

*choose Gateway.*



Thank you for choosing Gateway Technical College for your path to a successful career. With over 60 associate degree programs and 100 diploma and certificate options, Gateway provides the choices you need to align your skills and interests with the job markets of our region.

Building off a century of learning Gateway has an 88 percent job placement rate and 97 percent of local employers have indicated that they are satisfied with our graduates. Investing in a college degree is essential to competing for high-skill, high-wage jobs. A recent economic impact study of Gateway indicated that for every dollar a student invested in their education at Gateway a return of \$7.50 could be expected over the lifetime of their career.

Leadership in a changing economy is what Gateway graduates are known for. Gateway students participate in community service projects, international exchange programs, industry internships, professional learning communities, skill building student organizations and much more to add to the depth of the applied and integrated learning environment on campus.

As a student, you will be taught by top professionals in their respective industries, connected to the job market through career placement services, supported with services that include financial responsibility, social integrity and personal and professional development.

Your Gateway experience will be as unique and special as you are. Welcome to the Red Hawk tradition of individual success building community success.

Respectfully,

A handwritten signature in black ink that reads "Bryan Albrecht".

Bryan D. Albrecht, Ed.D.  
President and CEO  
Gateway Technical College

# Gateway Technical College District Board of Trustees through June, 2015

The Gateway Technical College District is governed by a nine-member board of trustees representing the communities served by the three-county district, which is comprised of two employer members, two employee members, one elected official, one school district administrator, and three additional members. Members are appointed by the chairpersons of the Kenosha, Racine, and Walworth County Boards of Supervisors, and serve staggered three-year terms.

The Gateway Board's monthly meetings are open to the public. Information on their meetings can be found at [gtc.edu/board](http://gtc.edu/board).



**Ram Bhatia**  
Racine County



**William Duncan**  
Walworth County



**Ronald J. Frederick**  
Kenosha County



**Susan Greenfield**  
Racine County



**Gary Olsen**  
Walworth County



**Bethany Ormseth**  
Kenosha County



**R. Scott Pierce**  
Kenosha County



**Roger Zacharias**  
Kenosha County



**Pamela Zenner-Richards**  
Racine County



# Table of Contents

2015–2016 Academic Calendar..... 10

Academic Information and Student Records ..... 23

Accreditation ..... 9

Admissions ..... 11

Apprenticeship Program ..... 192

Campuses and Centers ..... 4

Certificates of Completion ..... 190

**Course Descriptions ..... 194**

Credit Transfer to Four-Year (Articulation) ..... 30

District Board of Trustees..... 1

Faculty and Administration ..... 354

Gateway—Your Community Technical College ..... 5

Memberships ..... 9

Paying for College ..... 17

**Program Curricula—Associate of Applied Science Degree,  
Technical Diploma and Advanced Technical Certificate ..... 32**

Reciprocity—In-state Tuition ..... 31

Registration ..... 15

Student Rights and Responsibilities ..... 25

Information is subject to change and reflects material of record as of March 1, 2015. Updated information will be posted to appropriate locations on Gateway’s website gtc.edu. Published by the Marketing & Communications Department, Gateway Technical College—Spring 2015.

Accommodations: If you need special accommodations, please contact Gateway’s Disability Support Services department:

Elkhorn Campus/Burlington Center: 262.741.8020  
 Kenosha Campus: 262.564.2006  
 Racine Campus: 262.619.6216

Deaf/Hard of Hearing Services:  
 Office: 262.564.2564 (Voice)  
 Cell/Text: 262.960.1931  
 Wisconsin Relay System: 711  
 Email: sadowiskil@gtc.edu

Atención: Si usted necesita asistencia en español, favor de llamar a:  
 Maria Abrego 262.741.8318, Linda Badillo 262.564.2660, Maria Perez, 262.619.6328, or  
 Rosalva Santana, 262.619.6612

CNC Production Technician p. 62



EMT–Paramedic p. 92



Horticulture–Greenhouse and Marketing p. 110



Surgical Technology p. 172



Gateway's campuses and advanced technology centers are equipped to provide students with state-of-the-art learning opportunities. The three full-service campuses in Elkhorn, Kenosha, and Racine are home to Learning Success Centers, Follett Bookstores, libraries, and Student Services Centers. Get a sneak-peak of Gateway's facilities by taking a virtual tour at [gtc.edu/virtualtour](http://gtc.edu/virtualtour).



**Burlington Center**  
496 McCanna Pkwy.  
Burlington, WI 53105-3623



**Center for Bioscience and Information Technology**  
3520 - 30th Avenue  
Kenosha, WI 53144-1690



**Elkhorn Campus**  
400 County Road H  
Elkhorn, WI 53121-2046



**HERO Center**  
380 McCanna Pkwy.  
Burlington, WI 53105-3622



**Horizon Center for Transportation Technology**  
4940 - 88th Avenue (Highway H)  
Kenosha, WI 53144-7467



**Kenosha Campus**  
3520 - 30th Avenue  
Kenosha, WI 53144-1690



**LakeView Advanced Technology Center**  
9449 - 88th Avenue (Highway H)  
Pleasant Prairie, WI 53158-2216



**Racine Campus**  
1001 South Main Street  
Racine, WI 53403-1582

**Administration Center**  
3520 - 30th Avenue  
Kenosha, WI 53144-1690

**WGTD-HD**  
Your Gateway to Public Radio  
[wgtd.org](http://wgtd.org)

**1-800-247-7122**

**Wisconsin Relay System: 711**  
[gtc.edu](http://gtc.edu)



**SC Johnson iMET Center**  
2320 Renaissance Blvd.  
Sturtevant, WI 53177-1763

# Gateway—Your Community Technical College

Gateway Technical College provides quality technical education to the residents of its District, which is comprised of the southeastern Wisconsin counties of Kenosha, Racine, and Walworth.

Gateway is one of sixteen technical college districts that comprise the Wisconsin Technical College System. Gateway is a taxpayer-supported institution of postsecondary education, offering more than 60 degree and diploma programs, as well as nearly 50 certificate programs. Gateway provides you with almost limitless alternatives for your educational and employment future.

Associate of Applied Science Degrees and Technical Diplomas are awarded upon successful completion of individual program requirements. Advanced Technical Certificates allow those with a degree and/or work experience to gain advanced training in specialties related to their field of employment. Gateway Certificates allow students to earn concentrated credits in targeted fields, often on their way to a degree, which can be marketed to a future employer.

In addition, a wide variety of Adult Continuing Education (ACE) noncredit classes, workshops, and seminars are offered to assist Gateway District residents in expanding and augmenting occupational skills, or personal enrichment.

## Core Abilities

We believe students need both technical knowledge and skills and core abilities in order to succeed in careers and in life. Our nine core abilities are the general attitudes and skills essential for every successful graduate. Our faculty promotes the development of these core abilities through learning experiences in all Gateway Technical College courses. We continually assess our students' learning in these areas to improve the general components of a Gateway Technical College education.

1. Act responsibly.
2. Communicate clearly and effectively.
3. Demonstrate essential computer skills.
4. Demonstrate essential mathematical skills.
5. Develop job-seeking skills.
6. Respect self and others as members of a diverse society.
7. Think critically and creatively.
8. Work cooperatively.
9. Value learning.

Gateway operates under a strategic plan called Vision 3.2.1, which stands for 3 counties, 2 goals, 1 vision. Collectively Gateway strives to meet the needs of each of the over 23,000 students that attend our college.

## Mission Statement

We collaborate to ensure economic growth and viability by providing education, training, leadership, and technological resources to meet the changing needs of students, employers, and communities.

## Our Vision

We are the community technical college of choice for academic achievement, occupational advancement, and personal development.

## Values

At Gateway Technical College, we value:

- diversity of individuals and perspectives.
- a positive climate for working and learning.
- innovation and risk-taking.
- honest and ethical behavior.
- quality and excellence in education.

## General Education Philosophy

We believe students need general education skills in order to succeed in career and life. Recognizing this fundamental importance, the college requires general studies coursework in all programs of 45 credits or more. General education gives students effective and relevant communication, mathematics, scientific thinking, and global social skills.



# A Century of Making Futures



Gateway Technical College laid the cornerstone of career training when Racine Continuation School began classes Nov. 3, 1911 as the first compulsory, publicly funded school in Wisconsin—and, in doing so, also became the first in America.

Gateway continues to provide students with education and training to pave the way for their career and their future, serving its communities and providing the spark for economic development.

In June of 1911, the Legislature passed a groundbreaking law calling for the creation of compulsory continuation schools in all cities of more than 5,000 and Racine was the first to

open. A year later, Kenosha Continuation School opened its doors, located in the auditorium of Frank School with an enrollment of 295.

Continuation schools at their birth were places where students could “continue” their education part-time if they chose to leave school at age 14. Educators at the time said these teens age 14 to 17 were falling through the cracks between education and work. They were not required to go to school, and many left—but did not have the skills to find jobs.

Enrollment in vocational schools—as they were then called—increased in the 1920s and the makeup of its students broadened. In addition to teens, World War I veterans returning home

also enrolled in the schools, fueled in part by the opportunities created by the Soldiers Education Bonus Act.

The makeup of vocational schools in the 1930s took on a new direction because of new legislation and the Depression. The Legislature passed a school attendance law in 1933 that kept most youth in high school until age 18 or graduation—so vocational schools continued to move toward training post-high school adults. A lack of jobs also kept students in school longer, prompting school officials to turn training more to adults.

Wartime impacted vocational education again. The threat of World War II prompted vocational

schools to train workers for defense jobs in specialized trade courses like pilot training and ground aeronautics. By January 1942, the Racine Vocational School was operating 24 hours a day.

By the 1950s, the boom of veterans enrolling into Kenosha and Racine declined, and the schools began offering more adult short-term day programs in home economics and business. Officials increasingly began to look at another educational delivery change to ensure that vocational schools met their full potential to serve students and their communities.

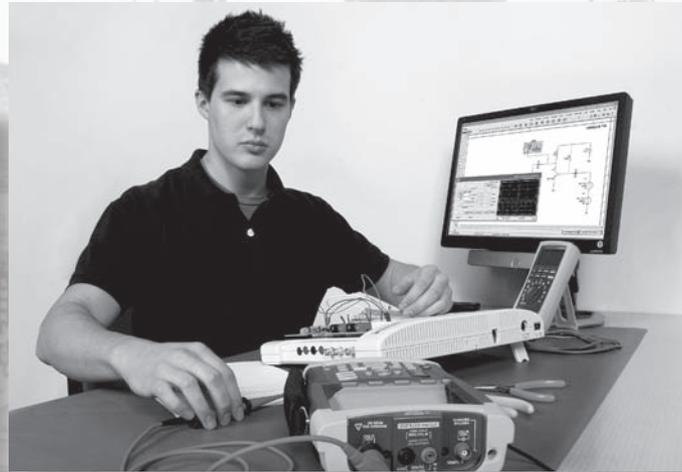
Their decision to begin offering associate-degree programs in 1959, beginning with business



education, transformed Gateway into what it is today—an institution of higher learning.

Walworth County decided to join the Kenosha vocation district in 1968 and a classroom building was built three years later. Kenosha Technical Institute and the Racine Technical Institute officially merged, along with the Walworth County campus into the Kenosha-Racine-Walworth vocational, technical and adult educational District 6 in April 1971. July 20, 1972, members of the board voted to change the district's name to Gateway Technical Institute. Its name changed to Gateway Technical College in the mid-1980s.

By 1972, Gateway was offering several different one- and two-year diplomas as well



as associate degrees. Gateway continued to provide new and innovative programs to meet the needs of industry and its students in the 1980s and 1990s. Programs developed during this time included Composite Manufacturing Technology, Desktop Publishing, Legal Secretary and Technical Communications. Gateway also worked to forge transfer agreements with four-year colleges, giving its graduates even more career and educational opportunities.

The college, from 1990s to present, continued to be innovative in its educational approach by offering courses in new and emerging careers. Technology centers dedicated to providing training and instruction in highly technical career

fields were built in Sturtevant, Kenosha, and Burlington.

High numbers of students turn to Gateway for their educational and career training needs. Gateway also ramped up the number of program transfer agreements with four-year colleges throughout Wisconsin and in other states, providing added educational options to Gateway students.

Gateway continues to be a state and national leader in offering “green” and sustainable career training and providing training opportunities for the jobs of tomorrow. Educational leaders from other countries increasingly visit Gateway in hopes of duplicating its innovative practices in



manufacturing, green careers and automotive technology at their own college. The college has also partnered with area businesses to help provide state-of-the-art facilities and equipment to give students real-world training in leading-edge technology. These partnerships, innovative training and the college's quality practices to prepare its students for their careers, have received state—as well as national—awards and recognition.

For more than 100 years, Gateway has provided opportunities for its students to make their futures through a number of career paths.



# Accreditation and Memberships

## Accreditation

Gateway Technical College is fully accredited by the Higher Learning Commission, North Central Association.



The Wisconsin Technical College System board has authorized Gateway as a self-governing district. Associate of Applied Science degrees, Technical Diplomas, Advanced Technical Certificates, and adult high school diplomas are granted.

All Gateway campuses and centers in Kenosha, Racine, and Walworth counties are approved by the Higher Learning Commission. Higher Learning Commission, North Central Association, 30 North LaSalle Street, Suite 2400, Chicago IL 60602-2504, phone 312-263-0456. [higherlearningcommission.org](http://higherlearningcommission.org)

The Wisconsin Technical College System Board has authorized Gateway Technical College to grant the Associate of Applied Science degree in two-year programs. Technical Diplomas are granted for one- and two-semester programs and for some multiple year programs of study. Advanced Technical Certificates are awarded in occupational content areas. Wisconsin Technical College System Board, 310 Price Place, P.O. Box 7874, Madison WI 53707, phone 608-266-1207.

- The Aeronautics—Pilot Training program has earned Federal Aviation Administration recognition as both an FAR Part 141 Flight School and an Airway Science Program. Federal Aviation Administration, Flight Standards District Office, 4915 S. Howell Ave., Milwaukee WI 53207, phone 262-747-5531.
- The Business and Information Technology division is accredited by the Accreditation

Council for Business Schools and Programs and has been granted the accreditation status of approval. ACBSP, 11520 West 119th Street, Overland Park, KS 66213, phone 913-339-9356.

- The Dental Assistant program is accredited by the Commission on Dental Accreditation and has been granted the accreditation status of approval. The Commission is a specialized accrediting body recognized by the Commission on Recognition of Postsecondary Accreditation and by the United States Department of Education. Commission on Dental Accreditation, American Dental Association, 211 E. Chicago Ave., Chicago IL 60611, phone 312-440-2719.
- The Health Information Technology program is accredited by the Commission on Accreditation for Health Informatics and Information Management Education, 233 N. Michigan Ave., Suite 2150, Chicago IL 60601, phone 312-233-1100.
- The Associate Degree Nursing program at Gateway Technical College is fully accredited by the National League for Nursing Accrediting Commission, Inc., 3343 Peachtree Rd. NE, Suite 500, Atlanta GA 30326, phone 404-975-5000, [nlac.org](http://nlac.org).
- The Medical Assistant program is fully accredited by the Commission of Allied Health Education and Programs (CAAHEP), on recommendation of the Curriculum Review Board of the American Association of Medical Assistants Endowment (AAMAE). Commission on Accreditation of Allied Health Education Program, 35 East Wacker Drive, Suite 1970, Chicago IL 60601, phone 312-553-9355.

- The Nursing Assistant program is fully approved by the Wisconsin Department of Health and Family Services (HFS), Bureau of Quality Assurance, 2917 International Lane, Suite 300, Madison WI 53704, phone 608-243-2019, or [dhfs.state.wi.us](http://dhfs.state.wi.us).
- The Physical Therapist Assistant program is fully accredited by the Commission on Accreditation in Physical Therapy Education of American Physical Therapy Association, 1111 N. Fairfax Street, phone 703-706-3245.
- The Surgical Technology program is fully accredited by the Commission on Accreditation of Allied Health Education Programs, 33 East Wacker Drive, Suite 1970, Chicago IL 60601, phone 312-553-9355.

## Memberships

- American Association for Women in Community Colleges
- American Association of Community Colleges
- American Association of Collegiate Registrars & Admission Officers
- American Association of University Women
- American College & University Presidents Climate Commission
- American Library Association
- Association for Career & Technical Education
- Association for the Advancement of Sustainability in Higher Education
- Association of Community College Trustees
- Association of Veterans Education Certifying Officials
- Business Educational Partnership Group, Inc.
- Business Industry Consulting Services International Incorporated
- Chair Academy
- College Board
- Community College Business Officers
- Council of North Central Two-year Colleges
- Council for Opportunity in Education
- Council for Resource Development
- Higher Learning Commission
- International Society for Technology in Education
- Instructional Technology Council
- League for Innovation
- Library Council of SE Wisconsin, Inc.
- Mid-America Association of Educational Opportunity Program Personnel
- Midwest Institute for International Intercultural Education
- National Association of Educational Procurement
- National Association of State Directors of Career and Technical Education Consortium
- National Association of Student Financial Aid Administration
- National Association of Veterans Program Administration
- National Business Incubation Association
- National Career Pathways Network
- National Coalition of Advanced Technology Centers
- National Coalition of Certification Centers
- National Community College Hispanic Council
- National Council for Marketing & Public Relations
- National Council for Workforce Education
- National Society of Leadership and Success
- Second Nature
- Small Business Development Center
- Southeast Wisconsin Education Consortium, Inc.
- Tempo International
- Wisconsin Association for Career and Technical Education
- Wisconsin Association of Public Purchasers
- Wisconsin Broadcasters Association
- Wisconsin Business Incubation Association
- Wisconsin Campus Compact
- Wisconsin Educational Media & Technology Association
- Wisconsin Library Association
- Wisconsin Solar Energy Association
- Wisconsin Student Government
- Wisconsin Women in Higher Education Leadership

## Special Notices

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take more than seven years to complete.

Tuition and material fees are determined by the Board of the Wisconsin Technical College System. Fees are set by the first week in April and are available on WebAdvisor.

Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

Curriculum in this publication is effective for the 2015–2016 academic year. Information was accurate as of March 1, 2015. Gateway reserves the right to modify course content.

The most current program and curriculum information are available at [gtc.edu](http://gtc.edu). Contact any Student Services Center with questions.

1-800-247-7122

[sscontactcenter@gtc.edu](mailto:sscontactcenter@gtc.edu)

Wisconsin Relay System: 711

Elkhorn Campus  
 400 County Road H  
 Elkhorn, WI 53121-2046

Kenosha Campus  
 3520 – 30th Avenue  
 Kenosha, WI 53144-1690

Racine Campus  
 1001 S. Main Street  
 Racine, WI 53403-1582

## Summer 2015 (May 11 through August 22)

<b>May 11</b>	<b>First day of summer semester</b>
<b>May 23–25</b>	<b>Holiday—college closed</b>
<b>July 3–4</b>	<b>Holiday—college closed</b>
<b>August 22</b>	<b>Last day of summer semester</b>

## Fall 2015 (September 8 through December 19)

<b>September 5–7</b>	<b>Holiday—college closed</b>
<b>September 8</b>	<b>First day of fall semester</b>
<b>September 23</b>	<b>Employee Learning Day—no classes</b>
<b>November 26–29</b>	<b>Holiday—college closed</b>
<b>December 17 (tentative)</b>	<b>Commencement</b>
<b>December 19</b>	<b>Last day of fall semester</b>
<b>December 24–January 3</b>	<b>Winter recess—college closed</b>

## Spring 2016 (January 11 through April 23)

<b>January 11</b>	<b>First day of spring semester</b>
<b>January 18</b>	<b>Dr. Martin Luther King, Jr. Day—no classes</b>
<b>March 25–28</b>	<b>Holiday—college closed</b>
<b>April 23</b>	<b>Last day of spring semester</b>
<b>May 17 (tentative)</b>	<b>Commencement</b>

## General Information

### Bookstores

The Follett Bookstores at Gateway offer a complete selection of new, used, digital and rental textbooks, school supplies, school-related software and clothing. Be sure to bring your course schedule to the bookstore when purchasing books and materials for courses. While it is not mandatory to do so, students may find it advantageous and convenient to purchase the necessary supplies from the Follett Bookstore at each campus. Students may also purchase course materials online using [efollett.com](http://efollett.com). Students can have their online orders sent to a home address or pick up their order at one of the campus bookstores. Students can use financial aid to purchase course materials in the campus stores or online. Students may sell their textbook back to the bookstore at the end of the semester. Book value is determined by condition and store need.

### Bookstore Refund Policy

New or used textbooks may be returned for refund or exchange within seven (7) calendar days from the start of courses. Short-term and interim courses have two (2) calendar days from start of the course. All refunds or exchanges require:

- Books to be in purchased condition; shrink wrapped materials and sealed CDs or access codes that are not opened, exposed or used.
- Customer to provide original dated cash register receipt.

Your refund will be processed in the currency it was purchased. For example, if you purchased your books/supplies with cash, a cash refund will be given. If you purchased your books/supplies with your financial aid authorization, your refund will be credited to your student account and refunded directly to you.

All other store purchases may be returned within thirty (30) days for refund or exchange, provided they are in purchased condition and with dated cash register receipt. Special orders may require payment at time of order and are not eligible for refund. Any electronic devices purchased from the bookstore are non-returnable if the package is opened including; computers, calculators, headphones, etc.

For bookstore hours and information visit [gtc.edu/bookstore](http://gtc.edu/bookstore).

Elkhorn: 262-741-8108  
Racine: 262-619-6866  
Kenosha: 262-564-2246

### Library

Libraries are located on the Elkhorn, Kenosha, and Racine campuses. Students have access through an online catalog to over 55,000 print, electronic, and audiovisual materials; audiovisual and computer equipment; and electronic book, periodical, and film databases. Students studying at home can access the library's online catalog, electronic databases, and selected world wide web resources through the Library section of the Gateway website at [gtc.edu/library](http://gtc.edu/library) and through the Library tab in Blackboard available after login. Students are able to request materials from other campuses or other libraries in person, by phone, or via email. The library staff is available to assist students with research and information seeking needs, in addition to explaining the extensive services and resources that are available. Users are reminded that abuse of library borrowing privileges or other library policies may result in revocation of patron's borrower card and/or use of library facilities and services. Library hours of operation, policies, and extensive list of services offered are posted on their webpage: [gtc.edu/library](http://gtc.edu/library).

## Admissions

The Gateway District provides an equitable process for admitting individuals to Gateway programs, which is consistent with Chapters 38 and 118 of the Wisconsin Statutes and TCS 10 of the Wisconsin Administrative Code that govern the Wisconsin Technical College System. Applications and related materials are reviewed on a first-come, first-served basis.

The laws pertaining to Family Educational Rights and Privacy Act rights (FERPA) begin at the time of matriculation. A student is defined as one who has been accepted to a program and/or enrolled in a course.

### Priority Admissions Dates

While Gateway welcomes your application any time of year, we do offer priority dates. Applicants completing their application files by January 1 for Summer semester, July 1 for Fall semester, and November 1 for Spring semester enrollment are guaranteed program admission by the priority registration date for new students.

### Student Types

#### Degree-seeking Students

Degree-seeking students are individuals who are accepted to a specific postsecondary program with the intent of graduating. Application, application fee, placement testing, official high school transcripts and any other identified admission requirements must be completed for program admission.

#### Non-degree-seeking Students

Non-degree seeking students are individuals who are attending Gateway with no intention of completing a program. These individuals may enroll in courses for which all prerequisites have been met. Placement testing may be required

depending on the course(s) selected. Students seeking this status do not need to complete an application for admission and may register beginning the first day of open registration. Students accepted as non-degree-seeking students are not eligible for federal financial aid.

### Guest Students

Guest students are individuals who are accepted to Gateway for the purpose of transferring credits back to the college or university they are currently attending. These individuals should complete the guest student application and return it to Gateway's Admissions Office with the appropriate required signatures or ACT/SAT scores. Gateway Technical College does not offer financial aid to guest students. Guest students must work with their home institution to develop a consortium agreement with Gateway to utilize financial aid at the home institution.

### Acceptance Status

#### Full Acceptance Status

For individuals who have met all program admission requirements.

#### Remedial Acceptance Status

For individuals who have met all program admission requirements and for whom placement scores indicate remediation is required.

#### Conditional Acceptance Status

For individuals who are required to verify high school or GED graduation for admission to their program. A conditional acceptance may apply for students who have completed their junior year of high school or at least half of their GED testing (passed 3 of 5 GED tests). To be accepted conditionally, all other admission requirements for the program must be met. Conditionally accepted students may register with newly accepted

students for their first semester at Gateway. The receipt of official verification of the secondary credential or equivalent must be met prior to the start of the student's second semester.

The official date of program acceptance is the date Admissions receives official transcripts verifying high school or GED completion. Students accepted conditionally are not eligible for financial aid until the semester following the date Gateway has received official verification of completion of the secondary credential.

## Placement Testing

All individuals applying for admission to Gateway's postsecondary educational programs must take a placement assessment to assist in the appropriate placement in coursework. All applicants must meet the current placement test requirements for admission and courses.

Individuals not seeking program admission who wish to take a college course(s) may be required to take a placement test for courses with a placement score prerequisite.

When individuals with a documented disability are required to test, reasonable accommodations will be provided pursuant to state and federal regulations.

## Admission of Transfer Students

Students who want to transfer credits from another college or university to Gateway Technical College must be accepted to a postsecondary program and submit official transcripts to Student Services. Official transcripts are defined as transcripts sent directly to Gateway from the issuing institution, by a recognized electronic transcript service or hand delivered by the student if the transcripts remain unopened in the issuing school's sealed envelope. Official transcripts must have the issuing school's seal and appropriate official's signature to be

accepted. Please also see the section on credit for prior learning.

## Admission of High School Age Students

### Compulsory School Attendance (118.15)

§118.15 Contracts are exemptions to the requirements of compulsory attendance. Students qualify for these contracts under varying circumstances. Requirements for school districts also vary.

1. Upon the child's request of the school board and with the written approval of the child's parent or guardian, any child who is 16 years of age or over and a child at risk, as defined in § 118.153 (1) (a), may attend, in lieu of high school or on a part-time basis, a technical college if the child and his or her parent or guardian agree, in writing, that the child will participate in a program leading to the child's high school graduation. The district board of the technical college district in which the child resides shall admit the child.
2. Upon the child's request and with written approval of the child's parent or guardian, any child who is 17 years of age or over may be excused by the school board from regular school attendance if the child and his or her parent or guardian agree, in writing, that the child will participate in a program or curriculum modification under par. (d) leading to the child's high school graduation or leading to a high school equivalency diploma (HSED).

Prior to a child's admission to a program leading to the child's high school graduation or a high school equivalency program under 1 or 2, the child, his or her parent or guardian, the school board

and a representative of the high school equivalency program or program leading to the child's high school graduation shall enter into a written agreement. The written agreement shall state the services to be provided, the time period needed to complete the high school equivalency or program leading to the child's high school graduation and how the performance of the pupil will be monitored. The agreement shall be monitored by the school board on a regular basis, but in no case shall the agreement be monitored less frequently than once per semester. If the school board determines that a child is not complying with the agreement, the school board shall notify the child, his or her parent or guardian and the high school equivalency program or program leading to the child's high school graduation that the agreement may be modified or suspended in 30 days.

3. Upon the child's request, and with the written approval of parent or legal guardian, a child 17 years of age or older shall be excused by the school board from regular attendance if the child began a program leading to a High School Equivalency Diploma (HSED) in a secured correctional facility, a secured child caring institution, secured detention facility, or a juvenile portion of a county jail, and the parent or guardian agree that the child will continue to participate in the HSED program. The child must have passed at least one of the five content areas of the General Educational Development tests.

Children at risk of not graduating from high school are defined as pupils in grades 5 to 12 who are at risk of not graduating from high school because they are dropouts, or are two or more of the following:

1. One or more years behind their age group

in the number of credits attained.

2. Two or more years behind their age group in basic skills levels.
3. Habitual truants, as defined in § 118.16 (1) (a).
4. Parents.
5. Adjudicated delinquents
6. Eighth grade pupils whose score in each subject area on the examination administered under § 118.30 (1m) (am) 1 was below the basic level, 8th grade pupils who failed the examination under § 118.30 and 8th grade pupils who failed to be promoted to 9th grade.

Dropout means a child who ceased to attend school, does not attend public or private School, technical college or home-based private educational program on a full-time basis, has not graduated from high school and does not have an acceptable excuse under § 118.15 (1) (b) to (d) or (3).

Participants attending Gateway under a 118.15 contract for the High School Equivalency Program must complete all HSED requirements prior to taking GED tests.

## Voluntary Attendance of Youth Sixteen (16) Years or Older

Any child who is the age of sixteen (16) years or older is eligible to apply to a Gateway postsecondary program if all of the following apply:

- Gateway agrees to admit the individual.
- The individual satisfies the other requirements for admission under s.38.22(1), Technical College Admission Requirements.
- The individual has the written permission of his or her parents or legal guardian.

- The individual will not be attending Gateway during the hours of normal school day established under s.119.18(7) or 120.12(15).
- The attendance is not a fulfillment of the student's compulsory school attendance requirement.
- The student attends at the regular tuition rate charged adult students.
- Individuals taking course(s) solely for Gateway program credit shall pay their own tuition and fees, books, and other associated costs.

## Home Schooled Students

Any pupil who is under a Home School agreement with the Wisconsin Department of Public Instruction and requests educational services from Gateway shall first seek assistance from the public school system. Home schooled students may attend Gateway at the regular tuition rate charged adult students, provided the attendance is outside of their designated home school schedule and is not counted toward fulfillment of their Home School attendance or completion requirements.

## Youth Options Program

Any public school pupil may enroll at Gateway for the purpose of taking one or more courses if they satisfy the following:

1. The pupil has completed 10th grade.
2. The pupil is not defined as At Risk.
3. The pupil is not attending Gateway under Compulsory Attendance.
4. The pupil has the written approval of the pupil's parent or guardian.
5. The pupil has notified the school district of his or her intent to attend Gateway Technical College as outlined in 118.55(7r).

The pupil shall be admitted in the Gateway

course(s) if he or she meets the requirements and prerequisites of the course, and if space is available only after admitting to the course all individuals applying for admission to the course. Youth Options students are eligible to enroll beginning the first day of open registration.

After Gateway admits the pupil, the secondary school board shall be notified in writing within thirty (30) days after the course(s) begins. If the pupil is approved for high school and Gateway program credit, Gateway shall charge the secondary school board the actual cost of resident tuition, course fees, and books. The payment for Youth Options students with a disability attending Gateway shall be adjusted to reflect the cost of any special services required for the pupil.

## Adding or Withdrawing from a Program

Students are responsible for keeping demographic and program of study information updated on their records. Students' programs along with personal information are listed in WebAdvisor. It is important to keep this information updated so students receive important program information and notifications.

Students who wish to withdraw from their programs should do so through WebAdvisor. Students also have the option to fill out a program withdrawal form available at [gtc.edu/forms](http://gtc.edu/forms) and submit the form to Student Services. To add a program students must complete a program add form available at [gtc.edu/forms](http://gtc.edu/forms) and submit the form to Student Services. Students will be required to complete all coursework outlined on the curriculum sheet that corresponds to the academic year they were accepted into the program.

To encourage academic progress toward graduation, Gateway limits the number of programs students may pursue to three. Students

applying to more than three programs, excluding internal and Advanced Technical Certificates, must seek approval from program deans before the additional application is accepted.

## Active Program Status

Students who are not enrolled for two consecutive academic years and who are not taking college-level courses toward their degree will be deactivated from their program(s). To be reinstated, students must reapply to the program by completing a new Application for Admission at [gtc.edu/apply](http://gtc.edu/apply). Applicants who are reapplying must meet the programs current admission and graduation requirements. The new date of program admission will be considered the official date of acceptance. *Note: Withdrawal from a program does not imply withdrawal from courses. See Student Services staff for course withdrawal information.*

*Note: Students who are actively petitioning in designated health programs will not be deactivated.*

## Readmission of Students Activated for Military Service

Students who are forced to withdraw from their educational program due to military deployment shall be re-admitted to the program with their original acceptance date.

## High Demand Programs/Petitioning

Some programs have a greater number of students than available core course seats. For such programs, Gateway Technical College utilizes a petition process where a post-admission, second-tier process is used to select accepted students for upcoming core course seats. As directed by TCS 10, students selected via the petition process are chosen based on Gateway District residency at time of acceptance into their program. First

priority is given to in-district residency then Wisconsin non-district residency, followed by non-Wisconsin residents. In addition to residency, students will also be selected based on date of program acceptance. Applicants who change their minds regarding program enrollment or have their application/program status deactivated and want to return to the program will need to reapply and meet current admission requirements. They will be selected based on the most recent program acceptance date, not the original acceptance date.

The time element prior to selection for and enrollment in core courses varies by program and is not predictable. Further information about specific program petitioning is available at [gtc.edu/petitioning](http://gtc.edu/petitioning). Gateway must be informed of all address changes and changes for telephone or cell phone numbers. If the College does not have updated information, the result could be program deactivation or bypassing the student for openings in a program's core courses.

## Residency Qualifications

Gateway determines whether students are eligible for in-state tuition and petition selection per Administrative Code TCS 10.03. This policy is applicable to all courses whether credit, noncredit, English Language Learner (ELL) or Adult Basic Education (ABE). Determination of Wisconsin residency is based on where the student permanently resides and holds legal bona fide residence. Students must demonstrate the intent to permanently reside in Wisconsin and may not be charged in-state rates if their purpose of residing in Wisconsin is for educational purposes. A person who enters and remains in the state principally to obtain an education is presumed to continue to reside outside the state and the presumption continues in effect until rebutted by clear and convincing evidence of residence in the state through the Residency Determination process. A

visa is a permit granted to persons legally residing outside the United States (U.S.) to enter the U.S. for a specified period of time with the intent of returning to their home country. Therefore, students on visas cannot be considered Wisconsin residents for tuition purposes.

Any person who is a resident of Wisconsin/the Gateway district at the beginning of any semester for which the person makes application, is a resident of the state/Gateway district for admission and fees purposes. Any resident of the state who has maintained a permanent residence within the district prior to application at Gateway is a Gateway district resident for admission priority. Prior to the beginning of any semester or session for which admission is applied, a person may petition the district admissions office for a reconsideration of a residence determination based on changed circumstances. Upon receipt of such petition, the district official charged with residence determinations shall issue a written decision within 30 days of receipt of the request.

Applicants/students who wish to have their residency status reviewed should complete the Wisconsin/Gateway Technical College District Residency Verification form a [gtc.edu/forms](http://gtc.edu/forms) and supply corresponding, supporting documentations. All residency verifications must be done prior to the start of the semester in which the applicant/student attends. If verification is received after the start of the term, the new residency status will be effective at the start of the next semester.

## Remission of Nonresident Fees for Out-of-state Residents Including Au Pairs (Out-of-state Fee Waiver)

WTCS Administrative code allows for Gateway to remit the out-of-state fees for individuals who are considered out-of-state, who can demonstrate financial need, and who demonstrate the ability

to benefit from their educational experience. Au pairs are eligible for remission of out-of-state fees for up to six (6) credits or the equivalent. Additional credits/courses beyond those approved for remission are at the out-of-state rate. Remission of nonresident fees is limited and granted to those eligible on a first-come, first-served basis. Remission applications are submitted on an academic year basis. To apply, complete the Remission of Nonresident Fees application available at [gtc.edu/forms](http://gtc.edu/forms). Registration will be at the out-of-state rate until remission is approved. Students approved for fee remission are responsible for the payment of any in-state fees (and out-of-state fees, if applicable) that are incurred.

## International Students

Gateway Technical College is authorized to issue I-20's for students attending under F-1 and M-1 visas; however, enrollment of foreign students in the educational programs at Gateway will be based upon space availability unless there is a Contract for Service (C-150) which provides for completely dedicated courses at full cost recovery. Gateway is not authorized to issue I-20's to students for study of the English language or for programs considered high demand. International students are not considered Wisconsin residents and are required to pay tuition equal to the out-of-state rate.

## Conditions for Admission

- Enrollment in technical diploma or associate degree programs that have no waiting period, waiting list, or other restrictions.
- Verification of financial resources covering the cost of education.
- Completion of all necessary International Student Admission requirements.
- If transferring, demonstration of good standing in academics, conduct, and have

no debt at the sending institution(s).

- Sufficient proficiency in English to enable the student to benefit from instruction. Evidence of English proficiency may be TOEFL or IELTS scores that meet Gateway's minimum requirements.

## Procedure

An international student seeking to be admitted to Gateway Technical College shall:

1. Submit a completed WTCS application with application fee.
2. Complete International Student admission documents:
  - Declaration of Financial Resources or certification of finances documenting funds to cover education for the length of the program.
  - International Student Questionnaire/Emergency Contact form
  - Transfer Clearance form (if transferring from another U.S. school)
3. TOEFL score of 500+, 180 (CBT) or 64 (IBT) or written documentation that the applicant is from an approved English-speaking country. A list of countries which are excluded from the TOEFL testing can be found at [gtc.edu/student-services/admissions/international-students](http://gtc.edu/student-services/admissions/international-students)
4. Submit official evaluation of high school and/or college transcripts. Evaluations must be provided directly from the recognized, educational evaluation service.
5. Gateway requires a deposit of \$2,400 one month before the start of the semester the student wishes to begin. The only exceptions are:
  - students attending under Section 38.14(3) of the Wisconsin Statutes where Gateway has entered into a

Contract for Service with a foreign government or business not operating in Wisconsin.

- students qualifying as eligible for Nonresident Fee Remission:
  - those enrolling under Administrative Bulletin 04-03, Exchange Agreements with Foreign Educational Institutions.
  - those who meet the requirements to qualify as Needy and Worthy under Administrative Bulletin AB 04-02. An international student who qualifies for needy and worthy status will have his/her deposit returned.
- 6. Upon completion of all above admission requirements, an I-20 will be issued to the student.
- 7. When the student arrives, he/she will be required to submit a copy of his or her visa, take the placement test, and complete an Agreement of Attendance and Program Completion.

International students interested in applying for admission should contact the Primary Designated School Official, Director of College Access, Admissions, and Testing in Student Services for further information. Additional information and all forms are available at [gtc.edu/admissions](http://gtc.edu/admissions).

*Please note that due to enrollment restrictions, international student applicants should view the list of programs available to them on our website.*

## Reciprocity Agreements with the College of Lake County (CLC) and McHenry Community College (MHCC)

Through an agreement between Gateway Technical College and CLC and MHCC, students may be able to attend approved programs in

their neighboring state at the in-state rate. Students participating under the terms of these agreements must be accepted to an Associate Degree, Technical Diploma, or Certificate approved by the receiving college under the agreement. These students are not considered district residents for petition selection purposes. Illinois students interested in this option should contact the appropriate official at the college in their home county. Gateway Technical College district residents should contact the Admissions Office at Gateway Technical College. Individual courses, certificate, and transfer programs are not covered by this agreement.

## Reciprocity Agreement with Minnesota

Wisconsin has a reciprocal agreement with Minnesota. Individuals from Minnesota who wish to attend Gateway may do so at in-state tuition rates by completing a Residency Determination Verification form and submitting MN residency verification (same as for WI). These students are not considered residents for petition selection purposes.

## Academic Advising

Gateway Technical College offers a staff of highly trained and experienced Academic Advisors in each program area. Academic Advisors are available to provide new and continuing students with information about academic programs, curriculum requirements, and assist students with course selection. Academic Advisors are the primary contact for students regarding all things academic planning (registering, dropping/adding courses, transferring to another program or school, withdrawing, or any other matter of an academic nature).

We strongly encourage all new students to meet with the Academic Advisor for their program prior to beginning coursework. To a new student, the advisor is the primary source of academic advice, college preparation, and assistance in interpreting

placement test results, providing an overview of their program, and helping complete an initial course schedule. To the continuing student, the advisor is able to update students on their progress in their program, review graduation requirements, and provide encouragement, guidance, and referrals as needed. Advisors are available to guide students at any time during their educational experience at the college. They are available by appointment or at various walk-in opportunities in the Student Services Center on each campus.

## Role of the Student in Advising

It is the responsibility of the student to consult an Academic Advisor regarding academic information and concerns that may affect the student's academic progress. While Gateway's Academic Advisors are here to guide and assist students towards completion of their program, it is ultimately each student's responsibility to fulfill his/her degree requirements. New and continuing students who have remedial requirements, less than 24 credits, or do not meet the standards for good academic standing should work with their Academic Advisor. Continuing students with 24 or more credits that are in good academic standing should transition to working with a faculty advisor but always have access to their Academic Advisor as well. Students may set up an appointment at 1-800-247-7122.

## Role of the Faculty Advisor

Faculty members from each program serve as faculty advisors to continuing students who have completed all remedial requirements and 24 or more credits toward a diploma or associate degree program. Faculty advisors are available during faculty office hours throughout the year and help plan course schedules during faculty advising days, which are scheduled prior to the beginning of each registration period.

## Registration

### Registration Information

Registration is the process of enrolling in courses. Dates, hours, and instructions for registration are available each semester through WebAdvisor. Academic advising will be provided by faculty and academic advisors.

- Students must be officially registered to attend class.
- Students must be officially registered in order to receive credit for class(es).
- Students who have a debt greater than \$200 will not be able to register for a class until the account balance is at \$200 or less. Students who have any outstanding debt will not be able to receive their transcript or diploma.

### Registration Requirements

To register for classes, students must:

- register via WebAdvisor or submit a completed registration form to any Student Services Center.
- make any necessary payment or payment arrangements.
- not have an outstanding financial obligation of more than \$200 to the College.
- have met class pre-requisites and be accepted to the program, if applicable.

### Priority Registration

Students who are accepted to a postsecondary program are eligible to register during the priority registration period. A continuing program student is given a priority registration date based upon the number of credits the student has completed. Newly admitted program students may register during New Program Student Registration.

Students not accepted into a postsecondary program register during the open registration period. Students attending Gateway Technical College under the Youth Options program register during the open registration period regardless of whether or not they have been accepted into a postsecondary program.

### Service Member Priority Registration

Wisconsin Assembly Bill 201 gives priority registration to eligible service members attending a Wisconsin technical college. Eligible services members include those who have served or who are serving on active duty under honorable conditions. In accordance with the law, Gateway Technical College allows eligible service members (not including dependents) to register one day prior to their standard registration date.

### Prerequisites and Corequisites

A prerequisite is a required course which must be successfully completed before a student can register for an advanced course. Most courses require a minimum D- grade to be earned in the pre-requisite. However, some courses require a higher minimum grade. Please see course description information for prerequisite requirements. A co-requisite is a class which must be completed prior to or at the same time as the selected course. Students should become familiar with the prerequisite and corequisite requirements of their program courses. Prerequisite and corequisites are identified on curriculum sheets. Not following these requirements can result in the need for extra semesters of work to complete graduation requirements. A student who feels they have work experience or training which may qualify for enrolment in an advanced course, should discuss the situation with their academic advisor.

### Repeating a Course

If a student wishes to repeat a course they must register in person at a Student Services Center,

specifying on their registration form which course they are registering to repeat.

## Electives

Elective credits may enable students to take courses in addition to those specified in their program's curriculum. Elective courses may be chosen from the wide variety of classes offered each semester. Students in associate degree programs should be sure that their electives are at the associate degree level. Students should check with their faculty advisor or an academic advisor on the selection of elective credits.

## Changes in Registration

Changes to students' schedules may be made via WebAdvisor or in person at any Student Services Center. If using WebAdvisor, review "My Class Schedule" after conducting your transaction to verify that you are registered for the correct classes. A student wanting a third party to complete any transaction on their behalf must give the third party written permission authorizing the transaction. Photo identification of the third party and the student must be presented with the written permission.

## Financial Aid Census Date

The actual amount of financial aid funding a student is eligible to receive will be determined based on the fundable number of credits in which the student is enrolled and attending on the Census Date (the 14th calendar day of each semester at Gateway). After this date:

- adjustments will not be made for additional enrollment
- award may be recalculated for classes with no attendance and/or,
- a repayment may be charged for all or a portion of funds received

Gateway highly encourages students to register for all classes for a semester prior to the Census Date.

## No-shows

If a student does not attend class, they are not eligible to receive financial aid for the class. If an instructor drops a student from the class they are teaching, due to the student being a 'no show' or having poor attendance, there is no refund of tuition and fees; however, the Financial Aid office is required to adjust aid based on actual credits.

## Adding a Class

A student may add a class through the third class hour of the course without instructor approval, provided the class capacity has not been reached and all registration requirements have been met. Accelerated classes require instructor approval once the class has begun. Internet and blended classes require instructor approval when adding a class on or after the start date. After the third class hour of the course has elapsed, the student must obtain a Petition to Register Late form available at [gtc.edu/forms](http://gtc.edu/forms) or in any Student Services Center. An email generated by the student from his/her Gateway email account and instructor response with approval may be used in lieu of the petition. After obtaining the signature/approval of the instructor, the student must officially add the class in any Student Services Center. Class capacity may not be exceeded. The student is responsible for any and all missed course work, materials, and assignments. Refunds for students who enter a class late and subsequently drop will be calculated based upon the start date of the class, not the date the student registered for the class. A student who does not register for a class is not eligible to receive credit for the class. Financial aid awards will not be adjusted if adding a class after the Census date.

*Students may not attend a class unless they are officially registered for the course.*

## Dropping a Class

A drop is student-initiated. A student may drop a class without a grade up until 20% of the class meeting times have elapsed. In order to drop a class, a student must complete a drop via WebAdvisor or submit a completed Drop Form to any Student Services Center. The drop process is not complete until WebAdvisor processes the drop (confirm by viewing "My Class Schedule") or the Drop Form is received and processed by the Student Services Center. Nonattendance or notifying the instructor that the student will not be attending does NOT constitute a drop. When a student registers for a class, the student owes the corresponding tuition and fees. Students who plan to drop a class should do so immediately. A single day can make a significant difference in the amount of the refund. Drop deadlines are printed on a student's class schedule and are strictly enforced. For information regarding refunds, please see "Refund Policy" in "Paying for College" section of this handbook. A student who is a financial aid recipient should be aware that dropping a class may affect his or her financial aid award and account balance with the college. If a class is dropped, the financial aid award will be recalculated based on the remaining eligible credits. Dropped classes will be monitored throughout the entire semester. Dropped classes are used to calculate satisfactory academic progress for financial aid purposes. If students have questions on how dropping a class may affect their financial aid award, they should contact a Student Finance Specialist prior to dropping the class.

## Withdrawing from a Class

Withdrawals occur after the refund period; there are no refunds for withdrawn classes. A student may withdraw from a course without an academic penalty up until 80 percent of the class time has

elapsed. A student withdraws from classes by completing a Withdrawal Form for each class and submitting it to a Student Express Associate in any Student Services Center. A grade of 'W' will be recorded on the student academic record. A student who stops attending a class after the refund period without withdrawing receives an F grade. Withdrawing from a class(es) may affect the student's financial aid award. W grades are used to calculate satisfactory academic progress for financial aid purposes.

*Note: Withdrawal from classes does not imply withdrawal from the academic program. To withdraw from a program, access Withdraw from a Program in WebAdvisor. program withdrawal forms can be found at [gtc.edu/forms](http://gtc.edu/forms).*

## Class Cancellations

Gateway reserves the right to cancel any scheduled class. Refunds are issued for cancelled classes. The student is encouraged to work with their academic advisor in making alternative class selections.

## Combining Class Sections

Gateway reserves the right to combine class sections as a result of insufficient enrollments. If this occurs, every effort will be made to notify the student prior to the start of the class. The student's class schedule can be viewed on WebAdvisor at "My Class Schedule."

## Auditing a Course

At times a student may wish to attend a class without receiving a grade or credit. To do so, the student must register to audit the course. The tuition and fees are the same, whether the student is auditing the course or taking it for credit. Information regarding the fee exception for senior citizens auditing postsecondary courses follows. A student must officially change his or her audit

status within the first 20 percent of class. At the completion of the course, the student will receive a grade of AU (audit).

A student who is auditing a course may not change his or her enrollment in the class to credit-seeking or vice versa after the first 20 percent of the class has passed.

## Senior Citizen Audits of Postsecondary Courses

Wisconsin residents, 60 years of age or older on the start date of the class, may audit an associate degree or technical diploma course without paying the tuition portion of the class fee, provided space is available. This is a significantly reduced rate. Only non-tuition fees, such as material, activity, and other miscellaneous fees will be charged. Forms for requesting a senior citizen audit are available in any Student Services Center. If a senior citizen wants credit for the course, regular registration procedures and charges apply. The regular audit rules apply to changing status from credit-seeking to audit and vice versa.

## Senior Citizens and ACE Classes

Wisconsin citizens 62 years of age or older on the start date of the class may take Adult Continuing Education (ACE) classes at a significantly reduced rate. A student in this category is not charged tuition for the class, only non-tuition fees, such as material, activity, and other miscellaneous fees will be charged. Please contact Student Services for information.

## Student Enrollment Status

Student enrollment status is determined by the number of credit hours for which a student is registered. A full-time student is defined as one who is enrolled in 12 or more credit hours for Summer, Fall, or Spring semesters. A part-time student is defined as one who is enrolled in

less than 12 credit hours for Summer, Fall, or Spring semesters. Enrollment verifications reflect the student's enrollment status at the time the verification is completed.

## Paying for College

Gateway Technical College believes that the opportunity for a college education should be within the reach of all interested individuals. To that end, Gateway offers a variety of payment options. Students are ultimately responsible for the payment of tuition, fees, and books. Payment options include cash, check, MasterCard, Visa, financial aid, authorizations and a student payment plan. A payment option must be in place by published deadlines. Out-of-state students pay additional tuition charges. (See Residency Qualifications for more information.)

## Financial Aid

Financial aid is financial assistance to help students meet their educational costs. The Gateway Technical College Financial Aid Office administers a comprehensive program of federal, state and college grants, work-study and loan programs to provide assistance to students who would otherwise be unable to afford an education. Gateway uses the Free Application for Federal Student Aid (FAFSA) to determine if a student is eligible for federal grants, student and parent loans, work-study, and state grants. The FAFSA is available at [fafsa.ed.gov](http://fafsa.ed.gov).

Financial aid is made available to you if you are eligible according to specific state and federal regulations. However, all eligible students must:

- Apply for admission to and be accepted to an aid-eligible program and meet program entry requirements before the start of the semester.

- Be a U.S. citizen, a National, or a permanent resident of the United States.
- Demonstrate financial need as determined by Gateway's Financial Aid Office through the Financial Aid Application (FAFSA) process.
- Not be in default on any educational loan, or demonstrate an unwillingness to repay any educational loan and/or owe any overpayment to Gateway Technical College or the U.S. Department of Education.
- Be in compliance with Selective Service regulations.
- Be enrolled at least half-time status to receive most types of financial aid.
- Maintain Financial Aid Satisfactory Academic Progress as defined by Gateway's Financial Aid Office.
- Must participate in Loan Entrance/Exit Counseling if award includes loan.
- Only receive aid at one college per semester.

There are three major types of aid available to Gateway students. They include:

- Grants (do not have to be repaid unless you stop attending—see information on Return of Title IV funds)
- Student Loans (must be repaid)
- Student Employment (you work and earn money to help pay for college)

Information about the specific types of grants, loans, and student employment available may be obtained at [gtc.edu/financialaid](http://gtc.edu/financialaid). Financial aid information may be subject to change at any time due to change in federal, state, or sponsoring agency regulations.

## Financial Aid Communications

Communication in regards to the processing of your Free Application for Federal Student Aid (FAFSA) and financial aid award/eligibility will be sent to your Gateway Technical College student email and the "My Documents" section of WebAdvisor. It is the responsibility of every student applying for or receiving aid to check both of these locations on a regular basis throughout the academic year to ensure that all relevant financial aid requirements and deadlines are met in a timely manner. This includes periods when college is not in session as changes to your eligibility may occur during these times, such as when final grades are issued after the end of the semester. Failure to check your student email and the "My Documents" section of WebAdvisor on a regular basis could result in the delayed receipt of important information regarding financial aid requirements and the loss of financial aid eligibility.

If you are awarded funds through the Federal Student Aid program at Gateway Technical College, your award letter will be made available in the "Financial Aid Award Letter" section of WebAdvisor. You may view or print your letter at this location. If you require assistance viewing and/or printing your letter you may visit the nearest Student Services Center for assistance. The Financial Aid office does not print or mail award letters to students, parents or third parties.

## Census Date (Date of Record)

In accordance with federal regulations, the Financial Aid office will recalculate federal, state and institutional awards based on the enrollment status as of the published census date. The census date is set by the college and is the 14<sup>th</sup> calendar day of each semester.

Official census dates for the current academic year can be found at [gtc.edu/census](http://gtc.edu/census). On

this day, the college takes a “snap shot” of all students’ enrollment which becomes the “official enrollment” that is used for both state reporting and financial aid eligibility. After this date:

- Adjustments will not be made for additional enrollment
- Award may be recalculated for courses with no attendance and/or,
- Classes are cancelled or if a course is dropped that has not started, students may owe repayment

The classes you are enrolled in and attending as of census date will determine the amount of financial aid you receive. If you are enrolled and attending less than full time as of the census date, your awarded aid will likely be less than what was reported to you in your initial award letter or email. This difference is because students are initially awarded based on the expectation of full time enrollment. Financial aid is then adjusted after the census date to reflect students’ actual enrollment.

Gateway highly encourages students to register for all courses (including late start) for a semester prior to the census date.

## Financial Aid Satisfactory Academic Progress (SAP) Policy

The Federal Student Aid program requires that colleges maintain Satisfactory Academic Progress policies in order to ensure that students are progressing successfully through their programs as a condition of receiving financial aid. Students’ complete Gateway Technical College academic record is used to determine if each student meets the Satisfactory Academic Progress criteria as outlined in this document. All credits attempted at or transferred to Gateway Technical College, including those attempted without the use of financial aid, are included.

Each student’s financial aid status is calculated upon receipt of their Free Application for Federal Student Aid (FAFSA), as well as at the end of each semester if a student has submitted a FAFSA and attempted coursework. Students that have not met the Satisfactory Academic Progress Criteria as outlined in this document are notified via their student email account and WebAdvisor.

For complete information related to Gateway Technical College’s Satisfactory Academic Progress Policy, please go to: [gtc.edu/student-services/financial-aid](http://gtc.edu/student-services/financial-aid)

This policy is subject to change at any time should Federal regulations require it.

## Satisfactory Academic Progress Criteria

To maintain financial aid eligibility, students must meet all Satisfactory Academic Progress criteria as outlined below:

- Minimum 2.0 term Grade Point Average (GPA)
- Minimum 67% term completion rate (also known as Pace) 67 percent = credits completed divided by credits attempted
- Minimum 2.0 cumulative Grade Point Average (GPA). Cumulative GPA is calculated on all credits attempted at Gateway.
- Minimum 67 percent cumulative completion rate (all credits completed at Gateway and transferred to Gateway divided by total credits attempted).

Unlike a student’s academic GPA and/or completion rate, **all** attempted coursework is used in calculations involving Satisfactory Academic Progress. This means that courses with a final grade of F, U, W, WF, WP, or I, as well as a final status of NG (no grade) are included in these calculations as non-completions with zero grade points (this is the same as receiving

a final grade of “F” in a course). All repeats (R) are included as the final grade or status that was earned for each attempt. The academic GPA and/or completion rate shown on WebAdvisor may not match your GPA and/or completion rate as calculated for Satisfactory Academic Progress purposes due to these differences.

## Financial Aid Statuses

### Financial Aid Warning

Students failing to meet the Satisfactory Academic Progress criteria listed above will automatically be placed on Financial Aid Warning. Students on Financial Aid Warning remain eligible to receive financial aid. Students on Financial Aid Warning are not restricted in the number of credits they may take, but must meet all four Satisfactory Academic Progress criteria as outlined above in all future terms to avoid being placed on Suspension—Need Appeal.

### Suspension—Need Appeal (SNA)

Students in the Financial Aid Warning status who fail to meet all Satisfactory Academic Progress criteria will be placed on Suspension—Need Appeal. Students on Suspension—Need Appeal *may file a SAP Appeal/Plan and appeal to have their aid eligibility reinstated*. Students choosing not to file a SAP Appeal/Plan must meet all Satisfactory Academic Standing criteria listed in this document in order to be eligible to receive any further financial aid.

### Approved Appeal/Plan (AP)

Students who submit the SAP Appeal/Plan and are approved must follow the terms of their approved SAP Appeal/Plan. This would include:

- Achieving a minimum 2.0 term Grade Point Average (GPA) in all future terms.
- Achieving a minimum 67 percent term

completion rate (also known as Pace) in **all** future terms. 67 percent = credits completed divided by credits attempted.

- Taking only courses required to complete the current active program listed on the SAP Appeal/Plan form.
- Any and all other criteria as outlined on the SAP Appeal/Plan Form.

Students in Approved Appeal/Plan Status are strongly encouraged to meet with their program advisor to ensure that they are only taking required coursework. Students on Approved Appeal/Plan status that do not meet all of the criteria outlined above will be placed on Financial Aid Suspension (FAS).

## Financial Aid Suspension (FAS)

Students are placed into Financial Aid Suspension (FAS) status if:

- The Student has completed a SAP Appeal/Plan and it has been denied.
- The Student has had his or her SAP Appeal/Plan approved, but did not meet the terms specified by the approved SAP Appeal/Plan.
- They have exceeded the maximum duration of financial aid eligibility (150 percent Rule) as outlined below.

Students in the Financial Aid Suspension (FAS) status are not eligible to receive financial aid and are not eligible to appeal.

Students on Financial Aid Suspension (FAS) may regain financial aid eligibility if they complete financial aid eligible coursework with alternate funding sources and meet all Satisfactory Academic Progress criteria. Students that meet this criteria will be sent the SAP Reinstatement form via student email and will be eligible to receive aid once the form is processed by the Financial Aid office. Students that have had their financial aid eligibility reinstated as a result of the

SAP Reinstatement form being processed and do not meet all Satisfactory Academic Progress criteria in any subsequent term will immediately be placed back on Financial Aid Suspension (FAS).

Students exceeding the maximum duration of financial aid eligibility (150 percent Rule) as outlined below cannot regain financial aid eligibility regardless of academic performance.

## Duration of Financial Aid Eligibility—150 Percent Rule

Students that can no longer graduate by the time they have attempted 150 percent of the published credits for their current active program, as listed on their program requirement sheet, will immediately become ineligible for financial aid and will be placed on Financial Aid Suspension (FAS).

All credits that a student has transferred to Gateway Technical College, as well **all** credits attempted at Gateway Technical College count toward the 150 percent. All attempted credits are included in this calculation regardless of:

- Program status
- Program(s) being pursued
- Financial Aid received/not received
- Length of time since the credits were attempted

The maximum duration of financial aid eligibility is calculated by taking the number of credits required to complete your current active program requiring the most credits and multiplying by 150 percent (1.5). For example, a program requiring 70 credits to complete would have a maximum duration of eligibility of 105 credits. This is because  $70 \text{ Credits} \times 150 \text{ percent (1.5)} = \text{A maximum of 105 credits.}$

Note: The maximum duration of eligibility for students active in more than one program is calculated using the active program requiring the most credits to complete. It is **not** calculated on the basis of multiple programs.

Required credit for program	150 percent of that programs credit
70	105
69	104
68	102
67	101
66	99
64	96
61	92
44	66
33	50
32	48
28	42
27	41
17	26

Students exceeding the allowable 150 percent of their current program will be placed on financial aid suspension at the end of the semester in which the 150 percent limit is reached. The 150 percent status **cannot** be appealed. At this time all future aid will be cancelled at Gateway Technical College. Students on financial aid suspension are still allowed to take classes at Gateway Technical College by paying for the classes with alternative resources (payment plan, scholarships, Veterans Affairs benefits, etc.).

## Financial Aid Disbursement and Eligibility Policy

If you receive federal and/or state funding, your funds will be applied to your student account. You will be able to charge certain expenses to this account. Expenses include tuition, fees, and bookstore charges. After courses begin and your attendance is verified on the Census Date, Gateway will apply your financial aid award to your student account. If your award exceeds your expenses, a refund representing the proceeds of your funds will be applied to your Gateway Plus card. Financial aid awards are based on enrollment

levels. Enrollment level changes will prompt a change in aid funds and a new award notification will be sent to you. Awards may be viewed on WebAdvisor. All student loans are processed in two disbursements each term. Please check the important date's calendar online for more information: [gtc.edu/student-services/financial-aid/important-dates](http://gtc.edu/student-services/financial-aid/important-dates).

## Grants—Eligibility

### Federal Pell Grant

Students must be enrolled in a minimum of one (1) undergraduate level credit in order to be eligible for the Federal Pell Grant. Depending on a student's Expected Family Contribution (EFC) students may not be eligible for the Pell grant. Please check with a Student Finance Specialist for more information.

Student awards are initially based on full time enrollment (12 credits) for the full academic year. The amount of Federal Pell grant a student receives is based on the student's actual enrollment status at the census date. Due to this, after the census date, awards are recalculated to reflect student's actual enrollment status. Pell eligibility is based on enrollment, Estimated Family Contribution (EFC) and/or Cost of Attendance (COA).

### Federal Work Study

Students must qualify for federal work study and be enrolled in at least one (1) undergraduate level credit. If an award letter includes a federal work study award, students have the option to find a job and begin working. Students also have the option to not take advantage of this program; in this case all FWS funds will be forfeited. Monies are paid based on hours worked. Total monies earned cannot exceed the amount stated on the financial aid award. If you have not been awarded federal work study and are interested, contact any Student Service Center to see if you are eligible.

## State Grants

Student must be enrolled in a minimum of six (6) credits at the time of disbursement to be eligible for state grants. Due to limited state funds it is recommended that students apply for financial aid before April 1 for maximum eligibility.

## Loans—Eligibility

### Federal Student Loans

Students must be enrolled in a minimum of six (6) credits at the time of disbursement to be eligible for student loans.

Students who have not previously received a loan from Gateway Technical College and are requesting a loan must complete Direct Loan Entrance Counseling and sign a Direct Loan Master Promissory Note (MPN). If you do not complete Direct Loan Entrance Counseling and sign a Direct Loan Master Promissory Note, your loan funds will not be applied to your account.

You may complete Online Direct Loan Entrance Counseling and sign a Direct Loan Master Promissory Note at [studentloans.gov](http://studentloans.gov).

Note: Students requesting additional unsubsidized loans must complete financial awareness counseling at [studentloans.gov](http://studentloans.gov).

### Federal Parent PLUS Loans

Dependent students must be enrolled in a minimum of six (6) credits at the time of disbursement.

Eligibility for federal financial aid must first be determined for dependent students before consideration of Parent PLUS loans. Students may complete a FAFSA at [fafsa.gov](http://fafsa.gov). Parent and dependent student must be U.S. citizens or eligible noncitizens, and cannot be in default or owe an overpayment on federal grants. Parent

credit history will be checked. If PLUS loan is denied, students may be considered for additional unsubsidized loans.

## Private Loans

Student must be enrolled in a minimum of six (6) credits at the time of disbursement.

Eligibility for federal financial aid must first be determined by completing a FAFSA at [fafsa.gov](http://fafsa.gov) before consideration of private loans will be made. Gateway reserves the right to deny certification of the loan.

## Purchase or Rental of Textbooks Using Financial Aid Funds

Gateway Technical College believes that being prepared for classes is essential. To ensure students are ready, students who have a financial aid award in place on WebAdvisor may use their funds to purchase or rent their textbooks and supplies from our partner, Follett Bookstores.

The amount of funds a student will have available to use at the bookstore each semester will be the difference between what a student has been awarded for financial aid minus the cost of their classes. Funds will be available 24 hours after your financial aid award has been posted to Web Advisor.

- Bookstore authorization dates can be referenced at: [gtc.edu/student-services/financial-aid/important-dates](http://gtc.edu/student-services/financial-aid/important-dates)
- To purchase or rent in person, bring a photo ID and a copy of your schedule to the bookstore on campus during the bookstore authorization dates. Let them know you would like to charge your purchase to your financial aid when you check out.
- To purchase or rent online, visit [eFollett.com](http://eFollett.com) during the bookstore

authorization dates and select the items to be purchased and/or rented. Proceed to the Checkout area and enter all the required information. You will be taken to the Payment Methods screen and here is where to indicate that you would like to pay using Financial Aid.

Students who are Pell-eligible may wish to purchase their books from an alternate source. To do this, the student has the right to request an early disbursement of a portion of their Pell grant.

- The maximum early disbursement allowed will be calculated by subtracting the cost of tuition and fees from the amount of Pell grant awarded for that term as of the date the request is being reviewed. If the cost of tuition and fees is more than the award an early disbursement will not be granted.
- The early disbursement will also be limited to the book component of the student's cost of attendance as determined by Gateway's Financial Aid office.
- If this early disbursement is granted, the student will not have any funds available through Follett Bookstore for that term. If a student already purchased books using their financial aid at Follett, they are no longer eligible for the early disbursement.
- A student may request the early disbursement on a per-term basis by contacting a Student Finance Specialist and asking for an Early Pell Disbursement form. The form must be completed and returned to a Student Finance Specialist at Gateway by the first day of the term that the disbursement is being requested.
- Students must sign up for [saltmoney.org](http://saltmoney.org) and complete at least one SALT module if they have not already done so. This

must be completed by the time the Early Pell Disbursement form is submitted. If a module is not completed on the day the Early Pell Disbursement form is reviewed it will be automatically rejected.

## Gateway Plus Card

All eligible financial aid students will receive a Gateway Plus card. Financial aid disbursements are sent electronically to the Gateway Plus card (typically by 3:00 p.m. on the published refund date) and processed according to the choice indicated by the student. When the student activates the card successfully, the student may choose to have funds applied directly to the card or have funds electronically transferred to a bank account designated by the student. This card is good for five years and it is the responsibility of the student to retain this card. The card will be mailed to your address on file at Gateway Technical College. A \$10.00 fee is required when a replacement card is requested.

## Return of Federal Financial Aid Funds

If you withdraw or drop out of Gateway Technical College class(es) prior to completing 60% of the semester, you will be required to return some of the federal financial aid that was disbursed to you. The amount of aid you could keep is proportional with the amount of time you attended class(es) to the total days in the semester. Failure to attend any classes would mean a 100% return of all aid. Gateway is also required to repay to the federal aid funds a proportional part of your tuition that was originally paid with federal aid. The student is required to repay these funds to Gateway Technical College. Any return of tuition will go to the following funds in priority order: (1) Federal Direct Loan (unsubsidized), (2) Federal Direct Loan (subsidized), (3) PLUS Loan, (4) PELL Grant, (5) SEOG Grant, (6) TIP Grant. When aid is returned,

the student will owe a balance to Gateway. Payments should be made via WebAdvisor or in any Student Services Center. Students who do not repay a debt as a result of this calculation may be reported to the Department of Education and may be prohibited from receiving Title IV funds at other colleges. In addition, students who have a Title IV debt may not receive an official transcript. Students are reminded to follow the withdrawal procedures outlined in this handbook so that a correct calculation can be made.

## Gateway Foundation Scholarships

Help keep your education more affordable by applying for a Gateway Foundation Scholarship. Annually Gateway Foundation awards scholarships to eligible students ranging from \$300 to \$1,000 or more. During the continuing student scholarship application period, students are encouraged to go to the Foundation Web page and click on the link for "Scholarship Application." To go to the Gateway Foundation online application, use the following link: [gtc.edu/foundationsscholarships](http://gtc.edu/foundationsscholarships). The application period will open at the end of August and close in October. For more information about Gateway Foundation Scholarships visit [gtc.edu/foundation](http://gtc.edu/foundation).

Established in 1977, Gateway Technical College Foundation secures resources from the community to support, promote, and facilitate the educational activities of Gateway Technical College. As one of its activities, the Foundation raises funds to provide assistance to Gateway students who wish to enhance their lives through education and training. Annually, Gateway Technical College Foundation, Inc. awards scholarships and grants to students. These awards are made possible through the generosity of individuals, businesses, and organizations in southeast Wisconsin who recognize the need to assist in providing funds for students eager to embark on the path to their

future. To learn more about the Foundation, please visit us online at: [gtc.edu/foundation](http://gtc.edu/foundation).

## Veterans Administration (VA) Educational Benefits

Gateway Technical College is approved by the Wisconsin State Approving Agency and the Federal Department of Veterans Affairs to provide training to veterans, active service members, survivors, and dependents of a deceased or disabled veteran. You can get more information about VA education benefits by meeting with a Student Finance Specialist (School Certifying Official) or by contacting your local County Veterans Service Officer (CVSO). If you are planning to use veterans educational benefits at Gateway please follow these steps:

1. Set up an initial consultation about benefits and enrollment processes with Gateway Technical College by calling 1-800- 247-7122.
2. Bring with you all military documents you have, i.e. Certificate of Eligibility, DD214s, NOBE, KICKER as applicable to you. If you are a dependent some benefits will need other documentation, so please contact Gateway for more information.
3. Complete admissions process and be accepted into an approved program of study.
4. After you enroll in classes, please submit a VA-Education Benefit Request Form (VA-EBRF).
5. All Veterans must supply the college with their military transcripts.
6. It is strongly advised to apply for federal financial aid along with your federal VA benefits.

Additional information about Veteran's education benefits can be found at [gtc.edu/va](http://gtc.edu/va). For

specific eligibility requirements, you may also call the VA Regional Processing Office (Federal Benefits) at 1-888-442-4551, or the local County Veteran Service Office (State Benefits) located in your county. To find your local County Veteran Service Office please go to the following link: [wicvso.org/your\\_cvso](http://wicvso.org/your_cvso).

## VA Standards of Progress:

Students receiving VA educational benefits are required to maintain academic standards of progress. The standards of progress for Gateway students receiving VA educational benefits are as follows:

- A student who receives less than C average (2.0 on a 4.0 scale) in each of two successive semesters will be placed on a veteran benefit probationary status. This means that the college can certify one more semester of enrollment to the VA; however, the student must achieve at least a C average (2.0 on a 4.0 scale) for the semester.
- A student who receives less than a C average in the probationary semester will be considered in an unsatisfactory progress status. This means that the student will not be eligible for further educational benefits until satisfactory progress is reestablished.
- To reestablish satisfactory progress, the student must accumulate a minimum of six (6) credits (or equivalent in program's measured clock hours) with a C average. If the student achieves a C average, the college can resume certifying benefits to the VA beginning the next semester of enrollment. If, however, the student fails to achieve the C average, benefits will be curtailed until satisfactory progress, as defined previously is achieved.

For the most up-to-date information on academic

standards of progress for students using Veteran Education Benefits visit [gtc.edu/va](http://gtc.edu/va).

## Education Programs

Many benefits are available to advance the education and skills of veterans and service members. Spouses and family members may also be eligible for education and training assistance. Some might find they're eligible for more than one benefit or that one program is more suited to certain education and training goals than another.

Learn about these and other education and training programs administered by VA or start your application now:

- The Post-9/11 GI Bill offers higher education and training benefits to Veterans, Service members, and their families who served after Sept. 10, 2001.
- The Montgomery GI Bill assists active duty and reservists with the pursuit of higher education degrees, certificates, and other education and training.
- These other VA education and training programs offer various education and training benefits or increased benefits to certain reservists and veterans and their survivors and dependents:
  - Reserve Educational Assistance Program
  - Veterans Educational Assistance Program
  - Survivors and Dependents Educational Assistance Program
  - Educational Assistance Pilot Program
  - National Call to Service Program

Most of the educational programs offered by Gateway Technical College are approved for U.S. Department of Veterans Affairs (VA) educational benefits by the State of Wisconsin

State Approving Agency. Students who wish to use their VA educational benefits must schedule an appointment to meet with a Student Finance Specialist according to the Gateway campus of their county of residence. Students will learn about the required forms and other documents they need to submit. All students requesting to use benefits must complete the VA Education Benefit Request form (VA-EBRF) at [gtc.edu/forms](http://gtc.edu/forms).

## Wisconsin Department of Veterans Affairs (WDVA) Education Benefits

### Wisconsin Veterans Education Reimbursement Grant Program (VetEd)

Eligible Wisconsin veterans attending college can receive up to 100 percent reimbursement of the cost of tuition and material fees after successful completion of full-time or part-time coursework. Individuals eligible for Wisconsin GI Bill benefits must apply for and use those benefits in order to be eligible for VetEd reimbursement.

### Wisconsin GI Bill

Effective January, 2014 any student using the Wisconsin GI Bill (WI GI), whether it be the veteran, spouse or child of a veteran, must maintain at least a 2.0 cumulative GPA or higher in order to remain eligible for Wisconsin GI benefits.

- If the cumulative GPA that falls below 2.0 at the end of the semester, the student may still enroll the following semester, however, the student will not be able to use the Wisconsin GI benefit at this time.
- To regain eligibility, the student must achieve a cumulative GPA of a 2.0 or higher and then complete a VA-EBRF for the following semester for certification to be reviewed.

The Wisconsin G.I. Bill provides a full waiver ("remission") of tuition and fees for eligible

veterans, spouses or dependents for up to eight full-time semesters or 128 credits at any University of Wisconsin System (UWS) or Wisconsin Technical College System (WTCS) institution.

Please note that activity fees, miscellaneous fees, and book costs are not covered by the WI GI Bill.

The tuition remission will not be applied until the college has received approval from the WDVA regarding a student's eligibility for the WI GI Bill along with all required supplemental documentation. Students are responsible for meeting all payment deadlines. Additional information is available at [wisvets.com/WisGIBill](http://wisvets.com/WisGIBill).

### WDVA Retraining Grant

This grant is for recently unemployed or underemployed veterans who demonstrate a financial need while being retrained for employment. The program must be completed within two years. This is a grant, not a loan, and does not have to be repaid. The applicant may not receive a retraining grant and another WDVA education grant for the same period.

- The maximum grant is \$3,000 per year, for a maximum of two years.
- Complete eligibility requirements and application forms for the WDVA benefits are available through the County Veterans Service Office identified below. Please be mindful of the application deadlines for WDVA benefits.

### Guard and Reserve Tuition Programs

- Wisconsin Army and Air National Guard members attending Gateway can receive 100 percent reimbursement of tuition costs excluding fees with the Wisconsin National Guard Tuition Grant. Limits on this program are set by the Wisconsin Department of Military Affairs. Complete eligibility and

application forms are available from the student's Army or Air National Guard unit or at [dma.wi.gov](http://dma.wi.gov).

- Army, Air Force and Marine Reserve Tuition Assistance Program. Check with your unit Educational Officer for details on these programs.

### Payment Options

As a student, you may use one of the following options to pay for your tuition/fee charges. A payment option must be in place by the published payment option deadline to prevent being dropped from **all** active classes for nonpayment.

**Option 1: PAY FEES IN FULL** by credit card via WebAdvisor ([gtc.edu/webadvisor](http://gtc.edu/webadvisor) | select "Make a Payment") or by cash, check or credit card in any Student Services Center. Partial payments may be made on your account until the payment option deadline. Your account must be paid in full by the deadline or have a combination of self-payment and other funding sources.

**Option 2: PROVIDE AN AUTHORIZATION** from a third party (company/employer/agency) to cover tuition/fees or be awarded financial aid by payment option deadline.

**Option 3: ENROLL IN STUDENT PAYMENT PLAN** via WebAdvisor or in any Student Services Center by the payment plan enrollment deadline.

### Student Payment Plan

The Student Payment Plan is available for Summer 2015 from April 7, 2015 thru May 15, 2015; for Fall 2015 from August 4, 2015 thru September 11, 2015 and Spring 2016 from November 9, 2015 thru January 15, 2016 Enroll in the payment plan via WebAdvisor or in any Student Services Center.

The following outlines the Student Payment Plan requirements.

- Student must be enrolled in 3 or more credits. (Not available for noncredit students or to students only registered in Certified Nursing Assistant or WEDD courses.)
- A deposit of 25% of eligible tuition/fees plus a \$25 nonrefundable processing fee is required at time of enrolling on the Payment Plan. Any partial payments made toward tuition for the semester prior to enrolling on the payment plan may be applied to the required 25% deposit. Partial payments do not enroll you in the Payment Plan; the student must officially enroll on the plan.
- A maximum of \$2,000 is allowed on payment plan after required deposit is made. Any charges over the maximum must be paid in full at time of enrollment on plan.
- Three (3) installment payments are due during the semester for which the payment plan is initiated. Due dates are published in the student handbook, on Gateway's website and on the Payment Plan form. Students receive a bill, which is sent to the current address on file. Payments are due by scheduled due dates without exception, even in the event a bill is not received by the student.
- A late fee of \$45.00 will be assessed if scheduled payments for the Payment Plan are received after the due date.
- There is no grace period beyond the due date for payment before a late fee is assessed.
- The student will not be dropped from classes and will be responsible for payment of all fees.

### Debts Owed to Gateway

In accordance with the Gateway Technical College Board of Trustees policy, a hold will be placed on a student's account for any debt owed to the college of more than \$200. Students with a debt of \$200 or less can register for courses and services. However, until all outstanding debts to Gateway are resolved, access to records will be restricted. Students with a balance will not have access to transcripts or diplomas. Student may owe debts to Gateway which are related to registration, financial aid, library, returned checks or for other miscellaneous reasons. Student's debts are retained on his/her record until cleared.

Students can register with a prior debt \$200 or less.

Students with debts will have their accounts sent to a collection agency and to the Wisconsin Department of Revenue. All collection fees are the student's responsibility.

Debts owed to Gateway are educational debt and therefore seen as educational loan if not paid prior to the end of the term.

Your student account is considered by Gateway, a non-profit institution of higher learning, to be an educational loan made to you to assist in financing your education, and therefore is not dischargeable under the United States Bankruptcy Code. The outstanding balance due on your loan is subject to finance charges as established in the current Gateway student handbook and Gateway has the right to recover any collection and/or litigation costs incurred in the collection of any amount due.

Students receiving financial aid may be eligible to take advantage of the Prior Debt Process to assist with paying prior debts a student has with Gateway. Access the Prior Debt Process via WebAdvisor.

# Academic Information and Student Records

## Refund Policy

### Refunds for Cancelled Classes

A student is entitled to a full refund of all tuition and fees paid for a class if Gateway Technical College cancels the class.

### Refunds for Dropped Classes

Refund Schedule			
Drop	Before the first class meeting	Last Refund Drop Date column on the front side of student's class schedule	100% Refund
Drop	1-10% of class meetings elapsed	Last Refund Drop Date column on the front side of student's class schedule	80% Refund
Drop	11-20% of class meeting elapsed	Last Refund Drop Date column on the front side of student's class schedule	60% Refund
Withdrawal	21-80% of class meetings elapsed	Contact Student Services for withdrawal dates, instructions, and information	No Refund
Non-attendance/ Instructor Drops	Definition: Student doesn't attend or discontinues attendance without completing and submitting drop or withdrawal paperwork.		No Refund

### No Refund for Instructor Drops

A student who registers for a class but who fails to attend, or stops attending during the refund period without dropping, may be dropped by the instructor. As an instructor drop is administrative and not student initiated, the student is not eligible to receive a refund.

### No Refund for Withdrawals

No refund is made when a student withdraws from a class. Students withdraw from classes after the refund period has ended; i.e., after 20% of the class meeting times have elapsed.

### Active Duty

The college will provide a full refund of tuition and fees to students called into active service. Tuition and fee refunds will be first directed to repay federal financial aid. In some cases, Gateway will be required to utilize a portion of the tuition and fee refund to reduce the student's loan debt. Gateway will repay the college and student portion of federal grants. The student will then receive a refund check in the mail.

### Account Adjustments

Refunds will be applied to any outstanding balance the student has at the College. If the student account is:

**Paid in Full** - The refund will be mailed to the student's current address. No cash refunds.

**Payment Plan Account** - Any refund will be credited toward the balance owed. The amount due on subsequent statements will reflect the adjustment in fees. The refund percentage is based upon the total cost of the courses; it is not a percentage refund of the payments the student has made.

**Paid by Sponsorship/Agency/Company** - The tuition charges billed to the third party will be reduced. No refund will be issued.

**Paid/Partially Paid by Financial Aid** - The Financial Aid award/disbursement will reflect adjustments due to dropped classes.

**Nonattendance** - No refund is made to students who do not attend or discontinue attendance

without completing a drop via WebAdvisor or submitting drop paperwork or who do not complete and submit withdrawal paperwork. Refund would be based on outline Refund Schedule.

**Student Account Appeals** - Students are responsible for payment of tuition and fees for classes for which they register. However, if a student encounters extenuating circumstances which have unexpectedly affected the student's enrollment in the class, the student may appeal to have tuition and fees reduced. Bookstore charges cannot be reduced. Charges that were previously paid by financial aid funds may become a debt that the student is responsible for paying.

A student who wishes to submit an appeal should discuss the situation with a Student Finance Specialist and obtain a Student Account Appeal Form from the Student Finance Specialist. The completed Student Account Appeal form, with required supporting documentation, can be submitted at any Student Services Center or mailed to the Student Accounts department. The request must be submitted within 90 days from the end of the semester for which charges are being appealed. The student account appeal will be reviewed and the student will be notified of the decision via their Gateway student email 45 days. Each appeal will be reviewed only once, and the decision of the appeal is final.

## Academic Information and Student Records

### Gateway Technical College Credentials

#### Associate Degrees, Technical Diplomas, and Advanced Technical Certificates

The Gateway Technical College District Board has the authority to grant associate of applied science

degrees, technical diplomas, and advanced technical certificates to graduates of occupational programs approved by the Wisconsin Technical College System Board. Students must apply to the AAS or technical diploma programs and submit an application for graduation to graduate.

### Gateway Certificates

The Gateway Technical College District Board may award District certificates to students who complete a specific course or group of courses. Certificates are designed to help students gain entry level employment in specialized areas or to qualify for occupational advancement. Students must apply to the certificate program and complete a certificate completion form to receive a certificate.

### Adult High School Diploma

Gateway's Adult High School program is designed for people eighteen years and older who want to obtain their high school diploma. Public school districts in Kenosha, Racine, and Walworth counties cooperate in this program. Students enrolled in associate degree or technical diploma classes may also receive high school credit for them. The Adult High School academic advisor in Student Services can give you more information on obtaining a high school diploma through Gateway. Note: Students dually enrolled in adult high school and postsecondary courses are not eligible for financial aid.

### General Education Development (GED®)

Students can earn their GED by passing the official GED Testing Service tests. Subjects include Language Arts (RLA Reasoning through Language Arts), Math, Science and Social Studies. Prior to testing, students must complete an orientation (890-721) through the Adult Learning Center. GED instructors can pretest in all four testing subject areas. Practice tests are available in selected

subject areas. GED teaching strategies include small group instruction, computer-assisted learning, self-guided exercises and assignments, and one-on-one tutoring. Non-resident fees may apply.

## High School Equivalency Diploma (HSED)

An HSED may be completed in several ways. Many students decide to complete their HSED through GED testing and completion of Health, Civics, Career Awareness, and Employability Skills. An HSED may also be obtained through the completion of high school credits, postsecondary credits, or competencies. Students may also be eligible to receive an HSED if they have been granted a diploma from a foreign country. Students interested in pursuing an HSED should have their official high school transcripts sent to Gateway Admissions Office for review. All HSED participants must take an orientation (890-721) prior to starting the HSED program. Nonresident fees may apply.

## English Language Learner Program (ELL)

ELL is designed to prepare students whose first language is other than English to speak and understand the English language. Students will improve their speaking and listening, grammar and writing, and reading and vocabulary skills and learn about health, community, government, consumer education, and employability skills. Large and small group instruction, computer-assisted learning, and self-guided exercises and assignments are utilized. Free to Wisconsin residents.

## Student Name

The name on a student's record is the official name which will be displayed on college documents, transcripts, and diplomas. Name changes will only be completed upon presentation of a legal document supporting the change. Requests for name changes may be submitted to any Student Services Center.

## Social Security Number Policy

Social Security numbers are used to identify student records. A student's failure to prove a SSN may delay processing. All Gateway students who are applying for financial aid are required to provide their Social Security number. A Social Security number is critical to state and federal reporting and the financial aid process. The Social Security number is protected by the Family Educational Rights and Privacy Act (FERPA) and is not considered directory information and therefore will not be released to a third party. The Internal Revenue Service allows some postsecondary students to claim an education income tax credit on their taxes. In order to claim this credit, the student's Social Security number must be on file at the college so the student's enrollment can be reported to the IRS. The college will make a 1098T form available to the student electronically. This will document the student's SSN on file and the post secondary enrollment information. For tax credit eligibility information, consult your tax professional. The Internal Revenue Service requires that Gateway provide 1098T forms annually to post-secondary students.

## Student ID Number

Every student will have a system-generated ID number that will appear on his or her schedule and most Gateway correspondence. This number is not considered directory information, and will not be released to a third party. It is important that students know their student ID number.

## Curriculum Sheets

Curriculum sheets detail current course requirements and course descriptions in a student's program. A student must fulfill the requirements of the curriculum sheet for the academic year for which they were accepted to that program in order to graduate from that

program. At any time a student may elect to follow the most recent program curriculum, but may not move to a previous sheet. Useful information concerning possible job opportunities at entry and advanced levels is listed on the back of the sheet. Curriculum sheets can be obtained at [gtc.edu](http://gtc.edu) or in any Student Services Center.

## Academic Standards

**Academic and Program Standards**—Academic and program standards are developed and are available to all students.

**Continuous Student Enrollment (Policy J-110)**—Academic programs at Gateway undergo frequent changes to keep programs current with demands in technology and accreditation criteria. Generally, students are allowed to graduate following the program curriculum sheet in place at the time of the student's initial program acceptance. Because of frequent program changes and the length of time taken by students to meet graduation requirements, the following policies will govern which curriculum sheet will be used to define a student's graduation requirements:

1. The college does, after two (2) years of non-continuous enrollment, require the student to follow the most recent program curriculum in order to graduate.
2. The College reserves the right to place a seven (7) year limitation on accepting courses for graduation. Some programs have more stringent age requirements on course age for courses that are pre-requisites to program courses.
3. At any time, a student may elect to follow the most recent program curriculum.
4. The College reserves the right to establish course substitutions when courses are inactivated to meet program curriculum requirements.

## Grading System

Complete information regarding Gateway's grading system including credits, grading, grade changes, student records, grade point average (GPA), mid-term grades, academic progress, Provost Honors, and Dean's List can be found in Gateway's student handbook and on Gateway's website at [gtc.edu/handbook](http://gtc.edu/handbook).

## Attendance

Gateway recognizes the importance of attendance in the learning process but does not believe that attendance in and of itself constitutes learning. Instructors will document in their course syllabi fair and reasonable attendance policies for their classes based on their subject matter, delivery methods, learning activities, student audience, external regulations, College and departmental guidelines, and employer expectations in their field of instruction. Students are responsible for reading and understanding each class attendance policy and for learning any material covered during an absence.

To be eligible to receive financial aid funding for class(es) students must be attending all class(es) prior to the established Census Date.

## Credit for Prior Learning

### Transfer Credits from another Institution

A student must be accepted to a postsecondary program at Gateway before transfer credits will be evaluated. Courses completed at a regionally accredited institution are evaluated to determine transferability. Coursework completed at an institution which is not regionally accredited may be evaluated through the credit for prior learning process to determine what proficiency credit may be granted. Gateway must have official transcripts on file before transfer credits are evaluated. Official transcripts are defined as transcripts sent

# Student Rights and Responsibilities

directly to Gateway from the issuing institution, by a recognized electronic transcript service or hand-delivered by the student if the transcripts remain unopened in the issuing school's sealed envelope. Official transcripts must have the issuing school's seal and appropriate official's signature to be accepted. A minimum grade of C is required for courses to be accepted in transfer. Courses with a grade of C- or below will not be accepted.

The Assistant Registrar for Transfer Credit and Registration will evaluate the transcripts working in collaboration with course instructors and academic deans as necessary to determine course transfer credit.

## College Level Examination

College-level proficiency credit will be granted for knowledge validated by the Advanced Placement (AP) program, College Level Examination Program (CLEP) and Dantes Subject Standardized Test (DSST). Please refer to Gateway's website for a list of accepted exams. Students must meet minimum score requirements to be awarded credit. A minimum score of 3 is required for AP exams, a minimum score of 50 is required for CLEP exams and minimum scores on DSST exams varies by exam.

Some examinations may require additional competence tests before credit can be granted. An official transcript, score report, or equivalent documents issued by the external agency, must be submitted before credit can be granted.

## Military Evaluation

Credit may be granted upon review of an official military transcript from Joint Services Transcript (JST) which may be requested at [jst.doded.mil](mailto:jst.doded.mil). Transcripts should be submitted to the Assistant Registrar for Transfer Credit and Evaluation. Guidelines established by the American Council

on Education (ACE) are considered in addition to referrals to specific departments when deemed necessary. The Assistant Registrar for Transfer Credit and Registration will evaluate the transcripts working in collaboration with the academic departments as necessary to determine course transfer credit.

## Articulation for High School Students

Through an agreement with area high schools, Gateway awards credits for certain approved courses taken at the high school level. Students must enroll in Gateway within 27 months of high school graduation and have earned a B or better in the high school course. It is also possible for qualified high school students to enroll in a higher level Gateway course with the consent of the academic advisor. High school students should speak with their high school guidance counselors regarding these opportunities.

## Prior Learning Assessment

A student must be active in an associate degree or technical diploma program at Gateway to be eligible to apply for prior learning assessment. Prior learning assessment recognizes prior learning through the awarding of academic proficiency credit. Credit or its equivalent is awarded for learning, with consideration given for work experience. Students with prior learning experience may be able to pass prior learning assessment tests and earn credits toward their diploma or degree from Gateway. Prior learning assessment fees are charged and are not covered by financial aid. No student is allowed to apply for prior learning assessment for a course which they are failing or for which they have received a letter grade on their official transcript including A through F grades, incomplete or withdrawal grades.

The prior learning assessment option should be considered by students who have:

- extensive high school coursework which is not covered under a Tech Prep agreement.
- broad work experience supported by training and seminars with content similar to Gateway courses.
- courses from other institutions which are not regionally accredited.
- diploma courses not directly transferable to Associate Degree programs.
- completion of noncredit coursework, self study or other nontraditional education or training.

Prior learning assessment may be available through the following processes.

1. **Credit by Examination**  
Proficiency credit may be granted to students who demonstrate course competencies through the satisfactory completion of college developed written tests for specified courses. Contact the Assistant Registrar of Transfer Credit and Registration for information.
2. **Credit by Demonstration**  
Proficiency credit may be granted to students who demonstrate course competencies through the satisfactory completion of college developed demonstrative performance tests for specified courses. Exams are not available for all courses. Contact the Assistant Registrar of Transfer Credit and Registration for Information.
3. **Evaluation of Experience**  
Proficiency credit may be granted to students who demonstrate course competencies through portfolio presentations demonstrating mastery of skills or competencies. Portfolio presentations are not available for all

courses. There are specific courses for which proficiency credit may be granted through portfolio presentations. Contact the Assistant Registrar of Transfer Credit and Registration for information.

## Graduation

Complete information regarding graduation from Gateway Technical College including graduation requirements, computation of GPA for graduation, application for graduation, graduation with honors, Provost Honors program at graduation, commencement ceremony and transcripts can be found in Gateway's student handbook and on Gateway's website at [gtc.edu/handbook](http://gtc.edu/handbook).

## Student Rights and Responsibilities

Gateway is dedicated to helping students identify and achieve realistic goals through excellent educational opportunities. The administration and staff of the College promote responsible participation and high achievement as goals for our students. As a Gateway Technical College student, you should be aware of and accept responsibility as an active, contributing member of the College. This section explains policies and procedures identifying student rights and responsibilities. Gateway Technical College believes that all students have responsibilities in the areas of governance, services, and conduct.

Additional information on policies such as; student use of services, student code of conduct, student due process, restraining orders and orders of protection and, computer, networking and information resources can be found in Gateway's student handbook and on Gateway's website at [gtc.edu/handbook](http://gtc.edu/handbook).

## Federal Family Educational Rights and Privacy Act (FERPA)

### Notification of Rights

The Family Educational Rights and Privacy Act (FERPA) affords students certain rights with respect to their education records. FERPA rights begin when a student registers for a course or at the point of admission to a program. These rights include:

- (1) The right to inspect and review the student's education records within 45 days of the day the College receives a request for access. A student should submit to the Registrar a written, signed request that identifies the record(s) the student wishes to inspect. The registrar will make arrangements for access and notify the student of the time and place where the records may be inspected. If the records are not maintained by the registrar, that official shall advise the student of the correct official to whom the request should be addressed.
- (2) The right to request the amendment of the student's education records that the student believes are inaccurate, misleading, or otherwise in violation of the student's privacy rights under FERPA.  
A student who wishes to ask the college to amend a record should write the College official responsible for the record, clearly identify the part of the record the student wants changed, and specify why it should be changed.  
If the College decides not to amend the record as requested, the College will notify the student in writing of the decision and the student's right to a hearing regarding the request for amendment. Additional information regarding the hearing

procedures will be provided to the student when notified of the right to a hearing.

- (3) The right to provide written consent before the College discloses personally identifiable information from the student's education records, except to the extent that FERPA authorizes disclosure without consent.  
The College discloses education records without a student's prior written consent under the FERPA exception for disclosure to school officials with legitimate educational interests. A school official is a person employed by the College in an administrative, supervisory, academic or research, or support staff position (including law enforcement unit personnel and health staff); a person or company with whom the College has contracted as its agent to provide a service instead of using College employees or officials (such as an attorney, auditor, or collection agent); a person serving on the Board of Trustees; or a student serving on an official committee, such as a disciplinary or grievance committee, or assisting another school official in performing his or her tasks.  
A school official has a legitimate educational interest if the official needs to review an education record in order to fulfill his or her professional responsibilities for the College.
- (4) The right to file a complaint with the U.S. Department of Education concerning alleged failures by the College to comply with the requirements of FERPA. The name and address of the Office that administers FERPA is:  
Family Policy Compliance Office  
U.S. Department of Education  
400 Maryland Avenue, SW  
Washington, DC 20202-5901

### Notification of Directory Information

Gateway Technical College complies with the provisions of FERPA. Prior written consent from a student must be obtained before information may be disclosed by Gateway Technical College to third parties, unless the information or the individual or group making the request is exempted by the policy and the Family Educational Rights and Privacy Act of 1974. Such exemptions are made for the following:

1. Request from Gateway Technical College faculty and staff with a legitimate need to know.
2. Request in accordance with a lawful subpoena or court order.
3. Request from representatives of agencies or organizations from which the student is receiving or has received financial aid.
4. Request from officials of other postsecondary educational institutions to which the student has applied for admission.
5. Request from other persons or agencies specifically exempted from the prior consent requirement by the Act. This includes certain federal and state officials of the District accrediting agencies, etc.
6. Requests for directory information, which includes the following categories:
  - Name
  - Hometown
  - Date of birth
  - Program of enrollment (major field of study) and number of credits for which currently or formerly enrolled
  - Participation in officially recognized activities
  - Dates of attendance (including enrollment status, classification, and year, matriculation, and withdrawal dates)

- Candidacy for graduation
- Degrees and awards/honors received (type of degree and date granted)
- Most recent previous educational agency or institution attended

The student may elect to have directory information held confidential. When this option is exercised, the only information that will be released by Gateway, other than exemptions 1. through 5., is confirmation that a student is or has been enrolled at Gateway. If you elect to allow the release of directory information, such release will be limited to those requests perceived to be in the best interest of the student; e.g., requests from parents, friends, relatives, prospective employers, or licensing agencies seeking to confirm certain information, societies, news releases, programs, etc. All other inquiries will be limited to confirmation that a student is or was previously enrolled at Gateway.

Gateway Technical College assumes no responsibility or liability for the accuracy of judgment as to whether or not a release of directory information is in the best interest of a student. Likewise, Gateway will assume no responsibility for contacting students who have elected to stipulate directory information as confidential for the subsequent permission to release any information. If you elect to have directory information held confidential, please complete a form which is available at any Student Services office.

### Enrollment Policy

Students will be considered enrolled in a class upon registration and provided they remain registered, if they have:

- paid the required tuition and fees
- entered into a standardized payment plan agreement with the District or

# Student Rights and Responsibilities

- have been awarded financial aid or have a third-party payer authorization/contract on file with Gateway guaranteeing payment of the tuition and fees.

Any student who has an outstanding debt greater than \$200 with the College will not be allowed to register until the debt has been reduced to \$200 or less. Students, who believe they should not be held responsible for charges to their account due to extenuating circumstances, must follow Student Account Appeals Procedures. This policy will be effective in reference to debts incurred after January 1, 1992.

## Student Religious Accommodations

### Policy

In compliance with Wisconsin Administrative Code, Gateway Technical College will make reasonable accommodation of a student's religious beliefs. A student may request reasonable accommodation from his/her instructor with regard to examinations and other academic requirements. The student request must be in writing and submitted to the instructor five (5) working days prior to the date(s) of the anticipated absence. Instructors will provide a means by which a student can perform the make-up examination or other academic requirements in a timely manner without penalty.

Additional information regarding this policy can be found in Gateway's student handbook and on Gateway's website at [gtc.edu/handbook](http://gtc.edu/handbook).

## Student Right-to-know Reporting

### Policy

Gateway will maintain and disclose student program completion and graduation rates in compliance with the Student-Right-To-Know and Campus Security Act.

### Procedure

- Information on completion and graduation rates of all technical diploma or associate degree-seeking full-time students will be collected.
- This information as well as Campus Security Information will be made available through appropriate College publications, on the Gateway Technical College website ([gtc.edu](http://gtc.edu)), and to prospective students upon request.
- This information will be available before prospective students enroll or enter into any financial obligation with the College.

## Drug-free Environment

Any student who engages in an activity, on District premises or at a District-sponsored event, that constitutes a violation of State of Wisconsin Uniform Controlled Substances Act shall be subject to nonacademic misconduct disciplinary sanctions. In determining the appropriate sanction, the College president, or designee, shall consider those penalties, including suspension and expulsion, that will contribute most effectively to maintaining a College environment free from controlled substances.

In keeping with local, state, and federal laws, Gateway Technical College prohibits the possession, use, or distribution of drugs and alcohol by students while on College property or when involved in any College sponsored activity. If a student has a drug or alcohol problem, we highly recommend that they seek assistance from the Student Services office.

## Tobacco-free Environment—Policy E-155

Gateway Technical College is strongly committed to maintaining and improving the health and

well-being of all employees and customers. It is, therefore, Gateway's policy that employees have the right to work in an environment free of the hazards of tobacco smoke.

Use of tobacco and smoking is prohibited on all Gateway Campuses, which includes but is not limited to the following: 1) All buildings, grounds, sidewalks, streets, parking lots, and structures. 2) All Gateway owned and leased vehicles. 3) All personal vehicles on Gateway property.

This policy applies to all devices including electronic cigarettes, e-cigarettes, or personal vaporizers that are alternatives to smoking tobacco products.

Failure to comply with this policy will be dealt with through the college's disciplinary procedures. Students, staff, visitors, and tenants who breach the policy will be asked to stop smoking and will be asked to leave the premises if they fail to comply with this request. All breaches of this policy will be recorded in writing.

## Conceal Carry

In an effort to provide a safe learning and working environment, Gateway Technical College has initiated a policy prohibiting anyone from bringing a weapon inside any college building. Gateway bans all weapons inside college facilities which includes—but is not limited to—such items as knives and firearms.

Persons storing weapons within their own vehicles parked on college owned, leased, or operated lots or grounds must:

- Conceal the weapon from open view of persons moving in or around the vehicle.
- If a firearm, unload the weapon.
- If a firearm, store the weapon in a secured (locked) case or install a locked trigger guard.

## Affirmative Action / Equal Opportunity—Policy H-110

The Gateway Technical College District will be fair and impartial in all its relations with its students, employees, and applicants for employment without regard to race, color, national origin, ancestry, creed, religion, political affiliation, marital status, parental status, pregnancy, family or medical leave, disability, age, gender, sexual orientation, arrest record or conviction record, retaliation, union or non-union affiliation, membership in the National Guard, state defense force or any reserve component of the military forces of the U.S. or Wisconsin.

Any questions concerning Affirmative Action contact:

**Jacqueline Morris**, Director Staffing  
District Affirmative Action Officer,  
Titles VI, VII, & IX  
3520 30th Avenue, Kenosha, WI 53144  
(262) 564-3032 • (262) 960-1931 (text)  
(262) 564-2838 FAX  
email: [morisj@gtc.edu](mailto:morrisj@gtc.edu)  
Wisconsin Relay System: 711

Any questions concerning Titles VI, VII & IX contact:

**Debbie Miller**, Director Human Resources  
Equal Employment Opportunity Officer,  
Titles VI, VII & IX  
3520 30th Avenue, Kenosha, WI 53144  
(262) 564-3220 • (262) 960-1931 (text)  
(262) 564-2838 FAX  
email: [millerd@gtc.edu](mailto:millerd@gtc.edu)  
Wisconsin Relay System: 711

Additional information regarding this policy can be found in Gateway's student handbook or on Gateway's website at [gtc.edu/handbook](http://gtc.edu/handbook).



## Student Rights and Responsibilities

### Sexual Assault and Harassment Policy—Policy H-140

#### Policy

Gateway Technical College is committed to provide our students, staff and campus visitors a safe learning environment.

#### Procedures

##### Application of this policy

This policy applies to all students, employees, contractors and visitors of the college who violate its provisions on college property or while participating in a college sponsored program or event.

#### Sexual Assault

The college considers a sexual assault or attempted sexual assault as a very serious crime. Sexual assault of any person is illegal, unacceptable and will not be tolerated. The college does not collect nor disseminate information concerning persons on campus who have been convicted of sexual offenses. Community members may access the Wisconsin Department of Corrections Sex Offender Registry at [offender.doc.state.wi.us/public](http://offender.doc.state.wi.us/public) to research any information that they feel is necessary.

#### Sexual Harassment

The Gateway Technical College District, through its commitment to equal opportunity, will attempt to provide an environment free of sexual harassment for all employees and students in accordance with the law of the United States and the State of Wisconsin.

Sexual harassment of employees and students of the Gateway District is unacceptable and impermissible conduct which will not be tolerated.

The institution deprecates such conduct as an abuse of authority. Whenever knowledge is received that a sexual harassment condition is being imposed, prompt and remedial action will be taken. Any student or employee may challenge a hostile or abusive work/learning environment, even if the harassment is not targeted specifically at them.

An employee may be held individually liable as a harasser, and will be subject to discipline, up to and including termination. Students may be subject to claims by fellow students or staff for their conduct, as well as subject to Gateway District discipline, including expulsion or suspension. This policy against harassment applies throughout all Gateway District environments, whether on campus, at work assignments off campus, at District-sponsored social functions, or otherwise. In addition, no employee or student of the District should have to tolerate harassment from any vendor or other person doing business with the District or others with whom they come in contact in the course of the District's functions.

Additional information regarding this policy can be found in Gateway's student handbook and on Gateway's website at [gtc.edu/handbook](http://gtc.edu/handbook).

### Reasonable Accommodations—Policy H-150

#### Equal Opportunities for Americans with Disabilities

Gateway Technical College is committed to providing equal employment opportunities as well as professional, courteous service for persons with disabilities, through reasonable accommodation, as governed by the Americans with Disabilities Act (ADA) of 1990. Reasonable accommodations shall be provided in a timely and cost-effective manner upon self identification, verification and

an analysis of solutions. Immediate supervisors, in conjunction with the facilities managers shall have the authority to make reasonable accommodations for applicants or employees which do not exceed \$500 and are totally within the work station or work site of the individual.

Additional information regarding this policy can be found in Gateway's student handbook and on Gateway's website at [gtc.edu/handbook](http://gtc.edu/handbook).





## Credit Transfer to Four-Year (Articulation)

While all Gateway programs develop skills for employment, students are encouraged to pursue continuing education opportunities upon completion of Gateway programs. This may include involvement in professional associations, company-provided workshops or updates, professional development, etc., as well as continuation of formal education.

To meet the need for lifelong education in our increasingly demanding and technical workplace, a growing number of Gateway Technical College students have successfully continued their education at a variety of institutions of higher learning. Cooperating institutions determine the number and ways in which credits may be transferred and used toward further degree completion. Detailed course descriptions, transcripts detailing work completed, student records of individual programs, and assistance from Student Services Centers may facilitate this process.

Students are advised to check with the admission departments at the institutions where the students may eventually wish to transfer credits, as well as with Gateway's Student Services Center, to determine current arrangements. Graduates interested in transferability of credits earned through an associate degree program should contact a Gateway academic advisor for specific information.

### Articulation Agreements with Institutions of Higher Learning

Gateway Technical College is connected with a number of postsecondary institutions within the state and nationally. Gateway currently articulates with 43 colleges and universities allowing students to transition from Gateway Technical College to another institution in a smooth and seamless manner. Students can take advantage of online learning opportunities from many higher education partners to transfer their credits and complete bachelor's degrees without leaving the Gateway campus. In addition, Upper Iowa University has an articulation agreement that allows Upper Iowa University to

teach courses leading towards a bachelor's degree in several program areas at Gateway's Elkhorn and Racine campuses and the Burlington Center.

Gateway Technical College has articulation agreements with the following institutions of higher learning.

Alverno College  
Aurora University—George Williams College  
Capella University  
Cardinal Stritch University  
Carroll University  
Carthage College  
College of Lake County  
Columbia College  
Concordia University Wisconsin  
DeVry Institute of Technology  
Embry-Riddle Aeronautical University  
Franklin University  
Lakeland College  
Marian College  
Marquette University  
McHenry County College  
Milwaukee School of Engineering  
Mount Mary College  
Pennsylvania College of Technology  
Ottawa University  
Robert Morris College  
Silver Lake College  
Southern Illinois University/Carbondale  
St. Cloud State University  
Trinity International University  
University of Phoenix  
University of Wisconsin System Colleges—  
see JACAP Agreed Statement

University of Wisconsin—Eau Claire  
University of Wisconsin—Green Bay  
University of Wisconsin—La Crosse  
University of Wisconsin—Madison  
University of Wisconsin—Milwaukee  
University of Wisconsin—Oshkosh  
University of Wisconsin—Parkside  
University of Wisconsin—Platteville  
University of Wisconsin—River Falls  
University of Wisconsin—Stevens Point  
University of Wisconsin—Stout  
University of Wisconsin—Superior  
University of Wisconsin—Whitewater  
Upper Iowa University  
Utah Valley State College  
Viterbo College

### JACAP Agreed Statement

#### UW/Technical College System Uniform Policy Statement On Credit Transfer

Students enrolled in the Wisconsin Technical College System who wish to continue their education in the UW System may be eligible to transfer credits toward their bachelor's degree in the following ways:

- Students enrolled in the Associate of Arts/Science program at Madison Area Technical College, Milwaukee Area Technical College, or Nicolet Area Technical College may transfer up to 72 credits toward their degree.
- Students who have successfully completed an Associate of Applied Arts/Science Degree in the Technical College System are eligible to transfer up to 30 credits of General Studies coursework, depending on the UW institution.
- Students who have successfully completed an Associate of Applied Arts/Science Degree may be eligible to transfer certain technical support and/or occupational credits when there is a direct relationship between a Technical College Associate Degree program and a program offered at a University of Wisconsin System institution.
- Students transferring from the Technical College System may earn credit by earning appropriate scores on national standardized examinations (e.g., College Level Examination program) or on examinations developed by the University of Wisconsin System transfer institution.

For more information about these transfer opportunities, students should consult with their Technical College advisors or the Admissions Office at a University of Wisconsin System institution.

## Reciprocity—In-state Tuition

UNIVERSITY OF WISCONSIN  
**PARKSIDE**

### General Studies Transfer Certificate

Transfer agreement between Gateway  
Technical College and  
University of Wisconsin–Parkside.

Gateway students who complete the  
certificate's 30-credit program of study  
comprised of general studies courses  
can apply those credits toward the liberal  
arts requirements for their UW–Parkside  
baccalaureate degree.

Students will be dually admitted to Gateway  
and UW–Parkside and may be eligible for  
financial aid through  
UW–Parkside for this certificate.

[gtc.edu/genstudiescert](http://gtc.edu/genstudiescert)

For more information and to apply, contact a  
Gateway academic advisor.



Through an agreement between Gateway Technical College and College of Lake County and McHenry Community College, students may be able to attend approved programs in their neighboring state at in-state rate. Gateway Technical College district residents interested in participating should contact Gateway's Admissions department. Illinois residents interested in this option should contact the appropriate official at the college in their home county.

### Gateway Programs Available to McHenry County Residents

Aeronautics – Pilot Training (A.A.S.)\*  
Alcohol and Other Drug Abuse (Internal Certificate)  
Automated Manufacturing Systems Technology (A.A.S.)  
Air Conditioning, Heating & Refrigeration Technology (A.A.S.)  
Air Conditioning, Heating & Refrigeration- Geothermal Technician (A.A.S.)  
Architectural – Structural Engineering Technician (A.A.S.)  
Barber Technologist (Diploma)\*  
Civil Engineering Technology-Freshwater Resources (A.A.S.)  
Civil Engineering Technology-Highway Technology (A.A.S.)  
Cosmetology (Diploma)\*  
Dental Assistant (Diploma)\*  
Graphic Communications (A.A.S.)  
Human Service Associate (A.A.S.)  
Interior Design (A.A.S.)  
Land Surveying Technician (A.A.S.)  
Medical Assistant (Diploma)\*  
Physical Therapist Assistant (A.A.S.)\*  
Surgical Technology (A.A.S.)\*

### McHenry Programs Available to Gateway Residents

Business Management (A.A.S.)  
Construction Management (A.A.S.)  
Developmental Disability Aide (Certificate)  
Electronic Engineering Technician -- FAA Option (A.A.S.)  
EMT – Ambulance (Certificate)  
EMT – Paramedic (A.A.S.)  
EMT – Paramedic (Certificate)  
Health and Fitness Education (A.A.S.)  
Fitness Instructor Training (Certificate)  
International Business (Certificate)

Machinist Training (Certificate)  
Manufacturing Management (A.A.S.)  
Occupational Therapy Assistant (A.A.S)\*  
Warehousing and Distribution (Certificate)  
General Studies courses (non-degree credit)

### Gateway Programs Available to Lake County Residents

Aeronautics – Pilot Training (A.A.S.)  
Automated Manufacturing Systems Technology (A.A.S.)  
Barber Technologist (Diploma)\*  
Cosmetology (Diploma)\*  
Dental Assistant (Diploma)\*  
Diesel Equipment Technology-Industrial/Mobile Hydraulic Mechanic (Certificate)  
Electro-Mechanical Technology (A.A.S.)  
Graphic Communications (A.A.S.)  
Health Unit Coordinator (Diploma)  
Interior Design (A.A.S.)  
LPN Bridge to ADN (A.A.S.)

### Lake County Programs Available to Gateway Residents

Automotive Collision Repair (Certificate)  
Electrician Apprenticeship (A.A.S.)  
Health and Wellness Promotion (A.A.S.)  
Health and Wellness Promotion – Personal Training (Certificate)  
Health and Wellness Promotion – Wellness Coaching (Certificate)  
Laser/Photonics/Optics (Certificate)  
Laser/Photonics/Optics – Applied Lasers (Certificate)  
Laser/Photonics/Optics – Biophotonics (Certificate)  
Machine Tool Trades (A.A.S.)  
Mechatronics (Certificate)  
Phlebotomy Technician (Certificate)  
Sustainable Agriculture (Certificate)

*\*High demand programs – space is limited.*

## Associate of Applied Science Degree

Accounting .....	34
Administrative Professional .....	36
Aeronautics–Pilot Training .....	40
Air Conditioning, Heating and Refrigeration Technology .....	42
Air Conditioning, Heating and Refrigeration Technology–Geothermal Technician .....	44
Architectural–Structural Engineering Technician .....	46
Automated Manufacturing Systems Technology .....	48
Automotive Technology .....	52
Business Management .....	56
Civil Engineering Technology–Highway Technology .....	58
Civil Engineering Technology–Fresh Water Resources .....	60
Criminal Justice–Law Enforcement .....	66
Culinary Arts .....	70
Diesel Equipment Technology .....	76
Early Childhood Education .....	78
Electrical Engineering Technology .....	80
Electrical Engineering Technology–Biomedical Engineering Technology .....	82
Electrical Engineering Technology–Sustainable Energy Systems .....	84
Electro-Mechanical Technology .....	86
Electronics .....	88
Fire Medic .....	96
Geospatial Surveying Technician .....	100
Graphic Communications .....	104
Health Information Technology .....	106
Horticulture–Greenhouse and Marketing .....	110
Horticulture–Landscape .....	112
Human Service Associate .....	114
Individualized Technical Studies .....	116
Individualized Technical Studies–Journeyworker .....	117
Information Technology–Computer Support Specialist .....	118

Information Technology–Network Specialist .....	124
Information Technology–Network Specialist Security Analyst .....	126
Information Technology–Software Developer .....	128
Information Technology–Web Developer .....	130
Information Technology–Web Developer SharePoint Developer .....	132
Instructional Assistant .....	134
Interior Design .....	136
Marketing–Business to Business .....	138
Marketing–General Marketing .....	140
Marketing–Marketing Communications .....	142
Mechanical Design Technology–Mechanical Engineering Tech .....	144
Mechanical Design Technology–Mechatronics .....	146
Nursing .....	150
Paramedic Technician .....	158
Physical Therapist Assistant .....	164
Professional Communications .....	166
Supervisory Management .....	170
Surgical Technology .....	172
Veterinary Technician .....	180

## Technical Diploma

Advanced EMT .....	38
Automotive Maintenance Technician .....	50
Barber Technologist .....	54
CNC Production Technician .....	62
Cosmetology .....	64
Criminal Justice–Law Enforcement Academy .....	68
Dental Assistant .....	72
Diesel Equipment Mechanic .....	74
Emergency Medical Technician .....	90
EMT–Paramedic .....	92
Facilities Maintenance .....	94

# Program Curricula Index

Health Unit Coordinator.....	108
Information Technology–Junior SharePoint Developer.....	120
Information Technology–Junior Web Developer.....	122
Medical Assistant.....	148
Nursing Assistant.....	152
Office Assistant.....	154
Pharmacy Technician.....	162
Practical Nursing (see Nursing–Associate Degree).....	150
Small Business Entrepreneurship.....	168
Tool and Die Technician.....	174
Veterinary Assistant.....	178
Welding–Advanced Welding.....	182
Welding–Pipe Welding.....	184
Welding–Robotics.....	186
Welding/Maintenance and Fabrication.....	188

## Advanced Technical Certificate

Game Programming.....	98
Gerontological and Rehabilitative Nursing Care.....	102
Oracle.....	156
Perioperative Nursing.....	160
Urban Farming.....	176



**Air Conditioning, Heating and Refrigeration Technology – Geothermal Technician p. 44**



**Horticulture–Greenhouse and Marketing p. 110**

## Welding–Advanced Welding p. 182



## Special Notices

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take more than seven years to complete.

Tuition and material fees are determined by the Board of the Wisconsin Technical College System. Please consult the Gateway website [gtc.edu](http://gtc.edu) for exact fee amounts.

Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

Course materials listed in this catalog were effective for the 2015–2016 academic year.

Course descriptions are merely general summaries of various courses which may be offered at Gateway Technical College during the 2015–2016 academic year. Gateway reserves the right to modify course content at any time and to cancel any tentatively scheduled course due to low enrollment. Course descriptions were accurate as of March 1, 2015. Some courses offered by Gateway Technical College require successful completion, concurrent enrollment, or waiver.

Some courses offered by Gateway Technical College have enrollment which is restricted to persons formally accepted for admission into specific programs.



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Accounting

## ACCOUNTING

(10-101-1)

Associate of Applied Science Degree

Most Courses Offered at Elkhorn, Kenosha,  
and Racine Campuses & Online

# Accounting

Δ Suggested Sequence	✓ Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
Semester 1	101-100 *	Accounting Program Orientation		1	1-0
	101-114 *	Accounting Principles		4	3-2
	101-143 *	Payroll Accounting		2	1-2
	103-143	Computers for Professionals	Prereq: 103-142 (See Notes 2 & 4)	3	2-2
	801-136	English Composition 1	Prereq: 831-103 (See Note 2)	3	3-0
	804-123	Math with Business Applications	Prereq: 834-109 (See Note 2)	3	3-0
	804-115 <i>OR</i>	College Technical Math 1	Prereq: 834-110 (See Note 2)	5	5-0
Semester 2	101-104 *	Income Tax Accounting		4	3-2
	101-121 *	Intermediate Accounting I	Prereq:101-114 Coreq:101-100; 804-123; 103-143 OR 103-102	4	3-2
	101-106 *	Accounting Spreadsheet Apps.	Prereq: 101-112 or 101-114; 103-143 OR 103-102	3	2-2
	101-154 *	Accounting Software Applications	Prereq: 101-112 or 101-114	2	1-2
	102-160 *	Business Law		3	3-0
	809-195	Economics			
	809-143 <i>OR</i> 809-144	Microeconomics Macroeconomics	Prereq: 838-105 (See Note 2)	3	3-0
Semester 3	101-122 *	Intermediate Accounting II	Prereq: 101-121	4	3-2
	101-131 *	Management Accounting	Prereq: 101-121	4	3-2
	801-196 <i>OR</i> 801-198	Oral/Interpersonal Communication Speech	Prereq: 838-105 (See Note 2)	3	3-0
	809-198	Psychology, Introduction to	Prereq: 838-105 (See Note 2 & 5)	3	3-0
	Semester 4	101-105 *	Accounting Career Readiness	Prereq: 101-131	2
101-103 <i>OR</i> 102-138		Internship for Accounting BIZ Internship	Prereq: Instructor Consent Prereq: Instructor Consent	2 3	1-0-0-4 0-0-0-12
101-155 *		Financial Analysis/Management	Prereq: 101-106; Coreq: 101-122	3	2-2
101-107 *		Accounting Capstone	(See Note 1)	3	2-2
801-197		Technical Reporting	Prereq: 801-136	3	3-0
809-172 <i>OR</i> 809-196		Diversity Studies, Introduction to Sociology, Introduction to	Prereq: 838-105 (See Note 2) Prereq: 838-105 (See Note 2 & 5)	3 3	3-0 3-0
Electives		<b>Take 6 elective credits. Any associate degree level course may be taken as an elective.</b>			<b>6</b>
	<b>Suggested Electives:</b>				
	101-162 Acctg Serving the Public Interest (3 Cr)	101-164 Non-Profit Acctg Software Apps (3 Cr)			
	101-159 Income Tax Accounting II (3 Cr)	101-163 Triple Bottom Line Accounting (3 Cr)			
102-122 Investments (3 Cr)	114-101 Personal Financial Planning (3 Cr)				
<b>Minimum Program Total Credits Required</b>				<b>69</b>	

Δ Courses may be taken out of suggested sequence as long as requisites have been met.



choose Gateway.

 <b>Effective 2015/2016</b>	<b>Career Cluster ▶</b> 	<b>Career Pathway ▶</b> Accounting	<b>ACCOUNTING</b> <b>(10-101-1)</b> <i>Associate of Applied Science Degree</i> Most Courses Offered at Elkhorn, Kenosha, and Racine Campuses & Online

**PROGRAM DESCRIPTION**

*Accounting* covers the principles of accounting, including budgeting, financial analysis, cost accounting, tax preparation, and other commercial aspects. Students are taught to interpret figures and what they actually mean to the company or organization. Entry level jobs for the accounting graduate include junior or assistant accountant, bookkeeper, cost accountant, property accountant, and payroll accountant. If taken full-time, this is a two-year course of study.

**PROGRAM LEARNING OUTCOMES**

**Graduates of the Accounting Associate Degree Program should be able to:**

1. Compile, setup and compute basic financial ratios from annual report information and use the data to individually analyze the financial position of a public company.
2. Demonstrate the use of a commercial software package.
3. Prepare basic payroll journal entries, related reports, and filings.
4. Use commonly accepted cost accounting methods.
5. Demonstrate comprehensive knowledge of the accounting cycle and application of Generally Accepted Accounting Principles.
6. Prepare basic individual income tax returns.
7. Demonstrate applied employability skills in the accounting field.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                           | 5. Develop job seeking skills                                       |
| 2. Communicate clearly and effectively       | 6. Respect themselves and others as a member of a diverse community |
| 3. Demonstrate essential computer skills     | 7. Think critically and creatively                                  |
| 4. Demonstrate essential mathematical skills | 8. Work cooperatively   |
|  | 9. Value learning   |

**ADMISSION REQUIREMENTS**

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.

**GRADUATION REQUIREMENTS**

1. Minimum 69 credits with an average of 2.0 or above.
2. \*Average of 2.0 ("C") or above for these major courses.

*For a complete list of Graduation Requirements check the Student Handbook.*

**NOTES**

1. 101-107 has prerequisites of 101-104, 101-122, 101-131, 101-143 & 101-154 and a corequisite of 101-155.
2. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
3. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).
4. Formerly 103-199, PC Basics/Microsoft Office.
5. Transfer credits in Social Science may substitute for this course. See an advisor for details.

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.  
 For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster ▶</b> 	<b>Career Pathway ▶</b> Administrative Services	<b>ADMINISTRATIVE PROFESSIONAL</b> (10-106-6) <i>Associate of Applied Science Degree</i> Most Courses Offered at Elkhorn, Kenosha, and Racine Campuses & Online

<sup>Δ</sup> Suggested Sequence	✓	Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
Semester 1		103-109	Windows Operating Sys. & Con.		1	.5-1
		106-011 *	Records Management		1	1-0
		106-137 *	Keyboarding Applications		3	1-4
		106-178 *	Business Proofreading & Editing		2	2-0
		801-136	English Composition 1	Prereq: 831-103 (See Note 1)	3	3-0
		801-196	Oral / Interpersonal Communication	Prereq: 838-105 (See Note 1)	3	3-0
		804-123	Math with Business Applications	Prereq: 834-109 (See Note 1)	3	3-0
Semester 2		101-112	Accounting for Business		3	3-0
		101-114	Accounting Principles		4	3-2
		103-110	Microsoft PowerPoint		1	.5-1
		106-010 *	Publication Design for Business	Prereq: 106-137	2	1-2
		106-012 *	Spreadsheet/DB for Business I	Prereq: 106-137	3	2-2
		106-014 *	Word Processing for Business I	Prereq: 106-137	2	1-2
		106-119 *	Professional Development		2	2-0
	809-196	Sociology, Introduction to	Prereq: 838-105 (See Note 1 & 3)	3	3-0	
Semester 3		103-111	Microsoft PowerPoint II		1	.5-1
		106-006 *	Business Communication Skills	Prereq: 106-137; 106-178; 801-136	3	2-2
		106-013 *	Spreadsheet/DB for Business II	Prereq: 106-012	3	2-2
		106-015 *	Word Processing for Business II	Prereq: 106-014	2	1-2
		106-190 *	Administrative Office Procedures	Prereq: 106-012	3	2-2
		809-198	Psychology, Introduction to	Prereq: 838-105 (See Note 1 & 3)	3	3-0
Semester 4		106-005	Admin. Professional Internship	Prereq: Instructor Consent	2	1-0-0-4
		102-138	BIZ Internship		3	0-0-0-12
		106-007 *	Business Software Solutions	Prereq: 106-013	2	1-2
		106-008 *	Emerging Business Trends & Tech.		2	1-2
		106-009 *	Meetings/Planning		1	.5-1
		801-197	Technical Reporting	Prereq: 801-136	3	3-0
		809-195	Economics			
		809-143	Microeconomics	Prereq: 838-105 (See Note 1)	3	3-0
	809-144	Macroeconomics				
Electives		<b>Take 6 elective credits. Any associate degree level course may be taken as an elective.</b>				<b>6</b>
		<b>Suggested Electives:</b>				
		101-106 Accounting Spreadsheet Apps (3 Cr)	101-154 Accounting Software Applications (2 Cr)			
		101-143 Payroll Accounting (2 Cr)	196-164 Personal Skills for Supervisors (3 Cr)			
		106-127 Skill Building I (1 Cr)	196-191 Supervision (3 Cr)			
	106-016 Principles of Customer Service (3 Cr)	106-018 Customer Service Management (3 Cr)				

<sup>Δ</sup>Courses may be taken out of suggested sequence as long as requisites have been met.

**Minimum Program Total Credits Required**

**66**



Effective 2015/2016

Career Cluster ►



Career Pathway ►

Administrative Services

**ADMINISTRATIVE PROFESSIONAL**

(10-106-6)

Associate of Applied Science Degree  
Most Courses Offered at Elkhorn, Kenosha,  
and Racine Campuses & Online

**PROGRAM DESCRIPTION**

The Administrative Professional program prepares individuals to perform administrative and office support activities. Students will develop skills in word processing, spreadsheets, presentation software, filing/records management, and production of business documents. Extensive software skills are acquired, as well as Internet research abilities and oral and written communication skills. Professional development training includes ethics, group interaction, problem-solving, self-awareness, and professionalism.

**PROGRAM LEARNING OUTCOMES**

Graduates of the Administrative Professional Associate Degree Program should be able to:

1. Demonstrate effective workplace communications.
2. Apply technology skills to business and administrative tasks.
3. Perform routine administrative procedures.
4. Manage administrative projects.
5. Maintain internal and external relationships.
6. Model professionalism in the workplace.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                           | 5. Develop job seeking skills                                       |
| 2. Communicate clearly and effectively       | 6. Respect themselves and others as a member of a diverse community |
| 3. Demonstrate essential computer skills     | 7. Think critically and creatively                                  |
| 4. Demonstrate essential mathematical skills | 8. Work cooperatively   |
|  | 9. Value learning   |

**ADMISSION REQUIREMENTS**

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.

**GRADUATION REQUIREMENTS**

1. Minimum 66 credits with an average of 2.0 or above.
2. \*Average of 2.0 ("C") or above for these major courses.

For a complete list of Graduation Requirements check the Student Handbook.

**NOTES**

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with departmental approval).
3. Transfer credits in Social Science may substitute for this course. See an advisor for details.

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.  
For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster</b> ▶	<b>Career Pathway</b> ▶	<b>ADVANCED EMT</b> (30-531-6) <i>Technical Diploma</i> Most Courses Offered at HERO Center
		Emergency and Fire Management Services	

<i>Course Number</i>	<i>Course Title</i>	<i>Requisites</i>	<i>Credits</i>	<i>Hrs/Wk Lec - Lab</i>
531-327	Advanced EMT	Prereq: 531-326 & Department Consent (See Note 1)	4	4-2-0-4
<b>Minimum Program Total Credits Required</b>			<b>4</b>	

 <b>Effective 2015/2016</b>	<b>Career Cluster ▶</b>	<b>Career Pathway ▶</b>	<b>ADVANCED EMT</b> <b>(30-531-6)</b> <i>Technical Diploma</i> Most Courses Offered at HERO Center
		<b>Emergency and Fire Management Services</b>	

**PROGRAM DESCRIPTION**

If you currently hold a State of Wisconsin licensure as an Emergency Medical Technician (EMT), you can pursue additional training in intravenous access, fluid and medication administration, clinical decision making skills, and patient assessment at this advanced level. Upon completion of the didactic, lab, and clinical components of this program, the participant will be eligible for testing and credentialing through the National Registry of Emergency Medical Technicians®.

**PROGRAM LEARNING OUTCOMES**

- Graduates of the Advanced EMT Technical Diploma Program should be able to:**
1. Understand the legal liabilities and requirements of professional conduct to operate as an Advanced EMT as outlined in HSS 110 of the Wisconsin Administrative Code.
  2. Perform a successful assessment, treatment plan, and packaging for both a trauma and medical patient.
  3. Perform cardiac arrest management and airway management of the adult and pediatric patient.
  4. Demonstrates the ability to interact with patients in a compassionate and professional manner.
  5. Understand and demonstrate safe practice in the administration of approved medications via the enteral and parenteral routes.
  6. Integrate the appropriate use of intravenous fluids, and demonstrate safe administration of medication in the treatment of adult and pediatric patients.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                     | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively | 7. Think critically and creatively                                  |
| 3. Demonstrate essential comp. skills  | 8. Work cooperatively   |
| 4. Demonstrate essential math skills   | 9. Value learning   |
| 5. Develop job seeking skills          |   |

**ADMISSION REQUIREMENTS**

1. Students must submit an application (no fee).
2. Students must submit a current Wisconsin EMT license and valid CPR certification.
3. Students must complete a functional ability form verifying they have read and understand the functional abilities for the program.

**GRADUATION REQUIREMENTS**

1. Minimum 4 credits with an average of 2.0 or above.

*For a complete list of Graduation Requirements check the Student Handbook.*

**NOTES**

1. A valid Wisconsin EMT license will be accepted in place of 531-326.
2. Please note that your program may require additional fee(s) for: Criminal Background Check, Medical Documentation Manager, and/or Drug Testing.

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR**  
**EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.  
 For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster</b> ▶	<b>Career Pathway</b> ▶	<b>AERONAUTICS – PILOT TRAINING</b> <b>(10-402-1)</b> <i>Associate of Applied Science Degree</i> Most Courses Offered at Horizon Center
		Transportation Operations	

<sup>Δ</sup> Suggested Sequence	✓ Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
Semester 1	402-129	* Aviation / Introduction		3	2-2
	402-139	* Aero Science – Engine/ Structure/ System		3	3-0
	402-140C	* Flight Private Pilot A	Prereq: Inst. Consent Coreq: 402-129	1	0-2
	402-140D	* Flight Private Pilot B	Prereq: 402-140C & Inst. Consent	2	0-4
	801-136	English Composition 1	Prereq: 831-103 (See Note 1)	3	3-0
	804-113	College Technical Math 1A	Prereq: 834-110 (See Note 1)	3	3-0
Semester 2	402-136	* Aero Science – Aviation Weather		3	2-2
	402-137	* Aero Science – Instrument	Prereq: 402-140 OR 402-140D	3	2-2
	402-171	* Professional Piloting I	Prereq: 402-140 OR 402-140D Coreq: 402-137	2	0-4
	801-197	Technical Reporting	Prereq: 801-136	3	3-0
	801-198	Speech	Prereq: 838-105 (See Note 1)	3	3-0
	809-196	Sociology, Introduction to	Prereq: 838-105 (See Note 1 & 7)	3	3-0
Semester 3	402-133	* Aero Science – Commercial	Prereq: 402-140 OR 402-140D	3	2-2
	402-135	* Aero Science – Aerophysics/Aerodynamics		3	3-0
	402-173	* Professional Piloting II	Prereq: 402-171	2	0-4
	809-195	Economics	Prereq: 838-105 (See Note 1)	3	3-0
	809-198	Psychology, Introduction to	Prereq: 838-105 (See Note 1 & 7)	3	3-0
Semester 4	402-120	Aero Decision Making	Coreq: 402-177; 402-138	2	1-2
	402-122	Aircraft Systems – Advanced	Prereq: 402-139	3	3-0
	402-138	* Aero Science – Aviation Safety		3	3-0
	402-175	* Professional Piloting III	Prereq: 402-173 Coreq: 402-133	2	0-4
	402-177	* Professional Piloting IV	Coreq: 402-175	2	0-4
Electives	<b>Take 6 elective credits. Any associate degree level course may be taken as an elective.</b>			<b>6</b>	
	<b>Suggested Electives:</b>				
	402-166	Aeronautics Skill Development (1 Cr)	402-145	Flight-Certified Flight Instructor (2 Cr)	
	402-146	Flight Certified Instructor Instrument (1 Cr)	402-150	Internship-Flight (3 Cr)	
402-134	Aero Science Cert Flight Instructor Airplane (2 Cr)	402-131	Aero Science-Fund/Inst (2 Cr)		
<b>Minimum Program Total Credits Required</b>				<b>64</b>	

<sup>Δ</sup>Courses may be taken out of suggested sequence as long as requisites have been met.



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Transportation Operations

**AERONAUTICS – PILOT TRAINING**

(10-402-1)

Associate of Applied Science Degree  
Most Courses Offered at Horizon Center

**PROGRAM DESCRIPTION**

*Aeronautics-Pilot Training* develops the skills and knowledge, through academic and practical application, necessary for an entry-level career as a professional pilot. Required aircraft training and electives include commercial certificate with single engine, multi-engine, and instrument ratings, and certified flight instructor certificate with single engine, multi-engine, and instrument ratings. Actual licensing is dependent upon successful completion by the individual student.

**PROGRAM LEARNING OUTCOMES**

Graduates of the Aeronautics-Pilot Training Associate Degree Program should be able to:

1. Hold Federal Aviation Administration (FAA) certification as Commercial Pilot for single and multi-engine land airplanes with an instrument rating.
2. Have an awareness of safety and possess aeronautical decision making skills for facing planned as well as unplanned in-flight scenarios.
3. Have a thorough working knowledge of the Federal Aviation Regulations (FAR's) and appropriate operating practices as contained in the Aeronautical Information Manual (AIM).
4. Incorporate effective communication skills in a two pilot crew environment.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                           | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively       | 7. Think critically and creatively                                  |
| 3. Demonstrate essential computer skills     | 8. Work cooperatively   |
| 4. Demonstrate essential mathematical skills | 9. Value learning   |
| 5. Develop job seeking skills                |   |

**ADMISSION REQUIREMENTS**

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.

**GRADUATION REQUIREMENTS**

1. Minimum 64 credits with an average of 2.0 or above.
2. \*Average of 2.0 ("C") or above for these major courses.

*For a complete list of Graduation Requirements check the Student Handbook.*

**NOTES**

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. Students must maintain a 2.0 GPA in Aviation Core courses (402 courses) to continue with flight training.
3. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).
4. A student supplied tablet computer is required for all flight courses. Please contact the department prior to purchasing a tablet for the minimum specification sheet.
5. A valid FAA 3<sup>rd</sup> class (or higher) medical certificate is required prior to beginning any flight course.
6. Proof of U.S. Citizenship or TSA approval required prior to beginning any flight course.
7. Transfer credits in Social Science may substitute for this course. See an advisor for details.

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.

For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_. My advisor's contact information is \_\_\_\_\_.



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Construction

**AIR CONDITIONING, HEATING & REFRIGERATION TECHNOLOGY**

(10-601-1A)

Associate of Applied Science Degree  
Most Courses Offered at Kenosha Campus

<sup>Δ</sup> Suggested Sequence	✓	Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
Semester 1		103-143	Computers for Professionals	Prereq: 103-142 (See Notes 1 & 5)	3	2-2
		601-110	* Air Condition Fundamentals		3	3-0
		601-111	* Workplace Fundamentals		1	0-2
		601-116	* Mechanical Fundamentals		3	1-4
		605-107	Fundamentals of Electricity/Electronics		3	1-4
		804-107	College Mathematics	Prereq: 834-109 (See Notes 1 & 4)	3	3-0
Semester 2		601-121	* Heating Systems	Prereq: 601-110	3	2-2
		601-128	* Electrical Controls & Systems	Prereq: 605-107	3	1-4
		801-136	English Composition 1	Prereq: 831-103 (See Note 1)	3	3-0
		801-196	Oral / Interpersonal Communication	Prereq: 838-105 (See Note 1)	3	3-0
		809-196	Sociology, Introduction to	Prereq: 838-105 (See Note 1 & 6)	3	3-0
Semester 3		601-129	* HVAC Systems	Prereq: 601-110; 601-116	3	1-4
		601-131	§* Heating Systems Applications	Prereq: 601-121	3	1-4
		601-133	* Refrigeration Fundamentals		3	2-2
		601-147	* Control Circuit Applications	Prereq: 601-128	3	1-4
		801-197	Technical Reporting	Prereq: 801-136	3	3-0
Semester 4		601-130	* HVAC Blueprint Reading		2	1-2
		601-143	§* Refrigeration Applications	Prereq: 601-110; 601-116; 601-133	3	1-4
		601-145	* Electronic Energy Management	Prereq: 601-147; 103-143	3	1-4
		601-148	* HVAC Electrical Troubleshooting/Repair	Prereq: 601-147; 103-143	3	1-4
		809-195	Economics	Prereq: 838-105 (See Note 1)	3	3-0
		809-198	Psychology, Introduction to	Prereq: 838-105 (See Note 1 & 6)	3	3-0
Electives		<b>Take 6 elective credits. Any associate degree level course may be taken as an elective.</b>			<b>6</b>	
		<b>Suggested Electives:</b> 442-101 Welding Basics (1 Cr) 601-114 Power Plant Op Engineer (4 Cr) 806-128 Descriptive Physics (3 Cr)				
<b>Minimum Program Total Credits Required</b>					<b>69</b>	

<sup>Δ</sup>Courses may be taken out of suggested sequence as long as requisites have been met.



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Construction

## AIR CONDITIONING, HEATING & REFRIGERATION TECHNOLOGY

(10-601-1A)

Associate of Applied Science Degree

Most Courses Offered at Kenosha Campus

### PROGRAM DESCRIPTION

*Air Conditioning, Heating, & Refrigeration Technology* develops the skills and knowledge necessary for state and federal certification. Theory and practical hands-on experience in the troubleshooting, repair, and installation of residential and commercial HVAC/R systems are emphasized. Students will practice on modern and advanced equipment, incorporating microprocessor controls, and building automation technology. Topics covered during lecture and lab hours include complete heating, air conditioning and refrigeration systems, how components interact, and total system performance. Refrigerant handling certification is encouraged and is dependent upon successful completion by the individual student.

### PROGRAM LEARNING OUTCOMES

**Graduates of the HVAC Associate Degree Program should be able to:**

1. Troubleshoot and repair residential heating equipment.
2. Troubleshoot residential air conditioning equipment.
3. Troubleshoot commercial refrigeration equipment.
4. Gather and tabulate data to calculate heating and cooling loads on residential dwellings.
5. Install a residential furnace and air conditioner.
6. Interpret residential/commercial building prints for code requirement, piping layout, and equipment placement.
7. Lay out and make basic duct work for residential dwellings.
8. Lay out, cut, and perform soldering and brazing techniques on copper tubing.

### CORE ABILITIES

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                           | 5. Develop job seeking skills                                       |
| 2. Communicate clearly and effectively       | 6. Respect themselves and others as a member of a diverse community |
| 3. Demonstrate essential computer skills     | 7. Think critically and creatively                                  |
| 4. Demonstrate essential mathematical skills | 8. Work cooperatively   |
|  | 9. Value learning   |

### ADMISSION REQUIREMENTS

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.

### GRADUATION REQUIREMENTS

1. Minimum 69 credits with an average of 2.0 or above.
2. \*Average of 2.0 ("C") or above for these Major courses.
3. §Students who take 601-113 (Facility Operating Engineer LP) and 601-117 (Facility Operating Engineer HP) may omit these courses.

*For a complete list of Graduation Requirements check the Student Handbook.*

### NOTES

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. Safety glasses are required in labs. If prescription safety glasses are required, allow a minimum of 90 days.
3. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).
4. Formerly 804-106, Intro to College Math.
5. Formerly 103-199, PC Basics/Microsoft Office.
6. Transfer credits in Social Science may substitute for this course. See an advisor for details.

### OTHER INFORMATION

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.

For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_. My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster</b> ▶	<b>Career Pathway</b> ▶	<b>AIR CONDITIONING, HEATING &amp; REFRIGERATION TECHNOLOGY</b> <b>(10-601-1B) – Geothermal Technician</b> <i>Associate of Applied Science Degree</i> Most Courses Offered at Kenosha Campus
		Construction	

<sup>Δ</sup> <b>Suggested Sequence</b>	<b>Course Number</b>	<b>Course Title</b>	<b>Requisites</b>	<b>Credits</b>	<b>Hrs/Wk Lec - Lab</b>
Semester 1	483-174	Intro to Groundloop Methods		2	2-0
	483-175	GeoExchange Site Safety		1	0-2
	601-110 *	Air Condition Fundamentals		3	3-0
	601-111 *	Workplace Fundamentals		1	0-2
	601-116 *	Mechanical Fundamentals		3	1-4
	605-107	Fundamentals of Electricity/Electronics		3	1-4
	804-107	College Mathematics	Prereq: 834-109 (See Note 1 )	3	3-0
Semester 2	483-178	Geological Formations for Drillers		3	3-0
	483-180	Rig Transport, Set-up, and Safety	Prereq: 483-175	2	2-0
	601-128 *	Electrical Controls & Systems	Prereq: 605-107	3	1-4
	801-136	English Composition 1	Prereq: 831-103 (See Note 1)	3	3-0
	801-196	Oral/Interpersonal Communication	Prereq: 838-105 (See Note 1)	3	3-0
	809-196	Sociology, Introduction to	Prereq: 838-105 (See Note 1 & 5)	3	3-0
Semester 3	483-170	Rotary Rig Operations	Prereq: 483-174; 483-175	3	2-2
	483-173	Plastic Fusion Applications		2	1-2
	601-129 *	HVAC Systems	Prereq: 601-110; 601-116	3	1-4
	601-133 *	Refrigeration Fundamentals		3	2-2
	601-147 *	Control Circuit Applications	Prereq: 601-128	3	1-4
	801-197	Technical Reporting	Prereq: 801-136	3	3-0
Semester 4	442-101	Welding Basics		1	0-2
	483-172	Grouting and Sanitation		2	1-2
	483-177	Trenching/Header Fundamentals	Prereq: 483-173; 483-174; 483-175	2	1-2
	612-102	Intro to Mobile Hydraulics/Pneumatics	Prereq: 605-107	3	2-2
	809-195	Economics	Prereq: 838-105 (See Note 1)	3	3-0
	809-198	Psychology; Introduction to	Prereq: 838-105 (See Note 1 & 5)	3	3-0
Electives	<b>Take 6 elective credits. Any associate degree level course may be taken as an elective.</b>			<b>6</b>	
	<b>Suggested Electives:</b>				
	483-181	Geo Site & Record Management (2 Cr.)	483-182	Geo Safety Lead (2 Cr.)	
	483-104	DX Geo Applications (2 Cr.)	483-183	Rotary: Air Boring Applications	
	483-171	Rotary: Mud Boring Applications (3 Cr.)	601-157	Radiant Floor Heating (2 Cr.)	
	601-149	Heat Load Applications (2 Cr.)			
<b>Minimum Program Total Credits Required</b>				<b>70</b>	

<sup>Δ</sup>Courses may be taken out of suggested sequence as long as requisites have been met.

 <p><b>Effective 2015/2016</b></p>	<b>Career Cluster ▶</b>	<b>Career Pathway ▶</b>	<p><b>AIR CONDITIONING, HEATING &amp; REFRIGERATION TECHNOLOGY</b>                  (10-601-1B) – Geothermal Technician  <i>Associate of Applied Science Degree</i>                  Most Courses Offered at Kenosha Campus</p>
		Construction	

**PROGRAM DESCRIPTION**

The *Air Conditioning, Heating & Refrigeration Technology-Geothermal Technician* program develops the skills and practical knowledge necessary for the student to seek employment in the installation, sales and service of the loopfield components used throughout the Geo industry. Topics are covered in a lecture/lab format with extensive work done during field exercises on active drill sites. The safe and proper operation of drilling equipment, the fabrication/installation of ground heat exchange loops, Federal and State regulatory compliance are covered in depth. Basic HVACR skill training needed by any industry professional such as the principles of airflow, piping, ductwork construction, heat flow, electrical circuits and the refrigeration process are also covered. While similar to conventional heating/cooling equipment this field of study emphasizes the unique components and installation techniques required by someone wishing to concentrate in Geothermal technology

**PROGRAM LEARNING OUTCOMES**

**Graduates of the HVAC Associate Degree Program should be able to:**

1. Troubleshoot and repair residential heating equipment.
2. Troubleshoot residential air conditioning equipment.
3. Troubleshoot commercial refrigeration equipment.
4. Gather and tabulate data to calculate heating and cooling loads on residential dwellings.
5. Install a residential furnace and air conditioner.
6. Interpret residential/commercial building prints for code requirement, piping layout, and equipment placement.
7. Lay out and make basic duct work for residential dwellings.
8. Lay out, cut, and perform soldering and brazing techniques on copper tubing.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                     | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively | 7. Think critically and creatively                                  |
| 3. Demonstrate essential comp. skills  | 8. Work cooperatively   |
| 4. Demonstrate essential math skills   | 9. Value learning   |
| 5. Develop job seeking skills          |   |

**ADMISSION REQUIREMENTS**

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.

**GRADUATION REQUIREMENTS**

1. Minimum 70 credits with an average of 2.0 or above.
2. \*Average of 2.0 ("C") or above for these Major courses.

*For a complete list of Graduation Requirements check the Student Handbook.*

**NOTES**

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. Safety glasses are required in labs. If prescription safety glasses are required, allow a minimum of 90 days.
3. During field drilling exercises steel toed shoes are required.
4. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with departmental approval).
5. Transfer credits in Social Science may substitute for this course. See an advisor for details.

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
 EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.  
 For a complete list of course descriptions (and possible online courses) for this program, please consult our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ . My advisor's contact information is \_\_\_\_\_ .

 <b>Effective 2015/2016</b>	<b>Career Cluster</b> ▶ 	<b>Career Pathway</b> ▶ Design & Pre-Construction	<b>ARCHITECTURAL – STRUCTURAL ENGINEERING TECHNICIAN</b> (10-614-6) <i>Associate of Applied Science Degree</i> Most Courses Offered at IMET Center

Δ Suggested Sequence	✓ Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
<b>Semester 1</b>	607-103	* Introduction to Civil Engineering & Architecture		2	1-2
	607-104	* Building Material & Construction Method		3	2-2
	607-169	* Surveying Basics	Prereq: 834-110 (See Note 1)	2	1-2
	607-170	* AutoCAD for Construction Sciences		2	1-2
	804-115	College Technical Math 1	Prereq: 834-110 (See Note 1)	5	5-0
	809-198	Psychology, Introduction to	Prereq: 838-105 (See Note 1 & 7)	3	3-0
<b>Semester 2</b>	607-102	* Conflict Resolution in CET		2	1-2
	607-128	* Construction Estimating	Prereq: 607-104	3	2-2
	607-132	* Structural Mechanics	Prereq: 804-114 OR 804-115	3	2-2
	607-136	* Construction Project Management		2	1-2
	607-187	* 3D CAD: Digital Terrain Modeling		2	1-2
	614-150	* 3D CAD: Building Information Modeling		2	1-2
<b>Semester 3</b>	801-136	English Composition 1	Prereq: 831-103 (See Note 1)	3	3-0
	607-143	* Structural Design Concrete and Steel	Prereq: 607-132	3	2-2
	614-140	* Mechanical Systems for Buildings	Prereq: 607-104	3	2-2
	614-108	* Residential Code		1	.5-1
	614-110	* Architectural Drafting – Residential	Prereq: 614-150 Coreq: 614-108	3	1-4
	809-196	Sociology, Introduction to	Prereq: 838-105 (See Note 1 & 7)	3	3-0
<b>Semester 4</b>	806-154	General Physics 1	Prereq: 804-115	4	3-2
	304-119	* Portfolio Presentation	Prereq: Instructor Consent	1	0-2
	614-114	* Commercial Code		2	1-2
	614-115	* Architectural Drafting – Commercial	Prereq: 614-110 Coreq: 614-114	3	1-4
	614-123	* Capstone: Architectural Structural Tech	Prereq: Inst. Cons.; Coreq: 614-115		
	614-107	* Residential and Commercial Inspection	Prereq: 614-108; Coreq: 614-114	3	1-4
<b>Electives</b>	801-197	Technical Reporting	Prereq: 801-136	3	3-0
	<b>Take 6 elective credits. Any associate degree level course may be taken as an elective.</b> <b>Suggested Electives:</b> 607-117 Geographical Information Systems (2 Cr)    607-154 Sewer and Water (2 Cr) 607-119 Civil Technology/Internship (1 Cr)        304-155 Principles of Interior Design (4 Cr)			<b>6</b>	

Δ Courses may be taken out of suggested sequence as long as requisites have been met.

**Minimum Total Program Credits Required        70**



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Design & Pre-Construction

**ARCHITECTURAL – STRUCTURAL  
ENGINEERING TECHNICIAN**

(10-614-6)

Associate of Applied Science Degree  
Most Courses Offered at iMET Center

**PROGRAM DESCRIPTION**

Architectural-Structural Engineering Technician focuses on a wide variety of aspects within the profession of Civil Engineering – beginning with surveying, transitioning into design, and resulting in construction. The first year classes are mostly the same for programs in the Construction Sciences Group (see Note 6). Basic skills are developed and students are exposed to all areas of the various professions. This allows the student to be able to understand and communicate across the professions, plus it allows the student to discover what area they really enjoy working in. The second year focuses on aspects specific to buildings, both design and structural components. The program is designed as a fusion of education and application; hence all the core classes are tied to real world experiences with a significant influx of participation from potential future employers. Some students use this program as a place to prepare themselves to transfer to a four year university. Most, however, use this program as a means to develop the skills that allow them to obtain a productive career in various aspects of architecture.

**PROGRAM LEARNING OUTCOMES**

Graduates of Architectural-Structural Engineering Tech should be able to:

1. Exhibit skills in multiple CAD environments, specifically AutoCAD and Revit
2. Measure field locations
3. Develop 3D computer models, maps, and drawings based field measurements.
4. Apply building codes to existing conditions and proposed designs.
5. Develop structural details for purposed conditions.
6. Differentiate between the various areas and functions within the profession.
7. Understand quantities, materials, equipment and methods used in the profession.
8. Exhibit proper and clear documentation and reporting skills
9. Exhibit individual ability to properly solve a problem
10. Work cooperatively in groups

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                       | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively   | 7. Think critically and creatively                                  |
| 3. Demonstrate essential computer skills | 8. Work cooperatively   |
| 4. Demonstrate essential math skills     | 9. Value learning   |
| 5. Develop job seeking skills            |   |

**ADMISSION REQUIREMENTS**

1. Students must submit an application and \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.

**GRADUATION REQUIREMENTS**

1. Minimum 70 credits with an average of 2.0 or above.
2. \*A 2.0 ("C") or above for these specific major core courses.

For a complete list of Graduation Requirements check the Student Handbook.

**NOTES**

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. Any course may be taken prior to enrollment in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).
3. This is a very intense and challenging program. Poor existing skills, especially poor math skills, can always be improved. As long as you have the heart and desire to succeed, the instructors will work with you.
4. Classes offered at Elkhorn Campus via NODAL delivery. See [www.gtc.edu](http://www.gtc.edu) for details.
5. Blackhawk Technical College students may take the majority of the core classes in this shared program via NODAL delivery at BTC's Janesville campus.
6. The programs in the Construction Science Group include: Civil Engineering Tech: Highway Technology, Geospatial Surveying Technician, Architectural-Structural Engineering Technician, and Civil Engineering Technology: Fresh Water Resources.
7. Transfer credits in Social Science may substitute for this course. See an advisor for details.

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.

For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster ▶</b> 	<b>Career Pathway ▶</b> Manufacturing Production Process Development	<b>AUTOMATED MANUFACTURING SYSTEMS TECHNOLOGY</b> (10-628-3) <i>Associate of Applied Science Degree</i> Most Courses Offered at Elkhorn Campus and Lakeview Center

△ Suggested Sequence	✓ Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
Semester 1	605-113 *	DC/AC I		3	2-2
	612-102 *	Pneumatics/Hydraulics, Introduction		3	2-2
	628-109 *	Mechanical Skills for Technicians		3	1-4
	620-103 *	Intro to Industrial Controls	Coreq: 605-113	4	2-4
	804-115	College Technical Math 1	Prereq: 834-110 (See Note 1)	5	5-0
Semester 2	628-125 *	Quality for Automated Manufacturing		3	2-2
	628-100 *	Automated Manufacturing Concepts/Intro		2	0-4
	628-110 *+	CNC/CAM Programming		3	1-4
	806-154	General Physics 1	Prereq: 804-115	4	3-2
	801-136	English Composition 1	Prereq: 831-103 (See Note 1)	3	3-0
Semester 3	442-102 *	Introduction to Welding		2	0-4
	620-140 *	Programmable Controllers	Prereq: 620-103	2	1-2
	890-103	Employability Skills		2	1-2
	628-111 *	Computer Assisted Programming/Robot and FMS		3	1-4
	809-196	Sociology, Introduction to	Prereq: 838-105 (See Note 1 & 3)	3	3-0
	809-198	Psychology, Introduction to	Prereq: 838-105 (See Note 1 & 3)	3	3-0
Semester 4	606-126 *	AutoCAD, Introduction	(See Note 4)	2	0-4
	620-120 *	Feedback & Control Systems	Prereq: 605-113	2	1-2
	620-145 *	Programmable Logic Controllers – Advanced	Prereq: 620-140	3	1-4
	628-112 *	Computer Aided Manufacturing, Advanced	Prereq: 628-111; Coreq: 620-145	3	1-4
	605-133 *	Industrial Data Communications	Prereq: 605-113 or 605-107	3	2-2
	801-197	Technical Reporting	Prereq: 801-136	3	3-0
Electives	<b>Take 6 elective credits. Any associate degree level course may be taken as an elective.</b>			<b>6</b>	
	<b>Suggested Electives:</b>				
	606-127 CAD Intermediate (2 Cr)	612-115 Hydraulics / Advanced (3 Cr)			
	606-128 CAD Solids (2 Cr)	620-111 Intro to Solid State Circuits (4 Cr)			
628-108 Field Experience (2 Cr)					

**Minimum Program Total Credits Required 70**

△ Courses may be taken out of suggested sequence as long as requisites have been met.



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Manufacturing Production  
Process Development

## AUTOMATED MANUFACTURING SYSTEMS TECHNOLOGY

(10-628-3)

Associate of Applied Science Degree

Most Courses Offered at

Elkhorn Campus and Lakeview Center

### PROGRAM DESCRIPTION

*Automated Manufacturing Systems Technology* is designed to train technicians who can work in a factory which has a high level of automation. Emphasis is placed on automated systems, including production systems, material handling systems, and supervisory control systems. Training objectives will focus on system implementation, application, operation, and installation. The education is broad-based and multi-disciplinary and includes an understanding of electrical, electronic, electromechanical, and mechanical components, plus micro-processors, computers, inventory, and quality control.

### PROGRAM LEARNING OUTCOMES

Graduates of the Automated Manufacturing Systems Technology Associate Degree Program should be able to:

1. Demonstrate knowledge of electricity, electronics, hydraulics and pneumatics.
2. Demonstrate a knowledge of sensor utilization for measuring flow, pressure, speed, voltage, current, torque, force, temperature, etc.
3. Demonstrate an understanding of PLC programming and program design.
4. Demonstrate proper use and operation of hand tools.
5. Analyze design solutions for electromechanical machines and devices as a team.

### CORE ABILITIES

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                           | 5. Develop job seeking skills                                       |
| 2. Communicate clearly and effectively       | 6. Respect themselves and others as a member of a diverse community |
| 3. Demonstrate essential computer skills     | 7. Think critically and creatively                                  |
| 4. Demonstrate essential mathematical skills | 8. Work cooperatively   |
|  | 9. Value learning   |

### ADMISSION REQUIREMENTS

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.

### GRADUATION REQUIREMENTS

1. Minimum 70 credits with an average of 2.0 or above.
2. \*Average of 2.0 ("C") or above for these major courses.

*For a complete list of Graduation Requirements check the Student Handbook.*

### NOTES

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).
3. Transfer credits in Social Science may substitute for this course. See an advisor for details.
4. Student may take 606-128 CAD-Solidworks (2 Cr) in place of this course. See an advisor for details.

### OTHER INFORMATION

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.

For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_. My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster ▶</b> 	<b>Career Pathway ▶</b> Facility & Mobile Equipment Maintenance	<b>AUTOMOTIVE MAINTENANCE                      TECHNICIAN</b> (31-404-3) <i>Technical Diploma</i> Most Courses Offered at Horizon Center

△ Suggested Sequence	✓ Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
<b>Semester 1</b>	602-122	* Auto IT for Transportation		2	1-2
	602-107	* Auto Service Fundamentals	Prereq: 602-122	2	1-2
	602-104	* Brake Systems	Prereq: 602-107; 122	3	2-2
	602-124	* Steering & Suspension Systems	Prereq: 602-107; 122	3	2-2
	804-107	College Mathematics	Prereq: 834-109 (See Note 1 & 5)	3	3-0
	801-136	English Composition 1	Prereq: 831-103 (See Note 1)	3	3-0
<b>Semester 2</b>	602-125	* Electrical & Electronic Systems 1	Prereq: 602-107; 122; Coreq: 804-107	2	1-2
	602-127	* Electrical & Electronic Systems 2	Prereq: 602-125; Coreq: 801-136	3	2-2
	602-196	* Climate Control Systems	Prereq: 602-127	3	2-2
	602-103	* Engine Repair 1	Prereq: 602-107; 122	2	1-2
	809-195	Economics	Prereq: 838-105 (See Note 1)	3	3-0
	801-196	Oral/Interpersonal Communication	Prereq: 838-105 (See Note 1)	3	3-0
<b>Minimum Program Total Credits Required</b>				<b>32</b>	

△ Courses may be taken out of suggested sequence as long as requisites have been met.

Federal regulations require disclosure of the following information for this program:

Books and Supplies	Resident Tuition and Fees	U.S. Department of Labor Standard Occupational (SOC) Code & Occupational Profile – available at <a href="http://www.onetonline.org">http://www.onetonline.org</a>
\$3,700	\$5,105	<u>Automotive Service Technicians and Mechanics (49-3023)</u>



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Facility & Mobile Equipment Maintenance

## AUTOMOTIVE MAINTENANCE TECHNICIAN

(31-404-3)

Technical Diploma

Most Courses Offered at Horizon Center

### PROGRAM DESCRIPTION

*Automotive Maintenance Technician* gives an overview of essential servicing techniques, including the testing, repairing, and rebuilding of basic automotive systems. Graduates of this program have the skills necessary for entry-level employment at automotive repair facilities and retail service centers or to pursue an Associate of Applied Science degree in a two-year automotive program. The student will be prepared to take up to four ASE tests in the following areas: brakes, suspension and steering, heating and air conditioning, and electrical systems. Special emphasis will be placed on mechanical relationships and basic engine performance. Students will be able to apply the techniques learned in lectures in an automotive shop laboratory setting. This will be accomplished in a simulated work environment.

### PROGRAM LEARNING OUTCOMES

Graduates of the Auto Maintenance Technician Technical Diploma Program should be able to:

1. Diagnose, service, and repair Suspension and Steering systems of light duty vehicles.
2. Diagnose, service, and repair Brake systems of light duty vehicles.
3. Diagnose, service, and repair Heating, Ventilating and Air Conditioning systems of light duty vehicles.
4. Diagnose and service Gasoline Engines of light duty vehicles.
5. Service Engine Performance related systems of light duty vehicles.

### CORE ABILITIES

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |                                       |
|--|---------------------------------------|
| 1. Act responsibly                     | 6. Respect themselves and others as a |
| 2. Communicate clearly and effectively | member of a diverse community         |
| 3. Demonstrate essential comp. skills  | 7. Think critically and creatively    |
| 4. Demonstrate essential math skills   | 8. Work cooperatively                 |
| 5. Develop job seeking skills          | 9. Value learning                     |

### ADMISSION REQUIREMENTS

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.

### GRADUATION REQUIREMENTS

1. Minimum 32 credits with an average of 2.0 or above.
2. \*Average of 2.0 ("C") or above for these major courses.

*For a complete list of Graduation Requirements check the Student Handbook.*

### NOTES

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. Safety glasses are required in labs. If prescription safety glasses are needed, allow at least 90 days.
3. A student supplied tablet computer is required for all 602 courses. Please contact the department prior to purchasing a computer for the minimum specification sheet.
4. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).
5. Formerly 804-106, Intro to College Math.

### OTHER INFORMATION

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.  
For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ . My advisor's contact information is \_\_\_\_\_ .

 <b>Effective 2015/2016</b>	<b>Career Cluster ▶</b> 	<b>Career Pathway ▶</b> Facility & Mobile Equipment Maintenance	<b>AUTOMOTIVE TECHNOLOGY</b> (10-602-3) <i>Associate of Applied Science</i> Most Courses Offered at Horizon Center

Δ Suggested Sequence	✓ Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
<b>Semester 1</b>	602-122	* Auto IT for Transportation		2	1-2
	602-107	* Auto Service Fundamentals	Prereq: 602-122	2	1-2
	602-104	* Brake Systems	Prereq: 602-107; 122	3	2-2
	602-124	* Steering & Suspension Systems	Prereq: 602-107; 122	3	2-2
	804-107	College Mathematics	Prereq: 834-109 (See Note 1)	3	3-0
	801-136	English Composition 1	Prereq: 831-103 (See Note 1)	3	3-0
<b>Semester 2</b>	602-125	* Electrical & Electronic Systems 1	Prereq: 602-107; 122; Coreq: 804-107	2	1-2
	602-127	* Electrical & Electronic Systems 2	Prereq: 602-125; Coreq: 801-136	3	2-2
	602-196	* Climate Control Systems	Prereq: 602-127	3	2-2
	602-103	* Engine Repair 1	Prereq: 602-107; 122	2	1-2
	809-195	Economics	Prereq: 838-105 (See Note 1)	3	3-0
	801-196	Oral / Interpersonal Communication	Prereq: 838-105 (See Note 1)	3	3-0
<b>Semester 3</b>	602-197	* Engine Performance 1	Prereq: 602-103; 127; Coreq: 801-136	3	2-2
	602-121	* Auto Instrumentation & Testing	Prereq: 602-197	4	3-2
	602-128	* Electrical & Electronic Systems 3	Prereq: 602-127	3	2-2
	602-149	* Manual Drive Train & Axles	Prereq: 602-107; 122	4	2-4
	809-196	Sociology, Introduction to	Prereq: 838-105 (See Note 1 & 6)	3	3-0
	809-198	Psychology, Introduction to	Prereq: 838-105 (See Note 1 & 6)	3	3-0
<b>Semester 4</b>	602-195	* Advanced Chassis Systems	Prereq: 602-104; 124; 127; Coreq: 801-136	2	2-0
	602-123	* Engine Repair 2	Prereq: 602-103; Coreq: 801-197	3	1-4
	602-109	* Auto Transmission/Transaxle	Prereq: 602-127	4	2-4
	602-198	* Engine Performance 2	Prereq: 602-197	4	3-2
	602-120	* Auto Service Simulation	Prereq: 602-104; 121; 123; 124; 128; 196; 198	2	0-4
	801-197	Technical Reporting	Prereq: 801-136	3	3-0

**Minimum Program Total Credits Required      70**

Δ Courses may be taken out of suggested sequence as long as requisites have been met.



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Facility & Mobile Equipment Maintenance

## AUTOMOTIVE TECHNOLOGY

(10-602-3)

Associate of Applied Science

Most Courses Offered at Horizon Center

### PROGRAM DESCRIPTION

*Automotive Technology* is a two-year repair and maintenance curriculum, totaling over 1,800 hours of automotive instruction. Students desiring to become entry-level line technicians at automotive dealerships or independent repair facilities will be prepared for ASE Master Certification in all areas of automotive mechanical repairs. Students will become competent in engine performance, engine repair, manual and automatic drive lines, transmissions and transaxles, electrical systems, and electronics, using a simulated work environment on vehicles.

### PROGRAM LEARNING OUTCOMES

Graduates of the Automotive Technology Associate Degree Program should be able to:

1. Demonstrate professionalism appropriate to the auto service industry.
2. Perform diagnosis, service and repair of automotive internal combustion engines.
3. Perform diagnosis, service and repair of automotive automatic transmission / transaxle systems.
4. Perform diagnosis, service and repair of automotive manual drive train and axles systems.
5. Perform diagnosis, service and repair of automotive steering and suspension steering systems.
6. Perform diagnosis, service and repair of automotive brake systems.
7. Perform diagnosis, service and repair of auto electrical/electronic systems.
8. Perform diagnosis, service and repair of automotive heating and air conditioning systems.
9. Perform diagnosis, service and repair of automotive engine performance systems.

### CORE ABILITIES

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                       | 5. Develop job seeking skills                                       |
| 2. Communicate clearly and effectively   | 6. Respect themselves and others as a member of a diverse community |
| 3. Demonstrate essential computer skills | 7. Think critically and creatively                                  |
| 4. Demonstrate essential math skills     | 8. Work cooperatively   |
|  | 9. Value learning   |

To schedule an appointment with an advisor, please call 1-800-247-7122.

For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ . My advisor's contact information is \_\_\_\_\_ .

### ADMISSION REQUIREMENTS

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.

### GRADUATION REQUIREMENTS

1. Minimum 70 credits with an average of 2.0 or above.
2. \*Average of 2.0 ("C") or above for these major courses.

*For a complete list of Graduation Requirements check the Student Handbook.*

### NOTES

1. A satisfactory placement test score (or successful remediation) is required prior to Enrollment. See an advisor for details.
2. A student supplied tablet computer is required for all 602 courses. Please contact the department prior to purchasing a computer for the minimum specification sheet.
3. Safety glasses are required in labs. If prescription safety glasses are required, allow a minimum of 90 days.
4. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval.)
5. Formerly 804-106, Intro to College Math.
6. Transfer credits in Social Science may substitute for this course. See an advisor for details.

### OTHER INFORMATION

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

 <b>Effective 2015/2016</b>	<b>Career Cluster ▶</b>	<b>Career Pathway ▶</b>	<b>BARBER TECHNOLOGIST</b> (30-502-5) <i>Technical Diploma</i> Most Courses Offered at Kenosha Campus
		Personal Care Services	

Δ Suggested Sequence	✓	Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
<b>Semester 1</b>		502-736 *	Barber Industry	Prereq: Instructor Consent	2	4-0
		502-742 *	Intro to Barbering	Prereq: Instructor Consent	1	2-0
		502-738 *	Basic Haircutting		2	2-2
		502-735 *	Advanced Haircutting	Prereq: 502-738	2	2-2
		502-741 *	Hairstyling		2	2-2
		502-740 *	Hair Color		2	2-2
		502-743 *	Shaving		2	2-2
		502-739 *	Chemical Texturing		2	2-2
<b>Semester 2</b>		502-730 *	Client Services 1	Prereq: 502-736; 742; 738; 735; 741; 740; 743; 739 & Instructor Consent	2	0-0-6
		502-731 *	Client Services 2	Prereq: 502-736; 742; 738; 735; 741; 740; 743; 739 & Instructor Consent	2	0-0-6
		502-732 *	Client Services 3	Prereq: 502-736; 742; 738; 735; 741; 740; 743; 739 & Instructor Consent	2	0-0-6
		502-733 *	Client Services 4	Prereq: 502-736; 742; 738; 735; 741; 740; 743; 739 & Instructor Consent	2	0-0-6
		502-734 *	Client Services 5	Prereq: 502-736; 742; 738; 735; 741; 740; 743; 739 & Instructor Consent	2	0-0-6

**Minimum Program Total Credits Required      25**

Δ Courses may be taken out of suggested sequence as long as requisites have been met.

Federal regulations require disclosure of the following information for this program:

Books and Supplies	Resident Tuition and Fees	U.S. Department of Labor Standard Occupational (SOC) Code & Occupational Profile – available at <a href="http://www.onetonline.org">http://www.onetonline.org</a>
\$2,000	\$3,655	<u>Barbers (39-5011)</u>

 <b>Effective 2015/2016</b>	<b>Career Cluster ▶</b>	<b>Career Pathway ▶</b>	<b>BARBER TECHNOLOGIST</b> <b>(30-502-5)</b> <i>Technical Diploma</i> Most Courses Offered at Kenosha Campus
		<b>Personal Care Services</b>	

**PROGRAM DESCRIPTION**

The *Barber Technologist* program offers a variety of courses such as Haircutting, Shaving, Styling, Color, Chemical Texture Services, and Male Facials. In addition to barber ownership or barber management, one can choose from positions in sales, advertising, research, and education. The possibilities are unlimited and so is the income potential. The *Barber Technologist* program is a two-semester program consisting of 1,080 hours of instruction.

**PROGRAM LEARNING OUTCOMES**

Graduates of the Barber Technologist Technical Diploma Program should be able to:

1. Apply safety and sanitation procedures.
2. Adhere to the current Wisconsin Administrative Codes and Statutes for barbers.
3. Demonstrate interpersonal skills for success.
4. Identify hair and scalp disorders.
5. Perform haircutting services.
6. Demonstrate shaving and other facial removal techniques.
7. Perform male facial procedures.
8. Perform texture services.
9. Perform hair color services.
10. Demonstrate hairstyling and finishing techniques.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                     | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively | 7. Think critically and creatively                                  |
| 3. Demonstrate essential comp. skills  | 8. Work cooperatively   |
| 4. Demonstrate essential math skills   | 9. Value learning   |
| 5. Develop job seeking skills          |   |

**ADMISSION REQUIREMENTS**

1. Students must submit an application and \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.
4. Students must complete a functional ability form verifying that they have read and understand the functional abilities for the program.

**GRADUATION REQUIREMENTS**

1. Minimum 25 credits with a minimum of 2.0 or above.
2. \*Minimum of 2.0 ("C") or above for these major courses.  
*For a complete list of Graduation Requirements check the Student Handbook.*

**NOTES**

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).
3. This is a high-demand program with limited openings.
4. This program requires two semesters to complete 1,080 hours on a full-time basis.
5. Students are required to purchase regulation uniforms.
6. Supplies and materials are required for this program. All must be purchased prior to beginning the first day of program.
7. Students must be 18 years of age or a high school graduate to take the state licensure exam.
8. Students must complete all classroom portions of instruction before beginning any of the client services courses.
9. All new students must attend a mandatory orientation prior to registering for courses.

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
 EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.  
 For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster</b> ▶	<b>Career Pathway</b> ▶	<b>BUSINESS MANAGEMENT</b> <b>(10-102-3)</b> <i>Associate of Applied Science Degree</i> Most Courses Offered at Elkhorn, Kenosha, and Racine Campuses & Online
		General Management	

<sup>Δ</sup> Suggested Sequence	✓ Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab	
Semester 1	196-129 *	Management Orientation		1	.5-1	
	101-114	Accounting Principles		4	3-2	
	<b>OR</b>					
	101-112 } *	Accounting for Business & Excel II	(Take 101-114 OR 101-112 & 103-103)	3	3-0	
	103-103 }			1	.5-1	
	102-137 *	Business / Intro to		3	3-0	
	102-160 *	Business Law		3	3-0	
	103-143 *	Computers for Professionals	Prereq: 103-142 (See Notes 1 & 3)	3	2-2	
801-198	Speech					
801-196 <b>OR</b>	Oral/Interpersonal Communications	Prereq: 838-105	3	3-0		
Semester 2	104-101 *	Marketing Principles		3	3-0	
	104-104 *	Selling Principles		3	3-0	
	801-136	English Composition 1	Prereq: 831-103 (See Note 1)	3	3-0	
	804-123 <b>OR</b>	Math with Business Applications	Prereq: 834-109 (See Note 1)	3	3-0	
	804-115	College Technical Math 1	Prereq: 834-110 (See Note 1)	5	5-0	
	809-198	Psychology, Introduction to	Prereq: 838-105 (See Note 1 & 4)	3	3-0	
Semester 3	104-105 *	Promotion Principles		3	3-0	
	105-106 <b>*OR</b>	Business Communications	Prereq: 801-136	3	2-2	
	801-197	Technical Reporting		3	3-0	
	196-190 *	Leadership Development		3	3-0	
	196-191 *	Supervision		3	3-0	
	809-172	Diversity Studies, Introduction to	Prereq: 838-105 (See Note 1)	3	3-0	
Semester 4	102-186	Business Management Internship	Prereq: Instructor Consent		1-0-0-8	
	102-138 <b>*OR</b>	BIZ Internship	Prereq: Instructor Consent	3	0-0-0-12	
	806-112	Principles of Sustainability	Prereq: 838-105 (See Note 1)		3-0	
	102-196 *	Business Decision Management	Prereq: 101-114 OR 101-112 & 103-103; 104-101	4	3-2	
	102-121 *	Credit Management	Prereq: 804-123	3	3-0	
	809-166	Ethics: Theory & Applications, Intro	Prereq: 838-105 (See Note 1)	3	3-0	
	809-195	Economics				
	809-144 <b>OR</b>	Macroeconomics	Prereq: 838-105 (See Note 1)	3	3-0	
Electives	<b>Take 6 elective credits. Any associate degree level course may be taken as an elective.</b>			<b>6</b>		
	<b>Suggested Electives:</b>					
		103-103 Excel II (1 Cr)				
	104-170 Business Purchasing (3 Cr)	196-193 Human Resource Management (3 Cr)				
	104-194 International Marketing (3 Cr)	809-143 Microeconomics (3 Cr)				
196-189 Team Building / Problem Solving (3 Cr)	809-144 Macroeconomics (3 Cr)					
<b>Minimum Program Total Credits Required</b>				<b>69</b>		

<sup>Δ</sup>Courses may be taken out of suggested sequence as long as requisites have been met.

 <b>Effective 2015/2016</b>	<b>Career Cluster ▶</b>	<b>Career Pathway ▶</b>	<b>BUSINESS MANAGEMENT</b> <b>(10-102-3)</b> <i>Associate of Applied Science Degree</i> Most Courses Offered at Elkhorn, Kenosha, and Racine Campuses & Online
		<b>General Management</b>	

**PROGRAM DESCRIPTION**

*Business Management* is designed to provide a broad background in management theory, human resource management and behavior, accounting, marketing, and business decision making. Students learn how to effectively plan, organize, direct, and evaluate business functions essential to efficient and productive business organizations. Graduates will have the business knowledge and skills to prepare them for a management trainee, assistant, manager, or team leader position in a wide cross-section of business, government, and not-for-profit sectors of our economy.

**PROGRAM LEARNING OUTCOMES**

**Graduates of the Business Management Associate Degree Program should be able to:**

1. Plan the operations of a business.
2. Organize resources to achieve the goals of the organization.
3. Direct individuals and/or processes to meet organizational goals.
4. Control business processes.

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**ADMISSION REQUIREMENTS**

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.

**GRADUATION REQUIREMENTS**

1. Minimum 69 credits with an average of 2.0 or above.
2. \*Average of 2.0 ("C") or above for these major courses.

*For a complete list of Graduation Requirements check the Student Handbook.*

**NOTES**

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with departmental approval).
3. Formerly 103-199, PC Basics/Microsoft Office.
4. Transfer credits in Social Science may substitute for this course. See an advisor for details.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

1. Act responsibly.
2. Communicate clearly and effectively.
3. Demonstrate essential computer skills.
4. Demonstrate essential mathematical skills.
5. Develop job seeking skills.
6. Respect themselves and others as members of a diverse community.
7. Think critically and creatively.
8. Work cooperatively.
9. Value learning.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
 EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.  
 For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ . My advisor's contact information is \_\_\_\_\_ .

 <b>Effective 2015/2016</b>	<b>Career Cluster</b> ▶ 	<b>Career Pathway</b> ▶ Engineering & Technology	<b>CIVIL ENGINEERING TECHNOLOGY- HIGHWAY TECHNOLOGY</b> (10-607-4) <i>Associate of Applied Science Degree</i> Most Courses Offered at iMET Center

△ Suggested Sequence	✓ Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
Semester 1	607-103	* Introduction to Civil Engineering & Architecture		2	1-2
	607-104	* Building Material & Construction Method		3	2-2
	607-169	* Surveying Basics	Prereq: 834-110 (See Note 1)	2	1-2
	607-170	* AutoCAD for Construction Science		2	1-2
	804-115	College Technical Math 1	Prereq: 834-110 (See Note 1)	5	5-0
	809-198	Psychology, Introduction to	Prereq: 838-105 (See Note 1 & 7)	3	3-0
Semester 2	607-102	* Conflict Resolution in CET		2	1-2
	607-128	* Construction Estimating	Prereq: 607-104	3	2-2
	607-132	* Structural Mechanics	Prereq: 804-114 OR 804-115	3	2-2
	607-136	* Construction Project Management		2	1-2
	607-162	* Materials Testing	Prereq: 607-104	2	1-2
	607-187	* 3D CAD: Digital Terrain Modeling		2	1-2
	614-150	* 3D CAD: Building Information Modeling		2	1-2
Semester 3	801-136	English Composition 1	Prereq: 831-103 (See Note 1)	3	3-0
	607-117	* Geographical Information Systems I		2	1-2
	607-127	* Civil Engineering Drafting		3	1-4
	607-173	* Surveying Fundamentals	Prereq: 607-169	3	1-4
	806-154	General Physics 1	Prereq: 804-115	4	3-2
Semester 4	809-196	Sociology, Introduction to	Prereq: 838-105 (See Note 1 & 7)	3	3-0
	607-150	* Survey Construction/ Route/ Highway	Prereq: 607-173	4	2-4
	607-152	* Elements Inspections/ Contacts/ Specification	Prereq: 607-128	3	1-4
	607-154	* Sewer and Water Systems		2	2-0
	607-166	* Capstone: CET-Highway Technology	Prereq: Inst. Cons. Coreq: 607-154	1	1-0
Electives	801-197	Technical Reporting	Prereq: 801-136	3	3-0
	<b>Take 6 elective credits. Any associate degree level course may be taken as an elective.</b>			<b>6</b>	
<b>Suggested Electives:</b> 607-174 Land Surveying – Data Processing (2 Cr)    607-129 Future Trends-Civil/Architecture (2 Cr) 607-134 Steel Design and Detailing (2 Cr)        607-135 Reinforced Concrete Design and Detailing (2 Cr) 607-119 Civil Technology/Internship (1 Cr)					

△ Courses may be taken out of suggested sequence as long as requisites have been met.    **Minimum Program Total Credits Required**    **70**



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Engineering & Technology

### CIVIL ENGINEERING TECHNOLOGY- HIGHWAY TECHNOLOGY

(10-607-4)

Associate of Applied Science Degree  
Most Courses Offered at iMET Center

#### PROGRAM DESCRIPTION

*Civil Engineering Technology – Highway Technology* focuses on a wide variety of aspects within the profession of Civil Engineering – beginning with surveying, transitioning into design, and resulting in construction. The first year classes are mostly the same for programs in the Construction Sciences Group (see Note 6). Basic skills are developed and students are exposed to all areas of the various professions. This allows the student to be able to understand and communicate across the professions, plus it allows the student to discover what area they really enjoy working in. The 2nd year focuses on aspects specific to Highway and Public Works. The program is designed as a fusion of education and application; hence all the core classes are tied to real world experiences with a significant influx of participation from potential future employers. Some students use this program as a place to prepare themselves to transfer to a four year university. Most, however, use this program as a means to develop the skills that allow them to obtain a productive career in various aspects of Highway Technology.

#### PROGRAM LEARNING OUTCOMES

Graduates of the Civil Engineering Technology Program should be able to:

1. Utilize graphic techniques to produce engineering drawings.
2. Conduct standardized field and laboratory testing on civil engineering materials.
3. Utilize modern surveying methods for land measurements and/or construction layout.
4. Estimate material quantities and costs for civil engineering projects.
5. Utilize geometric elements to develop corridors.
6. Design storm systems to meet given design requirements.
7. Determine forces and stresses in elementary structural systems.
8. Employ productivity software to solve technical problems.

#### CORE ABILITIES

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                       | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively   | 7. Think critically and creatively                                  |
| 3. Demonstrate essential computer skills | 8. Work cooperatively   |
| 4. Demonstrate essential math skills     | 9. Value learning   |
| 5. Develop job seeking skills            |   |

To schedule an appointment with an advisor, please call 1-800-247-7122.

For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_.

#### ADMISSION REQUIREMENTS

1. Students must submit an application and \$30 fee.
2. Students must submit official high school, GED, or HSED transcript.
3. Students must complete reading, writing, math, and computer skills placement assessments.

#### GRADUATION REQUIREMENTS

1. Minimum 70 credits with an average of 2.0 or above.
2. \*A 2.0 ("C") or above for these specific major core courses.

For a complete list of Graduation Requirements check the Student Handbook.

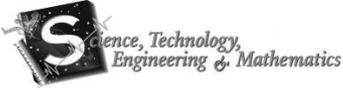
#### NOTES

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. Any course may be taken prior to enrollment in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).
3. This is a very intense and challenging program. Poor existing skills, especially poor math skills, can always be improved. As long as you have the heart and desire to succeed, the instructors will work with you.
4. Classes offered at Elkhorn Campus via NODAL delivery. See [www.gtc.edu](http://www.gtc.edu) for details.
5. Blackhawk Technical College students may take the majority of the core classes in this shared program via NODAL delivery at BTC's Janesville campus.
6. The programs in the Construction Science Group include: Civil Engineering Tech: Highway Technology, Geospatial Surveying Technician, Architectural-Structural Engineering Technician, and Civil Engineering Technology: Fresh Water Resources.
7. Transfer credits in Social Science may substitute for this course. See an advisor for details.

#### OTHER INFORMATION

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

#### EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES

 <b>Effective 2015/2016</b>	<b>Career Cluster</b> ▶ 	<b>Career Pathway</b> ▶ Engineering & Technology	<b>CIVIL ENGINEERING TECHNOLOGY – FRESH WATER RESOURCES</b> (10-607-9) Associate of Applied Science Degree Most Courses Offered at iMET Center

<b>Δ Suggested Sequence</b> ✓	<b>Course Number</b>	<b>Course Title</b>	<b>Requisites</b>	<b>Credits</b>	<b>Hrs/Wk Lec - Lab</b>
<b>Semester 1</b>	607-103	* Introduction to Civil Engineering & Architecture		2	1-2
	607-104	* Building Material & Construction Method		3	2-2
	607-169	* Surveying Basics	Prereq: 834-110 (See Note 1)	2	1-2
	607-170	* AutoCAD for Construction Sciences		2	1-2
	804-115	College Technical Math 1	Prereq: 834-110 (See Note 1)	5	5-0
	809-198	Psychology, Introduction to	Prereq: 838-105 (See Note 1 & 7)	3	3-0
<b>Semester 2</b>	607-102	* Conflict Resolution in CET		2	1-2
	607-132	* Structural Mechanics	Prereq: 804-114 OR 804-115	3	2-2
	607-136	* Construction Project Management		2	1-2
	607-187	* 3D CAD: Digital Terrain Modeling		2	1-2
	614-150	* 3D CAD: Building Information Modeling		2	1-2
	806-102	* Environmental Chemistry	Prereq: 804-107	4	3-2
<b>Semester 3</b>	801-136	English Composition 1	Prereq: 831-103 (See Note 1)	3	3-0
	607-117	* Geographical Information Systems I		2	1-2
	607-181	* Hydrology and Conservation		2	2-0
	607-182	* Sampling and Testing	Prereq: 806-102	2	1-2
	607-183	* Fresh Water Treatment	Prereq: 806-102	3	2-2
	809-196	Sociology, Introduction to	Prereq: 838-105 (See Note 1 & 7)	3	3-0
<b>Semester 4</b>	806-154	General Physics 1	Prereq: 804-115	4	3-2
	607-154	* Sewer and Water Systems		2	2-0
	607-167	* Capstone: CET-Freshwater Resources	Prereq: Inst. Consent	1	1-0
	607-184	* Environmental Impact		2	2-0
	607-185	* Waste Water Treatment		3	2-2
	607-186	* Erosion Control	Prereq: 806-102	2	1-2
<b>Electives</b>	801-197	Technical Reporting	Prereq: 801-136	3	3-0
	<b>Take 6 elective credits. Any associate degree level course may be taken as an elective.</b>			<b>6</b>	
<b>Suggested Electives:</b> 614-108 Residential Code (1 Cr)                      614-114 Commercial Code (2 Cr) 607-152 Elements of Inspections (3 Cr)              607-129 Future Trends (2 Cr) 607-119 Civil Technology/Internship (1 Cr)					

Δ Courses may be taken out of suggested sequence as long as requisites have been met. **Minimum Program Total Credits Required 70**



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Engineering & Technology

## CIVIL ENGINEERING TECHNOLOGY – FRESH WATER RESOURCES

(10-607-9)

Associate of Applied Science Degree  
Most Courses Offered at iMET Center

### PROGRAM DESCRIPTION

*Civil Engineering Technology - Fresh Water Resources* focuses on a wide variety of aspects within the profession of Civil Engineering – beginning with surveying, transitioning into design, and resulting in construction. The first year classes are mostly the same for programs in the Construction Sciences Group (see Note 6). Basic skills are developed and students are exposed to all areas of the various professions. This allows the student to be able to understand and communicate across the professions, plus it allows the student to discover what area they really enjoy working in. The 2nd year focuses on aspects specific to fresh water, from rainfall to testing to cleaning. The program is designed as a fusion of education and application; hence all the core classes are tied to real world experiences with a significant influx of participation from potential future employers. Some students use this program as a place to prepare themselves to transfer to a 4 year university. Most, however, use this program as a means to develop the skills that allow them to obtain a productive career in various aspects of Fresh Water Resources.

### PROGRAM LEARNING OUTCOMES

Graduates of the Fresh Water Resources Program should be able to:

1. Exhibit skills in multiple CAD environments.
2. Measure field locations
3. Develop 3D computer models, maps, and drawings based field measurements.
4. Exhibit proper sampling and testing skills.
5. Acquire fresh water knowledge to aid in obtaining appropriate certifications.
6. Differentiate between the various areas and functions within the profession.
7. Understand quantities, materials, equipment and methods used in the profession.
8. Exhibit proper and clear documentation and reporting skills
9. Exhibit individual ability to properly solve a problem
10. Work cooperatively in groups

### CORE ABILITIES

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                       | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively   | 7. Think critically and creatively                                  |
| 3. Demonstrate essential computer skills | 8. Work cooperatively   |
| 4. Demonstrate essential math skills     | 9. Value learning   |
| 5. Develop job seeking skills            |   |

To schedule an appointment with an advisor, please call 1-800-247-7122.

For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_.

### ADMISSION REQUIREMENTS

1. Students must submit an application and \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.

### GRADUATION REQUIREMENTS

1. Minimum 70 Credits with an average of 2.0 or above.
2. \*A 2.0 ("C") or above for these specific major core courses.

For a complete list of Graduation Requirements check the Student Handbook.

### NOTES

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. Any course may be taken prior to enrollment in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).
3. This is a very intense and challenging program. Poor existing skills, especially poor math skills, can always be improved. As long as you have the heart and desire to succeed, the instructors will work with you.
4. Classes offered at Elkhorn Campus via NODAL delivery. See [www.gtc.edu](http://www.gtc.edu) for details.
5. Blackhawk Technical College students may take the majority of the core classes in this shared program via NODAL delivery at BTC's Janesville campus.
6. The programs in the Construction Science Group include: Civil Engineering Tech: Highway Technology, Geospatial Surveying Technician, Architectural-Structural Engineering Technician, and Civil Engineering Technology: Fresh Water Resources.
7. Transfer credits in Social Science may substitute for this course. See an advisor for details.

### OTHER INFORMATION

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

 <b>Effective 2015/2016</b>	<b>Career Cluster ▶</b> 	<b>Career Pathway ▶</b> Production	<b>CNC PRODUCTION TECHNICIAN</b> (31-444-2) <i>Technical Diploma</i> Most Courses Offered at Racine Campus

△ Suggested Sequence	✓	Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
<b>Semester 1</b>		444-331	* CNC Machining Technology	Coreq: 444-337	3	3-3
		444-337	* Fund. of Blueprint and Shop Safety		3	4-2
		444-338	* Fund. of CNC Machine Application	Coreq: 444-337	4	4-4
		444-339	* Gauging and Quality Control		3	4-2
		801-302	Speaking Principles		1	2-0
		804-370	Mathematics I, Applied	Prereq: 854-760 (See Note 1)	2	4-0
<b>Semester 2</b>		421-316	* Blueprint Reading, Advanced	Prereq: 444-337	2	2-2
		444-333	* Fund. of CNC Turning Applications	Prereq: 444-331 Coreq: 421-316; 804-371	3	2-4
		444-334	* Fund. Of CNC Milling Applications	Prereq: 444-331 Coreq: 421-316; 804-371	3	2-4
		444-335	* CNC Lathe Set-Up	Coreq: 444-333	3	2-4
		444-336	* CNC Mill Set-Up	Coreq: 444-334	3	2-4
		801-301	Writing Principles	Prereq: 851-760 (See Note 1)	1	2-0
		804-371	Mathematics II, Applied	Prereq: 804-370	1	2-0

**Minimum Program Total Credits Required      32**

△ Courses may be taken out of suggested sequence as long as requisites have been met.

Federal regulations require disclosure of the following information for this program:

Books and Supplies	Resident Tuition and Fees	Median Loan Debt <sup>1</sup>	On-time Graduation Rate <sup>2</sup>	U.S. Department of Labor Standard Occupational (SOC) Code & Occupational Profile – available at <a href="http://www.onetonline.org">http://www.onetonline.org</a>
\$350	\$5,000	\$0	25.0%	Numerical Tool & Process Control Programmer (51-4012) & CNC Machine Tool Operators (51-4011)

<sup>1</sup> **Median Loan Debt:** Based on eligibility, students can receive loans to help pay for the total cost of attending college. The cost is comprised of tuition and fees, books and supplies, transportation costs, room and board, and miscellaneous personal expenses. Therefore, medial loan debt may be more than the listed tuition, fees, books, and supplies cost.

<sup>2</sup> **On-time Graduation Rate:** Dependent upon students' choice to attend college part-time or full-time. Students decide to attend college part-time for a number of reasons including work schedule/demands and family responsibilities. 76 percent of students at Gateway attend part-time, therefore taking longer to complete their chosen program of study.



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Production

**CNC PRODUCTION TECHNICIAN**

(31-444-2)

Technical Diploma

Most Courses Offered at Racine Campus

**PROGRAM DESCRIPTION**

CNC Production Technician is a well rounded approach to becoming a CNC Technician. We teach the skills necessary for students to become qualified set-up technicians. Students are taught the basics of G-Code programming, proper M-Code usage, and the required steps to efficiently set fixture and tool offsets. Students create their own CNC programs and DNC to the proper machine tool. An excellent overall knowledge of CNC Controls is achieved by working on several different brand name controls. Overall, students will be proficient at programming, set-up, operation, editing, and part inspection.

**PROGRAM LEARNING OUTCOMES**

Graduates of the CNC Production Technician Technical Diploma Program should be able to:

1. Develop an inspection plan and inspect simple parts using precision tools and techniques. Prepare reports on the compliance of the parts.
2. Keep the duty station clean and safe for work. Keep the tools, workbenches, and manual equipment clean, maintained, and safe for work.
3. Interpret blueprints to determine part details and specifications.
4. Set up and operate a CNC milling center.
5. Set up and operate turning centers.
6. Determine common programming codes and program format.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                     | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively | 7. Think critically and creatively                                  |
| 3. Demonstrate essential comp. skills  | 8. Work cooperatively   |
| 4. Demonstrate essential math skills   | 9. Value learning   |
| 5. Develop job seeking skills          |   |

**ADMISSION REQUIREMENTS**

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.

**GRADUATION REQUIREMENTS**

1. Minimum 32 credits with an average of 2.0 or above.
2. \*Average of 2.0 ("C") or above for these major courses.

*For a complete list of Graduation Requirements check the Student Handbook.*

**NOTES**

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. Safety glasses (marked Z-87) are required in labs. If prescription glasses are needed, allow a minimum of 90 days.
3. A hand calculator capable of trigonometric functions is required for 804-370; the cost is approximately \$25.
5. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.  
For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_. My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster ▶</b> 	<b>Career Pathway ▶</b> Personal Care Services	<b>COSMETOLOGY</b> (31-502-1) <i>Technical Diploma</i> Most Courses Offered at Racine Campus

<sup>Δ</sup> Suggested Sequence	✓	Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
Semester 1		502-312 *	Intro to Barber/Cosmetology	Prereq: Instructor Consent	1	2-0
		502-301 *	Shampoo Treatment	Prereq: Instructor Consent	1	1-1
		502-324 *	Barber/Cosmetology Industry		2	4-0
		502-366 *	Women's Haircutting		2	2-2
		502-352 *	Men's Haircutting	Prereq: 502-366	2	2-2
		502-353 *	Perm Techniques		2	2-2
		502-348 *	Chemical Straightening	Prereq: 502-353	2	2-2
		502-349 *	Facials		2	2-2
		502-320 *	Basic Manicuring		1	1-1
Semester 2		502-345 *	Basic Hair Color	Prereq: Instructor Consent	2	2-2
		502-350 *	Hair Design 1	Prereq: Instructor Consent	2	2-2
		502-347 *	Bleaching	Prereq: 502-345	2	2-2
		502-351 *	Hair Design 2		2	2-2
		502-354 *	Salon Service 1	Prereq: (See Note 11) & Inst. Consent	1	0-0-3
		502-355 *	Salon Service 2	Prereq: (See Note 11) & Inst. Consent	1	0-0-3
		502-356 *	Salon Service 3	Prereq: (See Note 11) & Inst. Consent	1	0-0-3
		502-367 *	Salon Service 4	Prereq: (See Note 11) & Inst. Consent	1	0-0-3
		502-308 *	Salon Service 5	Prereq: (See Note 11) & Inst. Consent	1	0-0-3
		502-309 *	Salon Service 6	Prereq: (See Note 11) & Inst. Consent	1	0-0-3
Semester 3		502-310 *	Salon Service 7	Prereq: (See Note 11) & Inst. Consent	1	0-0-3
		502-361 *	Salon Service 8	Prereq: (See Note 11) & Inst. Consent	1	0-0-3
		502-362 *	Salon Service 9	Prereq: (See Note 11) & Inst. Consent	1	0-0-3
		502-311 *	Salon Service 10	Prereq: (See Note 11) & Inst. Consent	1	0-0-3
		502-364 *	Salon Service 11	Prereq: (See Note 11) & Inst. Consent	1	0-0-3
		502-365 *	Salon Service 12	Prereq: (See Note 11) & Inst. Consent	1	0-0-3
		502-371 *	Mock Board Theory	Prereq: Instructor Consent	1	2-0
		502-370 *	Mock Board Skills	Prereq: Instructor Consent	2	2-2

<sup>Δ</sup>Courses may be taken out of suggested sequence as long as requisites have been met. **Minimum Program Total Credits Required 38**  
**Enrollment Begins in fall and spring ONLY, beginning with the Semester 1 Sequence.**

Federal regulations require disclosure of the following information for this program:

Books and Supplies	Resident Tuition and Fees	Median Loan Debt <sup>1</sup>	On-time Graduation Rate <sup>2</sup>	U.S. Department of Labor Standard Occupational (SOC) Code & Occupational Profile – available at <a href="http://www.onetonline.org">http://www.onetonline.org</a>
\$6,020	\$6,410	\$4,500	0%	Hairdresser, Hairstylists, & Cosmetologists (39-5012)

<sup>1</sup> **Median Loan Debt:** Based on eligibility, students can receive loans to help pay for the total cost of attending college. The cost is comprised of tuition and fees, books and supplies, transportation costs, room and board, and miscellaneous personal expenses. Therefore, medial loan debt may be more than the listed tuition, fees, books, and supplies cost.

<sup>2</sup> **On-time Graduation Rate:** Dependent upon students' choice to attend college part-time or full-time. Students decide to attend college part-time for a number of reasons including work schedule/demands and family responsibilities. 76 percent of students at Gateway attend part-time, therefore taking longer to complete their chosen program of study.



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Personal Care Services

**COSMETOLOGY**

(31-502-1)

Technical Diploma

Most Courses Offered at Racine Campus

**PROGRAM DESCRIPTION**

Exciting careers are open to the licensed, experienced *Cosmetologists*. In addition to salon ownership, salon management, and specialization of a service, one can choose from positions in sales, advertising, research, education, and makeup artistry. The possibilities are unlimited and so is the income potential. The Cosmetology program is a three-semester Diploma program consisting of 1,550 hours of instruction. Students attend classes Monday through Friday as scheduled, and may attend full or part-time. Students receive instruction in Cosmetology skills such as hair designing, haircutting, hair coloring, permanent waving, and manicuring. Classes in makeup artistry, sculptured nails, color analysis, and salon management are also included.

**PROGRAM LEARNING OUTCOMES**

Graduates of the Cosmetology Technical Diploma Program should be able to:

1. Perform hair coloring services.
2. Perform chemical relaxing services.
3. Perform hair sculpting services.
4. Perform permanent wave services.
5. Demonstrate styling services.
6. Demonstrate nail services.
7. Demonstrate facial services.
8. Demonstrate sales techniques.
9. Demonstrate basic theory knowledge required in the field.
10. Demonstrate interpersonal skills for success.
11. Develop strategies to market products and services.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                     | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively | 7. Think critically and creatively                                  |
| 3. Demonstrate essential comp. skills  | 8. Work cooperatively   |
| 4. Demonstrate essential math skills   | 9. Value learning   |
| 5. Develop job seeking skills          |   |

**ADMISSION REQUIREMENTS**

1. Students must submit an application and \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.
4. Students must complete a functional ability form verifying they have read and understand the functional abilities for the program.

**GRADUATION REQUIREMENTS**

1. Minimum 38 credits with a minimum of 2.0 or above.
2. \*Minimum of 2.0 ("C") or above for these major courses.

For a complete list of Graduation Requirements check the Student Handbook.

**NOTES**

1. This is a high demand program with limited openings.
2. Program requires three semesters to complete 1550 hours on a full-time basis. Part-time attendance will extend student's training time. Please contact an advisor for details.
3. Students are required to purchase regulation uniforms.
4. Supplies and materials are required for this program. All must be purchased prior to beginning the first day of the program.
5. Students must be 18 years of age or a high school graduate to take the state licensure exam.
6. 502-338, Manicure/Nail Technician II is an optional course for State Manicurist/Nail Technician license.
7. Students must complete all classroom portions of a course before beginning any of the Salon Services or Mock Board courses.
8. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).
9. All new students must attend a mandatory orientation prior to registering for courses.
10. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
11. These courses require the following prerequisites: 502-301; 502-345; 502-320; 502-347; 502-348; 502-349; 502-350; 502-351; 502-352; 502-353; and 502-366.

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.  
For a complete list of course descriptions (and possible online courses) for this program, please consult our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_

 <p><b>GATEWAY</b> TECHNICAL COLLEGE Effective 2015/2016</p>	<p><b>Career Cluster ▶</b></p>	<p><b>Career Pathway ▶</b></p>	<p><b>CRIMINAL JUSTICE-LAW ENFORCEMENT</b> (10-504-1) <i>Associate of Applied Science Degree</i> Most Courses Offered at Elkhorn, Kenosha, and Racine Campuses</p>
		<p>Law Enforcement Services</p>	

<sup>Δ</sup> Suggested Sequence	✓	Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
Semester 1		504-900 *	Intro to Criminal Justice		3	3-0
		504-902 *	Criminal Law		3	3-0
		801-136	English Composition 1	Prereq: 831-103 (See Note 1)	3	3-0
		801-198	Speech	Prereq: 838-105 (See Note 1)	3	3-0
		804-107	College Mathematics	Prereq: 834-109 (See Note 1 & 5)	3	3-0
		809-198	Psychology, Introduction to	Prereq: 838-105 (See Note 1 & 8)	3	3-0
Semester 2		103-143	Computers for Professionals	Prereq: 103-142 (See Notes 1 & 6)	3	2-2
		504-908 *	Traffic Theory		3	3-0
		504-904 *	Juvenile Law		3	3-0
		504-141 *	Interview, Interrogations, Confessions		3	3-0
		801-196	Oral/Interpersonal Communication	Prereq: 838-105 (See Note 1)	3	3-0
		809-159	Psychology, Abnormal	Prereq: 809-198	3	3-0
Semester 3		504-907 *	Community Policing Strategies	Prereq: 504-900	3	3-0
		504-903 *	Professional Communications		3	3-0
		504-117 *	Police Administration	Prereq: 504-900	3	3-0
		504-148 *	Rules of Evidence	Prereq: 504-900	3	3-0
		809-196	Sociology, Introduction to	Prereq: 838-105 (See Note 1 & 8)	3	3-0
Semester 4		504-901 *	Constitutional Law	Prereq: 504-902 Coreq: 504-148	3	3-0
		504-905 *	Report Writing	Prereq: 504-902; 801-136	3	3-0
		504-906 *	Criminal Investigation Theory	Prereq: 504-902; 504-900 Coreq: 504-148	3	2-2
		802-124	Spanish I	Prereq: 838-105 (See Note 1)	4	4-0
		504-176	<b>OR</b> Spanish for Law Enforcement		3	3-0
Electives		<b>Take 6 elective credits. Any associate degree level course may be taken as an elective.</b>				<b>6</b>
		<b>Suggested Electives:</b>				
		504-116 Civil Law (3 Cr)	504-173 Cyber Crime (3 Cr)			
		504-124 Forensic Science (3 Cr)	504-174 Intro to Security (3 Cr)			
		504-175 Terrorism / Homeland Security (3 Cr)	802-125 Spanish II (4 Cr)			
	504-152 Police Internship (3 Cr)	802-119 Spanish III (4 Cr)				
<b>Minimum Program Total Credits Required</b>					<b>69</b>	

<sup>Δ</sup>Courses may be taken out of suggested sequence as long as requisites have been met.

 <b>Effective 2015/2016</b>	<b>Career Cluster ▶</b>	<b>Career Pathway ▶</b>	<b>CRIMINAL JUSTICE-LAW ENFORCEMENT</b> (10-504-1) <i>Associate of Applied Science Degree</i> Most Courses Offered at Elkhorn, Kenosha, and Racine Campuses
		<b>Law Enforcement Services</b>	

**PROGRAM DESCRIPTION**

*Criminal Justice-Law Enforcement* is an accredited two-year associate degree program that prepares students for positions in a variety of law enforcement careers at the state, local, and federal levels, as well as in the field of private security. Students study the law enforcement field plus physical and behavioral sciences to meet the demands of the police profession, including criminal investigation, traffic law, patrol procedures, and scientific crime laboratory.

**PROGRAM LEARNING OUTCOMES**

**Graduates of the Criminal Justice Associate Degree Program should be able to:**

1. Think critically.
2. Manage emergencies.
3. Communicate effectively.
4. Demonstrate professionalism.
5. Conduct investigations.
6. Interact with others.
7. Demonstrate tactical skills (applies only to occupational certifications).

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                     | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively | 7. Think critically and creatively                                  |
| 3. Demonstrate essential comp. skills  | 8. Work cooperatively   |
| 4. Demonstrate essential math skills   | 9. Value learning   |
| 5. Develop job seeking skills          |   |

**ADMISSION REQUIREMENTS**

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript including a graduation or passing date.

**GRADUATION REQUIREMENTS**

1. Minimum 69 credits with an average of 2.0 or above.
2. \*A minimum grade of 2.0 ("C") or above for these major courses.

*For a complete list of Graduation Requirements check the Student Handbook.*

**NOTES**

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. Students who complete this associate degree and who wish to be pre-Certified as Wisconsin Law Enforcement Officers must successfully complete an approved Wisconsin Law Enforcement Academy – 520 hour curriculum. This certifiable status is valid for the period of 2 years. Additional Admission requirements pursuant to the Wisconsin Law Enforcement Standards Board will be applicable to pre-Certification.
3. Law Enforcement Academy: Students must attend and successfully complete all components of this program within the specified time period (520hrs – Full time program 15 weeks) to achieve the status of "Certifiable Law Enforcement Officer" according to the State of Wisconsin Law Enforcement Standards Board.
4. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).
5. Formerly 804-106, Intro to College Math.
6. Formerly 103-199, PC Basics/Microsoft Office.3
7. Students wishing to demonstrate proficiency in Spanish are encouraged to enroll in 90-801-3 Spanish Proficiency for Law Enforcement (internal certificate). See an advisor for details.
8. Transfer credits in Social Science may substitute for this course. See an advisor for details.

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.  
 For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ . My advisor's contact information is \_\_\_\_\_ .

 <b>Effective 2015/2016</b>	<b>Career Cluster</b> ▶	<b>Career Pathway</b> ▶	<b>CRIMINAL JUSTICE – LAW ENFORCEMENT ACADEMY</b> (30-504-1) <i>Technical Diploma</i> Most Courses Offered at Kenosha Campus
		Law Enforcement Services	

<sup>Δ</sup> Suggested Sequence	✓	Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
Semester 1		504-301	Relational Skills		3	5.5 - 0
		504-302	Patrol Procedures		4	1-7
		504-300	Policing in America		1	1.5 - .5
		504-304	The Legal Context		2	3-0
		504-303	Investigations		2	3-0
		531-323	Law Enforcement Emergency Response		1	2-0
		504-305	Tactical Skills		3	1.5-4.5

**Minimum Program Total Credits Required      16**

<sup>Δ</sup>Courses may be taken out of suggested sequence as long as requisites have been met.

Federal regulations require disclosure of the following information for this program:

Books and Supplies	Resident Tuition and Fees	Median Loan Debt <sup>1</sup>	On-time Graduation Rate <sup>2</sup>	U.S. Department of Labor Standard Occupational (SOC) Code & Occupational Profile – available at <a href="http://www.onetonline.org">http://www.onetonline.org</a>
\$2,200	\$2,440	\$0	100%	Police Patrol Officers (33-3051)

<sup>1</sup> **Median Loan Debt:** Based on eligibility, students can receive loans to help pay for the total cost of attending college. The cost is comprised of tuition and fees, books and supplies, transportation costs, room and board, and miscellaneous personal expenses. Therefore, medial loan debt may be more than the listed tuition, fees, books, and supplies cost.

<sup>2</sup> **On-time Graduation Rate:** Dependent upon students' choice to attend college part-time or full-time. Students decide to attend college part-time for a number of reasons including work schedule/demands and family responsibilities. 76 percent of students at Gateway attend part-time, therefore taking longer to complete their chosen program of study.



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Law Enforcement Services

## CRIMINAL JUSTICE – LAW ENFORCEMENT ACADEMY

(30-504-1)

Technical Diploma

Most Courses Offered at Kenosha Campus

### PROGRAM DESCRIPTION

*Criminal Justice Law Enforcement Academy*, 520 Hour Basic Training Course, is a 13 week, full time Law Enforcement Academy designed to prepare the candidate to perform the essential functions of a law enforcement officer in the State of Wisconsin. Completion of the Law Enforcement Officer 520 Hour Basic Training Course meets State of Wisconsin Law Enforcement Standards Board requirements for certification. Employed candidates become certified upon presentation of their Academy transcripts to the Standards Board and upon Board approval. Candidates seeking employment have two years from completion of the Basic Training Course to secure a law enforcement position in order to become certified.

### ADMISSION REQUIREMENTS

#### Step 1:

1. Students must submit an application and \$30 fee.
2. Students must submit official high school, GED, or HSED transcript including a graduation or passing date.
3. Students must submit an official college transcript verifying an associate degree or higher in Criminal Justice or at least 60 postsecondary credits earned. Students earning credits at Gateway Technical College do not need a Gateway transcript but should note the completion of credits on their application.
4. Students must complete a Background Disclosure form and must request and pay for a background check with a driving record. Applicants of this program are subject to a review of their criminal backgrounds. Positive background checks may negatively impact your ability to pursue this career at Gateway Technical College. Each case will be individually evaluated based on all available evidence provided to the college.
5. Students must complete a functional ability form verifying that they have read and understand the functional abilities for the program.
6. Students must complete DJLE-327 Application for Enrollment form.
7. Students must submit a copy of a valid driver's license.
8. Students must submit Annotation of Birth Facts form.

#### Step 2:

1. Students will participate in an interview. Selected candidates will need to submit a DJLE-332 Physician's Assessment form.

### GRADUATION REQUIREMENTS

1. Minimum grade of 2.0 ("C") or above in all courses.
2. Satisfactorily demonstrate proficiency in all hands-on unified tactical areas of training (DAAT, EVOG, Firearms, Vehicle Contacts)
3. Pass a 32-hour scenario-based final assessment exercise.

For a complete list of Graduation Requirements check the Student Handbook.

### NOTES

1. For detailed information about this program please visit the Law Enforcement website: [www.gtc.edu/LEAcademy](http://www.gtc.edu/LEAcademy)
2. Please note that your program may require additional fee(s) for: Criminal Background Check, Medical Documentation Manager, and/or Drug Testing.
3. Background checks for the Law Enforcement Academy program are valid for 6 months. Students must request a current background check every 6 months they are enrolled or re-apply.

### PROGRAM LEARNING OUTCOMES

Graduates of the Criminal Justice – Law Enforcement Academy Technical Diploma Program should be able to:

1. Think critically
2. Manage emergencies
3. Communicate effectively
4. Demonstrate professionalism
5. Conduct investigations
6. Interact with others
7. Demonstrates tactical skills

### CORE ABILITIES

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

1. Act responsibly
2. Communicate clearly and effectively
3. Demonstrate essential comp. skills
4. Demonstrate essential math skills
5. Develop job seeking skills
6. Respect themselves and others as a member of a diverse community
7. Think critically and creatively
8. Work cooperatively
9. Value learning

### OTHER INFORMATION

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.  
For a complete list of course descriptions (and possible online courses) for this program, please consult our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster ▶</b> 	<b>Career Pathway ▶</b> Restaurants and Food/Bev. Services	<b>CULINARY ARTS</b> (10-316-1) <i>Associate of Applied Science Degree</i> Most Courses Offered at Racine Campus

△ Suggested Sequence	✓	Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
<b>Semester 1</b>		316-104 *	Short Order Deli	Coreq: 316-170; 316-131 (See Note 4)	2	0-4
		316-130 *	Nutrition	(See Note 4)	2	2-0
		316-131 *	Culinary Skills I	Coreq: 316-170 (See Note 4)	4	2-4
		316-140 *	Basic Baking Techniques		3	1-4
		316-170 *	Sanitation and Hygiene	(See Note 4)	1	1-0
		801-196	Oral/Interpersonal Communication	Prereq: 838-105 (See Notes 1 & 4)	3	3-0
		804-123	Math with Business Apps	Prereq: 834-109 (See Note 1 & 4)	3	3-0
<b>Semester 2</b>		101-112	Accounting for Business		3	3-0
		103-143	Computers for Professionals	Prereq: 103-142 (See Notes 1 & 5)	3	2-2
		316-132 *	Culinary Skills II	Prereq: 316-131	4	1-6
		316-133 *	Menu Planning, Purchasing, Cost Control		3	3-0
		316-134 *	Garde Manger		1	0-2
		809-198	Psychology, Introduction to	Prereq: 838-105 (See Note 1 & 6)	3	3-0
<b>Semester 3</b>		316-105 *	International Buffets	Prereq: 316-132	4	1-6
		316-135 *	Catering/Banquets	Prereq: 316-132	2	1-2
		316-190 *	Food Service Supervision		3	3-0
		801-136	English Composition 1	Prereq: 831-103 (See Note 1)	3	3-0
		809-166	Ethics: Theory & Applications, Intro to	Prereq: 838-105 (See Note 1)	3	3-0
<b>Semester 4</b>		196-123	Problem Solving/Decision Making		2	2-0
		316-125 *	Fine Dining	Prereq: 316-131; 316-132; 316-135	4	1-6
		809-195	Economics	Prereq: 838-105 (See Note 1)	3	3-0
		809-196	Sociology, Introduction to	Prereq: 838-105 (See Note 1 & 6)	3	3-0
<b>Electives</b>	<b>Take 6 elective credits. Any associate degree level course may be taken as an elective.</b>				<b>6</b>	
	<b>Suggested Electives:</b>					
		104-101 Marketing Principles (3 Cr)		196-190 Leadership Development (3 Cr)		
		316-136 Culinary Competition I (1 Cr)				
	316-137 Culinary Competition II (1 Cr)					
<b>Minimum Program Total Credits Required</b>					<b>68</b>	

△ Courses may be taken out of suggested sequence as long as requisites have been met.



Effective 2015/2016

Career Cluster ►



Career Pathway ►

Restaurants and Food/Bev. Services

**CULINARY ARTS**

(10-316-1)

Associate of Applied Science Degree  
Most Courses Offered at Racine Campus

**PROGRAM DESCRIPTION**

Culinary Arts places emphasis on food purchasing, specialty food preparation, dining room operation, and quantity food preparation sanitation. In addition to the business aspects of restaurant operations, this program includes extensive hands-on preparation of different foods. Students completing the program are certified in sanitation and qualified for employment as cafeteria managers, restaurant cooks, concession managers, and specialty cooks.

**ADMISSION REQUIREMENTS**

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must complete a functional ability form verifying they have read and understand the functional abilities for the program.
4. Students must submit official high school, GED, or HSED transcripts.

**GRADUATION REQUIREMENTS**

1. Minimum 68 credits with an average of 2.0 or above.
2. \*Average of 2.0 ("C") or above for these major courses.

*For a complete list of Graduation Requirements check the Student Handbook.*

**PROGRAM LEARNING OUTCOMES**

Graduates of the Culinary Arts Associate Degree Program should be able to:

1. Apply principles of safety and sanitation in food service operations.
2. Apply principles of nutrition.
3. Demonstrate culinary skills.
4. Manage food service operations.
5. Plan menus.
6. Analyze food service financial information.
7. Relate food service operations to sustainability.

**NOTES**

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. A uniform and physical are required for this program.
3. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).
4. Students must submit all health and immunization forms prior to the first day of attending all first-semester courses.
5. Formerly 103-199, PC Basics/Microsoft Office.
6. Transfer credits in Social Science may substitute for this course. See an advisor for details.
7. Please note that your program may require additional fee(s) for: Criminal Background Check, Medical Document Manager, and/or Drug Testing.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                           | 5. Develop job seeking skills                                       |
| 2. Communicate clearly and effectively       | 6. Respect themselves and others as a member of a diverse community |
| 3. Demonstrate essential computer skills     | 7. Think critically and creatively                                  |
| 4. Demonstrate essential mathematical skills | 8. Work cooperatively   |
|  | 9. Value learning   |

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.

For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster ▶</b> 	<b>Career Pathway ▶</b> Therapeutic Services	<b>DENTAL ASSISTANT</b> (31-508-1) <i>Technical Diploma</i> Most Courses Offered at Kenosha Campus

△ Suggested Sequence	✓ Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
<b>Semester 1</b>	508-101	* Dental Health Safety	Prereq: Instructor Consent (See Note 4&6)	1	0-2
	508-103	* Dental Radiography	Prereq: Instructor Consent (See Note 4)	2	1-0-3
	508-113	* Dental Materials	Prereq: Instructor Consent (See Note 4)	2	1-2
	508-302	* Dental Chairside	Prereq: Instructor Consent; Coreq: 508-101; 508-113; 508-304 (See Note 4)	5	6-4
	508-304	* Dental and General Anatomy	Prereq: Instructor Consent (See Note 4)	2	4-0
	508-306	* Dental Assistant Clinicals	Prereq: Instructor Consent (See Note 4&6)	3	0-0-9
	508-307	* Dental Assistant Professionalism	Prereq: Inst. Consent (See Notes 1 & 4)	1	2-0
<b>Semester 2</b>	508-120	* Dental Office Management	Prereq: 508-307 (See Note 1)	2	2-0
	508-308	* Dental Chairside – Advanced	Prereq: 508-302	5	5-4
	508-309	* Dental Laboratory Procedure	Prereq: 508-113	4	4-4
	508-310	* Dental Radiography – Advanced	Prereq: 508-103	1	0-2
	508-311	* Dental Assistant Clinicals - Advanced	Prereq: 508-306 (See Note 6)	2	0-0-8
	801-301	Writing Principles	Prereq: 851-760 (See Note 2&7)	1	2-0
	801-302	Speaking Principles	(See Note 2&7)	1	2-0

**Minimum Program Total Credits Required      32**

The Dental Assistant program is only offered on a full-time basis, Monday through Friday. Travel is required to clinical sites. Students must provide their own transportation.

Federal regulations require disclosure of the following information for this program:

Books and Supplies	Resident Tuition and Fees	Median Loan Debt <sup>1</sup>	On-Time Graduation Rate <sup>2</sup>	U.S. Department of Labor Standard Occupational (SOC) Code & Occupational Profile – available at <a href="http://www.onetonline.org">http://www.onetonline.org</a>
\$2,325	\$5,265	\$5,179	18.0%	<a href="#">Dental Assistants (31-9091)</a>

<sup>1</sup> **Median Loan Debt:** Based on eligibility, students can receive loans to help pay for the total cost of attending college. The cost is comprised of tuition and fees, books and supplies, transportation costs, room and board, and miscellaneous personal expenses. Therefore, medial loan debt may be more than the listed tuition, fees, books, and supplies cost.

<sup>2</sup> **On-time Graduation Rate:** Dependent upon students' choice to attend college part-time or full-time. Students decide to attend college part-time for a number of reasons including work schedule/demands and family responsibilities. 76 percent of students at Gateway attend part-time, therefore taking longer to complete their chosen program of study.



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Therapeutic Services

**DENTAL ASSISTANT**

(31-508-1)

Technical Diploma

Most Courses Offered at Kenosha Campus

**PROGRAM DESCRIPTION**

Dental Assistant program prepares graduates to work with dentists as they examine and treat patients. Dental Assistants with documented skills also may carry out a variety of laboratory, clinical and office duties. Some dental assistants manage the office and are responsible for patient scheduling and bookkeeping functions. Graduates receive a technical diploma and are eligible to write the certification examination of the Dental Assisting National Board. Most dental assistants work in general or specialized dental offices, either for individual dentists or for groups of dentists. Some dental assistants may choose to work for insurance companies, dental laboratories, or dental supply companies. The dental assistant also may find employment with federal agencies such as the Veterans' Administration, United States Public Health Services, the Armed Forces, or a state, county or city health facility.

**PROGRAM LEARNING OUTCOMES**

Graduates of the Dental Assistant Technical Diploma Program should be able to:

1. Perform a variety of advanced supportive dental procedures.
2. Manage infection and hazard control.
3. Produce diagnostic intraoral and extraoral radiographs on a variety of patients.
4. Perform advanced dental laboratory procedures.
5. Demonstrate professional behaviors, ethics, and appearance.
6. Perform dental office business procedures.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                     | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively | 7. Think critically and creatively                                  |
| 3. Demonstrate essential comp. skills  | 8. Work cooperatively   |
| 4. Demonstrate essential math skills   | 9. Value learning   |
| 5. Develop job seeking skills          |   |

**ADMISSION REQUIREMENTS**

1. Students must submit an application and \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript including a graduation or passing date.
4. Students must complete a Background Disclosure form and must request and pay for a background check. Applicants for all health science programs are subject to a review of their criminal backgrounds. Positive background checks may negatively impact your ability to pursue a health career at Gateway Technical College. Each case will be individually evaluated based on all available evidence provided to the college.
5. Students must complete a functional ability form verifying they have read and understand the functional abilities for the program.
6. Students must have current CPR for the Healthcare Provider certification.

**GRADUATION REQUIREMENTS**

1. Minimum 32 credits with an average of 2.0 or above.
2. \*Minimum Grade of 2.0 ("C") or above for these major courses.  
*For a complete list of Graduation Requirements check the Student Handbook.*

**NOTES**

1. This course will be taught online. Basic computer literacy and Blackboard knowledge are highly recommended.
2. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
3. Any non-508 course may be taken prior to entry in the program, assuming requisites have been satisfied (or waived with departmental approval).
4. Students will be selected for their initial core 508 courses using a petition process. Students must meet petition requirements prior to enrolling in 508 courses.
5. This program has a second-tier admission process for clinical/practicum/program courses called petitioning. Students are selected based on completion of academic eligibility requirements and district residency. See <https://www.gtc.edu/student-services/admissions/what-petitioning> for additional information.
6. Students must provide CPR for the Healthcare Provider certification prior to enrollment.
7. Students may take 801-196 Oral/Interpersonal Communication in place of 801-301 & 801-302.
8. Please note that your program may require one or all of the following additional fee(s) for: Criminal Background Check, Medical Documentation Manager, and/or Drug Testing.

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.

For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_

 <b>Effective 2015/2016</b>	<b>Career Cluster</b> ▶ 	<b>Career Pathway</b> ▶ Facility & Mobile Equipment Maintenance	<b>DIESEL EQUIPMENT MECHANIC</b> (31-412-1) <i>Technical Diploma</i> Most Courses Offered at Horizon Center

△ Suggested Sequence	✓	Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
<b>Semester 1</b>		412-111 *	Diesel Maintenance Fundamentals		2	1-2
		412-107 *	Diesel Electricity 1	Prereq: 412-111	4	2-4
		412-114 *	Diesel Heating, Cooling & Air Cond.	Prereq: 412-111; 107	3	2-2
		412-117 *	Diesel Suspension & Steering Systems	Prereq: 412-111	3	1-4
		804-107	College Mathematics	Prereq: 834-109 (See Note 1)	3	3-0
		801-136	English Composition 1	Prereq: 831-103 (See Note 1)	3	3-0
<b>Semester 2</b>		412-106 *	Diesel Brake Systems	Prereq: 412-111; 117	4	2-4
		412-112 *	Diesel Drive Trains	Prereq: 412-111; 106	4	2-4
		412-116 *	Diesel Preventative Maintenance	Prereq: 412-111; 106; 112	3	1-4
		801-197	Technical Reporting	Prereq: 801-136	3	3-0

**Minimum Program Total Credits Required      32**

△ Courses may be taken out of suggested sequence as long as requisites have been met.

Federal regulations require disclosure of the following information for this program:

Books and Supplies	Resident Tuition and Fees	U.S. Department of Labor Standard Occupational (SOC) Code & Occupational Profile – available at <a href="http://www.onetonline.org">http://www.onetonline.org</a>
\$2,325	\$5,100	<u>Mobile Heavy Equipment Mechanics (49-3042)</u>



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Facility & Mobile Equipment Maintenance

**DIESEL EQUIPMENT MECHANIC**

(31-412-1)

Technical Diploma

Most Courses Offered at Horizon Center

**PROGRAM DESCRIPTION**

*Diesel Equipment Mechanic* is a one-year repair and maintenance program designed to prepare an entry level diesel technician. This program is the first year of the associate degree Diesel Equipment Technology program. Program instruction will include over the road, off road and stationary applications. Emphasis will be placed on the fundamentals and repair of diesel engines, and basic diesel vehicle systems including brakes, heating, cooling, and electrical/electronic.

**PROGRAM LEARNING OUTCOMES**

Graduates of the Diesel Equipment Mechanic Program should be able to:

1. Diagnose major systems in diesel and heavy equipment industry.
2. Repair major systems in diesel and heavy equipment industry.
3. Service major systems in diesel and heavy equipment industry.
4. Practice personal and professional work habits.
5. Document complaint, cause, and correction.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                     | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively | 7. Think critically and creatively                                  |
| 3. Demonstrate essential comp. skills  | 8. Work cooperatively   |
| 4. Demonstrate essential math skills   | 9. Value learning   |
| 5. Develop job seeking skills          |   |

**ADMISSION REQUIREMENTS**

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.

**GRADUATION REQUIREMENTS**

1. Minimum 32 credits with an average of 2.0 or above.
2. Average of 2.0 ("C") or above for all 412 major courses.

*For a complete list of Graduation Requirements check the Student Handbook.*

**NOTES**

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. Tablet computer required for this program. See an advisor for a fact sheet describing minimum requirement.
3. Work uniform is required. See an advisor for details.
4. Safety glasses are required in labs. If prescription safety glasses are required, allow a minimum of 90 days.
5. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites has been satisfied (or waived with department approval.)
6. A state issued Commercial Driver License (CDL) is not required for the program but highly recommended. Gateway Technical College does not offer CDL training.

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.  
For a complete list of course descriptions (and possible online courses) for this program, please consult our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_. My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster</b> ▶ 	<b>Career Pathway</b> ▶ Facility & Mobile Equipment Maintenance	<b>DIESEL EQUIPMENT TECHNOLOGY</b> (10-412-1) <i>Associate of Applied Science Degree</i> Most Courses Offered at Horizon Center

<sup>Δ</sup> Suggested Sequence	✓	Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
Semester 1		412-111 *	Diesel Maintenance Fundamentals		2	1-2
		412-107 *	Diesel Electricity 1	Prereq: 412-111	4	2-4
		412-114 *	Diesel Heating, Cooling & Air Cond.	Prereq: 412-111; 107	3	2-2
		412-117 *	Diesel Suspension & Steering Systems	Prereq: 412-111	3	1-4
		804-107	College Mathematics	Prereq: 834-109 (See Note 1)	3	3-0
		801-136	English Composition 1	Prereq: 831-103 (See Note 1)	3	3-0
Semester 2		412-106 *	Diesel Brake Systems	Prereq: 412-111; 117	4	2-4
		412-112 *	Diesel Drive Trains	Prereq: 412-111; 106	4	2-4
		412-116 *	Diesel Preventative Maintenance	Prereq: 412-111; 106; 112	3	1-4
		801-196	Oral/Interpersonal Communication	Prereq: 838-105 (See Note 1)	3	3-0
		801-197	Technical Reporting	Prereq: 801-136	3	3-0
Semester 3		412-110 *	Diesel Fuel Systems	Prereq: 412-111	3	2-2
		412-109 *	Diesel Engine Service	Prereq: 412-111; 110	5	2-6
		412-108 *	Diesel Electricity 2	Prereq: 412-111; 107	3	2-2
		809-196	Introduction to Sociology	Prereq: 838-105 (See Note 1 & 7)	3	3-0
Semester 4		412-115 *	Diesel Hydraulic Systems	Prereq: 412-111	2	1-2
		412-113 *	Diesel Fuel Systems - Advanced	Prereq: 412-111; 107; 110; 108	3	2-2
		412-105 *	Diesel Control Systems - Advanced	Prereq: 412-111; 108; 109; 112; 113; 114	4	3-2
		809-198	Psychology, Intro to	Prereq: 838-105 (See Note 1 & 7)	3	3-0
		809-195	Economics	Prereq: 838-105 (See Note 1)	3	3-0
Electives		<b>Take 6 elective credits. Any associate degree level course may be taken as an elective.</b>			<b>6</b>	
		<b>Suggested Electives:</b> 412-122 Professional Practices (3 Cr) 412-123 Diesel Equipment Technology Internship (3 Cr) 443-101 Forklift Operation and Maintenance (1 Cr)				
<b>Minimum Program Total Credits Required</b>					<b>70</b>	

<sup>Δ</sup> Courses may be taken out of suggested sequence as long as requisites have been met.



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Facility & Mobile Equipment Maintenance

# DIESEL EQUIPMENT TECHNOLOGY

(10-412-1)

Associate of Applied Science Degree  
Most Courses Offered at Horizon Center

### PROGRAM DESCRIPTION

*Diesel Equipment Technology* is a two-year repair and maintenance program designed to prepare an entry level diesel technician. Program instruction will include over the road, off road and stationary applications. Emphasis will be placed on operational fundamentals and repair of diesel engines, and diesel vehicle systems including brakes, heating, and cooling systems. Technical skills will be developed in diagnosing and repair of advanced engine and system controls.

### PROGRAM LEARNING OUTCOMES

Graduates of the Diesel Equipment Technology Program should be able to:

1. Diagnose major systems in diesel and heavy equipment industry.
2. Repair major systems in diesel and heavy equipment industry.
3. Service major systems in diesel and heavy equipment industry.
4. Practice personal and professional work habits.
5. Document complaint, cause, and correction.

### CORE ABILITIES

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                     | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively | 7. Think critically and creatively                                  |
| 3. Demonstrate essential comp. skills  | 8. Work cooperatively   |
| 4. Demonstrate essential math skills   | 9. Value learning   |
| 5. Develop job seeking skills          |   |

### ADMISSION REQUIREMENTS

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.

### GRADUATION REQUIREMENTS

1. Minimum 70 credits with an average of 2.0 or above.
2. Average of 2.0 ("C") or above for all 412 major courses.

*For a complete list of Graduation Requirements check the Student Handbook.*

### NOTES

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. Tablet computer required for this program. See an advisor for a fact sheet describing minimum requirement.
3. Work uniforms are required. See an advisor for details.
4. Safety glasses are required in labs. If prescription safety glasses are required, allow a minimum of 90 days.
5. Any course may be taken prior to entry in the program, assuming prerequisites and/or co-requisite requirements have been satisfied (or waived with departmental approval).
6. A state issued Commercial Driver License (CDL) is not required for the program but highly recommended. Gateway Technical College does not offer CDL training.
7. Transfer credits in Social Science may substitute for this course. See an advisor for details.

### OTHER INFORMATION

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.  
For a complete list of course descriptions (and possible online courses) for this program, please consult our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster ▶</b>	<b>Career Pathway ▶</b>	<b>EARLY CHILDHOOD EDUCATION</b> <b>(10-307-1)</b> <i>Associate of Applied Science Degree</i> <i>Most Courses Offered at Racine Campus</i>
		Early Childhood Development & Services	

<sup>Δ</sup> <i>Suggested Sequence</i>	Course Number	Course Title	Requisites	Credits	Hrs/Wk	
					Lec	Lab
Semester 1	307-148 *	ECE: Foundations of Early Childhood Education	(See Note 5)	3	3	0
	307-151 *	ECE: Infant & Toddler Development	(See Note 5)	3	3	0
	307-167 *	ECE: Health, Safety & Nutrition	(See Note 5)	3	3	0
	307-174 *	ECE: Practicum 1	Coreq: 307-167 (See Note 5)	3	2	0-3
	307-178 *	ECE: Art, Music and Language Arts		3	3	0
	801-136	English Composition 1	Prereq: 831-103 (See Note 1)	3	3	0
Semester 2	307-179 *	ECE: Child Development		3	3	0
	307-188 *	ECE: Guiding Children's Behavior		3	3	0
	307-192 *	ECE: Practicum 2	Prereq: 307-174; 307-167	3	1	0-6
	307-195 *	ECE: Family and Community Relationships		3	3	0
	804-107	College Mathematics	Prereq: 834-109 (See Note 1 & 3)	3	3	0
809-198	Psychology, Introduction to	Prereq: 838-105 (See Note 1 & 7)	3	3	0	
Semester 3	307-166 *	ECE: Curriculum Planning	Prereq: 307-174 (See Note 5)	3	3	0
	307-187 *	ECE: Children with Differing Abilities		3	3	0
	307-194 *	ECE: Math, Science & Social Studies		3	3	0
	307-197 *	ECE: Practicum 3	Prereq: 307-192; Coreq: 307-151	3	1	0-6
	801-198	Speech	Prereq: 838-105 (See Note 1)	3	3	0
	809-128	Marriage and Family	Prereq: 838-105 (See Note 1)	3	3	0
Semester 4	307-198 *	ECE: Administering an Early Childhood Ed. Program		3	3	0
	307-199 *	ECE: Practicum 4	Prereq: 307-197	3	1	0-6
	801-196	Oral/Interpersonal Communication	Prereq: 838-105 (See Note 1)	3	3	0
	809-172	Diversity Studies, Introduction to	Prereq: 838-105 (See Note 1)	3	3	0
Electives	<b>Take 3 elective credits. Any associate degree level course may be taken as an elective.</b>			3		
	<b>Suggested Electives:</b> 307-100 Children's Play (3 Cr)                      307-150 Emerging Literacy (3 Cr) 307-117 ECE Credit for Prior Learning (3 Cr)					
<b>Minimum Program Total Credits Required</b>				<b>69</b>		

<sup>Δ</sup>Courses may be taken out of suggested sequence as long as requisites have been met.



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Early Childhood Development & Services

**EARLY CHILDHOOD EDUCATION**

(10-307-1)

Associate of Applied Science Degree  
Most Courses Offered at Racine Campus

**PROGRAM DESCRIPTION**

Early Childhood Education prepares students to work as teach-caregivers in early childhood settings. It combines hands-on fieldwork in area centers with related academic work at the college. Graduates become responsible for the care and education of children in the birth-to-six-years age range. They create and maintain safe and healthy play environments, guide behavior, plan and implement learning activities, and work cooperatively with staff and parents.

**ADMISSION REQUIREMENTS**

1. Students must submit an application and \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript including a graduation or passing date.
4. Students must complete a Background Disclosure form and must request and pay for a background check. Applicants of this program are subject to a review of their criminal backgrounds. Positive background checks may negatively impact your ability to pursue this career at Gateway Technical College. Each case will be individually evaluated based on all available evidence provided to the college.
5. Students must complete a functional ability form verifying that they have read and understand the functional abilities for the program.

**GRADUATION REQUIREMENTS**

1. Minimum 69 credits with an average of 2.0 or above.
2. \*Average of 2.0 ("C") or above for these major courses.

For a complete list of Graduation Requirements check the Student Handbook.

**PROGRAM LEARNING OUTCOMES**

Graduates of the Early Childhood Education Associate Degree Program should be able to:

1. Apply child development theory to practice.
2. Cultivate relationships with children, family, and the community.
3. Assess child growth and development.
4. Use best practices in teaching and learning.
5. Demonstrate professionalism.
6. Integrate health, safety, and nutrition practices.

**NOTES**

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).
3. Formerly 804-106, Intro to College Math.
4. Background checks for the ECE program are valid for one year. Students must request a current background check for each year they are enrolled.
5. Students must submit all health and immunization forms prior to the first day of attending all first-semester courses.
6. Please note that your program may require additional fee(s) for: Criminal Background Check, Medical Documentation Manager, and/or Drug Testing.
7. Transfer credits in Social Science may substitute for this course. See an advisor for details.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                           | 5. Develop job seeking skills                                       |
| 2. Communicate clearly and effectively       | 6. Respect themselves and others as a member of a diverse community |
| 3. Demonstrate essential computer skills     | 7. Think critically and creatively                                  |
| 4. Demonstrate essential mathematical skills | 8. Work cooperatively   |
|  | 9. Value learning   |

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.

For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_. My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster</b> ▶ 	<b>Career Pathway</b> ▶ Engineering & Technology	<b>ELECTRICAL ENGINEERING TECHNOLOGY</b> (10-662-1A) <i>Associate of Applied Science Degree</i> Most Courses Offered at iMET Center

△ Suggested Sequence	✓	Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
<b>Semester 1</b>		605-113 *	DC/AC I		3	2-2
		605-130 *	Digital Electronics		4	3-2
		801-136	English Composition 1	Prereq: 831-103 (See Note 1)	3	3-0
		804-115	College Technical Math 1	Prereq: 834-110 (See Note 1)	5	5-0
		809-198	Psychology, Introduction to	Prereq: 838-105 (See Note 1 & 4)	3	3-0
<b>Semester 2</b>		605-114 *	DC/AC II	Prereq: 605-113	3	2-2
		605-120 *	Electronic Devices I	Prereq: 605-113	4	2-4
		801-197	Technical Reporting	Prereq: 801-136	3	3-0
		804-197	College Algebra & Trig w Apps	Prereq: 804-115	5	5-0
		809-195	Economics	Prereq: 838-105 (See Note 1)	3	3-0
<b>Semester 3</b>		605-121 *	Electronic Devices II	Prereq: 605-120	4	2-4
		605-190 *	Microprocessors	Coreq: 605-114; 605-121	4	2-4
		662-112 *	DC/AC III	Prereq: 605-114	3	2-2
		804-198 *	Calculus 1	Prereq: 804-197	4	4-0
		806-143 *	College Physics 1	Prereq: 804-113 or 804-115	3	2-2
<b>Semester 4</b>		662-124 *	Electronic Circuit Analysis	Prereq: 605-120	3	2-2
		804-181 *	Calculus 2	Prereq: 804-198	4	4-0
		809-196	Sociology, Introduction to	Prereq: 838-105 (See Note 1 & 4)	3	3-0
<b>Electives</b>		<b>Take 6 elective credits. Any associate degree level course may be taken as an elective.</b>			<b>6</b>	
		<b>Suggested Electives:</b> 605-150 Industrial Electronics (3 Cr) 605-133 Industrial Data Communications (3 Cr)				
<b>Minimum Program Total Credits Required</b>					<b>70</b>	

△ Courses may be taken out of suggested sequence as long as requisites have been met.



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Engineering & Technology

**ELECTRICAL ENGINEERING TECHNOLOGY**

(10-662-1A)

Associate of Applied Science Degree  
Most Courses Offered at iMET Center

### PROGRAM DESCRIPTION

*Electrical Engineering Technology* focuses on the installation, maintenance, modification, diagnosis, and troubleshooting of a wide variety of electronic equipment. In addition to comprehensive training in electronic theory, lab experience is an integral part of the program. The study areas include AC/DC principles, transistor operation, digital circuits, microprocessors, optoelectronics, communications, and industrial electronics.

### PROGRAM LEARNING OUTCOMES

Graduates of the Electrical Engineering Tech. Associate Degree Program should be able to:

1. Apply electronic theory to practice.
2. Operate test equipment.
3. Build electronic circuits and systems.
4. Evaluate the operation of electronic circuits or systems.
5. Communicate technical information.

### CORE ABILITIES

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                           | 5. Develop job seeking skills                                       |
| 2. Communicate clearly and effectively       | 6. Respect themselves and others as a member of a diverse community |
| 3. Demonstrate essential computer skills     | 7. Think critically and creatively                                  |
| 4. Demonstrate essential mathematical skills | 8. Work cooperatively   |
|  | 9. Value learning   |

### ADMISSION REQUIREMENTS

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.

### GRADUATION REQUIREMENTS

1. Minimum 70 credits with an average of 2.0 or above.
2. \*Average of 2.0 ("C") or above for these major courses.

*For a complete list of Graduation Requirements check the Student Handbook.*

### NOTES

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. Safety glasses are required in labs. If prescription safety glasses are necessary, please allow a minimum of 90 days.
3. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).
4. Transfer credits in Social Science may substitute for this course. See an advisor for details.

### OTHER INFORMATION

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.

For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster ▶</b> 	<b>Career Pathway ▶</b> Engineering & Technology	<b>ELECTRICAL ENGINEERING TECHNOLOGY</b> (10-662-1B) – Biomedical Engineering Technology Associate of Applied Science Degree Most Courses Offered at iMET Center

△ Suggested Sequence	✓	Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
<b>Semester 1</b>		605-113 *	DC/AC I		3	2-2
		605-130 *	Digital Electronics		4	3-2
		801-136	English Composition 1	Prereq: 831-103 (See Note 1)	3	3-0
		804-115	College Technical Math 1	Prereq: 834-110 (See Note 1)	5	5-0
		809-198	Psychology, Introduction to	Prereq: 838-105 (See Note 1 & 4)	3	3-0
<b>Semester 2</b>		605-114 *	DC/AC II	Prereq: 605-113	3	2-2
		605-120 *	Electronic Devices I	Prereq: 605-113	4	2-4
		662-102 *	Medical Devices Function & Use I		3	2-2
		801-197	Technical Reporting	Prereq: 801-136	3	3-0
		804-197	College Algebra & Trig w/ Apps	Prereq: 804-115	5	5-0
<b>Semester 3</b>		605-121 *	Electronic Devices II	Prereq: 605-120	4	2-4
		605-190 *	Microprocessors	Coreq: 605-114; 605-121	4	2-4
		662-112 *	DC/AC III	Prereq: 605-114	3	2-2
		804-198 *	Calculus 1	Prereq: 804-197	4	4-0
		806-143 *	College Physics 1	Prereq: 804-113 or 804-115	3	2-2
<b>Semester 4</b>		662-124 *	Electronic Circuit Analysis	Prereq: 605-120	3	2-2
		662-103 *	Medical Devices Function & Use II		3	2-2
		662-101 *	Safety in Healthcare		1	1-0
		809-196	Sociology, Introduction to	Prereq: 838-105 (See Note 1 & 4)	3	3-0
<b>Electives</b>		<b>Take 6 elective credits. Any associate degree level course may be taken as an elective.</b>			<b>6</b>	
		<b>Suggested Electives:</b> 605-150 Industrial Electronics (3 Cr) 605-133 Industrial Data Communications (3 Cr) 804-181 Calculus 2 (4 Cr)				

**Minimum Program Total Credits Required 70**

△ Courses may be taken out of suggested sequence as long as requisites have been met.



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Engineering & Technology

## ELECTRICAL ENGINEERING TECHNOLOGY

(10-662-1B) – Biomedical Engineering Technology  
Associate of Applied Science Degree  
Most Courses Offered at iMET Center

### PROGRAM DESCRIPTION

*Electrical Engineering Technology* focuses on the installation, maintenance, modification, diagnosis, and troubleshooting of a wide variety of electronic equipment. In addition to comprehensive training in electronic theory, lab experience is an integral part of the program. The study areas include AC/DC principles, transistor operation, digital circuits, microprocessors, optoelectronics, communications, and industrial electronics.

### PROGRAM LEARNING OUTCOMES

Graduates of the Electrical Engineering Tech. Associate Degree Program should be able to:

1. Apply electronic theory to practice.
2. Operate test equipment.
3. Build electronic circuits and systems.
4. Evaluate the operation of electronic circuits or systems.
5. Communicate technical information.

### CORE ABILITIES

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                           | 5. Develop job seeking skills                                       |
| 2. Communicate clearly and effectively       | 6. Respect themselves and others as a member of a diverse community |
| 3. Demonstrate essential computer skills     | 7. Think critically and creatively                                  |
| 4. Demonstrate essential mathematical skills | 8. Work cooperatively   |
|  | 9. Value learning   |

### ADMISSION REQUIREMENTS

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.

### GRADUATION REQUIREMENTS

1. Minimum 70 credits with an average of 2.0 or above.
2. \*Average of 2.0 ("C") or above for these major courses.

*For a complete list of Graduation Requirements check the Student Handbook.*

### NOTES

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. Safety glasses are required in labs. If prescription safety glasses are necessary, please allow a minimum of 90 days.
3. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).
4. Transfer credits in Social Science may substitute for this course. See an advisor for details.

### OTHER INFORMATION

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.

For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster</b> ▶ 	<b>Career Pathway</b> ▶ Engineering & Technology	<b>ELECTRICAL ENGINEERING TECHNOLOGY</b> (10-662-1C) – Sustainable Energy Systems Associate of Applied Science Degree Most Courses Offered at iMET Center

△ Suggested Sequence	✓	Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
<b>Semester 1</b>		605-113 *	DC/AC I		3	2-2
		605-130 *	Digital Electronics		4	3-2
		801-136	English Composition 1	Prereq: 831-103 (See Note 1)	3	3-0
		804-115	College Technical Math 1	Prereq: 834-110 (See Note 1)	5	5-0
		809-198	Psychology, Introduction to	Prereq: 838-105 (See Note 1 & 4)	3	3-0
<b>Semester 2</b>		605-114 *	DC/AC II	Prereq: 605-113	3	2-2
		605-120 *	Electronic Devices I	Prereq: 605-113	4	2-4
		482-110 *	Sustainable Energy, Intro to		2	1-2
		801-197	Technical Reporting	Prereq: 801-136	3	3-0
		804-197	College Algebra & Trig w Apps	Prereq: 804-115	5	5-0
<b>Semester 3</b>		605-121 *	Electronic Devices II	Prereq: 605-120	4	2-4
		605-190 *	Microprocessors	Coreq: 605-114; 605-121	4	2-4
		662-112 *	DC/AC III	Prereq: 605-114	3	2-2
		804-198 *	Calculus 1	Prereq: 804-197	4	4-0
		482-111 *	Sustainable Energy: Gen of Elec	Prereq: 482-110	2	1-2
<b>Semester 4</b>		662-124 *	Electronic Circuit Analysis	Prereq: 605-120	3	2-2
		482-112 *	Capstone Design Project	Prereq: 482-110; 482-111	3	2-2
		806-143 *	College Physics 1	Prereq: 804-113 or 804-115	3	2-2
		809-196	Sociology, Introduction to	Prereq: 838-105 (See Note 1 & 4)	3	3-0
<b>Electives</b>		<b>Take 6 elective credits. Any associate degree level course may be taken as an elective.</b>			<b>6</b>	
		<b>Suggested Electives:</b> 605-150 Industrial Electronics (3 Cr) 605-151 Industrial Data Communications (3 Cr) 804-181 Calculus II (4 Cr)				
<b>Minimum Program Total Credits Required</b>					<b>70</b>	

△ Courses may be taken out of suggested sequence as long as requisites have been met.



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Engineering & Technology

## ELECTRICAL ENGINEERING TECHNOLOGY

(10-662-1C) – Sustainable Energy Systems  
Associate of Applied Science Degree  
Most Courses Offered at iMET Center

### PROGRAM DESCRIPTION

*Electrical Engineering Technology* focuses on the installation, maintenance, modification, diagnosis, and troubleshooting of a wide variety of electronic equipment. In addition to comprehensive training in electronic theory, lab experience is an integral part of the program. The study areas include AC/DC principles, transistor operation, digital circuits, microprocessors, optoelectronics, communications, and industrial electronics.

### PROGRAM LEARNING OUTCOMES

Graduates of the Electrical Engineering Tech. Associate Degree Program should be able to:

1. Apply electronic theory to practice.
2. Operate test equipment.
3. Build electronic circuits and systems.
4. Evaluate the operation of electronic circuits or systems.
5. Communicate technical information.

### CORE ABILITIES

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                           | 5. Develop job seeking skills                                       |
| 2. Communicate clearly and effectively       | 6. Respect themselves and others as a member of a diverse community |
| 3. Demonstrate essential computer skills     | 7. Think critically and creatively                                  |
| 4. Demonstrate essential mathematical skills | 8. Work cooperatively   |
|  | 9. Value learning   |

### ADMISSION REQUIREMENTS

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.

### GRADUATION REQUIREMENTS

1. Minimum 70 credits with an average of 2.0 or above.
2. \*Average of 2.0 ("C") or above for these major courses.

*For a complete list of Graduation Requirements check the Student Handbook.*

### NOTES

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. Safety glasses are required in labs. If prescription safety glasses are necessary, please allow a minimum of 90 days.
3. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).
4. Transfer credits in Social Science may substitute for this course. See an advisor for details.

### OTHER INFORMATION

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.

For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster</b> ▶	<b>Career Pathway</b> ▶	<b>ELECTRO-MECHANICAL TECHNOLOGY</b> <b>(10-620-1)</b> <i>Associate of Applied Science Degree</i> Most Courses Offered at Elkhorn Campus and Lakeview Center
		Manufacturing Production Process Development	

<sup>Δ</sup> Suggested Sequence	✓	Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
Semester 1		605-113 *	DC/AC I		3	2-2
		612-102 *	Pneumatics/Hydraulics, Intro to		3	2-2
		620-103 *	Intro to Industrial Controls	Coreq: 605-113	4	2-4
		628-109 *	Mechanical Skills for Technicians		3	1-4
		804-115	College Technical Math 1	Prereq: 834-110 (See Note 1)	5	5-0
Semester 2		620-111 *	Intro to Industrial Solid State Circuits	Prereq: 605-113	4	2-4
		620-140 *	Programmable Controllers	Prereq: 620-103	2	1-2
		628-111 *	Computer Assisted Programming/ Robot and FMS		3	1-4
		801-136	English Composition 1	Prereq: 831-103 (See Note 1)	3	3-0
		806-154	General Physics 1	Prereq: 804-115	4	3-2
Semester 3		620-110 *	Robotics Mechanics I	Prereq: 605-113	3	2-2
		620-145 *	Programmable Logic Controllers/Adv.	Prereq: 620-140	3	1-4
		620-150 *	Electromechanical Drives	Prereq: 605-113	3	1-4
		809-196	Sociology, Introduction to	Prereq: 838-105 (See Note 1 & 5)	3	3-0
		809-198	Psychology, Introduction to	Prereq: 838-105 (See Note 1 & 5)	3	3-0
Semester 4		620-102 *	Process Controls	Coreq: 620-111	3	2-2
		620-113 *	Troubleshooting Electrical/Electronic Systems	Prereq: 620-102; Coreq: 620-145	3	2-2
		625-121 *	MSSC Certification Preparation & Assessment		2	2-0
		628-112 *	Computer Aided Manufacturing, Adv.	Prereq: 628-111; Coreq: 620-145	3	1-4
		801-197	Technical Reporting	Prereq: 801-136	3	3-0
Electives		<b>Take 6 elective credits. Any associate degree level course may be taken as an elective.</b>			<b>6</b>	
		<b>Suggested Electives:</b> 196-135 Business Concepts, Ethics, Prin. (2 Cr)    890-103 Employability Skills (2 Cr) 606-126 AutoCAD, Introduction (2 Cr)                628-108 Field Experience (2 Cr)				
<b>Minim Program Total Credits Required</b>					<b>69</b>	

<sup>Δ</sup>Courses may be taken out of suggested sequence as long as requisites have been met.



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Manufacturing Production Process Development

**ELECTRO-MECHANICAL TECHNOLOGY**

(10-620-1)

*Associate of Applied Science Degree*

Most Courses Offered at

Elkhorn Campus and Lakeview Center

**PROGRAM DESCRIPTION**

The emerging field of *Electro-Mechanical Technology* and associated robotics equipment is covered in this program, which can be completed in two years of study if taken full-time. Topics covered during classroom lectures and through practical hands-on experience on modern equipment include troubleshooting manufacturing processes with programmable logic controllers (PLC), robotics, industrial electrical and hydraulic systems, mechanical power transfer systems and process control systems. Other items which are covered include technical report writing, human relations, and communication skills.

**PROGRAM LEARNING OUTCOMES**

**Graduates of the Electro-Mechanical Technology Associate Degree Program should be able to:**

1. Perform work safely.
2. Troubleshoot electrical and mechanical systems and devices.
3. Repair electrical and mechanical systems.
4. Communicate technical information.
5. Integrate electrical and mechanical systems and devices.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                     | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively | 7. Think critically and creatively                                  |
| 3. Demonstrate essential comp. skills  | 8. Work cooperatively   |
| 4. Demonstrate essential math skills   | 9. Value learning   |
| 5. Develop job seeking skills          |   |

**ADMISSION REQUIREMENTS**

1. Students must submit an application and \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.

**GRADUATION REQUIREMENTS**

1. Minimum 69 credits with an average of 2.0 or above.
2. \*Average of 2.0 ("C") or above for these major courses.

*For a complete list of Graduation Requirements check the Student Handbook.*

**NOTES**

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. A hand calculator capable of trigonometric functions is required; cost is approximately \$25.
3. Safety glasses are required in labs. If prescription safety glasses are necessary, allow a minimum of 90 days.
4. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).
5. Transfer credits in Social Science may substitute for this course. See an advisor for details.

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.  
For a complete list of course descriptions (and possible online courses) for this program, please consult our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster</b> ▶ 	<b>Career Pathway</b> ▶ <b>Engineering &amp; Technology</b>	<b>ELECTRONICS</b> <b>(10-605-1)</b> <i>Associate of Applied Science Degree</i> <i>Most Courses Offered at iMET Center</i>

△ Suggested Sequence	✓	Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
<b>Semester 1</b>		605-113 *	DC/AC I		3	2-2
		605-130 *	Digital Electronics		4	3-2
		801-136	English Composition 1	Prereq: 831-103 (See Note 1)	3	3-0
		804-115	College Technical Math 1	Prereq: 834-110 (See Note 1)	5	5-0
		809-198	Psychology, Introduction to	Prereq: 838-105 (See Note 1 & 4)	3	3-0
<b>Semester 2</b>		605-114 *	DC/AC II	Prereq: 605-113; 804-115	3	2-2
		605-120 *	Electronic Devices I	Prereq: 605-113	4	2-4
		801-197	Technical Reporting	Prereq: 801-136	3	3-0
		804-197	College Algebra & Trig w Apps	Prereq: 804-115	5	5-0
		809-195	Economics	Prereq: 838-105 (See Note 1)	3	3-0
<b>Semester 3</b>		605-121 *	Electronic Devices II	Prereq: 605-120	4	2-4
		605-133 *	Industrial Data Communications	Prereq: 605-113 OR 605-107	3	2-2
		605-138 *	Circuit Construction and Repair		3	1-4
		605-190 *	Microprocessors	Coreq: 605-114; 605-121	4	2-4
<b>Semester 4</b>		605-136 *	PLC System Design	Prereq: 605-130	3	2-2
		605-150 *	Industrial Electronics	Prereq: 605-114; 605-120	3	1-4
		806-154 *	General Physics 1	Prereq: 804-115	4	3-2
		809-196	Sociology, Introduction to	Prereq: 838-105 (See Note 1 & 4)	3	3-0
<b>Electives</b>		<b>Take 6 elective credits. Any associate degree level course may be taken as an elective.</b>				<b>6</b>
		<b>Suggested Electives:</b> 605-181 Computer Hardware Arch (3 Cr) 605-182 Computer Interfacing Tech (3 Cr) 605-184 Data Acquisition (3 Cr)				

**Minimum Program Total Credits Required 69**

△ Courses may be taken out of suggested sequence as long as requisites have been met.



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Engineering & Technology

**ELECTRONICS**

(10-605-1)

Associate of Applied Science Degree  
Most Courses Offered at iMET Center

**PROGRAM DESCRIPTION**

*Electronics* focuses on the installation, maintenance, modification, diagnosis, and troubleshooting of a wide variety of electronic equipment. In addition to comprehensive training in electronic theory, lab experience is an integral part of the program. The study areas include AC/DC principles, transistor operation, digital circuits, microprocessors, optoelectronics, communications, and industrial electronics. The operation and use of various test and diagnostic equipment is included throughout the curriculum. The program prepares the students for a broad range of entry-level electronic technician positions.

**PROGRAM LEARNING OUTCOMES**

Graduates of the Electronics Associate Degree Program should be able to:

1. Apply electronic theory to practice.
2. Operate test equipment.
3. Build electronic circuits and systems.
4. Evaluate the operation of electronic circuits or systems.
5. Communicate technical information.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                           | 5. Develop job seeking skills                                       |
| 2. Communicate clearly and effectively       | 6. Respect themselves and others as a member of a diverse community |
| 3. Demonstrate essential computer skills     | 7. Think critically and creatively                                  |
| 4. Demonstrate essential mathematical skills | 8. Work cooperatively   |
|  | 9. Value learning   |

**ADMISSION REQUIREMENTS**

1. Students must submit an application and \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.

**GRADUATION REQUIREMENTS**

1. Minimum 69 credits with an average of 2.0 or above.
2. \*Average of 2.0 ("C") or above for these major courses.

*For a complete list of Graduation Requirements check the Student Handbook.*

**NOTES**

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. Safety glasses are required in labs. If prescription safety glasses are necessary, please allow a minimum of 90 days.
3. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).
4. Transfer credits in Social Science may substitute for this course. See an advisor for details.

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.  
For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster ▶</b>	<b>Career Pathway ▶</b>	<b>EMERGENCY MEDICAL TECHNICIAN</b> <b>(30-531-3)</b> <i>Technical Diploma</i> Most Courses Offered at HERO Center
		Emergency and Fire Management Services	

<i>Course Number</i>	<i>Course Title</i>	<i>Requisites</i>	<i>Credits</i>	<i>Hrs/Wk Lec - Lab</i>
531-326	Emergency Medical Technician	Prereq: Program Admission	5	4-4-2
<b>Minimum Program Total Credits Required</b>			<b>5</b>	

 <b>Effective 2015/2016</b>	<b>Career Cluster ▶</b>	<b>Career Pathway ▶</b>	<b>EMERGENCY MEDICAL TECHNICIAN</b> <b>(30-531-3)</b> <i>Technical Diploma</i> Most Courses Offered at HERO Center
		Emergency and Fire Management Services	

**PROGRAM DESCRIPTION**

Emergency Medical Technician is a 180 hour entry-level training in emergency medicine. This program provides students the skills and knowledge needed to assess and manage all types of injuries and acute illnesses while providing safe and rapid patient transport to an appropriate medical facility. Components of the course include lecture, practical lab, and hospital clinical experience. Upon program completion, students are prepared to take the National Registry of Emergency Medical Technicians® examination to be licensed as an Emergency Medical Technician in Wisconsin. Students wishing to pursue other levels of EMS licensure, such as Advanced EMT or Paramedic, must first be licensed as an Emergency Medical Technician before being eligible to register in subsequent EMS licensure programs.

**PROGRAM LEARNING OUTCOMES**

Graduates of the Emergency Medical Technician Technical Diploma Program should be able to:

1. Understand the legal liabilities and requirements of professional conduct to operate as an Emergency Medical Technician as outlined in HSS 110 of the Wisconsin Administrative Code.
2. Demonstrate skills in patient extrication, packaging, and safe movement.
3. Perform cardiac arrest management and airway management of the adult and pediatric patient.
4. Perform a successful assessment, treatment plan, and packaging for trauma and medical patients in both the adult and pediatric population.
5. Demonstrate the ability to interact with patients in a compassionate and professional manner.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                     | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively | 7. Think critically and creatively                                  |
| 3. Demonstrate essential comp. skills  | 8. Work cooperatively   |
| 4. Demonstrate essential math skills   | 9. Value learning   |
| 5. Develop job seeking skills          |   |

**ADMISSION REQUIREMENTS**

1. Students must submit an application (no fee).
2. Students must complete a functional ability form verifying they have read and understand the functional abilities for the program.

**GRADUATION REQUIREMENTS**

1. Minimum 5 credits with an average of 2.0 or above.

*For a complete list of Graduation Requirements check the Student Handbook.*

**NOTES**

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
 EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.  
 For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).  
 My advisor is \_\_\_\_\_. My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster</b> ▶	<b>Career Pathway</b> ▶	<b>EMT - PARAMEDIC</b> (31-531-1) <i>Technical Diploma</i> Most Courses Offered at HERO Center
		Emergency and Fire Management Services	

	△ Suggested Sequence	✓	Course Number	Course Title	Requisites	Credits	Hrs/Wk	
							Lec	Lab
<b>Semester 1</b>			531-911	* EMS Fundamental	Prereq: 838-105 (See Notes 1 & 2)	2	2	0
			531-912	* Paramedic Medical Principles	Prereq: 531-911	4	4	0
			531-913	* Adv. Patient Asses. Principles	Prereq: 531-911	3	2	2
			531-914	* Adv. Pre-Hospital Pharmacology	Prereq: 531-911	3	2	2
			531-915	* Paramedic Respiratory Mgt.	Prereq: 531-914	2	1	2
			531-917	* Paramedic Clinical/Field I	Prereq: 531-912 (See Notes 3 & 4)	3	0	0-0-12
			531-955	* Paramedic Cardiology 1	Prereq: 531-915	2	1	5-1
			531-956	* Paramedic Cardiology 2	Prereq: 531-955	2	1	2
<b>Semester 2</b>			531-918	* Adv. Emergency Resuscitation	Prereq: 531-956	1	0	2
			531-919	* Paramedic Medical Emergencies	Prereq: 531-918	4	3	2
			531-920	* Paramedic Trauma	Prereq: 531-919	3	2	2
			531-921	* Special Patient Populations	Prereq: 531-920	3	2	2
			531-922	* EMS Operations	Prereq: 531-921	1	1	0
			531-923	* Paramedic Capstone	Prereq: 531-921	1	0	2
			531-924	* Paramedic Clinical/Field II	Prereq: 531-956 (See Notes 3 & 4)	4	0	0-0-16

**Minimum Program Total Credits Required      38**

△ Courses may be taken out of suggested sequence as long as requisites have been met.

Federal regulations require disclosure of the following information for this program:

Books and Supplies	Resident Tuition and Fees	Median Loan Debt <sup>1</sup>	On-time Graduation Rate <sup>2</sup>	U.S. Department of Labor Standard Occupational (SOC) Code & Occupational Profile – available at <a href="http://www.onetonline.org">http://www.onetonline.org</a>
\$320	\$5,395	\$0	14.0%	<u>EMTs and Paramedics (29-2041)</u>

<sup>1</sup> **Median Loan Debt:** Based on eligibility, students can receive loans to help pay for the total cost of attending college. The cost is comprised of tuition and fees, books and supplies, transportation costs, room and board, and miscellaneous personal expenses. Therefore, medial loan debt may be more than the listed tuition, fees, books, and supplies cost.

<sup>2</sup> **On-time Graduation Rate:** Dependent upon students' choice to attend college part-time or full-time. Students decide to attend college part-time for a number of reasons including work schedule/demands and family responsibilities. 76 percent of students at Gateway attend part-time, therefore taking longer to complete their chosen program of study.



Effective 2015/2016

Career Cluster ►



Career Pathway ►

Emergency and Fire Management Services

EMT - PARAMEDIC

(31-531-1)

Technical Diploma

Most Courses Offered at HERO Center

**PROGRAM DESCRIPTION**

Program Description: Paramedic requires students to be licensed in Wisconsin at the Emergency Medical Technician (EMT), Advanced EMT (EMT Intermediate Technician), or EMT Intermediate level and be current in Healthcare Provider CPR. Paramedics can perform more acute care and administer advanced drug therapies. They can also perform surgical procedures to open airways and provide resuscitative drugs. Paramedics have an increased knowledge of lifesaving skills as well as advanced emergency assessment expertise. This program is offered on a part time basis: either two evenings a week and Saturdays or an alternating day class 2-3 days a week to accommodate the typical 24 hour on/48 hour off schedule worked by many FF/EMS agencies. At the end of the program, students will take a final Gateway Technical College written and practical exam, and after successful completion students will be eligible to test and credential through the National Registry of Emergency Medical Technicians®. The program includes approximately 650 hours of classroom lecture and skills lab, and approximately 500 hours of supervised hospital clinical and field time. Satisfactory completion of clinical/field time is competency based so actual number of hours may vary from student to student. Graduates of this program can expect to find employment with private ambulance companies, fire departments, or hospital emergency rooms. Students finishing the first two semesters of the program (the 531 courses) are eligible to receive the Paramedic Technical Diploma (31-531-1). All courses in the EMT-Paramedic diploma program can be applied to the Paramedic Technician associate degree.

Program Goal: To prepare competent entry-level Emergency Medical Technician-Paramedics in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains, with or without exit points at the Emergency Medical Technician-Intermediate and/or Emergency Medical Technician-Basic, and/or First Responder levels.

**PROGRAM LEARNING OUTCOMES**

Graduates of the EMT - Paramedic Program should be able to:

1. Prepare for incident response and EMS operations.
2. Integrate pathophysiological principles and assessment findings to provide appropriate patient care.
3. Demonstrate paramedic skills associated with established standards and procedures for a variety of patient encounters.
4. Communicate effectively with others.
5. Demonstrate professional behavior.
6. Meet state and national competencies listed for paramedic credentialing.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

1. Act responsibly
2. Communicate clearly and effectively
3. Demonstrate essential comp. skills
4. Demonstrate essential math skills
5. Develop job seeking skills
6. Respect themselves and others as a member of a diverse community
7. Think critically and creatively
8. Work cooperatively
9. Value learning

**ADMISSION REQUIREMENTS**

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must have current CPR certification.
4. Students must have current Wisconsin EMS licensure.
5. Students must submit official high school, GED, or HSED transcript.
6. Students must complete a functional ability form verifying they have read and understand the functional abilities for the program.

**GRADUATION REQUIREMENTS**

1. Minimum 38 credits with an average of 2.0 or above.
2. \*Minimum of 2.0 ("C") or above for these major courses.

For a complete list of Graduation Requirements check the Student Handbook.

**NOTES**

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. Prior to enrolling in paramedic level courses, a student must satisfactorily complete an EMS specific pre-admission screening which includes both written and practical components at the Emergency Medical Technician level (EMT) and attend an informational orientation with the program staff.
3. Drug testing and immunizations are required prior to admission to the first clinical course (531-917).
4. Applicants of this program are subject to a review of their criminal backgrounds as part of the training center training permit process. Positive background checks may negatively impact your ability to pursue this career at Gateway Technical College.
5. Please note that your program may require additional fee(s) for: Criminal Background Check, Medical Documentation Manager, and/or Drug Testing.

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.  
For a complete list of course descriptions (and possible online courses) for this program, please consult our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster</b> ▶	<b>Career Pathway</b> ▶	<b>FACILITIES MAINTENANCE</b> (31-443-2) <i>Technical Diploma</i> Most Courses Offered at Kenosha Campus
		Maintenance / Operations	

<sup>Δ</sup> Suggested Sequence	✓	Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
Semester 1		442-101 * <b>OR</b>	Welding Basics		1	0-2
		443-101	Forklift Operation & Maintenance			1-0
		601-111 *	Workplace Fundamentals		1	0-2
		605-107 *	Fund. of Electricity/Electronics	(See Note 3)	3	1-4
		103-143	Computers for Professionals	(See Notes 1 & 4)	3	2-2
		801-301	Writing Principles	Prereq: 851-760 (See Note 1)	1	2-0
		804-370	Mathematics I, Applied	Prereq: 854-760 (See Note 1)	2	4-0
Semester 2		443-311 *	Electrical Applications	Prereq: 605-107; Coreq: 601-111	3	2-4
		443-312 *	Basic Carpentry and Repair	Coreq: 601-111	2	1-3
		443-313 *	Interior Finishing	Coreq: 601-111	2	1-3
		443-314 *	Mechanical Systems	Coreq: 601-111	2	1-3
		443-315 *	Industrial Preventative Maintenance	Coreq: 601-111	2	1-3
		601-112 *	Environmental Systems	Coreq: 601-111	2	1-2
		461-120 *	Small Power Equipment		3	1-4
	804-371	Mathematics II, Applied	Prereq: 804-370	1	2-0	
<b>Minimum Program Total Credits Required</b>					<b>28</b>	

<sup>Δ</sup>Courses may be taken out of suggested sequence as long as requisites have been met.

Federal regulations require disclosure of the following information for this program:

Books and Supplies	Resident Tuition and Fees	U.S. Department of Labor Standard Occupational (SOC) Code & Occupational Profile – available at <a href="http://www.onetonline.org">http://www.onetonline.org</a>
\$2,325	\$4,415	Maintenance and Repair Workers (49-9071)



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Maintenance /  
Operations

**FACILITIES MAINTENANCE**

(31-443-2)

Technical Diploma

Most Courses Offered at Kenosha Campus

**PROGRAM DESCRIPTION**

*Facilities Maintenance* provides the training needed to service, maintain, and operate equipment found in public, commercial, and other buildings. Typical operations employing facilities (building) maintenance workers include hospitals, government buildings, schools, hotels, apartment buildings, light manufacturing facilities, and office buildings. The required skills and knowledge include basic carpentry, basic electricity, basic HVAC (heating, ventilating, and air conditioning), basic plumbing, electrical control devices, and safety.

**PROGRAM LEARNING OUTCOMES**

Graduates of the Facilities Maintenance Diploma Program should be able to:

1. Perform basic drywall repairs.
2. Understand need and use of electrical safety devices.
3. Use portable power tools safely.
4. Perform basic preventative maintenance procedures on HVAC equipment.
5. Understand operation of plumbing systems.
6. Perform basic maintenance procedures on small power equipment.
7. Perform basic maintenance procedures on automotive fleet.
8. Understand basic interior wall and ceiling construction methods.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                     | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively | 7. Think critically and creatively                                  |
| 3. Demonstrate essential comp. skills  | 8. Work cooperatively   |
| 4. Demonstrate essential math skills   | 9. Value learning   |
| 5. Develop job seeking skills          |   |

**ADMISSION REQUIREMENTS**

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.

**GRADUATION REQUIREMENTS**

1. Minimum 28 credits with an average of 2.0 or above.

*For a complete list of Graduation Requirements check the Student Handbook.*

**NOTES**

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).
3. 605-107 Course Cost includes Snap On Digital Multi Meter #EEDM525D.
4. Formerly 103-199, PC Basics/Microsoft Office.

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.

For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_.

 <p><b>GATEWAY</b> TECHNICAL COLLEGE Effective 2015/2016</p>	<p><b>Career Cluster</b> ▶</p>	<p><b>Career Pathway</b> ▶</p>	<p><b>FIRE MEDIC</b> (10-531-2) Associate of Applied Science Degree Most Courses Offered at HERO Center</p>
		<p>Emergency &amp; Fire Management Services</p>	

Suggested Sequence	✓	Course Number	Course Title	Requisites	Credits	Hrs/Wk	
						Lec	Lab
Semester 1		503-101 *	Advanced Firefighting Concepts I	Prereq: 503-142 & Advisor Consent	4		1-6
		503-103 *	Fire Medic Health & Wellness I	Prereq: Advisor Consent	1		0-2
		801-136	English Composition 1	Prereq: 831-103 (See Note 1)	3		3-0
		804-107	College Mathematics	Prereq: 834-109 (See Note 1)	3		3-0
		809-172	Diversity Studies, Introduction to	Prereq: 838-105 (See Note 1)	3		3-0
		809-198	Psychology, Introduction to	Prereq: 838-105 (See Note 1 & 7)	3		3-0
Semester 2		503-102 *	Advanced Firefighting Concepts II	Prereq: 503-101	4		1-6
		503-104 *	Fire Medic Health & Wellness II	Prereq: 503-103	1		0-2
		801-196	Oral/Interpersonal Communication	Prereq: 838-105 (See Note 1)	3		3-0
		806-134	General Chemistry	Prereq: 804-107	4		3-2
		809-196	Sociology, Introduction to	Prereq: 838-105 (See Note 1 & 7)	3		3-0
Semester 3		531-911 *	EMS Fundamental	Prereq: 838-105 (See Notes 1 & 2)	2		2-0
		531-912 *	Paramedic Medical Principles	Prereq: 531-911	4		4-0
		531-913 *	Adv. Patient Asses. Principles	Prereq: 531-911	3		2-2
		531-914 *	Adv. Pre-Hospital Pharmacology	Prereq: 531-911	3		2-2
		531-915 *	Paramedic Respiratory Mgt.	Prereq: 531-914	2		1-2
		531-917 *	Paramedic Clinical/Field I	Prereq: 531-912 (See Notes 4 & 5)	3		0-0-0-12
		531-955 *	Paramedic Cardiology 1	Prereq: 531-915	2		1.5-1
		531-956 *	Paramedic Cardiology 2	Prereq: 531-955	2		1-2
Semester 4		531-918 *	Adv. Emergency Resuscitation	Prereq: 531-956	1		0-2
		531-919 *	Paramedic Medical Emergencies	Prereq: 531-918	4		3-2
		531-920 *	Paramedic Trauma	Prereq: 531-919	3		2-2
		531-921 *	Special Patient Populations	Prereq: 531-920	3		2-2
		531-922 *	EMS Operations	Prereq: 531-921	1		1-0
		531-923 *	Paramedic Capstone	Prereq: 531-921	1		0-2
		531-924 *	Paramedic Clinical/Field II	Prereq: 531-956 (See Notes 4 & 5)	4		0-0-0-16
<b>Minimum Program Total Credits Required</b>					<b>70</b>		

△ Courses may be taken out of suggested sequence as long as requisites have been met.



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Emergency & Fire Management Services

**FIRE MEDIC**

(10-531-2)

Associate of Applied Science Degree  
Most Courses Offered at HERO Center

**PROGRAM DESCRIPTION**

Fire Medic graduates take their initial firefighter and EMT training to the next level through a performance-based advanced firefighter training program. Students are able to complete five advanced firefighting tactics, apply health & wellness principles to their own professional lives, earn a valid candidate physical ability test (CPAT) certificate and earn a paramedic license. Requisite building construction, fire behavior, fire protection systems, fire department risk management and soft skills are stressed, along with life-long learning and living habits to become safe and effective professional Fire Medic providers. This program may be completed in two years of study if taken full-time.

The Paramedic portion requires students to be licensed in Wisconsin at the Emergency Medical Technician (EMT), Advanced EMT (EMT Intermediate Technician), or EMT Intermediate level and be current in Healthcare Provider CPR. Paramedics can perform more acute care and administer advanced drug therapies. Paramedics have an increased knowledge of lifesaving skills as well as advanced emergency assessment expertise. At the end of the program, students will take a final Gateway Technical College written and practical exam, and after successful completion students will be eligible to test and credential through the National Registry of Emergency Medical Technicians®. The program includes approximately 650 hours of classroom lecture and skills lab, and approximately 500 hours of supervised hospital clinical and field time. Students who successfully complete the 531 courses are eligible to receive the Paramedic Technical Diploma (31-531-1). All courses in the EMT-Paramedic diploma can be applied to the Paramedic Technician associate degree.

**PROGRAM LEARNING OUTCOMES**

Graduates of the Fire Medic Associate Degree Program should be able to:

1. Demonstrate professional conduct by displaying personal code of ethics, positive work ethic, flexibility, teamwork skills, physical fitness, safe procedures, and sensitivity to diverse cultures and individuals.
2. Apply incident management skills to emergency incidents.
3. Meet professional fire and EMS credentialing standards.
4. Communicate clearly and effectively both verbally and through written documentation with clients, coworkers, other agencies, and supervisors.
5. Integrate pathophysiological principles and assessment findings to appropriate patient care.
6. Demonstrate paramedic skills associated with established standards and procedures for a variety of patient encounters.
7. Meet state and national competencies listed for paramedic credentialing.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                       | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively   | 7. Think critically and creatively                                  |
| 3. Demonstrate essential computer skills | 8. Work cooperatively   |
| 4. Demonstrate essential math skills     | 9. Value learning   |
| 5. Develop job seeking skills            |   |

**ADMISSION REQUIREMENTS**

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript including a graduation or passing date.
4. Students must complete Firefighter 1 certification prior to admission.
5. Students must complete a functional ability form verifying they have read and understand the functional abilities for the program.
6. Students must have current CPR certification.
7. Students must have current Wisconsin EMS licensure.

**GRADUATION REQUIREMENTS**

1. Minimum 70 credits with an average of 2.0 or above.
2. \*Minimum grade of 2.0 ("C") or above for these major courses.

For a complete list of Graduation Requirements check the Student Handbook.

**NOTES**

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).
3. Prior to enrolling in paramedic level courses (531), a student must satisfactorily complete an EMS specific pre-admission screening which includes both written and practical components at the Emergency Medical Technician level (EMT) and attend an informational orientation with program staff.
4. Drug testing and immunizations are required prior to admission to the first clinical course (531-917).
5. Applicants of this program are subject to review of their criminal backgrounds as part of the training center training permit process. Positive background checks may negatively impact your ability to pursue this career at Gateway Technical College.
6. Please note that your program may require additional fee(s) for: Criminal Background Check, Medical Documentation Manager, and/or Drug Testing.
7. Transfer credits in Social Science may substitute for this course. See an advisor for details.

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.  
For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster ▶</b>	<b>Career Pathway ▶</b>	<b>GAME PROGRAMMING</b> (10-810-16) <i>Advanced Technical Certificate</i> Most Courses Offered at Kenosha Campus
		Programming & Software Development	

√	<b>Course Number</b>	<b>Course Title</b>	<b>Requisites</b>	<b>Credits</b>	<b>Hrs/Wk Lec - Lab</b>
	152-157	Game Programming I	Prereq: 152-126	3	2-2
	152-186	Mobile Game Programming	Prereq: 152-157	3	2-2
	152-124	Computer Programming C	Prereq: 152-126	3	2-2
	152-161	Game Programming Technologies	Prereq: 152-157	2	1-2
	204-162	Graphics for Gaming		1	1-0
<b>Program Total Required</b>				<b>12</b>	

 <b>Effective 2015/2016</b>	<b>Career Cluster ▶</b>	<b>Career Pathway ▶</b>	<b>GAME PROGRAMMING</b> <b>(10-810-16)</b> <i>Advanced Technical Certificate</i> Most Courses Offered at Kenosha Campus
		Programming & Software Development	

**PROGRAM DESCRIPTION**

The *Game Programming* ATC builds on the skills, knowledge, and abilities developed in the IT – Software Developer associate degree, or an equivalent degree program. Students will also develop skills needed to program two and three dimensional computer games. The skills learned in this certificate are transferable to many other industries including multimedia development and animation.

**EQUIVALENCY**

*This program is designed for students who have completed one of the following Gateway Technical College Associate Degrees (or have the equivalent knowledge and skills):*

IT – Software Developer (10-152-1)

Equivalency can be earned through a combination of prior class work and/or current work experience. For equivalency information, call the campus advisor.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                     | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively | 7. Think critically and creatively                                  |
| 3. Demonstrate essential comp. skills  | 8. Work cooperatively   |
| 4. Demonstrate essential math skills   | 9. Value learning   |
| 5. Develop job seeking skills          |   |

**ADMISSION REQUIREMENTS**

1. Related associate degree (official transcript required) or equivalent work experience (documented by advisor) required.

**GRADUATION REQUIREMENTS**

1. 12 Credits with a minimum of 2.0 or above.

*For a complete list of Graduation Requirements check the Student Handbook.*

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
 EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.  
 For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster ▶</b> 	<b>Career Pathway ▶</b> Design & Pre-Construction	<b>GEOSPATIAL SURVEYING TECHNICIAN</b> (10-607-7) <i>Associate of Applied Science Degree</i> Most Courses Offered at iMET Center

Δ Suggested Sequence	✓	Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
<b>Semester 1</b>		607-103	* Introduction to Civil Engineering & Architecture		2	1-2
		607-104	* Building Material & Construction Method		3	2-2
		607-169	* Surveying Basics	Prereq: 834-110 (See Note 1)	2	1-2
		607-170	* AutoCAD for Construction Sciences		2	1-2
		804-115	College Technical Math 1	Prereq: 834-110 (See Note 1)	5	5-0
		809-198	Psychology, Introduction to	Prereq: 838-105 (See Note 1 & 7)	3	3-0
<b>Semester 2</b>		607-102	* Conflict Resolution in CET		2	1-2
		607-128	* Construction Estimating	Prereq: 607-104	3	2-2
		607-136	* Construction Project Management		2	1-2
		607-187	* 3D CAD: Digital Terrain Modeling		2	1-2
		614-150	* 3D CAD: Building Information Modeling		2	1-2
		801-136	English Composition 1	Prereq: 831-103 (See Note 1)	3	3-0
<b>Semester 3</b>		809-196	Sociology, Introduction to	Prereq: 838-105 (See Note 1 & 7)	3	3-0
		607-117	* Geographical Information Systems I		2	1-2
		607-127	* Civil Engineering Drafting		3	1-4
		607-173	* Surveying Fundamentals	Prereq: 607-169	3	1-4
		607-137	* Global Positioning Systems	Prereq: 607-169	2	1-2
		607-189	* Geospatial Data Processing	Prereq: 607-169	2	1-2
<b>Semester 4</b>		806-154	General Physics 1	Prereq: 804-115	4	3-2
		607-118	* Geographical Information Systems II	Prereq: 607-117	2	1-2
		607-150	* Survey Construction/ Route/ Highway	Prereq: 607-173	4	2-4
		607-188	* Capstone: Geospatial Surveying Tech	Prereq: Inst. Consent	1	1-0
		607-190	* Legal Research and Boundary	Prereq: 607-169	4	2-4
	801-197	Technical Reporting	Prereq: 801-136	3	3-0	
<b>Electives</b>		<b>Take 6 elective credits. Any associate degree level course may be taken as an elective.</b> <b>Suggested Electives:</b> 607-154 Sewer and Water (2 Cr) 607-152 Elements of Inspections (3 Cr) 607-119 Civil Technology/Internship (1 Cr)				6
		<p style="text-align: center;"><b>Registered Land Surveyor</b></p> <p><i>This program meets the educational requirements to become a Licensed Land Surveyor in the State of Wisconsin as long as 4 of the 6 elective credits are additional math-related credits approved by the surveying instructor of the CET program.</i></p>				

Δ Courses may be taken out of suggested sequence as long as requisites have been met.

**Minimum Program  
Total Credits Required**

**70**



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Design & Pre-Construction

## GEOSPATIAL SURVEYING TECHNICIAN

(10-607-7)

Associate of Applied Science Degree  
Most Courses Offered at iMET Center

### PROGRAM DESCRIPTION

The *Geospatial Surveying Technician* program focuses on a wide variety of aspects within the profession of Civil Engineering – beginning with surveying, transitioning into design, and resulting in construction. The first year classes are mostly the same for programs in the Construction Sciences Group (see Note 6). Basic skills are developed and students are exposed to all areas of the various professions. This allows the student to be able to understand and communicate across the professions, plus it allows the student to discover what area they really enjoy working in. The second year focuses on aspects specific to Geospatial Surveying. The program is designed as a fusion of education and application; hence all the core classes are tied to real world experiences with a significant influx of participation from potential future employers. Some students use this program as a place to prepare themselves to transfer to a four year university. Most, however, use this program as a means to develop the skills that allow them to obtain a productive career in various aspects of land surveying.

### PROGRAM LEARNING OUTCOMES

Graduates of the Geospatial Surveying Technician Program should be able to:

1. Exhibit skills in multiple CAD environments, specifically AutoCAD and Revit
2. Measure field locations
3. Develop 3D computer models, maps, and drawings based field measurements.
4. Apply building codes to existing conditions and proposed designs.
5. Develop structural details for purposed conditions.
6. Differentiate between the various areas and functions within the profession.
7. Understand quantities, materials, equipment and methods used in the profession.
8. Exhibit proper and clear documentation and reporting skills
9. Exhibit individual ability to properly solve a problem
10. Work cooperatively in groups

### CORE ABILITIES

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                       | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively   | 7. Think critically and creatively                                  |
| 3. Demonstrate essential computer skills | 8. Work cooperatively   |
| 4. Demonstrate essential math skills     | 9. Value learning   |
| 5. Develop job seeking skills            |   |

To schedule an appointment with an advisor, please call 1-800-247-7122.

For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_.

### ADMISSION REQUIREMENTS

1. Students must submit an application and \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcripts.

### GRADUATION REQUIREMENTS

1. Minimum 70 credits with an average of 2.0 or above.
2. \*A 2.0 ("C") or above for these specific major core courses.

For a complete list of Graduation Requirements check the Student Handbook.

### NOTES

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. Any course may be taken prior to enrollment in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).
3. This is a very intense and challenging program. Poor existing skills, especially poor math skills, can always be improved. As long as you have the heart and desire to succeed, the instructors will work with you.
4. Classes offered at Elkhorn Campus via NODAL delivery. See [www.gtc.edu](http://www.gtc.edu) for details.
5. Blackhawk Technical College students may take the majority of the core classes in this shared program via NODAL delivery at BTC's Janesville campus.
6. The programs in the Construction Science Group include: Civil Engineering Tech: Highway Technology, Geospatial Surveying Technician, Architectural-Structural Engineering Technician, and Civil Engineering Technology: Fresh Water Resources.
7. Transfer credits in Social Science may substitute for this course. See an advisor for details.

### OTHER INFORMATION

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

 <b>Effective 2015/2016</b>	<b>Career Cluster ▶</b>	<b>Career Pathway ▶</b>	<b>GERONTOLOGICAL AND REHABILITATIVE NURSING CARE</b> (10-810-21) <i>Advanced Technical Certificate</i> Most Courses Offered Online
		Therapeutic Services	

√	<b>Course Number</b>	<b>Course Title</b>	<b>Requisites</b>	<b>Credits</b>	<b>Hrs/Wk Lec - Lab</b>
	510-155	* Principles of Gerontological Nursing	Prereq: Instructor Consent	3	3-0
	510-156	* Assessment of the Older Adult	Prereq: 510-155 & Instructor Consent	3	2-2
	510-157	* Rehab Care and Chronic Disease Mgmt	Prereq: 510-155 & Instructor Consent	3	2-2

**Program Total Required            9**

 <b>Effective 2015/2016</b>	<b>Career Cluster ▶</b>	<b>Career Pathway ▶</b>	<b>GERONTOLOGICAL AND REHABILITATIVE NURSING CARE</b> (10-810-21) <i>Advanced Technical Certificate</i> Most Courses Offered Online
		Therapeutic Services	

**PROGRAM DESCRIPTION**

The ATC in Gerontological and Rehabilitative Nursing Care will enhance the nurse's knowledge and skills in the principles needed for providing expert nursing care for the aging population with a rigorous review of relevant material. There will be a strong emphasis on physiology and evidence based practice. Courses are offered entirely online. Application of theory and promotion of critical reasoning will be supported through the use of unfolding case studies and scenarios.

**EQUIVALENCY**

*This program is designed for students who have completed one of the following Gateway Technical College Associate Degrees (or have the equivalent knowledge and skills):*

10-543-1 Nursing-Associate Degree

Equivalency can be earned through a combination of prior class work and/or current work experience. For equivalency information, call the campus advisor.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                     | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively | 7. Think critically and creatively                                  |
| 3. Demonstrate essential comp. skills  | 8. Work cooperatively   |
| 4. Demonstrate essential math skills   | 9. Value learning   |
| 5. Develop job seeking skills          |   |

**ADMISSION REQUIREMENTS**

1. Related associate degree (official transcript required) or equivalent work experience (documented by advisor) required.

**GRADUATION REQUIREMENTS**

1. 9 credits with a minimum of "C" or better on all courses.

*For a complete list of Graduation Requirements check the Student Handbook.*

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.  
 For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ . My advisor's contact information is \_\_\_\_\_ .

 <b>Effective 2015/2016</b>	<b>Career Cluster ▶</b>	<b>Career Pathway ▶</b>	<b>GRAPHIC COMMUNICATIONS</b> <b>(10-204-3)</b> <i>Associate of Applied Science Degree</i> Most Courses Offered at Elkhorn and Racine Campuses & Online
		Visual Arts	

<sup>Δ</sup> Suggested Sequence	✓	Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
Semester 1		204-100 *	Design Concepts		4	3-2
		204-105 *	Comp. Illustration & Drawing Tech		3	2-2
		204-107 *	Digital Photography, Intro to		3	2-2
		204-125 *	Illustration Media Concepts		3	2-2
		801-136	English Composition 1	Prereq: 831-103 (See Note 1)	3	3-0
Semester 2		204-116 *	Web Page Design For Graphic Designers	Prereq: 204-107	3	2-2
		204-120 *	Multimedia Survey		3	2-2
		204-126 *	Design & Publishing	Prereq: 204-100	3	2-2
		204-127 *	Digital Prepress Fundamentals	Coreq: 204-126	3	2-2
		809-166	Ethics: Theory & Application, Intro to	Prereq: 838-105 (See Note 1)	3	3-0
		804-123 804-113 <i>OR</i>	Math with Business Applications College Technical Math 1A	Prereq: 834-109 (See Note 1) Prereq: 834-110 (See Note 1)	3	3-0
Semester 3		204-109 *	Graphic Design Professional Practices	Prereq: 204-126	3	2-2
		204-134 *	Advanced Problems in Graphic Design	Prereq: 204-126	3	2-2
		204-135 *	Advanced Design Concepts	Prereq: 204-126	4	3-2
		801-197	Technical Reporting	Prereq: 801-136	3	3-0
		809-198	Psychology, Introduction to	Prereq: 838-105 (See Note 1 & 4)	3	3-0
Semester 4		204-142 *	Applied Exit Strategies/Display Graphic	Prereq: 204-109	3	2-2
		204-143 *	Advanced Illustration		3	2-2
		801-198	Speech	Prereq: 838-105 (See Note 1)	3	3-0
		809-196	Sociology, Introduction to	Prereq: 838-105 (See Note 1 & 4)	3	3-0
Electives		Take 6 elective credits. Any associate degree level course may be taken as an elective.			6	
		<b>Suggested Electives:</b> 204-115 Advanced Digital Photography (3 Cr) 204-149 Advanced Web Page Design (3 Cr)				
<b>Minimum Program Total Credits Required</b>					<b>68</b>	

<sup>Δ</sup>Courses may be taken out of suggested sequence as long as requisites have been met.

 <b>Effective 2015/2016</b>	<b>Career Cluster ▶</b>	<b>Career Pathway ▶</b>	<b>GRAPHIC COMMUNICATIONS</b> <b>(10-204-3)</b> <i>Associate of Applied Science Degree</i> Most Courses Offered at Elkhorn and Racine Campuses & Online
		<b>Visual Arts</b>	

**PROGRAM DESCRIPTION**

*Graphic Communications* educates students in the practice of design, illustration, and reproductive processes related to the print and audio visual media. Course work includes basic illustration, visual communication, and reproductive concepts with emphasis on development in computer graphic skills. The program includes certain aspects of commercial art and communication/computer graphics, with emphasis on skills training required for the increasingly technological focus of graphic design in today's workplace.

**PROGRAM LEARNING OUTCOMES**

**Graduates of the Graphics Communications Associate Degree Program should be able to:**

1. Apply principles of design to develop strategic marketing and communication products and services.
2. Demonstrate proficiency in the use of design software, tools, and technology.
3. Implement creative solutions from concept through completion using a formal process.
4. Apply effective legal and ethical business practices and project management skills.
5. Communicate artwork rationale in formal and informal settings.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                           | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively       | 7. Think critically and creatively                                  |
| 3. Demonstrate essential computer skills     | 8. Work cooperatively   |
| 4. Demonstrate essential mathematical skills | 9. Value learning   |
| 5. Develop job seeking skills                |   |

**ADMISSION REQUIREMENTS**

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.

**GRADUATION REQUIREMENTS**

1. Minimum 68 credits with an average of 2.0 or above.
2. \*Average of 2.0 ("C") or above for these major courses.

*For a complete list of Graduation Requirements check the Student Handbook.*

**NOTES**

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. The Graphic Communications program at Gateway Technical College has course articulation degree completion agreements with UW-Parkside and Carthage College. See an advisor for details.
3. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).
4. Transfer credits in Social Science may substitute for this course. See an advisor for details.

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.  
 For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).  
 My advisor is \_\_\_\_\_. My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster</b> ▶	<b>Career Pathway</b> ▶	<b>HEALTH INFORMATION TECHNOLOGY</b> <b>(10-530-1)</b> <i>Associate of Applied Science Degree</i> <i>Most Courses Offered at Racine Campus</i>
		Health Informatics	

<sup>Δ</sup> <i>Suggested Sequence</i>	<i>Course Number</i>	<i>Course Title</i>	<i>Requisites</i>	<i>Credits</i>	<i>Hrs/Wk Lec - Lab</i>
Semester 1	103-143 *	Computers for Professionals	Prereq: 103-142 (See Notes 1 & 9)	3	2-2
	501-101 *	Medical Terminology	Prereq: 838-105 (See Note 1)	3	3-0
	530-181 *	Intro to the Health Record	Prereq: Advisor Consent	1	0-2
	801-136	English Composition 1	Prereq: 831-103 (See Note 1)	3	3-0
	801-198	Speech	Prereq: 838-105 (See Note 1)	3	3-0
	806-177	General Anatomy and Physiology	Prereq: 806-134 (See Note 5)	4	3-2
Semester 2	530-176 *	Health Data Management	Prereq: 530-181	2	1-2
	530-182 *	Human Diseases for the Health Professions	Prereq: 501-101; 806-189 <b>OR</b> 806-177 & Advisor Consent	3	3-0
	801-197	Technical Reporting	Prereq: 801-136	3	3-0
	809-166	Ethics: Theory & Applications, Intro to	Prereq: 838-105 (See Note 1)	3	3-0
	809-196	Sociology, Introduction to	Prereq: 838-105 (See Note 1 & 11)	3	3-0
	809-198	Psychology, Introduction to	Prereq: 838-105 (See Note 1 & 11)	3	3-0
Semester 3	530-160 *	Healthcare Informatics	Prereq: 103-143; 530-176	4	3-2
	530-177 *	Healthcare Stats & Research	Prereq: 530-176	2	2-0
	530-178 *	Healthcare Law & Ethics	Prereq: 530-176	2	2-0
	530-197 *	ICD Diagnosis Coding	Prereq: 501-101; 806-177; 530-181; 530-182 & Advisor Consent	3	2-2
	530-199 *	ICD Procedure Coding	Prereq: 501-101; 806-177; 530-181; 530-182 & Advisor Consent	2	2-0
Semester 4	530-161 *	Health Quality Management	Prereq: 530-177	3	3-0
	530-184 *	CPT Coding	Prereq: 530-181; 530-182	3	2-2
	530-185 *	Healthcare Reimbursement	Prereq: 530-182; 530-197; 530-199 Coreq: 530-184	2	2-0
	530-194 *	HIM Organizational Resources	Prereq: Advisor Consent Coreq: 530-161	2	2-0
	530-195 *	Applied Coding	Prereq: Advisor Consent Coreq: 530-185	2	2-0
	530-196 *	Professional Practice 1	Prereq: 530-177; 530-178; 530-197; 530-199 Coreq: 530-184	3	1-0-6
Summer	530-198 *	Professional Practice 2	Prereq: 530-196; 530-160 Coreq: 530-161; 530-194; 530-195	3	1-0-6
Electives	<b>Take 5 elective credits. Any associate degree level course may be taken as an elective.</b> <b>Suggested Electives:</b> 103-106 Microsoft Access II (1 Cr)                      103-105 Microsoft Access (1 Cr) 103-107 Microsoft Access III (1 Cr)                      890-161 Critical Thinking (3 Cr)			5	

**Minimum Program Total Credits Required      70**

<sup>Δ</sup>Courses may be taken out of suggested sequence as long as requisites have been met.



Effective 2015/2016

Career Cluster ►



Career Pathway ►

Health Informatics

HEALTH INFORMATION TECHNOLOGY

(10-530-1)

Associate of Applied Science Degree  
Most Courses Offered at Racine Campus

**PROGRAM DESCRIPTION**

Health Information Technology is a field where healthcare meets the cutting edge of technology. Health Information Technicians are specialists in great demand! The HIM professionals can expect to be in high demand as the health sector expands into the century. In fact, the Bureau of Labor Statistics cites health information technology as one of the fastest growing occupations in the U.S. Health Information Technicians contribute to the quality of care by collecting, analyzing, and reporting health care data. This requires knowledge of disease, treatments, computer systems, and organizational skills. The Health Information (medical records) Technology program is accredited by the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM) in cooperation with the Council on Accreditation of the American Health Information Management Association. Grads who successfully pass the national accreditation exam may use the credential "RHIT", Registered Health Information Technician.

**PROGRAM LEARNING OUTCOMES**

Graduates of the Health Information Technology Program should be able to:

1. Manage health data.
2. Apply coding and reimbursement systems.
3. Model professional behaviors and ethics.
4. Maintain electronic applications to manage health information.
5. Apply organizational management techniques.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                       | 5. Develop job seeking skills                                       |
| 2. Communicate clearly and effectively   | 6. Respect themselves and others as a member of a diverse community |
| 3. Demonstrate essential computer skills | 7. Think critically and creatively                                  |
| 4. Demonstrate essential math skills     | 8. Work cooperatively   |
|  | 9. Value learning   |

**ADMISSION REQUIREMENTS**

1. Students must submit application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript including a graduation or passing date.
4. Students must complete a Background Disclosure form and request and pay for a background check. Applicants for all health science programs are subject to a review of their criminal backgrounds. Positive background checks may negatively impact your ability to pursue a health career at Gateway Technical College. Each case will be individually evaluated based on all available evidence provided to the college.

**GRADUATION REQUIREMENTS**

1. Minimum 70 credits with an average of 2.0 or above.
2. \*A minimum grade of 2.0 ("C") or above for each of these major courses.

For a complete list of Graduation Requirements check the Student Handbook.

**NOTES**

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. Clinical sites may require proof of insurance and criminal background checks.
3. A liability insurance of approximately \$13 in the fourth semester and summer session is required.
4. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).
5. The prerequisite for this course must have been completed with a minimum grade of a 'C' or better.
6. Students must meet petition requirements prior to enrolling in 530 courses.
7. Formerly 804-106, Intro to College Math.
8. If part-time students cannot complete the HIT or Coding programs within 5 and 3 years respectively, they will be asked to retake any courses that exceed those thresholds. Students are allowed to repeat any HIT/Coding course only one time.
9. Formerly 103-199, PC Basics/Microsoft Office.
10. This program has a second-tier admission process for clinical/practicum/program courses called petitioning. Students are selected based on completion of academic eligibility requirements and district residency. See <https://www.gtc.edu/student-services/admissions/what-petitioning> for additional information.
11. Transfer credits in Social Science may substitute for this course. See an advisor for details.
12. Please note that your program may require additional fee(s) for: Criminal Background Check, Medical Documentation Manager, and/or Drug Testing.

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.  
For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_. My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	Career Cluster ►	Career Pathway ►	<b>HEALTH UNIT COORDINATOR</b> (30-510-2) <i>Technical Diploma</i> Most Courses Offered at Racine Campus
		Support Services	

△ Suggested Sequence	✓	Course Number	Course Title	Requisites	Credits	Hrs/Wk
						Lec - Lab
Semester 1		501-101 *	Medical Terminology	Prereq: 838-105 (See Note 2)	3	3-0
		501-107 *	Intro to Healthcare Computing	(See Note 1)	2	1-2
		501-104 *	Healthcare Customer Service	Prereq: 851-760 (See Note 2) & Advisor Consent; Coreq: 501-107	2	1-2
		509-302 *OR	Human Body in Health and Disease	Coreq: 501-101	3	6-0
		543-300	Nursing Assistant	Prereq: Advisor Consent (See Note 7)	3	4-2
		801-301	Writing Principles	Prereq: 851-760 (See Note 2)	1	2-0
Semester 2		510-301 *	Health Unit Coordinator Procedures I	Prereq: 501-101; 501-104; 501-107 (See Note 5)	3	6-0
		510-302 *	Health Unit Coordinator Procedures II	Prereq: 510-301 (See Note 5)	3	6-0
		510-303 *	Health Unit Coordinator Clinical	Coreq: 510-302 (See Note 5)	3	0-2-6

**Minimum Program Total Credits Required      20**

Federal regulations require disclosure of the following information for this program:

Books and Supplies	Resident Tuition and Fees	Median Loan Debt <sup>1</sup>	On-time Graduation Rate <sup>2</sup>	U.S. Department of Labor Standard Occupational (SOC) Code & Occupational Profile – available at <a href="http://www.onetonline.org">http://www.onetonline.org</a>
\$1,320	\$2,950	\$6,690	0.0%	Receptionists and Information Clerks (43-4171)

<sup>1</sup> **Median Loan Debt:** Based on eligibility, students can receive loans to help pay for the total cost of attending college. The cost is comprised of tuition and fees, books and supplies, transportation costs, room and board, and miscellaneous personal expenses. Therefore, median loan debt may be more than the listed tuition, fees, books, and supplies cost.

<sup>2</sup> **On-time Graduation Rate:** Dependent upon students' choice to attend college part-time or full-time. Students decide to attend college part-time for a number of reasons including work schedule/demands and family responsibilities. 76 percent of students at Gateway attend part-time, therefore taking longer to complete their chosen program of study.



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Support Services

## HEALTH UNIT COORDINATOR

(30-510-2)

Technical Diploma

Most Courses Offered at Racine Campus

### PROGRAM DESCRIPTION

Health Unit Coordinator prepares the student for employment in a variety of health care settings. The program prepares the student to professionally coordinate health unit operations, transcribe medical orders, communicate effectively in a health care environment, and manage client information. The program includes theory, simulated activities, and experience in a health care setting.

### PROGRAM LEARNING OUTCOMES

Graduates of the Health Unit Coordinator Technical Diploma Program should be able to:

1. Manage client information.
2. Integrate the role of the Health Unit Coordinator in the health care system.
3. Coordinate health unit operations.
4. Communicate professionally in the health care environment.
5. Transcribe medical orders.

### CORE ABILITIES

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                     | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively | 7. Think critically and creatively                                  |
| 3. Demonstrate essential comp. skills  | 8. Work cooperatively   |
| 4. Demonstrate essential math skills   | 9. Value learning   |
| 5. Develop job seeking skills          |   |

### ADMISSION REQUIREMENTS

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript including a graduation or passing date.
4. Students must complete a Background Disclosure form and must request and pay for a background check. Applicants for all health science programs are subject to a review of their criminal backgrounds. Positive background checks may negatively impact your ability to pursue a health career at Gateway Technical College. Each case will be individually evaluated based on all available evidence provided to the college.
5. Students must complete a functional ability form verifying they have read and understand the functional abilities for the program.

### GRADUATION REQUIREMENTS

1. Minimum 20 credits with an average of 2.0 or above.
2. \*Minimum Grade of 2.0 ("C") or above for these major courses.

For a complete list of Graduation Requirements check the Student Handbook.

### NOTES

1. This course requires advisor consent, which will be granted only to students who either show the ability to type at 35WPM or complete a keyboarding course.
2. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
3. Clinical sites may require proof of health insurance, immunizations, and a physical.
4. Any non-510 course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).
5. Students must petition prior to enrolling in 510 courses.
6. Clinical sites may be at a facility located anywhere in the Gateway District. Students are responsible for their own transportation.
7. Students choosing to enroll in 543-300 Nursing Assistant will need to review the Notes section of the 30-543-1 Nursing Assistant curriculum sheet for a list of additional requirements for this course. See an advisor for details.
8. This program has a second-tier admission process for clinical/practicum/program courses called petitioning. Students are selected based on completion of academic eligibility requirements and district residency. See <https://www.gtc.edu/student-services/admissions/what-petitioning> for additional information.
9. Please note that your program may require additional fee(s) for: Criminal Background Check, Medical Documentation Manager, and/or Drug Testing.

### OTHER INFORMATION

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.  
For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_. My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster</b> ▶ 	<b>Career Pathway</b> ▶ Plant Systems	<b>HORTICULTURE</b> (10-001-1A) – Greenhouse & Marketing <i>Associate of Applied Science Degree</i> Most Courses Offered at Kenosha Campus

△ Suggested Sequence	✓	Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab	
<b>Semester 1</b>		001-137 *	Greenhouse Business and Planning		3	2-2	
		001-144 * *OR	Floral Design I / Commercial Landscape Management		3	2-2	
		001-136					
		001-146 *	Sustainable Landscape		1	1-0	
		001-147 *	Soils and Plant Nutrition		1	1-0	
		103-143	Computers for Professionals	Prereq: 103-142 (See Notes 1 & 3)	3	2-2	
		801-136	English Composition 1	Prereq: 831-103 (See Note 1)	3	3-0	
<b>Semester 2</b>		001-148 *	Plant Pests and Beneficials		1	1-0	
		001-150 * *OR	Floristry Landscape Plants II	Prereq: 001-144	3	2-2	
		001-132					
		001-151 *	Greenhouse Crops		3	2-2	
		801-198	Speech	Prereq: 838-105 (See Note 1)	3	3-0	
		804-123	Math Business Applications	Prereq: 834-109 (See Note 1)	3	3-0	
		809-195	Economics	Prereq: 838-105 (See Note 1)	3	3-0	
<b>Semester 3</b>		001-130 *	Landscape Plants I		3	2-2	
		001-143 *	Herbaceous Plants		3	2-2	
		104-104	Selling Principles		3	3-0	
		801-196	Oral/Interpersonal Communication	Prereq: 838-105 (See Note 1)	3	3-0	
		809-196	Sociology, Introduction to	Prereq: 838-105 (See Note 1 & 4)	3	3-0	
<b>Semester 4</b>		001-111 *	Horticulture Practicum	Prereq: 001-147; 001-151	3	2-2	
		001-128 *	Horticulture Marketing		3	2-2	
		001-129 *	Pesticide Applicator Certification		1	1-0	
		001-154 *	Alternative Growing Methods		3	2-2	
		001-142 * *OR	Vegetable Science Visual Merchandising		3	2-2 1-4	
		104-119					
		001-180 *	Horticulture Portfolio	Prereq: 001-147; 151; 130; 143 Coreq: 001-128	1	1-0	
		809-198	Psychology, Introduction to	Prereq: 838-105 (See Note 1 & 4)	3	3-0	
<b>Electives</b>		<b>Take 6 elective credits. Any associate degree level course may be taken as an elective.</b>			<b>6</b>		
		<b>Suggested Electives:</b>					
		001-103 Permaculture (3 Cr)	001-152 Perennials (3 Cr)				
		001-108 Business of Urban Farming (3 Cr)	001-153 Fruit Science (3 Cr)				
		001-109 Urban Farming and Mkt. Gard. (3 Cr)	802-124 Spanish I (4 Cr)				
		001-117 Landscape Design/Advanced (3 Cr)	890-105 Serving to Learn Locally (2 cr)				
		001-149 Horticulture Events (3 Cr)	890-106 Serving to Learn Globally (2 cr)				

△ Courses may be taken out of suggested sequence as long as requisites have been met.

**Minimum Program Total Credits Required**

**68**



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Plant Systems

**HORTICULTURE**

(10-001-1A) – Greenhouse & Marketing  
Associate of Applied Science Degree  
Most Courses Offered at Kenosha Campus

**PROGRAM DESCRIPTION**

*Horticulture-Greenhouse and Marketing* includes training in floral design, greenhouse operations, and garden center and floral shop management. Courses include hands-on experience with flowers, plants, equipment, computers, and horticulture business management. This program may be completed in two years of full-time study.

**PROGRAM LEARNING OUTCOMES**

Graduates of the Horticulture-Greenhouse & Marketing Associate Degree Program should be able to:

1. Analyze growing media.
2. Diagnose plant health.
3. Communicate as a horticulture professional.
4. Apply design principles.
5. Provide horticulture maintenance.
6. Apply the principles of plant science.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                           | 5. Develop job seeking skills                                       |
| 2. Communicate clearly and effectively       | 6. Respect themselves and others as a member of a diverse community |
| 3. Demonstrate essential computer skills     | 7. Think critically and creatively                                  |
| 4. Demonstrate essential mathematical skills | 8. Work cooperatively   |
|  | 9. Value learning   |

**ADMISSION REQUIREMENTS**

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.

**GRADUATION REQUIREMENTS**

1. Minimum 68 credits with an average of 2.0 or above.
2. \*Average of 2.0 ("C") or above for these major courses.

*For a complete list of Graduation Requirements check the Student Handbook.*

**NOTES**

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).
3. Formerly 103-199, PC Basics/Microsoft Office.
4. Transfer credits in Social Science may substitute for this course. See an advisor for details.

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.

For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_. My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster ▶</b> 	<b>Career Pathway ▶</b> Plant Systems	<b>HORTICULTURE</b> (10-001-1B) – Landscape <i>Associate of Applied Science Degree</i> Most Courses Offered at Kenosha Campus

△ Suggested Sequence	✓	Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
<b>Semester 1</b>		001-130 *	Landscape Plants I		3	2-2
		001-136 *	Landscape Management		3	2-2
		001-146 *	Sustainable Landscape		1	1-0
		001-147 *	Soils and Plant Nutrition		1	1-0
		103-143	Computers for Professionals	Prereq: 103-142 (See Notes 1 & 3)	3	2-2
		801-136	English Composition 1	Prereq: 831-103 (See Note 1)	3	3-0
<b>Semester 2</b>		001-132 *	Landscape Plants II		3	2-2
		001-148 *	Plant Pests and Beneficials		1	1-0
		001-151 *	Greenhouse Crops		3	2-2
		001-154 *	Alternative Growing Methods		3	2-2
		801-198	Speech	Prereq: 838-105 (See Note 1)	3	3-0
		804-123	Math with Business Applications	Prereq: 834-109 (See Note 1)	3	3-0
<b>Semester 3</b>		001-111 *	Horticulture Practicum	Prereq: 001-147; 001-151	3	2-2
		001-140 *	Landscape Design, Intro		3	2-2
		001-143 *	Herbaceous Plants		3	2-2
		809-198	Psychology, Introduction to	Prereq: 838-105 (See Note 1 & 4)	3	3-0
		801-196	Oral/Interpersonal Communication	Prereq: 838-105 (See Note 1)	3	3-0
<b>Semester 4</b>		001-122 *	Horticulture Business Operations		3	2-2
		001-128 *	Horticulture Marketing		3	2-2
		001-129 *	Pesticide Applicator Certification		1	1-0
		001-142 *	Vegetable Science		3	2-2
		001-180 *	Horticulture Portfolio	Prereq: 001-147; 151; 130; 143; Coreq: 001-128	1	1-0
		809-195	Economics	Prereq: 838-105 (See Note 1)	3	3-0
		809-196	Sociology, Introduction to	Prereq: 838-105 (See Note 1 & 4)	3	3-0
<b>Electives</b>		<b>Take 6 elective credits. Any associate degree level course may be taken as an elective.</b>			<b>6</b>	
		<b>Suggested Electives:</b>				
		001-103 Permaculture (3 Cr)		001-152 Perennials (3 Cr)		
		001-108 Business of Urban Farming (3 Cr)		001-153 Fruit Science (3 Cr)		
		001-109 Urban Farming and Mkt. Gard. (3 Cr)		802-124 Spanish I (4 Cr)		
		001-117 Landscape Design/Advanced (3 Cr)		890-105 Serving to Learn Locally (2 cr)		
		001-149 Horticulture Events (3 Cr)		890-106 Serving to Learn Globally (2 cr)		
<b>Minimum Program Total Credits Required</b>					<b>68</b>	

△ Courses may be taken out of suggested sequence as long as requisites have been met.



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Plant Systems

**HORTICULTURE**

(10-001-1B) – Landscape

Associate of Applied Science Degree  
Most Courses Offered at Kenosha Campus

**PROGRAM DESCRIPTION**

*Horticulture-Landscape* includes training in landscape design, sustainable management, and garden center operations. Courses include hands-on experience in plant identification, pest control, landscape design concepts and graphics, and landscape techniques such as pruning, planting, and weed control.

**PROGRAM LEARNING OUTCOMES**

Graduates of the Horticulture-Landscape Associate Degree Program should be able to:

1. Analyze growing media.
2. Diagnose plant health.
3. Communicate as a horticulture professional.
4. Apply design principles.
5. Provide horticulture maintenance.
6. Apply the principles of plant science.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                           | 5. Develop job seeking skills                                       |
| 2. Communicate clearly and effectively       | 6. Respect themselves and others as a member of a diverse community |
| 3. Demonstrate essential computer skills     | 7. Think critically and creatively                                  |
| 4. Demonstrate essential mathematical skills | 8. Work cooperatively   |
|  | 9. Value learning   |

**ADMISSION REQUIREMENTS**

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.

**GRADUATION REQUIREMENTS**

1. Minimum 68 credits with an average of 2.0 or above.
2. \*Average of 2.0 ("C") or above for these major courses.

*For a complete list of Graduation Requirements check the Student Handbook.*

**NOTES**

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).
3. Formerly 103-199, PC Basics/Microsoft Office.
4. Transfer credits in Social Science may substitute for this course. See an advisor for details.

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.  
For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_. My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster</b> ▶ 	<b>Career Pathway</b> ▶ Family & Community Services	<b>HUMAN SERVICE ASSOCIATE</b> (10-520-3) <i>Associate of Applied Science Degree</i> Most Courses Offered at Elkhorn, Kenosha, and Racine Campuses

△ Suggested Sequence	✓ Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
Semester 1	103-143	Computers for Professionals	Prereq: 103-142 (See Notes 1 & 4)	3	2-2
	520-101 *	Human Services, Intro to		3	3-0
	520-105 *	Interviewing Principles & Recordkeeping		3	2-2
	801-136	English Composition 1	Prereq: 831-103 (See Note 1)	3	3-0
	809-198	Psychology, Introduction to	Prereq: 838-105 (See Note 1 & 5)	3	3-0
Semester 2	520-110 *	Community Resources & Services		3	3-0
	520-115 *	Counseling, Introduction to	Prereq: 520-105	3	2-2
	520-127 *	Professional Practices in Human Services		3	3-0
	699-136	Writing Grant Proposals	Prereq: 831-103 (See Note 1)	3	2-2
	804-107	College Mathematics	Prereq: 834-109(See Note 1 & 3)	3	3-0
	809-196	Sociology, Introduction to	Prereq: 838-105 (See Note 1 & 5)	3	3-0
Semester 3	520-124 *	Field Experience I / Human Services	Prereq: 520-127; Coreq: 520-140	3	1-0-0-8
	520-140 *	Group Counseling	Prereq: 520-115	3	2-2
	550-130 *	Alcohol/Drug Abuse Rehabilitation		3	2-2
	801-196	Oral/Interpersonal Communication	Prereq: 838-105 (See Note 1)	3	3-0
	809-159 *	Psychology, Abnormal	Prereq: 809-198	3	3-0
Semester 4	520-121 *	Field Experience II / Human Services	Prereq: 520-124	3	1-0-0-8
	550-150 *	Psychopharmacology	Take 550-150 <b>OR</b> Human Services Elective	3	3-0
	809-128	Marriage and the Family	Prereq: 838-105 (See Note 1)	3	3-0
	520-151	Family Theory and Practice			
	809-188	Psychology, Developmental	Prereq: 838-105 (See Note 1)	3	3-0
Electives	<b>Take 6 elective credits. Any associate degree level course may be taken as an elective.</b> <b>Suggested Electives:</b>			6	
	520-141 Survey Public Services (3 Cr) 520-152 Aspects of Disabilities (3 Cr) 520-160 Correctional Processes (3 Cr) 520-150 Gerontology/Intro to (3 Cr)	520-161 Child and Adolescent Mental Health (3Cr) 550-154 Family & Chemical Abuse (3 Cr) 550-156 Mental Health/Sub Abuse (3 Cr) 520-128 Child Welfare Policy and Practice (3 Cr)			
<b>Minimum Program Total Credits Required</b>				<b>66</b>	

△ Courses may be taken out of suggested sequence as long as requisites have been met.

 <b>Effective 2015/2016</b>	<b>Career Cluster ▶</b>	<b>Career Pathway ▶</b>	<b>HUMAN SERVICE ASSOCIATE</b> <b>(10-520-3)</b> <i>Associate of Applied Science Degree</i> Most Courses Offered at Elkhorn, Kenosha, and Racine Campuses
		<b>Family &amp; Community Services</b>	

**PROGRAM DESCRIPTION**

*Human Service Associate* is designed to prepare people for entry level positions in a variety of human service agencies and social service programs. The Human Service Associate program includes a unique combination of the study of aspects of human services, general education subjects, and 300 hours of actual field experience in a community human service agency under the supervision of a working professional. If taken full-time, this program may be completed in four semesters of study.

**PROGRAM LEARNING OUTCOMES**

Graduates of the Human Service Associate Degree Program should be able to:

1. Model a commitment to cultural competence.
2. Uphold the Ethical Standards and Values for Human Service Professionals.
3. Demonstrate professionalism.
4. Utilize community resources.
5. Apply human services interventions and best practices.
6. Cultivate professional relationships.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                           | 5. Develop job seeking skills                                       |
| 2. Communicate clearly and effectively       | 6. Respect themselves and others as a member of a diverse community |
| 3. Demonstrate essential computer skills     | 7. Think critically and creatively                                  |
| 4. Demonstrate essential mathematical skills | 8. Work cooperatively   |
|  | 9. Value learning   |

**ADMISSION REQUIREMENTS**

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.

**GRADUATION REQUIREMENTS**

1. Minimum 66 credits with an average of 2.0 or above.
2. \*Average of 2.0 ("C") or above for these major courses.

*For a complete list of Graduation Requirements check the Student Handbook.*

**NOTES**

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).
3. Formerly 804-106, Intro to College Math.
4. Formerly 103-199, PC Basics/Microsoft Office.
5. Transfer credits in Social Science may substitute for this course. See an advisor for details.

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.  
 For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_.



Effective 2015/2016

**INDIVIDUALIZED TECHNICAL STUDIES**

(10-825-1)

Associate of Applied Science Degree

Most Courses Offered at All Campuses

**PROGRAM DESCRIPTION**

*Individualized Technical Studies* is designed for employed individuals in partnership with their respective employer, desiring to combine skills and knowledge from different academic disciplines. The degree is designed to meet specific educational needs of students whose career goals do not align with current academic programs. Career goals are identified with the input of the student, a Gateway advisor, and an occupational mentor. A formal portfolio is developed to define career goals, document appropriate learning experiences, and formulate a plan for degree completion. Courses from all departments within the college are available for utilization, with a minimum of 20 of these credits being focused in one specific discipline.

**PROGRAM REQUIREMENTS**

1. For admission, students must meet the following requirements: submit an application and \$30 fee; complete reading, writing, math, and computer skills placement assessments; and submit official high school, GED, or HSED transcript.
2. The ITS degree is intended for currently employed individuals who have a spec. career obj. in mind that can't be met by exist. college degree programs.
3. The student is required to work under the direction of an occupational mentor at their current place of employment so that the student and the current employer are in complete agreement as to the curriculum identified, and place value on its contribution to the student and employer. These requirements are in place to prevent students or colleges from designing a program around what they perceive to be a workforce need but which employers do not value, leaving the student with an unmarketable set of skills.
4. Critical to a successful experience and graduation from this program will be the input of an occupational mentor. This real-world business person knows about the requirements and skills needed to be successful in the program of study. The mentor, with the assistance of a Gateway advisor, helps the student decide the combination of technical and general studies courses necessary to meet the job requirements of their employer.

**GRADUATION REQUIREMENTS**

**Requirements for Graduation (67 Credit Hours):**

- 40 credits Individualized Technical Studies courses  
(20 must be focused in one technical discipline)
- 21 credits General Studies **required** from the following:
  - 6 credits Communications
  - 3 credits Social Science
  - 3 credits Behavioral Science
  - 3 credits Mathematics and/or Natural Science
  - 6 credits Additional from General Studies area
- 6 credits Electives

25% of the total program credits must be completed at Gateway.

*For a complete list of Graduation Requirements check the Student Handbook.*

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |   |   |
|---|---|
| <ol style="list-style-type: none"> <li>1. Act responsibly</li> <li>2. Communicate clearly and effectively</li> <li>3. Demonstrate essential computer skills</li> <li>4. Demonstrate essential mathematical skills</li> <li>5. Develop job seeking skills</li> </ol> | <ol style="list-style-type: none"> <li>6. Respect themselves and others as a member of a diverse community</li> <li>7. Think critically and creatively</li> <li>8. Work cooperatively</li> <li>9. Value learning</li> </ol> |
|---|---|

To schedule an appointment with an advisor, please call 1-800-247-7122.

For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_.



Effective 2015/2016

## TECHNICAL STUDIES-JOURNEYWORKER

(10-499-5)

Associate of Applied Science Degree

Most Courses Offered at All Campuses

### PROGRAM DESCRIPTION

In response to requests for academic recognition of registered apprenticeship training in the state of Wisconsin, the WTCS provides a TECHNICAL STUDIES – JOURNEYWORKER ASSOCIATE IN APPLIED SCIENCE DEGREE. This degree recognizes the goals, general principles and procedures of the WTCS Credit for Prior Learning Policy (WTCS #323, revised July 2005). The Technical Studies Journeyworker AAS degree is designed to support lifelong learning and accelerate the achievement of individual career goals. Transferability of the Technical Studies portion of the AAS degree to four year institutions will be based on the accepting institution's policies.

### PROGRAM REQUIREMENTS

1. For admission, students must possess a Wisconsin Apprenticeship Completion Certificate issued by the Department of Workforce Development-Bureau of Apprenticeship Standards registered program which includes a minimum of 400 hours of prescribed apprentice related instruction in the Wisconsin Technical College System.
2. Complete all prescribed WTCS apprentice related technical instruction. Possession of the DWD-BAS Wisconsin Apprenticeship Completion Certificate AND successful completion of all prescribed coursework fulfills the Technical Studies requirement of the Technical Studies-Journeyworker Associate of Applied Science degree.

### GRADUATION REQUIREMENTS

#### Requirements for Graduation (60 Credit Hours):

- 39 credits Technical Studies (awarded as advanced standing)
- 21 credits General Studies **required** from the following:
  - 6 credits Communications
  - 3 credits Social Science
  - 3 credits Behavioral Science
  - 3 credits Mathematics and/or Natural Science
  - 6 credits Additional from General Studies area

25% of the total program credits must be completed at Gateway.

*For a complete list of Graduation Requirements check the Student Handbook.*

### OTHER INFORMATION

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

### CORE ABILITIES

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

1. Act responsibly
2. Communicate clearly and effectively
3. Demonstrate essential computer skills
4. Demonstrate essential mathematical skills
5. Develop job seeking skills
6. Respect themselves and others as a member of a diverse community
7. Think critically and creatively
8. Work cooperatively
9. Value learning

To schedule an appointment with an advisor, please call 1-800-247-7122.  
For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster</b> ▶	<b>Career Pathway</b> ▶	<b>IT – COMPUTER SUPPORT SPECIALIST</b> <b>(10-154-3)</b> <i>Associate of Applied Science Degree</i> Most Courses Offered at Elkhorn and Kenosha Campuses
		Information Support and Services	

<sup>Δ</sup> Suggested Sequence	✓	Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
Semester 1		154-121 *	CSS Program Orientation	Prereq: 103-142	1	1-0
		154-119 *	System Software Support	Coreq: 154-121	3	2-2
		107-011 *	IT in Business		3	2-2
		107-193 *	IT Essentials		3	2-2
		801-136	English Composition 1	Prereq: 831-103 (See Note 1)	3	3-0
		804-133 <b>OR</b>	Mathematics and Logic	Prereq: 834-110 (See Note 1)	3	3-0
		804-107	College Math	Prereq: 834-109 (See Note 1)		
Semester 2		154-114 *	Hardware & Software Support	Prereq: 154-119; 107-193	3	2-2
		154-122 *	Introduction to Help/Service Desk	Prereq: 107-193	3	2-2
		150-105 *	Intro to Networking / Web Concepts		3	2-2
		801-197	Technical Reporting	Prereq: 801-136	3	3-0
		809-196 <b>OR</b>	Sociology, Introduction to	Prereq: 838-105 (See Note 1 & 4)	3	3-0
		809-172	Diversity Studies, Introduction to	Prereq: 838-105 (See Note 1)		
Semester 3		154-112 *	Data Security & Recovery Support	Prereq: 154-114	3	2-2
		154-113 *	IT Apps Server & Support	Prereq: 154-114	3	2-2
		154-120 *	Advanced Help/Service Desk	Prereq: 154-122	3	2-2
		801-196 <b>OR</b>	Oral/Interpersonal Communication	Prereq: 838-105 (See Note 1)	3	3-0
		801-198	Speech			
		809-144 <b>OR</b>	Macroeconomics	Prereq: 838-105 (See Note 1)	3	3-0
		809-143 <b>OR</b>	Microeconomics			
	809-195	Economics				
Semester 4		154-116 *	Emerging Technologies and Apps.	Prereq: 154-112; 154-113	2	1-2
		154-118 *	CSS Skills Implementation & Career Prep	Prereq: 154-112; 113 Coreq: 801-197	3	2-2
		107-177 *	IT Project Management	Prereq: 154-113 OR 152-131; Coreq: 801-197	4	3-2
		152-126 *	Intro to Prog. & Database Concepts		4	3-2
		809-198	Psychology, Introduction to	Prereq: 838-105 (See Note 1 & 4)	3	3-0
	Electives	<b>Take 6 elective credits. Any associate degree level course may be taken as an elective.</b>				<b>6</b>
<b>Suggested Electives:</b>						
		154-109	IT-Computer Support Specialist Internship (3 Cr)	150-111 Network Admin. – Microsoft (3 Cr)		
		107-009	A+ Essentials Review Class (1 Cr)	152-105 System i Concepts (2 Cr)		
		107-010	A+ 602 Review Class (1 Cr)	102-138 BIZ Internship (3 Cr)		
	809-112	Principles of Sustainability (3 Cr)				
<b>Minimum Program Total Credits Required</b>					<b>68</b>	

<sup>Δ</sup>Courses may be taken out of suggested sequence as long as requisites have been met.



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Information Support and Services

**IT – COMPUTER SUPPORT SPECIALIST**

**(10-154-3)**

*Associate of Applied Science Degree  
Most Courses Offered at Elkhorn  
and Kenosha Campuses*

**PROGRAM DESCRIPTION**

The *IT – Computer Support Specialist* program has been designed to prepare students for a career in Information Technology, providing end-user service and support in a variety of environments, including small business, not-for-profit and enterprise-sized corporations. Topics include the architecture, use, installation, and upgrading of hardware and software, operating systems, networking, and communications as well as data security and recovery. Students will evaluate user hardware and software needs, function as a liaison between their firm and outside contractors or vendors, research emerging technologies, and provide user training for both hardware and software.

**PROGRAM LEARNING OUTCOMES**

**Graduates of the IT-Computer Support Specialist Associate Degree Program should be able to:**

1. Manage information technology hardware.
2. Manage software.
3. Support computer networks.
4. Provide end user support.
5. Solve information technology problems.
6. Demonstrate customer service skills as an IT professional.
7. Coordinate technology projects.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                           | 5. Develop job seeking skills                                       |
| 2. Communicate clearly and effectively       | 6. Respect themselves and others as a member of a diverse community |
| 3. Demonstrate essential computer skills     | 7. Think critically and creatively                                  |
| 4. Demonstrate essential mathematical skills | 8. Work cooperatively   |
|  | 9. Value learning   |

**ADMISSION REQUIREMENTS**

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.

**GRADUATION REQUIREMENTS**

1. Minimum 68 credits with an average of 2.0 or above.
2. \*Grade of 2.0 (“C”) or above for these major courses.

*For a complete list of Graduation Requirements check the Student Handbook.*

**NOTES**

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).
3. See your advisor if you have questions about course selection.
4. Transfer credits in Social Science may substitute for this course. See an advisor for details.

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.

For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster ▶</b> 	<b>Career Pathway ▶</b> Web and Digital Communications	<b>IT – JUNIOR SHAREPOINT DEVELOPER</b> (31-152-5) Technical Diploma Most Courses Offered Online

<sup>Δ</sup> Suggested Sequence	✓	Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
Semester 1		152-187 *	Web Program Orientation		1	1-0
		107-193 *	IT Essentials		3	2-2
		152-126 *	Intro to Prog. & Database Concepts		4	3-2
		152-182 *	Web Programming 1		3	2-2
		801-198 801-196	OR Speech Oral/Interpersonal Communications	Prereq: 838-105 (See Note 1)	3	3-0
Semester 2		152-146 *	Advanced Databases	Prereq: 152-126	3	2-2
		152-150 *	Web Programming 2	Prereq: 152-182	3	2-2
		152-151 *	Microcomputer Programming/Adv	Prereq: 152-126	3	2-2
		152-178 *	Develop ASP.NET Web Apps	Prereq: 152-126	3	2-2
		152-184 *	Java Programming 1	Prereq: 152-126	3	2-2
Semester 3		152-129 *	Web Project Management	Prereq: 152-146; Coreq: 152-188	2	1-2
		152-177 *	Core Prog SharePoint Solutions	Prereq: 152-178	3	2-2
		152-174 *	Java Programming 2	Prereq: 152-184	3	2-2
		152-176 *	Adv Prog SharePoint Solutions	Prereq: 152-177	3	2-2
		152-188 *	PHP Web Programming	Prereq: 152-182	3	2-2
<b>Minimum Program Total Credits Required</b>					<b>43</b>	

<sup>Δ</sup>Courses may be taken out of suggested sequence as long as requisites have been met.

Students who are interested in continuing into the 10-152-3 IT-Web Developer-SharePoint Developer program can earn their associate degree by completing an additional 27 credits. Please see your academic advisor for details.



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Web and Digital Communications

**IT – JUNIOR SHAREPOINT DEVELOPER**

(31-152-5)

Technical Diploma

Most Courses Offered Online

### PROGRAM DESCRIPTION

The *IT- Junior SharePoint Developer* diploma trains students in the development and maintenance of business web sites as well as designing and developing collaboration applications with Microsoft SharePoint. Topics will include web site design and development and basic knowledge of SQL and back-end databases. This concentration includes a focus on the Microsoft Certified SharePoint Solution Developer (MCSD) Certification. Typical entry-level positions for this training opportunity include junior web developer, junior web programmer, and Junior SharePoint Developer.

### PROGRAM LEARNING OUTCOMES

Graduates of the IT-Junior SharePoint Developer Technical Diploma Program should be able to:

1. Design software systems.
2. Integrate database technologies.
3. Develop software applications.
4. Develop technical documentation.

### CORE ABILITIES

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                     | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively | 7. Think critically and creatively                                  |
| 3. Demonstrate essential comp. skills  | 8. Work cooperatively   |
| 4. Demonstrate essential math skills   | 9. Value learning   |
| 5. Develop job seeking skills          |   |

### ADMISSION REQUIREMENTS

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.

### GRADUATION REQUIREMENTS

1. Minimum 43 credits with an average of 2.0 or above.
2. \*Grade of 2.0 ("C") or above for these major courses.

*For a complete list of Graduation Requirements check the Student Handbook.*

### NOTES

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. For those students considering the pursuit of a 4 year degree in this field, 804-115 College Technical Math 1 is recommended. This course may be taken in place of 804-133 Mathematics and Logic.
3. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with departmental approval).

### OTHER INFORMATION

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.  
For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster</b> ▶	<b>Career Pathway</b> ▶	<b>INFORMATION TECHNOLOGY JUNIOR WEB DEVELOPER</b> (31-152-4) <i>Technical Diploma</i> Most Courses Offered Online
		Web and Digital Communications	

<sup>Δ</sup> <i>Suggested Sequence</i>	✓	<i>Course Number</i>	<i>Course Title</i>	<i>Requisites</i>	<i>Credits</i>	<i>Hrs/Wk Lec - Lab</i>
<b>Semester 1</b>		152-187 *	Web Program Orientation		1	1-0
		150-105 *	Intro to Networking / Web Concepts		3	2-2
		152-126 *	Intro to Prog. & Database Concepts		4	3-2
		152-182 *	Web Programming 1		3	2-2
		801-198	Speech	Prereq: 838-105 (See Note 1)	3	3-0
		801-196 <i>OR</i>	Oral/Interpersonal Communications			
		804-133 <i>OR</i>	Mathematics and Logic	Prereq: 834-110 (See Notes 1 & 2)	3	3-0
	804-115	College Technical Math 1	5			
<b>Semester 2</b>		107-193 *	IT Essentials		3	2-2
		152-146 *	Advanced Databases	Prereq: 152-126	3	2-2
		152-178 *	Develop ASP.NET Web Apps	Prereq: 152-126	3	2-2
		152-184 *	Java Programming 1	Prereq: 152-126	3	2-2
		152-188 *	PHP Web Programming	Prereq: 152-182	3	2-2
		152-190 *	Elements of Dynamic Web Design	Prereq: 152-182	2	1-2

**Minimum Program Total Credits Required      34**

<sup>Δ</sup>*Courses may be taken out of suggested sequence as long as requisites have been met.*

Students who are interested in continuing into the 10-152-3 IT-Web Developer program can earn their associate degree by completing an additional 35 credits. Please see your academic advisor for details.

Federal regulations require disclosure of the following information for this program:

Books and Supplies	Resident Tuition and Fees	U.S. Department of Labor Standard Occupational (SOC) Code & Occupational Profile – available at <a href="http://www.onetonline.org">http://www.onetonline.org</a>
\$1,627	\$6,200	Web Developer (15-1134)



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Web and Digital Communications

# INFORMATION TECHNOLOGY JUNIOR WEB DEVELOPER

(31-152-4)

Technical Diploma

Most Courses Offered Online

### PROGRAM DESCRIPTION

The *Information Technology Junior Web Developer* diploma trains students in the development of business web sites using a variety of programming and scripting languages. Topics will include web site design and development and basic knowledge of SQL and back-end databases. Typical entry-level positions are junior web developer and junior web programmer.

### PROGRAM LEARNING OUTCOMES

Graduates of the Information Technology Junior Web Developer Technical Diploma Program should be able to:

1. Communicate effectively.
2. Utilize web design principles, standards, and best practices in designing effective and usable websites.
3. Identify and apply HTML/CSS tags and attributes for web page design.
4. Develop basic web applications using server-side scripting languages such as PHP and ASP.NET.
5. Use SQL commands to query a database and display data on a webpage.
6. Conduct testing and troubleshooting of web pages.

### CORE ABILITIES

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                     | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively | 7. Think critically and creatively                                  |
| 3. Demonstrate essential comp. skills  | 8. Work cooperatively   |
| 4. Demonstrate essential math skills   | 9. Value learning   |
| 5. Develop job seeking skills          |   |

### ADMISSION REQUIREMENTS

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.

### GRADUATION REQUIREMENTS

1. Minimum 34 credits with an average of 2.0 or above.
2. \*Minimum of 2.0 ("C") or above for these major courses.

*For a complete list of Graduation Requirements check the Student Handbook.*

### NOTES

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. For those students considering the pursuit of a 4 year degree in this field, 804-115 College Technical Math 1 is a better choice. This course may be taken in place of 804-133 Mathematics and Logic.
3. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).

### OTHER INFORMATION

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.  
For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster ▶</b>	<b>Career Pathway ▶</b>	<b>IT-NETWORK SPECIALIST</b> <b>(10-150-2A)</b> <i>Associate of Applied Science Degree</i> Most Courses Offered at Elkhorn and Racine Campuses
		Network Systems	

<sup>Δ</sup> <i>Suggested Sequence</i>	<i>Course Number</i>	<i>Course Title</i>	<i>Requisites</i>	<i>Credits</i>	<i>Hrs/Wk Lec - Lab</i>
Semester 1	107-011 *	IT in Business		3	2-2
	107-193 *	IT Essentials		3	2-2
	150-105 *	Intro to Networking / Web Concepts		3	2-2
	150-114 *	Network Concepts – CCNA 1		3	2-2
	801-198	<b>OR</b> Speech	Prereq: 838-105 (See Note 1)	3	3-0
	801-196	Oral/Interpersonal Communications			
	804-133	<b>OR</b> Mathematics and Logic	Prereq: 834-110 (See Note 1)	3	3-0
	804-107	College Math	Prereq: 834-109 (See Note 1)		
Semester 2	150-111 *	Network Administration – Microsoft		3	2-2
	150-124 *	Routing – CCNA 2	Prereq: 150-114	3	2-2
	152-126 *	Intro to Prog. & Database Concepts		4	3-2
	801-136	English Composition 1	Prereq: 831-103 (See Note 1)	3	3-0
	809-198	Psychology, Introduction to	Prereq: 838-105 (See Note 1 & 3)	3	3-0
Semester 3	150-108 *	Virtual Technologies		3	2-2
	150-135 *	Switching & WANs – CCNA 3 & 4	Prereq: 150-124	4	2-4
	150-194 *	Network Security		3	2-2
	801-197	Technical Reporting	Prereq: 801-136	3	3-0
	809-196	Sociology, Introduction to	Prereq: 838-105 (See Note 1 & 3)	3	3-0
	809-195	Economics			
	809-143	<b>OR</b> Microeconomics	Prereq: 838-105 (See Note 1)	3	3-0
	809-144	Macroeconomics			
Semester 4	150-113 *	Network Administration – Linux/Unix		4	2-4
	150-132 *	Active Directory Administration	Prereq: 150-111	3	2-2
	150-136 *	Server Technologies	Prereq: 150-105 & 107-193	3	2-2
	107-013 *	IT Job Skills	Prereq: 150-114	1	1-0
Electives	<b>Take 6 elective credits. Any associate degree level course may be taken as an elective.</b>			6	
	<b>Suggested Electives:</b>				
	150-106 Intrusion Detection Systems (3 Cr)	150-180 What's in the Cloud? (3 Cr.)			
	150-131 Network Internship (3 Cr)	150-133 Message Service Admin (4 Cr)			
<b>Minimum Program Total Credits Required</b>				<b>70</b>	

<sup>Δ</sup>Courses may be taken out of suggested sequence as long as requisites have been met.



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Network Systems

**IT-NETWORK SPECIALIST**

(10-150-2A)

Associate of Applied Science Degree  
Most Courses Offered at Elkhorn  
and Racine Campuses

**PROGRAM DESCRIPTION**

*IT-Network Specialist* is designed to prepare students for a professional career in the computer network field. The program takes the students from the beginning architectural design process through installation, configuration, administration, and tuning of microcomputer network environments. Additional topics incorporated into the program include cross-platform and enterprise network environments.

**PROGRAM LEARNING OUTCOMES**

Graduates of the IT-Network Specialist Associate Degree program should be able to:

1. Implement computer networks.
2. Implement client systems.
3. Implement server operating systems.
4. Implement network security components.
5. Develop technical documentation.
6. Troubleshoot network systems.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                     | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively | 7. Think critically and creatively                                  |
| 3. Demonstrate essential comp. skills  | 8. Work cooperatively   |
| 4. Demonstrate essential math skills   | 9. Value learning   |
| 5. Develop job seeking skills          |   |

**ADMISSION REQUIREMENTS**

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.

**GRADUATION REQUIREMENTS**

1. Minimum 70 credits with an average of 2.0 or above.
2. \*Minimum of 2.0 ("C") or above for these major courses.

*For a complete list of Graduation Requirements check the Student Handbook.*

**NOTES**

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with departmental approval).
3. Transfer credits in Social Science may substitute for this course. See an advisor for details.

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.  
For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_.



 <b>Effective 2015/2016</b>	<b>Career Cluster ▶</b>	<b>Career Pathway ▶</b>	<b>IT-NETWORK SPECIALIST (10-150-2B) – Security Analyst</b> <i>Associate of Applied Science Degree</i> Most Courses Offered at Elkhorn and Racine Campuses
		Network Systems	

**PROGRAM DESCRIPTION**

*IT-Network Specialist-Security Analyst* is designed to prepare students for a professional career in the network security field. The program trains students in how to create a quality Risk Management strategy in order to secure a network environment. Students will complete the following tasks: create security policies and procedures, install VoIP systems, install and configure firewalls and secure VPNs. Additional topics include designing a secure network environment and monitoring systems using IDS/IPS.

**PROGRAM LEARNING OUTCOMES**

Graduates of the IT-Network Specialist Associate Degree program should be able to:

1. Implement computer networks.
2. Implement client systems.
3. Implement server operating systems.
4. Implement network security components.
5. Develop technical documentation.
6. Troubleshoot network systems.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                     | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively | 7. Think critically and creatively                                  |
| 3. Demonstrate essential comp. skills  | 8. Work cooperatively   |
| 4. Demonstrate essential math skills   | 9. Value learning   |
| 5. Develop job seeking skills          |   |

**ADMISSION REQUIREMENTS**

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.

**GRADUATION REQUIREMENTS**

1. Minimum 70 credits with an average of 2.0 or above.
2. \*Minimum of 2.0 ("C") or above for these major courses.

*For a complete list of Graduation Requirements check the Student Handbook.*

**NOTES**

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with departmental approval).
3. Transfer credits in Social Science may substitute for this course. See an advisor for details.

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.  
 For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster</b> ▶	<b>Career Pathway</b> ▶	<b>IT – SOFTWARE DEVELOPER</b> (10-152-1) <i>Associate of Applied Science Degree</i> Most Courses Offered at Kenosha Campus
		Programming and Software Development	

<sup>Δ</sup> Suggested Sequence	✓	Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
Semester 1		107-011 *	IT in Business		3	2-2
		152-105 *	System i Concepts	Coreq: 107-011	2	1-2
		152-126 *	Intro to Prog. & Database Concepts		4	3-2
		801-136	English Composition 1	Prereq: 831-103 (See Note 1)	3	3-0
		804-133	Mathematics and Logic	Prereq: 834-110 (See Note 1)	3	3-0
		801-196 801-198	<b>OR</b> Oral/Interpersonal Communication Speech	Prereq: 838-105 (See Note 1)	3	3-0
Semester 2		152-133 *	System I Control Language	Prereq: 152-105	2	1-2
		152-141 *	Java Programming – IBM iSeries	Prereq: 152-126; 152-105	3	2-2
		152-145 *	Internet Programming	Prereq: 152-126	3	2-2
		152-151 *	Microcomputer Prog. Advanced	Prereq: 152-126	3	2-2
		801-197	Technical Reporting	Prereq: 801-136	3	3-0
Semester 3		152-093 *	IBM Advanced Java Programming	Prereq: 152-141; 152-145	3	2-2
		152-122 *	Computer Programming RPG/IV (ILE)	Prereq: 152-105; 152-126	3	2-2
		152-168 *	IBM and .NET Enterprise Programming	Prereq: 152-151	3	2-2
		809-195 809-144	<b>OR</b> Economics Macroeconomics	Prereq: 838-105 (See Note 1)	3	3-0
		809-198	Psychology, Introduction to	Prereq: 838-105 (See Note 1 & 3)	3	3-0
Semester 4		152-125 *	Computer Program, RPG/IV (ILE) Adv.	Prereq: 152-122	3	2-2
		152-131 *	Systems Design / Development	Prereq: 152-122	3	2-2
		152-158 *	DB/UIDB Programming	Prereq: 152-126; 152-105	3	2-2
		152-167 *	IBM Zend Application Programming	Prereq: 152-141	3	2-2
		809-196 809-172	<b>OR</b> Sociology, Introduction to Diversity Studies, Introduction to	Prereq: 838-105 (See Note 1) Prereq: 838-105 (See Note 1 & 3)	3	3-0
	Electives		<b>Take 6 elective credits. Any associate degree level course may be taken as an elective.</b>			<b>6</b>
		<b>Suggested Electives:</b> 152-124 Computer Programming C++ (3 Cr)      152-165 Mobile App Development Apple iOS (3 Cr) 152-149 IBM i Systems Administration (3 Cr)      152-166 Mobile Application Dev. Windows (3 Cr) 152-164 Mobile Device Programming (3 Cr)      809-112 Principles of Sustainability (3 Cr)				
<b>Minimum Program Total Credits Required</b>					<b>69</b>	

<sup>Δ</sup>Courses may be taken out of suggested sequence as long as requisites have been met.



Effective 2015/2016

Career Cluster ►



Career Pathway ►

Programming and Software Development

**IT – SOFTWARE DEVELOPER**

(10-152-1)

Associate of Applied Science Degree  
Most Courses Offered at Kenosha Campus

**PROGRAM DESCRIPTION**

IT-Software Developer covers the rapidly changing field of Information technology with its multiple job opportunities; it may be completed in four semesters if taken full-time. The curriculum includes various types of programming, program analysis, and system software. Typical entry-level positions are entry-level programmer and computer operator.

**PROGRAM LEARNING OUTCOMES**

Graduates of the IT-Software Developer Associate Degree Program should be able to:

1. Develop interactive programs utilizing structured programming techniques.
2. Code on multiple platforms.
3. Be prepared for entry in the computer field.
4. Assess computer hardware and software needs.
5. Communicate effectively with IT, end-users, teams, and management.
6. Develop and document IT (Information Technology) environments.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |                                     |
|--|-------------------------------------|
| 1. Act responsibly                     | 6. Respect themselves and others as |
| 2. Communicate clearly and effectively | a member of a diverse community     |
| 3. Demonstrate essential comp. skills  | 7. Think critically and creatively  |
| 4. Demonstrate essential math skills   | 8. Work cooperatively               |
| 5. Develop job seeking skills          | 9. Value learning                   |

**ADMISSION REQUIREMENTS**

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.

**GRADUATION REQUIREMENTS**

1. Minimum 69 credits with an average of 2.0 or above.
2. \*Minimum of 2.0 ("C") or above for these major courses.

*For a complete list of Graduation Requirements check the Student Handbook.*

**NOTES**

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with departmental approval).
3. Transfer credits in Social Science may substitute for this course. See an advisor for details.

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.

For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster</b> ▶	<b>Career Pathway</b> ▶	<b>IT – WEB DEVELOPER</b> <b>(10-152-3A)</b> <i>Associate of Applied Science Degree</i> <i>Most Courses Offered Online</i>
		<b>Web and Digital Communications</b>	

<sup>Δ</sup> <i>Suggested Sequence</i>	<i>Course Number</i>	<i>Course Title</i>	<i>Requisites</i>	<i>Credits</i>	<i>Hrs/Wk Lec - Lab</i>
<b>Semester 1</b>	152-187 *	Web Program Orientation		1	1-0
	150-105 *	Intro to Networking / Web Concepts		3	2-2
	152-126 *	Intro to Prog. & Database Concepts		4	3-2
	152-182 *	Web Programming 1		3	2-2
	801-198	Speech	Prereq: 838-105 (See Note 1)	3	3-0
	801-196 <i>OR</i>	Oral/Interpersonal Communications			
	804-133 <i>OR</i>	Mathematics and Logic	Prereq: 834-110 (See Note 1 & 2)	3	3-0
	804-115	College Technical Math 1		5	5-0
<b>Semester 2</b>	152-146 *	Advanced Databases	Prereq: 152-126	3	2-2
	152-178 *	Develop ASP.NET Web Apps	Prereq: 152-126	3	2-2
	152-188 *	PHP Web Programming	Prereq: 152-182	3	2-2
	152-190 *	Elements of Dynamic Web Design	Prereq: 152-182	2	1-2
	801-136	English Composition 1	Prereq: 831-103 (See Note 1)	3	3-0
	809-196 <i>OR</i>	Sociology, Introduction to	Prereq: 838-105 (See Note 1 & 4)	3	3-0
	809-172	Diversity Studies, Introduction to	Prereq: 838-105 (See Note 1)		
<b>Semester 3</b>	107-193 *	IT Essentials		3	2-2
	152-184 *	Java Programming 1	Prereq: 152-126	3	2-2
	152-185 *	Advanced PHP	Prereq: 152-188	3	2-2
	152-189 *	Graphics Programming with Dynamic Elements	Prereq: 152-190	3	2-2
	801-197	Technical Reporting	Prereq: 801-136	3	3-0
	809-198	Psychology, Introduction to	Prereq: 838-105 (See Note 1 & 4)	3	3-0
<b>Semester 4</b>	152-129 *	Web Project Management	Prereq: 152-146; Coreq: 152-188	2	1-2
	152-139 *	Ruby	Prereq: 152-188	3	2-2
	152-174 *	Java Programming 2	Prereq: 152-184	3	2-2
	809-143 <i>OR</i>	Microeconomics	Prereq: 838-105 (See Note 1)	3	3-0
	809-144	Macroeconomics			
<b>Electives</b>	<b>Take 6 elective credits. Any associate degree level course may be taken as an elective.</b> <b>Suggested Electives:</b> 152-140 Web Internship (3 Cr) OR 152-110 DBA Part 1 – Oracle (3 Cr) 102-138 BIZ Internship (3 Cr) 145-119 Entrepreneurship (3 Cr) 152-164 Mobile Device App Programming (3 Cr) 806-112 Principles of Sustainability (3 Cr) 152-194 SQL Fundamentals Oracle (3 Cr)			6	
<b>Minimum Program Total Credits Required</b>				<b>69</b>	

<sup>Δ</sup>Courses may be taken out of suggested sequence as long as requisites have been met.



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Web and Digital Communications

IT – WEB DEVELOPER  
(10-152-3A)

Associate of Applied Science Degree  
Most Courses Offered Online

**PROGRAM DESCRIPTION**

The *IT-Web Developer* program trains students in the development and maintenance of business and e-Commerce web sites using a variety of software, programming, and scripting languages. Topics will include web site project management, design, development, deployment, and basic maintenance of back-end databases and websites. Typical entry-level positions for this training opportunity include web developer, web programmer, and web designer.

**PROGRAM LEARNING OUTCOMES**

Graduates of the IT-Web Developer Associate Degree Program should be able to:

1. Design software systems.
2. Integrate database technologies.
3. Develop software applications.
4. Develop technical documentation.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                     | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively | 7. Think critically and creatively                                  |
| 3. Demonstrate essential comp. skills  | 8. Work cooperatively   |
| 4. Demonstrate essential math skills   | 9. Value learning   |
| 5. Develop job seeking skills          |   |

**ADMISSION REQUIREMENTS**

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.

**GRADUATION REQUIREMENTS**

1. Minimum 69 credits with an average of 2.0 or above.
2. \*Grade of 2.0 ("C") or above for these major courses.

*For a complete list of Graduation Requirements check the Student Handbook.*

**NOTES**

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. For those students considering the pursuit of a 4 year degree in this field, 804-115 College Technical Math 1 is a better choice. This course may be taken in place of 804-133 Mathematics and Logic.
3. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with departmental approval).
4. Transfer credits in Social Science may substitute for this course. See an advisor for details.

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.

For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster ▶</b> 	<b>Career Pathway ▶</b> Web and Digital Communications	<b>IT – WEB DEVELOPER</b> <b>(10-152-3B) – SharePoint Developer</b> <i>Associate of Applied Science Degree</i> Most Courses Offered Online

<sup>Δ</sup> <i>Suggested Sequence</i>	<i>Course Number</i>	<i>Course Title</i>	<i>Requisites</i>	<i>Credits</i>	<i>Hrs/Wk Lec - Lab</i>
Semester 1	152-187 *	Web Program Orientation		1	1-0
	150-105 *	Intro to Networking / Web Concepts		3	2-2
	152-126 *	Intro to Prog. & Database Concepts		4	3-2
	152-182 *	Web Programming 1		3	2-2
	801-198	Speech	Prereq: 838-105 (See Note 1)	3	3-0
	801-196 <i>OR</i>	Oral/Interpersonal Communications			
	804-133 <i>OR</i>	Mathematics and Logic	Prereq: 834-110 (See Note 1 & 2)	3	3-0
	804-115	College Technical Math 1		5	5-0
Semester 2	152-146 *	Advanced Databases	Prereq: 152-126	3	2-2
	152-150 *	Web Programming 2	Prereq: 152-182	3	2-2
	152-151 *	Microcomputer Programming/Adv	Prereq: 152-126	3	2-2
	152-178 *	Develop ASP.NET Web Apps	Prereq: 152-126	3	2-2
	801-136	English Composition 1	Prereq: 831-103 (See Note 1)	3	3-0
	809-196	Sociology, Introduction to	Prereq: 838-105 (See Note 1 & 4)	3	3-0
	809-172 <i>OR</i>	Diversity Studies, Introduction to	Prereq: 838-105 (See Note 1)		
Semester 3	107-193 *	IT Essentials		3	2-2
	152-177 *	Core Prog SharePoint Solutions	Prereq: 152-178	3	2-2
	152-184 *	Java Programming 1	Prereq: 152-126	3	2-2
	152-188 *	PHP Web Programming	Prereq: 152-182	3	2-2
	801-197	Technical Reporting	Prereq: 801-136	3	3-0
	809-198	Psychology, Introduction to	Prereq: 838-105 (See Note 1 & 4)	3	3-0
Semester 4	152-129 *	Web Project Management	Prereq: 152-146; Coreq: 152-188	2	1-2
	152-174 *	Java Programming 2	Prereq: 152-184	3	2-2
	152-176 *	Adv Prog SharePoint Solutions	Prereq: 152-177	3	2-2
	809-143	Microeconomics		3	3-0
	809-144 <i>OR</i>	Macroeconomics	Prereq: 838-105 (See Note 1)		
Electives	<b>Take 6 elective credits. Any associate degree level course may be taken as an elective.</b>			<b>6</b>	
	<b>Suggested Electives:</b>				
	152-140 Web Internship (3 Cr) OR	152-110 DBA Part 1 – Oracle (3 Cr)			
	102-138 BIZ Internship (3 Cr)	145-119 Entrepreneurship (3 Cr)			
	152-164 Mobile Device App Programming (3 Cr)	806-112 Principles of Sustainability (3 Cr)			
152-194 SQL Fundamentals Oracle (3 Cr)					
<b>Minimum Program Total Credits Required</b>				<b>70</b>	

<sup>Δ</sup>Courses may be taken out of suggested sequence as long as requisites have been met.



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Web and Digital Communications

**IT – WEB DEVELOPER**  
**(10-152-3B) – SharePoint Developer**  
*Associate of Applied Science Degree*  
Most Courses Offered Online

**PROGRAM DESCRIPTION**

The *IT-Web Developer – SharePoint Developer* program trains students in the development and maintenance of business web sites as well as designing and developing collaboration applications with Microsoft SharePoint. Topics will include web site project management, design, development, deployment, and basic maintenance of back-end databases and websites. This concentration includes a focus on the Microsoft Certified SharePoint Solution Developer (MCSD) Certification. Typical entry-level positions for this training opportunity include web developer, web programmer, web designer and SharePoint Developer.

**PROGRAM LEARNING OUTCOMES**

**Graduates of the IT-Web Developer-SharePoint Developer Associate Degree Program should be able to:**

1. Design software systems.
2. Integrate database technologies.
3. Develop software applications.
4. Develop technical documentation.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                     | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively | 7. Think critically and creatively                                  |
| 3. Demonstrate essential comp. skills  | 8. Work cooperatively   |
| 4. Demonstrate essential math skills   | 9. Value learning   |
| 5. Develop job seeking skills          |   |

**ADMISSION REQUIREMENTS**

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.

**GRADUATION REQUIREMENTS**

1. Minimum 70 credits with an average of 2.0 or above.
2. \*Grade of 2.0 ("C") or above for these major.

*For a complete list of Graduation Requirements check the Student Handbook.*

**NOTES**

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. For those students considering the pursuit of a 4 year degree in this field, 804-115 College Technical Math 1 is a better choice. This course may be taken in place of 804-133 Mathematics and Logic.
3. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with departmental approval).
4. Transfer credits in Social Science may substitute for this course. See an advisor for details.

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR**  
**EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.

For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_. My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster</b> ▶ 	<b>Career Pathway</b> ▶ Administration and Administrative Support	<b>INSTRUCTIONAL ASSISTANT – ASSOCIATE DEGREE</b> (10-522-2) <i>Associate of Applied Science Degree</i> Most Courses Offered Online

△ Suggested Sequence	✓	Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
<b>Semester 1</b>		522-103	* IA: Introduction to Educational Practices		3	2-2
		522-106	* IA: Child and Adolescent Development		3	3-0
		522-111	* IA: Guiding and Managing Behavior		3	2-2
		804-107	College Mathematics	Prereq: 834-109 (See Note 2)	3	3-0
		801-136	English Composition 1	Prereq: 831-103 (See Note 2)	3	3-0
<b>Semester 2</b>		522-102	* IA: Techniques for Reading and Language Arts	Prereq: 838-105 (See Note 2)	3	2-2
		522-107	* IA: Overview of Special Education		3	3-0
		522-118	* IA: Techniques for Math	Prereq: 804-107	3	1-4
		801-196	Oral/Interpersonal Communication	Prereq: 838-105 (See Note 2)	3	3-0
		809-198	Psychology, Introduction to	Prereq: 838-105 (See Note 2 & 6)	3	3-0
<b>Semester 3</b>		522-122	* IA: Advanced Reading/Language Arts	Prereq: 522-102	3	2-2
		522-132	* IA: Positive Classroom Mgt Tech	Prereq: 522-111	3	3-0
		522-101	* IA: Teamwork in School Settings		3	2-2
		522-129	* IA: Practicum 1	Prereq: Advisor Consent (See Notes 1, 4 & 5)	3	1-0-0-6
		809-172	Intro to Diversity Studies		3	3-0
<b>Semester 4</b>		809-188	Psychology, Developmental	Prereq: 838-105 (See Note 2)	3	3-0
		522-104	* IA: Technology & Media Resources		3	2-2
		522-120	* IA: Techniques for Science		3	1-4
		522-124	* IA: Supporting Students with Disabilities		3	3-0
		522-131	* IA: Practicum 2	Prereq: 522-129 & Advisor Consent (See Notes 1, 4 & 5)	3	1-0-0-6
<b>Electives</b>		<b>Take 6 elective credits. Any associate degree level course may be taken as an elective.</b> <b>Suggested Electives:</b> 103-143 Computers for Professionals (3 Cr)      520-161 Child Adol. Mental Health (3 Cr) 520-110 Community Resources & Service (3 Cr)      802-111 Spanish I (3 Cr) 520-151 Family Theory & Practice (3 Cr)			6	
	<b>Minimum Program Total Credits. Required</b>					<b>69</b>

△ Courses may be taken out of suggested sequence as long as requisites have been met.



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Administration and Administrative Support

### INSTRUCTIONAL ASSISTANT – ASSOCIATE DEGREE

(10-522-2)

Associate of Applied Science Degree  
Most Courses Offered Online

#### PROGRAM DESCRIPTION

*Instructional Assistant* is an Associate of Applied Science degree, which prepares qualified individuals to work directly with students under the supervision of a licensed teacher. The duties include assisting children with math, reading, and writing assignments, as well as handling classroom management, clerical, and other tasks related to instruction. This program meets Title I requirements. Duties may also include monitoring student activities, correcting papers, tutoring, one-on-one activities, and small group facilitation. In addition, instructional assistants work on classroom displays, assist children with computers and media, and supervise various classroom and school events. Instructional assistants may be hired to provide instructional services to students from pre-k through high school; however, the focus of this program is on preparing grads to work primarily in elementary and middle school levels.

#### PROGRAM LEARNING OUTCOMES

Graduates of the Instructional Assistant Associate Degree Program should be able to:

1. Support all learning based on knowledge of subject matter.
2. Identify developmentally appropriate child/adolescent physical, social/emotional, intellectual, and language characteristics and their developmental and environmental impact on learning.
3. Adapt instruction to meet the diverse needs of all learners.
4. Utilize a variety of instructional strategies, media, and technology to foster the development of critical thinking and problem solving.
5. Use proactive classroom management techniques to promote a positive class climate, intrinsic motivation, and optimal learning.
6. Demonstrate effective written and verbal communication in working collaboratively within the school setting and interactions with students and families.
7. Assist in plan. and implement.instructional strategies that reflect the learning cycle.

#### CORE ABILITIES

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                       | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively   | 7. Think critically and creatively                                  |
| 3. Demonstrate essential computer skills | 8. Work cooperatively   |
| 4. Demonstrate essential math skills     | 9. Value learning   |
| 5. Develop job seeking skills            |   |

#### ADMISSION REQUIREMENTS

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript including a graduation or passing date.
4. Students must complete a background information form and pay a criminal background check fee. Applicants of this program are subject to a review of their criminal backgrounds. Positive background checks may negatively impact your ability to pursue this career at Gateway Technical College. Each case will be individually evaluated based on all available evidence provided to the college.
5. Students must complete a functional ability form verifying they have read and understand the functional abilities for the program.

#### GRADUATION REQUIREMENTS

1. Minimum 69 credits with an average of 2.0 or above.
2. \*Average of 2.0 ("C") or above for these major courses.

*For a complete list of Graduation Requirements check the Student Handbook.*

#### NOTES

1. This course requires advisor consent, which will only be given when proper physical and immunization records are submitted.
2. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
3. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).
4. Admittance into the Instructional Assistant program is required before taking this course.
5. Students must submit all health and immunization forms prior to the first day of attending these courses.
6. Transfer credits in Social Science may substitute for this course. See an advisor for details.
7. Please note that your program may require additional fee(s) for: Criminal Background Check, Medical Documentation Manager, and/or Drug Testing.

#### PROGRAM LEARNING OUTCOMES (CONTINUED)

8. Utilize informal assessment strategies to collect data for the support of student learning.
9. Incorporate the reflective process to promote student learning and prof.growth.
10. Assume professional responsibility for ethical, moral, and legal policies and procedures.
11. Provide for health and safety needs of students.

#### OTHER INFORMATION

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.

For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster</b> ▶	<b>Career Pathway</b> ▶	<b>INTERIOR DESIGN</b> <b>(10-304-1)</b> <i>Associate of Applied Science Degree</i> <i>Most Courses Offered at Kenosha Campus</i>
		<b>Design / Pre-Construction</b>	

<sup>Δ</sup> <i>Suggested Sequence</i> ✓	<i>Course Number</i>	<i>Course Title</i>	<i>Requisites</i>	<i>Credits</i>	<i>Hrs/Wk Lec - Lab</i>
<b>Semester 1</b>	304-122	* Textiles		3	3-0
	304-155	* Principles of Interior Design		4	2-4
	607-170	* AutoCAD for Construction		2	1-2
	801-136	English Composition 1	Prereq: 831-103 (See Note 5)	3	3-0
	804-123	Math with Business Applications	Prereq: 834-109 (See Note 5)	3	3-0
	809-196	Sociology, Introduction to	Prereq: 838-105 (See Note 5 & 8)	3	3-0
<b>Semester 2</b>	304-101	* Hist. of Furniture and Decorative Arts		3	3-0
	304-116	* Kitchen/Bathroom Plan	Prereq: 607-170	3	2-2
	304-133	* Sustainable Materials and Finishes		3	3-0
	304-153	* Drafting and Rendering Techniques	Prereq: 607-170; Coreq: 614-150	4	2-4
	614-150	* 3D CAD: Building Information Modeling		2	1-2
	801-198	Speech	Prereq: 838-105 (See Note 5)	3	3-0
<b>Summer</b>	304-151	* Center for Sustainable Living Practicum	Prereq: 304-133	1	0-2
<b>Semester 3</b>	304-104	* Advanced Technology for Interior Design	Prereq: 304-116; 614-150; 607-170	3	2-2
	304-123	* Business of Interior Design	Prereq: Instructor Consent	3	3-0
	304-154	* Interior Elements of Building Const.	Coreq: 304-156 (See Note 1)	2	2-0
	304-156	* Residential Design Studio	(See Note 2)	3	1-4
	809-198	Psychology, Introduction to	Prereq: 838-105 (See Note 5 & 8)	3	3-0
<b>Semester 4</b>	304-120	* Interior Design Internship & Sales	Prereq: 304-156; Coreq: 304-152	3	2-0-0-4
	304-119	* Portfolio Presentation	Prereq: Instructor Consent (See Note 4)	1	0-2
	304-152	* Commercial Design Studio	Prereq: Instructor Consent; Coreq: 104-114 (See Note 3)	3	1-4
	801-196	Oral/Interpersonal Communication	Prereq: 838-105 (See Note 5)	3	3-0
	809-195	Economics	Prereq: 838-105 (See Note 5)	3	3-0
<b>Electives</b>	<b>Take 6 elective credits. Any associate degree level course may be taken as an elective.</b>			<b>6</b>	
	<b>Suggested Electives:</b>				
	304-149 Adv. Kitchen/Bath Planning (3 Cr.)	304-150 Architectural History (3 Cr.)			
	304-118 Art History (3 Cr.)	614-115 Commercial Drafting (3 Cr.)			
304-148 Interior Des. Internship II (2 Cr.) (see note 7)					
<b>Minimum Program Total Credits Required</b>				<b>70</b>	

<sup>Δ</sup>Courses may be taken out of suggested sequence as long as requisites have been met.



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Design /  
Pre-Construction

**INTERIOR DESIGN**

(10-304-1)

Associate of Applied Science Degree  
Most Courses Offered at Kenosha Campus

### PROGRAM DESCRIPTION

*Interior Design* prepares students for careers in commercial and residential furniture sales, kitchen and bathroom planning, commercial and residential design, and related specialty fields. The educational emphasis is placed on color theory, design principles, architectural drafting, space planning, knowledge of building codes, furniture selection and layout, rendering, lighting, studio procedures in business, and sales methods. Additional course work is done in the areas of CAD applications, specifications of products, materials, and finishes, history of art, design internship, and general education studies. Full-time students may complete all degree requirements in two years.

### PROGRAM LEARNING OUTCOMES

Graduates of the Interior Design Program should be able to:

- Utilize prin. of design, color, arch. drawing, space plan., bldg. codes, lighting, sel. of furn., materials, and finishes to plan residential and commercial areas.
- Apply effective interpersonal communications with clients, co-workers, managers, subcontractors, and suppliers within the bldg. and designing fields.
- Obtain client information, assess existing conditions aesthetic needs, & relate this information to the design process.
- Plan personal business schedules to meet deadlines.
- Prepare written contract proposals and specifications for design projects.
- Prep. & give presentations of the des. prjct. in order to sell prod., conc., & ideas.
- Apply industry procedures to specifying, and estimating materials for, window treatments, bed coverings, wall coverings, flooring, and upholstery for interiors.
- Research & develop alternative design solutions to meet price points & aesthetic requirements of clients.
- Apply computer applications, utilizing CAD and word processing, to residential, commercial and business areas of Interior Design.

### CORE ABILITIES

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                     | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively | 7. Think critically and creatively                                  |
| 3. Demonstrate essential comp. skills  | 8. Work cooperatively   |
| 4. Demonstrate essential math skills   | 9. Value learning   |
| 5. Develop job seeking skills          |   |

To schedule an appointment with an advisor, please call 1-800-247-7122.

For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ . My advisor's contact information is \_\_\_\_\_ .

### ADMISSION REQUIREMENTS

- Students must submit an application & \$30 fee.
- Students must complete reading, writing, math, and computer skills placement assessments.
- Students must submit official high school, GED, or HSED transcript.

### GRADUATION REQUIREMENTS

- Minimum 70 credits with an average of 2.0 or above.
- \*Average of 2.0 ("C") or above for these major courses.

For a complete list of Graduation Requirements check the Student Handbook.

### NOTES

- 304-154 has prerequisites of 304-155, 607-170, 304-122, 304-116, 614-150, 304-133, and 304-153.
- 304-156 has prerequisites of 304-101, 304-155, 607-170, 304-122, 304-153, 304-133, and 614-150.
- 304-152 has prerequisites of 304-101, 304-104, 304-116, 304-122, 304-123, 304-133, 304-153, 304-154, 304-155, 304-156, 304-151, 614-150, and 607-170.
- Students must complete 72 hours of paid or unpaid internship work at an approved business. Transportation must be provided by the student.
- A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
- Any course may be taken prior to entry in the program assuming prerequisites and corequisites have been satisfied (or waived with department approval).
- Students will complete 144 hours of paid or unpaid internship work at an approved business. Transportation must be provided by the student.
- Transfer credits in Social Science may substitute for this course. See an advisor for details.

### OTHER INFORMATION

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**





Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Marketing Communications

**MARKETING**

**(10-104-3B) – Business to Business**  
*Associate of Applied Science Degree*  
Most Courses Offered at Elkhorn, Kenosha,  
and Racine Campuses & Online

**PROGRAM DESCRIPTION**

*Marketing*, which can be completed in two years of study if taken full-time, concentrates on a general method of marketing and sales. Course work includes such items as introduction to microcomputers, business overview, credit procedures, business communication, promotion methods, business law, supervisory techniques, retailing, general sales, and psychology.

**ADMISSION REQUIREMENTS**

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.

**GRADUATION REQUIREMENTS**

1. Minimum 70 credits with an average of 2.0 or above.
2. \*Average of 2.0 ("C") or above for these major courses.

*For a complete list of Graduation Requirements check the Student Handbook.*

**PROGRAM LEARNING OUTCOMES**

**Graduates of the Marketing-Business to Business Associate Degree Program should be able to:**

1. Communicate effectively in a professional environment.
2. Develop strategies to anticipate and satisfy market needs.
3. Promote products, services, images, and/or ideas to achieve a desired outcome.
4. Evaluate information through the market research process.
5. Prepare selling strategies.

**NOTES**

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).
3. Formerly 103-199, PC Basics/Microsoft Office.
4. Transfer credits in Social Science may substitute for this course. See an advisor for details.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                     | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively | 7. Think critically and creatively                                  |
| 3. Demonstrate essential comp. skills  | 8. Work cooperatively   |
| 4. Demonstrate essential math skills   | 9. Value learning   |
| 5. Develop job seeking skills          |   |

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.

For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_.

 <p><b>Effective 2015/2016</b></p>	<b>Career Cluster ▶</b> 	<b>Career Pathway ▶</b> Marketing Communications	<b>MARKETING</b> (10-104-3A) – General Marketing Associate of Applied Science Degree Most Courses Offered at Elkhorn, Kenosha, and Racine Campuses & Online

△ Suggested Sequence	✓	Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
<b>Semester 1</b>		104-101 *	Marketing Principles		3	3-0
		102-137 *OR	Introduction to Business		3	3-0
		102-160	Business Law		3	3-0
		104-104 *	Selling Principles		3	3-0
		103-143	Computers for Professionals	Prereq: 103-142 (See Notes 1 & 3)	3	2-2
		801-136	English Composition 1	Prereq: 831-103 (See Note 1)	3	3-0
		801-196 OR 801-198	Oral/Interpersonal Communication Speech	Prereq: 838-105 (See Note 1)	3	3-0
<b>Semester 2</b>		104-161 *	Selling Principles, Advanced	Prereq: 104-104	3	3-0
		804-123 OR	Math with Business Applications	Prereq: 834-109 (See Note 1)	3	3-0
		804-115	College Technical Math 1	Prereq: 834-110 (See Note 1)	5	5-0
		809-198	Psychology, Introduction to	Prereq: 838-105 (See Note 1 & 4)	3	3-0
		103-103	Microsoft Excel II		1	1-2
		<i>Take 9 credits from the list below in Semester 2, 3, or 4. +</i>				9
<b>Semester 3</b>		104-105 *	Promotion Principles		3	3-0
		104-173 *	Marketing Research	Coreq: 104-101	3	2-2
		801-197	Technical Reporting	Prereq: 801-136	3	3-0
		809-172	Diversity Studies, Introduction to	Prereq: 838-105 (See Note 1)	3	3-0
<b>Semester 4</b>		101-112 OR	Accounting for Business		3	3-0
		101-114	Accounting Principles		4	3-2
		104-115 *	Marketing Capstone/Internship	Prereq: 104-101; 104-104 & Inst. Consent Coreq: 104-116; 104-161	3	1-0-0-4
		104-116 *	Electronic Marketing/Social Media	Prereq: 104-101	3	3-0
		104-172 *	Marketing Management	Prereq: 104-101	3	3-0
		809-144	Macroeconomics	Prereq: 838-105 (See Note 1)	3	3-0
<b>Electives</b>		<i>Take 6 elective credits. Any associate degree level course may be taken as an elective.</i>				<b>6</b>
		<b>+ Take 9 credits from this list:</b> 102-121 *Credit Management (3 Cr) 104-119 *Visual Merchandising (3 Cr) 104-194 *International Marketing (3 Cr) 104-127 *Retailing (3 Cr)		<b>Suggested Electives:</b> 102-160 Business Law (3 Cr) 104-109 Marketing/Sports & Event (3 Cr) 104-134 Marketing Internship (3 Cr)		
<b>Minimum Program Total Credits Required</b>					<b>70</b>	

△ Courses may be taken out of suggested sequence as long as requisites have been met.



Effective 2015/2016

Career Cluster ►



Career Pathway ►

Marketing Communications

**MARKETING**

**(10-104-3A) – General Marketing**  
*Associate of Applied Science Degree*  
Most Courses Offered at Elkhorn, Kenosha,  
and Racine Campuses & Online

**PROGRAM DESCRIPTION**

*Marketing*, which can be completed in two years of study if taken full-time, concentrates on a general method of marketing and sales. Course work includes such items as introduction to microcomputers, business overview, credit procedures, business communication, promotion methods, business law, supervisory techniques, retailing, general sales, and psychology.

**ADMISSION REQUIREMENTS**

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.

**GRADUATION REQUIREMENTS**

1. Minimum 70 credits with an average of 2.0 or above.
2. \*Average of 2.0 ("C") or above for these major courses.

*For a complete list of Graduation Requirements check the Student Handbook.*

**NOTES**

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).
3. Formerly 103-199, PC Basics/Microsoft Office.
4. Transfer credits in Social Science may substitute for this course. See an advisor for details.

**PROGRAM LEARNING OUTCOMES**

**Graduates of the Marketing-General Associate Degree Program should be able to:**

1. Communicate effectively in a professional environment.
2. Develop strategies to anticipate and satisfy market needs.
3. Promote products, services, images, and/or ideas to achieve a desired outcome.
4. Evaluate information through the marketing research process.
5. Prepare selling strategies.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                     | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively | 7. Think critically and creatively                                  |
| 3. Demonstrate essential comp. skills  | 8. Work cooperatively   |
| 4. Demonstrate essential math skills   | 9. Value learning   |
| 5. Develop job seeking skills          |   |

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR**  
**EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.  
For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster</b> ▶	<b>Career Pathway</b> ▶	<b>MARKETING</b> <b>(10-104-3D) – Marketing Communications</b> <i>Associate of Applied Science Degree</i> Most Courses Offered at Elkhorn, Kenosha, and Racine Campuses & Online
		Marketing Communications	

Δ Suggested Sequence	✓	Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
<b>Semester 1</b>		104-101 *	Marketing Principles		3	3-0
		204-100 *	Design Concepts		4	3-2
		204-105 *	Comp. Illustration & Drawing Tech		3	2-2
		204-107 *	Digital Photography, Intro to		3	2-2
		801-136	English Composition 1	Prereq: 831-103 (See Note 1)	3	3-0
<b>Semester 2</b>		104-104 *	Selling Principles		3	3-0
		104-105 *	Promotion Principles		3	3-0
		204-116 *	Web Page Design for Graphic Designers	Prereq: 204-107	3	2-2
		204-126 *	Design & Publishing	Prereq: 204-100	3	2-2
		804-123	Math with Business Applications	Prereq: 834-109 (See Note 1)	3	3-0
		804-115 <b>OR</b>	College Technical Math 1	Prereq: 834-110 (See Note 1)	5	5-0
	809-172	Diversity Studies, Introduction to	Prereq: 838-105 (See Note 1)	3	3-0	
<b>Semester 3</b>		104-118 *	Advanced Promotion	Prereq: 104-105	3	3-0
		104-161 *	Selling Principles, Advanced	Prereq: 104-104	3	3-0
		204-109 <b>*OR</b>	Graphic Design Prof. Practices	Prereq: 204-126	3	2-2
		102-138	BIZ Internship	Prereq: Instructor Consent		
		801-197	Technical Reporting	Prereq: 801-136	3	3-0
		809-198	Psychology, Introduction to	Prereq: 838-105 (See Note 1 & 3)	3	3-0
<b>Semester 4</b>		104-115 *	Marketing Capstone/Internship	Prereq: 104-101; 104-104 & Inst. Consent Coreq: 104-116; 104-161	3	1-0-0-4
		104-116 *	Electronic Marketing/Social Media	Prereq: 104-101	3	3-0
		204-120 *	Multimedia Survey		3	2-2
		801-196 <b>OR</b>	Oral/Interpersonal Communication	Prereq: 838-105 (See Note 1)	3	3-0
		801-198	Speech			
		809-144	Macroeconomics	Prereq: 838-105 (See Note 1)	3	3-0
<b>Electives</b>		<b>Take 6 elective credits. Any associate degree level course may be taken as an elective.</b>				<b>6</b>
		<b>Suggested Electives:</b> 204-115 Advanced Digital Photography (3 Cr)      104-173 Marketing Research (3 Cr) 204-134 Advanced Problems in Graphic Design (3 Cr)      204-149 Adv. Web Page Design (3 Cr)				

**Minimum Program Total Credits Required      70**

Δ Courses may be taken out of suggested sequence as long as requisites have been met.



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Marketing Communications

**MARKETING**

**(10-104-3D) – Marketing Communications**  
*Associate of Applied Science Degree*  
Most Courses Offered at Elkhorn, Kenosha, and Racine Campuses & Online

**PROGRAM DESCRIPTION**

*Marketing*, which can be completed in two years of study if taken full-time, concentrates on a general method of marketing and sales. Course work includes such items as introduction to microcomputers, business overview, credit procedures, business communication, promotion methods, business law, supervisory techniques, retailing, general sales, and psychology.

**ADMISSION REQUIREMENTS**

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.

**GRADUATION REQUIREMENTS**

1. Minimum 70 credits with an average of 2.0 or above.
2. \*Average of 2.0 ("C") or above for these major courses.

*For a complete list of Graduation Requirements check the Student Handbook.*

**NOTES**

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).
3. Transfer credits in Social Science may substitute for this course. See an advisor for details.

**PROGRAM LEARNING OUTCOMES**

**Graduates of the Marketing-Marketing Communications Associate Degree Program should be able to:**

1. Communicate effectively in a professional environment.
2. Develop strategies to anticipate and satisfy market needs.
3. Promote products, services, images, and/or ideas to achieve a desired outcome.
4. Evaluate information through the marketing research process.
5. Prepare selling strategies.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |                                     |
|--|-------------------------------------|
| 1. Act responsibly                     | 6. Respect themselves and others as |
| 2. Communicate clearly and effectively | a member of a diverse community     |
| 3. Demonstrate essential comp. skills  | 7. Think critically and creatively  |
| 4. Demonstrate essential math skills   | 8. Work cooperatively               |
| 5. Develop job seeking skills          | 9. Value learning                   |

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR**  
**EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.

For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster</b> ▶ 	<b>Career Pathway</b> ▶ Engineering and Technology	<b>MECHANICAL DESIGN TECHNOLOGY</b> (10-606-1A) – Mechanical Engineering Tech <i>Associate of Applied Science Degree</i> Most Courses Offered at Elkhorn Campus and iMET Center

Suggested Sequence	✓	Course Number	Course Title	Requisites	Credits	Hrs/Wk
						Lec - Lab
Semester 1		606-149	* Introduction to MET		2	1-2
		606-103	* Material Properties		2	2-0
		606-128	* CAD – Solidworks		2	1-2
		606-141	* AutoCAD – Mech Design Tech		3	2-2
		801-136	English Composition 1	Prereq: 831-103 (See Note 1)	3	3-0
		804-115	College Technical Math 1	Prereq: 834-110 (See Note 1)	5	5-0
Semester 2		606-129	* CAD Solids / Advanced	Prereq: 606-128	2	1-2
		606-151	* Statics	Prereq: 804-115	3	2-2
		606-152	* Engineering Graphics w/ CAD1	Prereq: 606-149	2	1-2
		804-197	College Algebra & Trig w Apps	Prereq: 804-114 OR 804-115	5	5-0
		806-154	General Physics 1	Prereq: 804-115	4	3-2
Semester 3		606-118	* Mechanisms	Prereq: 606-151; 606-152	2	1-2
		606-119	* Motor Controls		3	2-2
		606-131	* Strength of Materials	Prereq: 606-151; 806-154	3	2-2
		606-153	* Engineering Graphics w/ CAD 2	Prereq: 606-152	2	1-2
		606-159	* Manufacturing Processes	Prereq: 606-103	2	2-0
		801-198	Speech	Prereq: 838-105 (See Note 1)	3	3-0
Semester 4		606-116	* Machine Design / Elements of	Prereq: 606-152	3	3-0
		606-138	* Design Problems	Prereq: Instructor Consent	2	0-4
		606-154	* Engineering Graphics w/ CAD 3	Prereq: 606-153	2	1-2
		606-160	* Fluid Power and Design		3	2-2
		809-196	Sociology, Introduction to	Prereq: 838-105 (See Note 1 & 5)	3	3-0
		809-198	Psychology, Introduction to	Prereq: 838-105 (See Note 1 & 5)	3	3-0
Electives		<b>Take 6 elective credits. Any associate degree level course may be taken as an elective.</b>			<b>6</b>	
		<b>Suggested Electives:</b>				
		606-130	Introduction – SolidEdge (2 Cr)	606-186	Directed Study/Mech. Design (1 Cr)	
		606-137	Manufacturing Process Appl (2 Cr)	606-199	Internship, Mechanical Technician (1 Cr)	
		606-139	Introduction – AutoCAD Inventor (2 Cr)			
	606-142	Creo – Pro/Engineering (2 Cr)				
<b>Minimum Program Total Credits Required</b>					<b>70</b>	

Δ Courses may be taken out of suggested sequence as long as requisites have been met.



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Engineering and Technology

**MECHANICAL DESIGN TECHNOLOGY**  
(10-606-1A) – Mechanical Engineering Tech  
*Associate of Applied Science Degree*  
Most Courses Offered at Elkhorn Campus  
and IMET Center

**PROGRAM DESCRIPTION**

In *Mechanical Design Technology*, comprehensive instruction is given and practical experience gained in mechanical design, drafting, and computer aided design (CAD). Extensive experience is gained with dimensioning practices, allowances, sections, drafting standards, auxiliary views, exploded views, fabrication drawings detail and assembly drawings, gears and cams, structural shapes, and intersections. Other topics covered through classroom study include practical geometry, basic fabrication methods, engineering geometry, linear velocity, engineering materials and properties, kinematics of machinery, and manufacturing processes.

**PROGRAM LEARNING OUTCOMES**

**Graduates of the Mechanical Design Technology Associate Degree Program should be able to:**

1. Prepare detail and assembly drawings for documentation of mechanical components and products.
2. Create CAD geometry, parts, and assemblies.
3. Design mechanical components and products.
4. Analyze mechanical engineering problems.
5. Select purchase parts.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |                                       |
|--|---------------------------------------|
| 1. Act responsibly                     | 6. Respect themselves and others as a |
| 2. Communicate clearly and effectively | member of a diverse community         |
| 3. Demonstrate essential comp. skills  | 7. Think critically and creatively    |
| 4. Demonstrate essential math skills   | 8. Work cooperatively                 |
| 5. Develop job seeking skills          | 9. Value learning                     |

**ADMISSION REQUIREMENTS**

1. Students must submit an application and \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.

**GRADUATION REQUIREMENTS**

1. Minimum 70 Credits with an average of 2.0 or above.
2. \*Average of 2.0 ("C") or above for these major courses.

*For a complete list of Graduation Requirements check the Student Handbook.*

**NOTES**

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. Safety glasses are required in labs. If prescription safety glasses are necessary, please allow a minimum of 90 days.
3. A drafting kit is required for this program; the cost is approximately \$20.
4. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).
5. Transfer credits in Social Science may substitute for this course. See an advisor for details.

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR**  
**EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.  
For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_. My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster</b> ▶ 	<b>Career Pathway</b> ▶ Engineering and Technology	<b>MECHANICAL DESIGN TECHNOLOGY (10-606-1B) – Mechatronics</b> <i>Associate of Applied Science Degree</i> Most Courses Offered at Elkhorn Campus and iMET Center

△ Suggested Sequence	✓ Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
<b>Semester 1</b>	606-149	* Introduction to MET	Coreq: 606-128	2	1-2
	605-113	* DC/AC I		3	2-2
	606-103	* Material Properties		2	2-0
	606-128	* CAD Solidworks		2	1-2
	801-136	English Composition 1	Prereq: 831-103 (See Note 1)	3	3-0
	804-115	College Technical Math 1	Prereq: 834-110 (See Note 1)	5	5-0
<b>Semester 2</b>	605-114	* DC/AC II	Prereq: 605-113	3	2-2
	605-130	* Digital Electronics	Coreq: 605-113	4	3-2
	606-129	* CAD Solids / Advanced	Prereq: 606-128	2	1-2
	606-151	* Statics	Prereq: 804-115	3	2-2
	606-152	* Engineering Graphics w/ CAD 1	Coreq: 606-128	2	1-2
	806-154	General Physics 1	Prereq: 804-115	4	3-2
<b>Semester 3</b>	605-120	* Electronic Devices I	Prereq: 605-113	4	2-4
	605-136	* PLC System Design	Prereq: 605-130	3	2-2
	606-116	* Machine Design / Elements of	Prereq: 606-152	3	3-0
	606-153	* Engineering Graphics w/ CAD 2	Prereq: 606-152	2	1-2
	801-198	Speech	Prereq: 838-105 (See Note 1)	3	3-0
<b>Semester 4</b>	606-102	* Mechanical Systems Design	Prereq: 605-130	3	2-2
	606-138	* Design Problems	Prereq: Instructor Consent	2	0-4
	606-141	* AutoCAD – Mech Design Tech		3	2-2
	809-196	Sociology, Introduction to	Prereq: 838-105 (See Note 1 & 5)	3	3-0
	809-198	Psychology, Introduction to	Prereq: 838-105 (See Note 1 & 5)	3	3-0
<b>Electives</b>	<b>Take 6 elective credits. Any associate degree level course may be taken as an elective.</b>			<b>6</b>	
	<b>Suggested Electives:</b>				
	606-118	Mechanisms (2 Cr)	606-154	Engineering Graphics w/ CAD 3 (2 Cr)	
	606-130	Introduction – SolidEdge (2 Cr)	606-160	Fluid Power and Design (3 Cr)	
	605-133	Industrial Data Communications (3 Cr)	606-186	Directed Study/Mechanical Design (1 Cr)	
	606-139	Intro – AutoCAD Inventor (2 Cr)	606-199	Internship, Mechanical Technician (1 Cr)	
	606-142	Introduction – Pro-E (2 Cr)			
<b>Minimum Program Total Credits Required</b>				<b>70</b>	

△ Courses may be taken out of suggested sequence as long as requisites have been met.



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Engineering and Technology

**MECHANICAL DESIGN TECHNOLOGY**

(10-606-1B) – Mechatronics

*Associate of Applied Science Degree*

Most Courses Offered at Elkhorn Campus and IMET Center

**PROGRAM DESCRIPTION**

In *Mechanical Design Technology*, comprehensive instruction is given and practical experience gained in mechanical design, drafting, and computer aided design (CAD). Extensive experience is gained with dimensioning practices, allowances, sections, drafting standards, auxiliary views, exploded views, fabrication drawings detail and assembly drawings, gears and cams, structural shapes, and intersections. Other topics covered through classroom study include practical geometry, basic fabrication methods, engineering geometry, linear velocity, engineering materials and properties, kinematics of machinery, and manufacturing processes.

**PROGRAM LEARNING OUTCOMES**

**Graduates of the Mechanical Design Technology Associate Degree Program should be able to:**

1. Prepare detail and assembly drawings for documentation of mechanical components and products.
2. Create CAD geometry, parts, and assemblies.
3. Design mechanical components and products.
4. Analyze mechanical engineering problems.
5. Select purchase parts.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                     | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively | 7. Think critically and creatively                                  |
| 3. Demonstrate essential comp. skills  | 8. Work cooperatively   |
| 4. Demonstrate essential math skills   | 9. Value learning   |
| 5. Develop job seeking skills          |   |

**ADMISSION REQUIREMENTS**

1. Students must submit an application and \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.

**GRADUATION REQUIREMENTS**

1. Minimum 70 credits with an average of 2.0 or above.
2. \*Average of 2.0 ("C") or above for these major courses.

*For a complete list of Graduation Requirements check the Student Handbook.*

**NOTES**

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. Safety glasses are required in labs. If prescription safety glasses are necessary, please allow a minimum of 90 days.
3. A drafting kit is required for this program; the cost is approximately \$20.
4. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).
5. Transfer credits in Social Science may substitute for this course. See an advisor for details.

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.

For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster</b> ▶	<b>Career Pathway</b> ▶	<b>MEDICAL ASSISTANT</b> (31-509-1) <i>Technical Diploma</i> Most Courses Offered at Elkhorn and Racine Campuses
		Therapeutic Services	

Suggested Sequence	✓	Course Number	Course Title	Requisites	Credits	Hrs/Wk
						Lec - Lab
<b>Semester 1</b>		509-301 *	Medical Assistant Admin Procedures	Coreq: 501-107	2	3-1
		509-303 *	Medical Assistant Lab Procedures 1	Coreq: 509-304	2	2-2
		509-304 *	Medical Assistant Clinical Procedures 1	Prereq: Advisor Consent	4	4-4
		509-302 *	Human Body in Health and Disease	Coreq: 501-101	3	6-0
		501-107 *	Intro to Healthcare Computing	(See Note 5)	2	1-2
		501-101 + * §	Medical Terminology	Prereq: 838-105 (See Note Below)	3	3-0
<b>Semester 2</b>		509-305 *	Medical Assistant Lab Procedures 2	Prereq: 509-303	2	2-2
		509-306 *	Medical Assistant Clinical Procedures 2	Prereq: 509-303; 509-304 Coreq: 509-308	3	4-2
		509-307 *	Medical Office Insurance & Finance	Prereq: 501-107; 509-302	2	0-4
		509-308 *	Pharm for Allied Health	Prereq: 509-302	2	4-0
		509-309 *	Medical Law, Ethics and Professionalism		2	4-0
		801-136 +OR	English Composition 1	Prereq: 831-103 (See Note Below)	3	3-0
	801-301	Writing Principles	Prereq: 851-760 (See Note Below)	1	2-0	
<b>A four week practicum follows the completion of the second semester.</b>						
		509-310 *	Medical Assistant Practicum	Prereq: Instructor Consent (See Note 7&8)	3	0-0-9

**Minimum Program Total Credits Required 31**

△ Courses may be taken out of suggested sequence as long as requisites have been met.

+ A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.

Federal regulations require disclosure of the following information for this program:

Books and Supplies	Resident Tuition and Fees	Median Loan Debt <sup>1</sup>	On-time Graduation Rate <sup>2</sup>	U.S. Department of Labor Standard Occupational (SOC) Code & Occupational Profile – available at <a href="http://www.onetonline.org">http://www.onetonline.org</a>
\$2,180	\$4,770	\$3,500	0%	<u>Medical Assistants (31-9092)</u>

<sup>1</sup> **Median Loan Debt:** Based on eligibility, students can receive loans to help pay for the total cost of attending college. The cost is comprised of tuition and fees, books and supplies, transportation costs, room and board, and miscellaneous personal expenses. Therefore, median loan debt may be more than the listed tuition, fees, books, and supplies cost.

<sup>2</sup> **On-time Graduation Rate:** Dependent upon students' choice to attend college part-time or full-time. Students decide to attend college part-time for a number of reasons including work schedule/demands and family responsibilities. 76 percent of students at Gateway attend part-time, therefore taking longer to complete their chosen program of study.



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Therapeutic Services

**MEDICAL ASSISTANT**

(31-509-1)

Technical Diploma

Most Courses Offered at  
Elkhorn and Racine Campuses

**PROGRAM DESCRIPTION**

The Medical Assistant program's goal is to prepare competent entry-level medical assistants in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains. Medical assistants are multi-skilled health individuals who work in ambulatory settings such as clinics, group practices, and physicians offices. The medical assistant is responsible for medical and surgical asepsis, taking vital signs, assisting the physician with examinations and surgery, administering ECGs and administering medications. The business/administrative duties include patient reception, appointment making, record keeping, filing, bookkeeping, processing insurance claims, typing medical correspondence, transcription and microcomputer applications. Laboratory functions include specimen collection, performance of waived laboratory tests and work. Graduates find jobs as medical assistants, secretaries, medical laboratory assistants, phlebotomists, receptionists, medical insurance clerks and electrocardiogram technicians.

**PROGRAM LEARNING OUTCOMES**

Graduates of the Medical Assistant Program should be able to:

1. Perform medical office administrative functions
2. Provide patient care in accordance with regulations, policies, laws, and patient rights.
3. Perform medical laboratory procedures
4. Demonstrate professionalism in a healthcare setting
5. Demonstrate safety and emergency practices in a healthcare setting

Gateway Technical College's Medical Assistant program is accredited by the Commission on Accreditation of Allied Health Programs (CAAHEP) ([www.caahep.org](http://www.caahep.org)) upon recommendation of the Medical Assisting Education Review Board (MAERB).

Commission on Accreditation of Allied Health Education Programs  
1361 Park Street Clearwater, FL 33756  
(727) 210-2350 [www.caahep.org](http://www.caahep.org)

Additional information on the Medical Assisting profession can be accessed at:  
[www.aama-nfl.org](http://www.aama-nfl.org)

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

1. Act responsibly
2. Communicate clearly and effectively
3. Demonstrate essential comp. skills
4. Demonstrate essential math skills
5. Develop job seeking skills
6. Respect themselves and others as a member of a diverse community
7. Think critically and creatively
8. Work cooperatively
9. Value learning

**ADMISSION REQUIREMENTS**

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript including a graduation or passing date.
4. Students must complete a Background Disclosure form and must request and pay for a background check. Applicants for all health science programs are subject to a review of their criminal backgrounds. Positive background checks may negatively impact your ability to pursue a health career at Gateway Technical College. Each case will be individually evaluated based on all available evidence provided to the college.

**GRADUATION REQUIREMENTS**

1. Minimum 31 credits with an average of 2.0 or above.
2. A grade of C or better for each of these (\*) courses.
3. §Can't be completed more than 26 mos. prior to entry in 509-308, 509-303, 509-304.

For a complete list of Graduation Requirements check the Student Handbook.

**NOTES**

1. A liability fee is assessed for core courses.
2. There is a daily long-term exposure to latex products in this program. Those with latex sensitivity may find exp. to latex impossible to avoid in this environment.
3. When there has been an interruption between core (\*) courses and Clinical Office Practice, the student must enroll in and successfully complete, Update for Health Professionals (509-433) prior to the practicum.
4. Some courses may be taken prior to entry in the program, assuming all requisites have been satisfied (or waived with department approval).
5. This course requires advisor consent which will be granted only to students who show the ability to type at 35WPM or complete a keyboarding course.
6. Persons conv. of a felony are not eligible to sit for the cert. exam unless the certifying board grants a waiver based on the mitigating circumstances listed in the Disciplinary Standards of the American Association of Medical Assistants.
7. Course 509-310 Medical Assistant Practicum is a 160 hour unpaid practicum experience that must be completed in order for students to successfully complete the MA program. In order to enroll in the practicum course, students must complete all other coursework, submit a completed health physical form and submit evidence of completion of courses 531-410B CPR-Healthcare Provider and 531-419A Medic First Aid.
8. Students should be advised that they will be assigned a clinical site affiliated with the campus where they have completed 509-305 and 509-306. Reassignment of clinical sites is subject to instructor approval.
9. This program has a second-tier admission process for clinical/practicum/program courses called petitioning. Students are selected based on completion of academic eligibility requirements and district residency. See <https://www.gtc.edu/student-services/admissions/what-petitioning> for additional information.
10. Please note that your program may require additional fee(s) for: Criminal Background Check, Medical Documentation Manager, and/or Drug Testing.

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.  
For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_. My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster</b> ▶	<b>Career Pathway</b> ▶	<b>NURSING – ASSOCIATE DEGREE</b> <b>(10-543-1)</b> <i>Associate of Applied Science Degree</i> Most Courses Offered at Burlington Center and Kenosha Campus
		Therapeutic Services	

<sup>Δ</sup> Suggested Sequence	✓	Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
<b>Pre-Clinical</b>		806-177 §*	General Anatomy and Physiology	Prereq: 806-134 (See Notes 1 & 5)	4	2-4
		806-179 *	Anatomy & Physiology, Advanced	Prereq: 806-177 (See Note 1)	4	2-4
<b>Clinical Semester 1</b>		543-101 §*	Nursing Fundamentals	Prereq: 806-177; 179 & Adv. Cons. (See Notes 1 & 12)	2	2-0
		543-102 §*	Nursing Skills	Prereq: 806-177; 179 & Adv. Cons. (See Notes 1 & 12)	3	0-6
		543-103 §*	Nursing Pharmacology	Prereq: 806-177; 179 & Adv. Cons. (See Notes 1 & 12)	2	2-0
		543-104 §*	Nsg: Intro Clinical Practice	Prereq: 806-177; 179 & Adv. Cons. (See Notes 1 & 12) Coreq: 543-101; 543-102; 543-103	2	0-0-6
		801-136 §	English Composition 1	Prereq: 831-103 (See Note 5)	3	3-0
		809-188 §	Psychology, Developmental	Prereq: 838-105 (See Note 5)	3	3-0
<b>Clinical Semester 2</b>		543-105 §*	Nursing Health Alterations	Prereq: (See Note 2)	3	2-2
		543-106 §*	Nursing Health Promotion	Prereq: 809-188 (See Note 2)	3	3-0
		543-107 §*	Nsg: Clin Care Across Lifespan	Coreq: 543-106 (See Note 2)	2	0-0-6
		543-108 §*	Nsg: Intro Clinical Care Mgt.	Coreq: 543-105 (See Note 2)	2	0-0-6
		801-198 §	Speech	Prereq: 838-105 (See Note 5)	3	3-0
<b>Clinical Semester 3</b>		543-109 *	Nursing Complx Health Alter I	Prereq: 806-179; Coreq: 806-197 (See Note 3)	3	2-2
		543-110 *	Nursing Mental Health Comm	Prereq: 806-179; Coreq: 809-198 (See Note 3)	2	1-2
		543-111 *	Nursing Intrmtd Clinical	Coreq: 543-109; 543-110; 543-112 (See Note 3)	3	0-0-9
		543-112 *	Nursing Advanced Skills	Prereq: 806-179 (See Note 3)	1	0-2
		806-197 *	Microbiology	Prereq: 806-177 OR 806-105 (See Note 5 & 15)	4	3-2
		809-198	Psychology, Introduction to	Prereq: 838-105 (See Note 5 & 14)	3	3-0
<b>Clinical Semester 4</b>		543-113 *	Nursing Cmplx Health Alter II	Prereq: 806-197 (See Note 4)	3	2-2
		543-114 *	Nursing Management Concepts	Prereq: (See Note 4)	2	2-0
		543-115 *	Nursing Advanced Clinical	Coreq: 543-113; 543-114 (See Note 4)	3	0-0-9
		543-116 *	Nursing Clinical Trans.	Coreq: 543-113; 543-114; 543-115 (See Note 4)	2	0-0-6
		809-196	Sociology, Introduction to	Prereq: 838-105 (See Note 5 & 14)	3	3-0
<b>Electives</b>		<b>Take 5 elective credits. Any associate degree level course may be taken as an elective.</b>			<b>5</b>	
		<b>Suggested Electives:</b>				
		510-154 Pathophysiology for Health Professions (3 Cr)	510-152 Nsg: Pediatrics (1 Cr)			
	501-101 Medical Terminology (3 Cr)	510-153 Nsg: Pharmacology Applications (1 Cr)				
	510-151 Nsg: Endocrine & Electrolytes (1 Cr)	543-199 Clinical Reasoning in Nursing (3 Cr)				
<b>Minimum Program Total Credits Required</b>					<b>70</b>	

<sup>Δ</sup>Courses may be taken out of suggested sequence as long as requisites have been met.



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Therapeutic Services

**NURSING – ASSOCIATE DEGREE**

(10-543-1)

Associate of Applied Science Degree  
Most Courses Offered at  
Burlington Center and Kenosha Campus

**PROGRAM DESCRIPTION**

Nursing-Associate Degree program is the dynamic interpersonal goal-directed process that seeks to promote optimal health within the context of individuals, family, community and society. The concept of caring, which is central to nursing, is communicated through both attitude and action. Nursing uses the nursing process, a problem solving approach to provide holistic care to individuals, families, and groups within the health care system. Nurses assess health and make clinical decisions to provide safe and effective nursing care according to standards of practice within legal, ethical and regulatory frameworks. Nursing practice is based on its own body of knowledge. Through collaboration with other health care professionals, nursing is responsive to the needs of the community across the health-illness continuum. The program may be completed in two academic years of full-time study. Individuals who are Licensed Practical Nurses should contact Gateway for information regarding advanced standing opportunities.

**PROGRAM LEARNING OUTCOMES**

Graduates of the Nursing Associate Degree Program should be able to:

1. Implement one's role as a nurse in ways that reflect integrity, responsibility, ethical practices, and an evolving professional identity as a nurse committed to evidence-based practice, caring, advocacy, and quality care.
  2. Demonstrate appropriate written, verbal, and nonverbal communication in a variety of clinical contexts.
  3. Integrate social, mathematical, and physical sciences, pharmacology, and pathophysiology in clinical decision making.
  4. Provide patient centered care by utilizing the nursing process across diverse populations and health care settings.
  5. Minimize risk of harm to patients, members of the healthcare team and self through safe individual performance in participation in system effectiveness.
  6. Lead the multidisciplinary health care team to provide effective patient care throughout the lifespan.
  7. Use information and technology to communicate, manage data, mitigate error, and support decision-making.
- The Nursing program is fully accredited by the ACEN, 3343 Peachtree Rd NE Suite #850, Atlanta, GA 30326. For more information call (404) 975-5000.

**Eligibility for Licensure Exam:** Student must be a grad of a state-app. school, be a U.S. citizen, or submit proof of intention to become a citizen or a perm. resident alien.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                     | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively | 7. Think critically and creatively                                  |
| 3. Demonstrate essential comp. skills  | 8. Work cooperatively   |
| 4. Demonstrate essential math skills   | 9. Value learning   |
| 5. Develop job seeking skills          |   |

**ADMISSION REQUIREMENTS**

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript including a graduation or passing date.
4. Students must complete a Background Disclosure form and must request and pay for a background check. Applicants for all health science programs are subject to a review of their criminal backgrounds. Positive background checks may negatively impact your ability to pursue a health career at Gateway Technical College. Each case will be individually evaluated based on all available evidence provided to the college.
5. Students must complete a functional ability form verifying they have read and understand the functional abilities for the program.

**GRADUATION REQUIREMENTS**

1. Minimum 70 credits with an average of 2.0 or above.
  2. \* Minimum Grade of 2.0 ("C") or above for these major courses.
  3. § Must be completed to be eligible to take the NCLEX-PN exam.
- GTC credits may transfer to colleges and universities offering adv. nurse ed. programs.  
For a complete list of Graduation Requirements check the Student Handbook.

**NOTES**

1. Students must meet current petition requirements at the time they are eligible to enroll in 543 courses.
2. These courses include prerequisites of 543-101; 543-102; 543-103; and 543-104.
3. These courses include prerequisites of 543-105; 543-106; 543-107; and 543-108.
4. These courses include prerequisites of 543-109; 543-110; 543-111; and 543-112.
5. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
6. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).
7. Eye protection is required in the chemistry lab and in selected clinical situation.
8. A liability insurance fee per semester is required.
9. Students will be selected for their initial core 543 courses using a petitioning process.
10. A physical examination and immunization are required prior to admission to the first clinical course. Clinical sites may require proof of health insurance.
11. This program has a second-tier admission process for clinical/practicum/program courses called petitioning. Students are selected based on completion of academic eligibility requirements and district residency. See <https://www.gtc.edu/student-services/admissions/what-petitioning> for additional information.
12. Beginning in January 2015, students must have received a "B-" or better in 806-177 General Anatomy & Physiology and 806-179 Anatomy & Physiology, Advanced, before they can enroll in this course.
13. Please note that your program may require additional fee(s) for: Criminal Background Check, Medical Documentation Manager, and/or Drug Testing.
14. Transfer credits in Social Science may substitute for this course. See an advisor for details.
15. Students in this program should complete 806-177 as the pre-req for this course.

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.  
For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_

 <b>Effective 2015/2016</b>	<b>Career Cluster ▶</b>	<b>Career Pathway ▶</b>	<b>NURSING ASSISTANT</b> <b>(30-543-1)</b> <i>Technical Diploma</i> Most Courses Offered at Burlington, Elkhorn, Kenosha, and Racine Campuses
		Therapeutic Services	

<i>Course Number</i>	<i>Course Title</i>	<i>Requisites</i>	<i>Credits</i>	<i>Hrs/Wk Lec - Lab</i>
543-300	Nursing Assistant	Prereq: 858-760 & Program Admission	3	4-2

**Minimum Program Total Credits Required      3**

The State of Wisconsin Regulatory Agency requires mandatory attendance of 120 hours for this course. There is an allowance of up to 8 hours absence/tardiness with mandatory documented homework assignments. If there is a college related cancellation of course time, mandatory make-up day(s) will be assigned to the course to ensure compliance with state regulations.



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Therapeutic Services

**NURSING ASSISTANT**

(30-543-1)

Technical Diploma

Most Courses Offered at Burlington, Elkhorn,  
Kenosha, and Racine Campuses

**PROGRAM DESCRIPTION**

*Nursing Assistant*, offered numerous times throughout the district, prepares students to perform basic nursing skills in caring for clients in various health care settings. A certificate is awarded upon successful completion of this course and graduates are eligible to competency test for placement on the Wisconsin Nursing Assistant / Home Health Aide Registry.

**ADMISSION REQUIREMENTS**

1. Students must submit an application (no fee).
2. Students must complete reading (score of 55+ or successful completion of 858-760), writing, and math placement assessments.
3. Students must complete a Background Disclosure form and must request and pay for a background check. Applicants for all health science programs are subject to a review of their criminal backgrounds. Positive background checks may negatively impact your ability to pursue a health career at Gateway Technical College. Each case will be individually evaluated based on all available evidence provided to the college.
4. Students must complete a functional ability form verifying they are able to perform physical requirements of the program and must complete all health requirements.

**GRADUATION REQUIREMENTS**

1. Minimum 3 credits with an average of 2.0 or above.

*For a complete list of Graduation Requirements check the Student Handbook.*

**NOTES**

1. A liability fee is assessed on a per credit basis.
2. Clinical sites may require drug testing.
3. Successful completion of 543-300 will result in the student's eligibility to take the Wisconsin Competency Testing for certification as a Nursing Assistant.
4. Certificates will be issued upon successful completion of 543-300.
5. 543-300 is a 120 hour course – classroom / lab / clinical combined.
6. District-wide Nursing Assistant clinical uniform required: Blue uniform top and blue uniform bottom.
7. Please note that your program may require additional fee(s) for: Criminal Background Check, Medical Documentation Manager, and/or Drug Testing.

**PROGRAM LEARNING OUTCOMES**

Graduates of the Nursing Assistant Technical Diploma Program should be able to:

1. Communicate and interact effectively with clients, family, and co-workers.
2. Maintain and protect client rights.
3. Report information and record observations.
4. Demonstrate the ethical and legal responsibilities of the NA/HHA.
5. Carry out the basic nursing skills required of the NA/HHA.
6. Provide for resident personal care and hygiene.
7. Assist with client rehabilitation and restorative care, promoting independence.
8. Assist clients with long-term, disabling conditions including dementia.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                     | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively | 7. Think critically and creatively                                  |
| 3. Demonstrate essential comp. skills  | 8. Work cooperatively   |
| 4. Demonstrate essential math skills   | 9. Value learning   |
| 5. Develop job seeking skills          |   |

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.

For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster</b> ▶	<b>Career Pathway</b> ▶	<b>OFFICE ASSISTANT</b> <b>(31-106-1)</b> <i>Technical Diploma</i> Most Courses Offered at Elkhorn, Kenosha, and Racine Campuses & Online
		Administrative Services	

<sup>Δ</sup> Suggested Sequence	✓	Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
Semester 1		103-109	Windows Operating Sys. & Con.		1	.5-1
		106-011 *	Records Management		1	1-0
		106-137 *	Keyboarding Applications		3	1-4
		106-178 *	Business Proofreading & Editing		2	2-0
		801-136	English Composition 1	Prereq: 831-103 (See Note 1)	3	3-0
		801-196	Oral/Interpersonal Communication	Prereq: 838-105 (See Note 1)	3	3-0
		804-123	Math with Business Applications	Prereq: 834-109 (See Note 1)	3	3-0
Semester 2		101-112	Accounting for Business		3	3-0
		101-114	Accounting Principles		4	3-2
		103-110	Microsoft PowerPoint		1	.5-1
		106-010 *	Publication Design for Business	Prereq: 106-137	2	1-2
		106-012 *	Spreadsheet/DB for Business I	Prereq: 106-137	3	2-2
		106-014 *	Word Processing for Business I	Prereq: 106-137	2	1-2
		106-119 *	Professional Development		2	2-0
		106-392 *	Office Field Study	Prereq: 106-137 Coreq: 106-119	1	.5-0-0-2
<b>Minimum Program Total Credits Required</b>					<b>30</b>	

<sup>Δ</sup>Courses may be taken out of suggested sequence as long as requisites have been met.

Federal regulations require disclosure of the following information for this program:

Books and Supplies	Resident Tuition and Fees	Median Loan Debt <sup>1</sup>	On-Time Graduation Rate <sup>2</sup>	U.S. Department of Labor Standard Occupational (SOC) Code & Occupational Profile – available at <a href="http://www.onetonline.org">http://www.onetonline.org</a>
\$1,825	\$4,560	\$3,500	0%	Office Clerks (43-9061)

<sup>1</sup> **Median Loan Debt:** Based on eligibility, students can receive loans to help pay for the total cost of attending college. The cost is comprised of tuition and fees, books and supplies, transportation costs, room and board, and miscellaneous personal expenses. Therefore, medial loan debt may be more than the listed tuition, fees, books, and supplies cost.

<sup>2</sup> **On-time Graduation Rate:** Dependent upon students' choice to attend college part-time or full-time. Students decide to attend college part-time for a number of reasons including work schedule/demands and family responsibilities. 76 percent of students at Gateway attend part-time, therefore taking longer to complete their chosen program of study.

 <b>Effective 2015/2016</b>	<b>Career Cluster ▶</b>	<b>Career Pathway ▶</b>	<b>OFFICE ASSISTANT</b> <b>(31-106-1)</b> <i>Technical Diploma</i> Most Courses Offered at Elkhorn, Kenosha, and Racine Campuses & Online
		<b>Administrative Services</b>	

**PROGRAM DESCRIPTION**

*Office Assistant* prepares individuals to fulfill the role of an office generalist. Participants will develop skills in keyboarding, filing, business mathematics, records control, and customer service. Office Assistant graduates will develop the computer skills necessary to succeed in the office environment. Participants will be given the opportunity to visit and observe area office assistants in action.

**PROGRAM LEARNING OUTCOMES**

**Graduates of the Office Assistant Technical Diploma Program should be able to:**

1. Demonstrate effective workplace communications.
2. Apply technology skills to business and administrative tasks.
3. Perform routine administrative procedures.
4. Maintain internal and external relationships.
5. Model professionalism in the workplace.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                     | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively | 7. Think critically and creatively                                  |
| 3. Demonstrate essential comp. skills  | 8. Work cooperatively   |
| 4. Demonstrate essential math skills   | 9. Value learning   |
| 5. Develop job seeking skills          |   |

**ADMISSION REQUIREMENTS**

1. Students must submit an application and \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.

**GRADUATION REQUIREMENTS**

1. Minimum 30 credits with an average of 2.0 or above.
2. \*Average of 2.0 ("C") or above for these major courses.

*For a complete list of Graduation Requirements check the Student Handbook.*

**NOTES**

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
 EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.  
 For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_.



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Programming & Software Development

**ORACLE**

(10-810-4)

Advanced Technical Certificate  
Most Courses Offered at Racine Campus

√	Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
	152-194	SQL Fundamentals - Oracle		3	2-2
	152-110	DBA – Part 1 – Oracle		3	2-2
	152-127	DBA – Part 2 – Oracle	Prereq: 152-110	3	2-2
	152-128	DBA – Part 3 – Oracle	Prereq: 152-110	3	2-2

**Program Total Required      12**

 <b>Effective 2015/2016</b>	<b>Career Cluster ▶</b>	<b>Career Pathway ▶</b>	<b>ORACLE</b> <b>(10-810-4)</b> <i>Advanced Technical Certificate</i> Most Courses Offered at Racine Campus
		<b>Programming &amp; Software Development</b>	

**PROGRAM DESCRIPTION**

Oracle prepares you for a career in Oracle Enterprise Database Administration. This career will allow you to organize, manage, backup, and recover data stored in Oracle databases that are available within an Intranet and/or Internet environment. Class work includes introduction to SQL, database administration, Oracle networking and backup and recovery, and Oracle performance tuning.

**EQUIVALENCY**

*This program is designed for students who have completed one of the following Gateway Technical College Associate Degrees (or have the equivalent knowledge and skills):*

- IT-Software Developer (10-152-1)
- IT-Web Developer/Administrator (10-152-3)
- IT-Network Specialist (10-150-2)
- IT-Computer Support Specialist (10-154-3)

Equivalency can be earned through a combination of prior class work and/or current work experience. For equivalency information, call the campus advisor.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                     | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively | 7. Think critically and creatively                                  |
| 3. Demonstrate essential comp. skills  | 8. Work cooperatively   |
| 4. Demonstrate essential math skills   | 9. Value learning   |
| 5. Develop job seeking skills          |   |

**ADMISSION REQUIREMENTS**

1. Related associate degree (official transcript required) or equivalent work experience (documented by an advisor) required.

**GRADUATION REQUIREMENTS**

1. 12 Credits with an average of 2.0 or above.

*For a complete list of Graduation Requirements check the Student Handbook.*

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
 EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.  
 For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster ▶</b>	<b>Career Pathway ▶</b>	<b>PARAMEDIC TECHNICIAN</b> <b>(10-531-1)</b> <i>Associate of Applied Science Degree</i> Most Courses Offered at HERO Center
		Emergency and Fire Management Services	

<sup>Δ</sup> Suggested Sequence	✓	Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
Semester 1		531-911 *	EMS Fundamental	Prereq: 838-105 (See Notes 1 & 2)	2	2-0
		531-912 *	Paramedic Medical Principles	Prereq: 531-911	4	4-0
		531-913 *	Adv. Patient Asses. Principles	Prereq: 531-911	3	2-2
		531-914 *	Adv. Pre-Hospital Pharmacology	Prereq: 531-911	3	2-2
		531-915 *	Paramedic Respiratory Mgt.	Prereq: 531-914	2	1-2
		531-917 *	Paramedic Clinical/Field I	Prereq: 531-912 (See Notes 3 & 4)	3	0-0-0-12
		531-955 *	Paramedic Cardiology 1	Prereq: 531-915	2	1.5-1
		531-956 *	Paramedic Cardiology 2	Prereq: 531-955	2	1-2
Semester 2		531-918 *	Adv. Emergency Resuscitation	Prereq: 531-956	1	0-2
		531-919 *	Paramedic Medical Emergencies	Prereq: 531-918	4	3-2
		531-920 *	Paramedic Trauma	Prereq: 531-919	3	2-2
		531-921 *	Special Patient Populations	Prereq: 531-920	3	2-2
		531-922 *	EMS Operations	Prereq: 531-921	1	1-0
		531-923 *	Paramedic Capstone	Prereq: 531-921	1	0-2
	531-924 *	Paramedic Clinical/Field II	Prereq: 531-956 (See Notes 3 & 4)	4	0-0-0-16	
Semester 3		801-136	English Composition 1	Prereq: 831-103 (See Note 1)	3	3-0
		801-196	Oral/Interpersonal Communication	Prereq: 838-105 (See Note 1)	3	3-0
		806-177	General Anatomy and Physiology	Prereq: 806-134	4	2-4
		809-196	Sociology, Introduction to	Prereq: 838-105 (See Note 1 & 5)	3	3-0
Semester 4		806-179	Anatomy & Physiology, Advanced	Prereq: 806-177	4	2-4
		806-197	Microbiology	Prereq: 806-177 OR 806-105 (See Note 7)	4	3-2
		809-188	Psychology, Developmental	Prereq: 838-105 (See Note 1)	3	3-0
		809-198	Psychology, Introduction to	Prereq: 838-105 (See Note 1 & 5)	3	3-0
Electives		<b>Take 5 elective credits. Any associate degree level course may be taken as an elective.</b>			<b>5</b>	
		<b>Suggested Electives:</b> 501-101 Medical Terminology (3 Cr)				

**Minimum Program Total Credits Required 70**

<sup>Δ</sup>Courses may be taken out of suggested sequence as long as requisites have been met.



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Emergency and Fire Management Services

**PARAMEDIC TECHNICIAN**

(10-531-1)

Associate of Applied Science Degree  
Most Courses Offered at HERO Center

**PROGRAM DESCRIPTION**

Paramedic requires students to be licensed in Wisconsin at the Emergency Medical Technician (EMT), Advanced EMT (EMT Intermediate Technician), or EMT Intermediate level and be current in Healthcare Provider CPR. Paramedics can perform more acute care and administer advanced drug therapies. They can also perform surgical procedures to open airways and provide resuscitative drugs. Paramedics have an increased knowledge of lifesaving skills as well as advanced emergency assessment expertise. This program is offered on a part time basis: either two evenings a week and Saturdays or an alternating day class 2-3 days a week to accommodate the typical 24 hour on/48 hour off schedule worked by many FF/EMS agencies. At the end of the program, students will take a final Gateway Technical College written and practical exam, and after successful completion students will be eligible to test and credential through the National Registry of Emergency Medical Technicians®. The program includes approximately 650 hours of classroom lecture and skills lab, and approximately 500 hours of supervised hospital clinical and field time. Satisfactory completion of clinical/field time is competency based so actual number of hours may vary from student to student. Graduates of this program can expect to find employment with private ambulance companies, fire departments, or hospital emergency rooms. Students finishing the first two semesters of the program (the 531 courses) are eligible to receive the Paramedic Technical Diploma (31-531-1). All courses in the EMT-Paramedic diploma program can be applied to the Paramedic Technician associate degree.

Program Goal: To prepare competent entry-level Emergency Medical Technician-Paramedics in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains, with or without exit points at the Emergency Medical Technician-Intermediate and/or Emergency Medical Technician-Basic, and/or First Responder levels.

**PROGRAM LEARNING OUTCOMES**

Graduates of the Paramedic Technician Program should be able to:

1. Prepare for incident response and EMS operations.
2. Integrate pathophysiological principles and assessment findings to provide appropriate patient care.
3. Demonstrate paramedic skills associated with established standards and procedures for a variety of patient encounters.
4. Communicate effectively with others.
5. Demonstrate professional behavior.
6. Meet state and national competencies listed for paramedic credentialing.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                     | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively | 7. Think critically and creatively                                  |
| 3. Demonstrate essential comp. skills  | 8. Work cooperatively   |
| 4. Demonstrate essential math skills   | 9. Value learning   |
| 5. Develop job seeking skills          |   |

**ADMISSION REQUIREMENTS**

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must have current CPR certification.
4. Students must have current Wisconsin EMS licensure.
5. Students must submit official high school, GED, or HSED transcript.
6. Students must complete a functional ability form verifying they have read and understand the functional abilities for the program.

**GRADUATION REQUIREMENTS**

1. Minimum 70 credits with an average of 2.0 or above.
2. \*A minimum grade of 2.0 ("C") or above for these major courses.  
*For a complete list of Graduation Requirements check the Student Handbook.*

**NOTES**

1. A satisfactory placement test score (or successful remediation) is required prior enrollment. See an advisor for details.
2. Prior to enrolling in paramedic level courses, a student must satisfactorily complete an EMS specific pre-admission screening which includes both written and practical components at the Emergency Medical Technician level (EMT) and attend an informational orientation with the program staff.
3. Drug testing and immunizations are required prior to admission to the first clinical course (531-917).
4. Applicants of this program are subject to a review of their criminal backgrounds as part of the training center training permit process. Positive background checks may negatively impact your ability to pursue this career at Gateway Technical College.
5. Transfer credits in Social Science may substitute for this course. See an advisor for details.
6. Please note that your program may require additional fee(s) for: Criminal Background Check, Medical Documentation Manager, and/or Drug Testing.
7. Students in this program should complete 806-177 as the pre-req for this course.

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.  
For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster</b> ▶	<b>Career Pathway</b> ▶	<b>PERIOPERATIVE NURSING</b> <b>(10-810-23)</b> <i>Advanced Technical Certificate</i> Most Courses Offered at Burlington Center and Kenosha Campus
		Therapeutic Services	

✓	Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
	543-118	* Periop Nursing Prof Role and Legal Cons		2	1.5-0-1.5
	543-119	* Periop Nursing Surg Environment	Prereq: 543-118	3	2-2
	543-120	* Periop Nursing Comp and Care	Prereq: 543-119	2	2-0
	543-121	* Periop Nursing Practicum	Prereq: 543-120	3	0-0-9
<b>Program Total Required</b>				<b>10</b>	

 <b>Effective 2015/2016</b>	<b>Career Cluster ▶</b>	<b>Career Pathway ▶</b>	<b>PERIOPERATIVE NURSING</b> <b>(10-810-23)</b> <i>Advanced Technical Certificate</i> Most Courses Offered at Burlington Center and Kenosha Campus
		Therapeutic Services	

**PROGRAM DESCRIPTION**

This ATC is designed to prepare the Registered Nurse with knowledge and skills to assume a position in surgical care health service occupations. The learner will be prepared to provide patient care in the perioperative environments, including pre-operative, intraoperative, and postoperative surgical areas. Content includes legal and ethical issues, various roles of the perioperative team, concepts of sterility, laser and basic surgical instrumentation, and care of the simple, complex and emergency surgical patient. Learning experiences will occur in the classroom, nursing skills lab, and a capstone clinical experience with an experience Registered Nurse in a surgical care unit.

**EQUIVALENCY**

*This program is designed for students who have completed one of the following Gateway Technical College Associate Degrees (or have the equivalent knowledge and skills):*

10-543-1 Nursing-Associate Degree

Equivalency can be earned through a combination of prior class work and/or current work experience. For equivalency information, call the campus advisor.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                     | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively | 7. Think critically and creatively                                  |
| 3. Demonstrate essential comp. skills  | 8. Work cooperatively   |
| 4. Demonstrate essential math skills   | 9. Value learning   |
| 5. Develop job seeking skills          |   |

**ADMISSION REQUIREMENTS**

1. Related associate degree (official transcript required) or equivalent work experience (documented by advisor) required.
2. Students must have current RN licensure.
3. Students must complete a Background Disclosure form and must request and pay for a background check. Applicants for all health science programs are subject to a review of their criminal backgrounds. Positive background checks may negatively impact your ability to pursue a health career at Gateway Technical College. Each case will be individually evaluated based on all available evidence provided to the college.
4. Please note that your program may require additional fee(s) for: Criminal Background Check, Medical Document Manager, and/or Drug Testing.

**GRADUATION REQUIREMENTS**

1. 10 credits with a minimum of "C" or better on all courses.

*For a complete list of Graduation Requirements check the Student Handbook.*

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.  
For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ . My advisor's contact information is \_\_\_\_\_ .

 <b>Effective 2015/2016</b>	<b>Career Cluster</b> ▶	<b>Career Pathway</b> ▶	<b>PHARMACY TECHNICIAN</b> <b>(31-536-1)</b> <i>Technical Diploma</i> Most Courses Offered at Burlington Center
		Therapeutic Services	

	√	Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
Semester 1		501-101 *	Medical Terminology	Prereq: 838-105 (See Note 4)	3	3-0
		103-143	Computers for Professionals	Prereq: 103-142 (See Note 4)	3	2-2
		536-112 *	Pharmacy Business Applications	Prereq: 834-109 Coreq: 536-115; 121 (See Note 7)	3	3-0
		536-115 *	Pharmacy Law	Prereq: 834-109 Coreq: 536-112; 121 (See Note 7)	2	1-2
		536-121 *	Fund. Reading Prescriptions	Prereq: 834-109 Coreq: 536-112; 115 (See Note 7)	2	1-2
		801-301	Writing Principles	Prereq: 851-760 (See Note 4)	1	2-0
		804-107	College Mathematics	Prereq: 834-109 (See Note 4)	3	3-0
Semester 2		536-110 *	Pharmacy Calculations	Prereq: 501-101; 536-121; 804-107 Coreq: 536-134; 122 (See Note 7)	3	3-0
		536-122 *	Pharmacology for Pharm Tech	Prereq: 501-101; 103-143; 536-112; 536-115; 536-121; 801-301 Coreq: 536-110; 134 (See Note 7)	3	3-0
		536-134 *	Managing Pharmacy Benefits	Prereq: 536-112; 115; 121; 801-301 Coreq: 536-110; 122 (See Note 7)	3	3-0
		801-196	Oral/Interpersonal Communications	Prereq: 838-105 (See Note 4)	3	3-0
Semester 3		536-101 *	Sterile Techniques for Pharm Tech	Prereq: 536-112; 115; 121; 110; 134 (See Note 3&9)	3	2-2
		536-139 *	Community Pharmacy Clinical	Prereq: Inst. Consent (See Notes 3, 6 & 7)	3	0-0-9

**Minimum Program  
Total Credits Required** **35**

**Certification:** Two organizations, the Pharmacy Technician Certification Board and the Institute for the Certification of Pharmacy Technicians, administer national certification examinations. Certification is voluntary in most states, but is required by some states and employers. Some technicians are hired without formal training, but under the condition that they obtain certification within a specified period of time. To be eligible for either exam, candidates must have a high school diploma or GED, no felony convictions of any kind within 5 years of applying, and no drug or pharmacy related felony convictions at any point.

Federal regulations require disclosure of the following information for this program:

Books and Supplies	Resident Tuition and Fees	Median Loan Debt <sup>1</sup>	On-time Graduation Rate <sup>2</sup>	U.S. Department of Labor Standard Occupational (SOC) Code & Occupational Profile – available at <a href="http://www.onetonline.org">http://www.onetonline.org</a>
\$1,700	\$3,260	\$2,250	0.0%	Pharmacy Technicians (29-2052)

<sup>1</sup> **Median Loan Debt:** Based on eligibility, students can receive loans to help pay for the total cost of attending college. The cost is comprised of tuition and fees, books and supplies, transportation costs, room and board, and miscellaneous personal expenses. Therefore, medial loan debt may be more than the listed tuition, fees, books, and supplies cost.

<sup>2</sup> **On-time Graduation Rate:** Dependent upon students' choice to attend college part-time or full-time. Students decide to attend college part-time for a number of reasons including work schedule/demands and family responsibilities. 76 percent of students at Gateway attend part-time, therefore taking longer to complete their chosen program of study.



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Therapeutic Services

PHARMACY TECHNICIAN

(31-536-1)

Technical Diploma

Most Courses Offered at Burlington Center

**PROGRAM DESCRIPTION**

The *Pharmacy Technician* diploma program is designed to prepare you to assist the pharmacist in preparation of drug products and prescriptions to be dispensed to the general public. The course of study covers one year of both academic and clerkship courses. This program is directed toward providing you with the skills and knowledge needed to obtain employment in either community or outpatient hospital pharmacies. Pharmacy technicians perform a variety of tasks including preparation of prescriptions, all types of record-keeping, inventory control, cash and credit transactions and third-party claims. Emphasis is placed on communication and customer relations in this health care occupation.

**PROGRAM LEARNING OUTCOMES**

Graduates of the Pharmacy Technician Technical Diploma Program should be able to:

1. Prepare prescription and med. products under the supervision of a pharmacist.
2. Demonstrate customer service skills to patients, prescribers, insurance agents and other members of the community.
3. Demonstrate ability to work cooperatively within the pharmacy team.
4. Communicate effectively both verbally and in writing.
5. Demonstrate essential computer skills.
6. Complete math calculations accurately.
7. Prepare and manage pharmaceutical inventories.
8. Dem. the role of a Pharmacy Technician in the clinical setting.
9. Demonstrate a commitment to continuous learning and professional development.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                     | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively | 7. Think critically and creatively                                  |
| 3. Demonstrate essential comp. skills  | 8. Work cooperatively   |
| 4. Demonstrate essential math skills   | 9. Value learning   |
| 5. Develop job seeking skills          |   |

**ADMISSION REQUIREMENTS**

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript including a graduation or passing date.
4. Students must complete a Background Disclosure form and must request and pay for a background check. Applicants for all health science programs are subject to a review of their criminal backgrounds. Positive background checks may negatively impact your ability to pursue a health career at Gateway Technical College. Each case will be individually evaluated based on all available evidence provided to the college.
5. Students must complete a functional ability form verifying they have read and understand the functional abilities for the program.

**GRADUATION REQUIREMENTS**

1. Minimum 35 credits with an average of 2.0 or above.
2. \*A minimum grade of 2.0 ("C") or above for these major courses.  
*For a complete list of Graduation Requirements check the Student Handbook.*

**NOTES**

1. Clinical sites may require proof of health insurance, immunizations, and a physical.
2. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).
3. Course 536-101 and 536-139 can only be completed after all other program courses have been successfully completed.
4. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
5. This program has a second-tier admission process for clinical/practicum/program courses called petitioning. Students are selected based on completion of academic eligibility requirements and district residency. See <https://www.gtc.edu/student-services/admissions/what-petitioning> for additional information.
6. Students will be selected for their core 536 courses using a petitioning process.
7. Students must meet petitioning requirements prior to enrolling in 536 courses.
8. Eye protection and white lab coat are required for pharmacy laboratory exercises.
9. Students who have previously completed the Community Pharmacy Technician program but may not have completed all required requisite courses may enroll in this course with instructor consent.
10. Please note that your program may require additional fee(s) for: Criminal Background Check, Medical Documentation Manager, and/or Drug Testing.

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.  
For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_. My advisor's contact information is \_\_\_\_\_.

 Effective 2015/2016	Career Cluster ►	Career Pathway ►	<b>PHYSICAL THERAPIST ASSISTANT</b> (10-524-1) Associate of Applied Science Degree Most Courses Offered at Kenosha Campus
		Therapeutic Services	

△ Suggested Sequence	Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
Summer	806-177	* General Anatomy & Physiology	Prereq: 806-134 (See Note 6)	4	2-4
Semester 1	524-138	* PTA Kinesiology 1	Prereq: Instructor Consent	3	1.5-3
	524-139	* PTA Patient Interventions	Prereq: Instructor Consent	4	2-4
	524-140	* PTA Professional Issues 1	Prereq: Instructor Consent	2	2-0
	524-143	* PTA Therapeutic Modalities	Coreq: 524-139	4	2-4
	809-198	Psychology, Introduction to	Prereq: 838-105 (See Note 2 & 8)	3	3-0
Semester 2	524-141	* PTA Kinesiology 2	Prereq: 524-138	4	2-4
	524-147	* PTA Clinical Practice 1	Coreq: 524-141; 524-143	2	0-1-0-6
	524-142	* PTA Therapeutic Exerc.	Prereq: 806-177 Coreq: 524-138	3	1.5-3
	524-145	* PTA Principles of Musculoskeletal Rehab.	Prereq: 524-139 Coreq: 524-141 & 524-142	4	2-4
	804-113	* College Technical Math 1A	Prereq: 834-110 (See Note 2)	3	3-0
	801-136	English Composition 1	Prereq: 831-103 (See Note 2)	3	3-0
Semester 3	524-144	* PTA Princ of Neuro Rehab.	(See Note 1)	4	2-4
	524-146	* PTA Cardio & Integ Mgmt	(See Note 1)	3	1.5-3
	524-148	* PTA Clinical Practice 2	Prereq: 524-147	3	.5-0-0-10
	809-188	Psychology, Developmental	Prereq: 838-105 (See Note 2)	3	3-0
Semester 4	524-149	* PTA Rehabilitation Across the Lifespan	Prereq: 524-144; 524-145; 524-148 Coreq: 524-146	2	1-2
	524-150	* PTA Prof Issues 2	Prereq: 524-140 Coreq: 524-148	2	2-0
	524-151	* PTA Clinical Practice 3	Prereq: 524-144; 524-145; 524-146; 524-148	5	.5-0-0-18
	801-196	Oral/Interpersonal Communication	Prereq: 838-105 (See Note 2)	3	3-0
	809-196	Sociology, Introduction to	Prereq: 838-105 (See Note 2 & 8)	3	3-0
Electives	<b>Take 3 elective credits. Any associate degree level course may be taken as an elective.</b>			<b>3</b>	
	<b>Suggested Electives:</b> 501-101 Medical Terminology (3 Cr.)      524-108 PTA Musculoskeletal Anatomy & Function (2 Cr) 510-154 Pathophys. for Health Prof. (3 Cr.)      806-179 Anatomy & Physiology, Advanced (4 Cr)				

**Minimum Program Total Credits Required 70**

△ Courses may be taken out of suggested sequence as long as requisites have been met.



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Therapeutic Services

**PHYSICAL THERAPIST ASSISTANT**

(10-524-1)

Associate of Applied Science Degree  
Most Courses Offered at Kenosha Campus

**PROGRAM DESCRIPTION**

Physical Therapist Assistant is a health profession with the primary purpose of promoting optimal human health and function through the application of scientific principles to prevent, identify, assess, correct, or alleviate acute or prolonged movement dysfunction. The physical therapist assistant (PTA) is a technical health care worker who carries out many patient treatments under the supervision of a physical therapist. PTAs find employment in clinics, hospitals, nursing homes, rehabilitation centers, home care agencies, schools, private health and fitness centers, and other settings.

**PROGRAM LEARNING OUTCOMES**

Graduates of the Physical Therapist Assistant Program should be able to:

1. Demonstrate effective comm. with patients, families, and health care team.
2. Exhibit behaviors and conduct that reflect respect and sensitivity according to PT practice standards.
3. Func. under the super. of a physical therapist in a safe, legal, ethical manner.
4. Produce documentation to support the delivery of PT services.
5. Demonstrate critical thinking skills to implement and adjust a plan of care under the direction and supervision of a physical therapist.
6. Perform technically competent data collection under the direction and supervision of the physical therapist.
7. Perform technically competent PT interventions under the direction and supervision of the physical therapist.
8. Educate patients, families, and other health providers.
9. Integrate components of administrative, operational, and fiscal practices of PT service in a variety of settings.
10. Implement a self-dir. plan for career dev., credentialing, and lifelong learning.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                     | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively | 7. Think critically and creatively                                  |
| 3. Demonstrate essential comp. skills  | 8. Work cooperatively   |
| 4. Demonstrate essential math skills   | 9. Value learning   |
| 5. Develop job seeking skills          |   |

**ADMISSION REQUIREMENTS**

1. Students must submit an application and \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript including a graduation or passing date.
4. Students must complete a Background Disclosure form and must request and pay for a background check. Applicants for all health science programs are subject to a review of their criminal backgrounds. Positive background checks may negatively impact your ability to pursue a health career at Gateway Technical College. Each case will be individually evaluated based on all available evidence provided to the college.
5. Students must complete a functional ability form verifying they have read and understand the functional abilities for the program.

**GRADUATION REQUIREMENTS**

1. Minimum 70 credits with an average of 2.0 or above.
2. \*A minimum grade of 2.0 ("C") or above for these major courses.  
*For a complete list of Graduation Requirements check the Student Handbook.*

**NOTES**

1. Courses 524-144 and 524-146 all have prerequisites of 524-141, 524-139 and 524-142.
2. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
3. Students must meet petition requirements before enrolling in 524 courses.
4. Any general studies course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).
5. CPR certification must be obtained and maintained.
6. The prerequisite for this course must have been completed with a minimum grade of a 'C' or better.
7. This program has a second-tier admission process for clinical/practicum/program courses called petitioning. Students are selected based on completion of academic eligibility requirements and district residency. See <https://www.gtc.edu/student-services/admissions/what-petitioning> for additional information.
8. Transfer credits in Social Science may substitute for this course. See an advisor for details.
9. Please note that your program may require additional fee(s) for: Criminal Background Check, Medication Documentation Manager, and/or Drug Testing.

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.

For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster ▶</b> 	<b>Career Pathway ▶</b> <b>Journalism and Broadcasting</b>	<b>PROFESSIONAL COMMUNICATIONS</b> <b>(10-699-1)</b> <i>Associate of Applied Science Degree</i> <i>Most Courses Offered at Racine Campus &amp; Online</i>

△ Suggested Sequence	✓ Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
<b>Semester 1</b>	103-143	Computers for Professionals	Prereq: 103-142 (See Note 1&3)	3	2-2
	699-110 *	Communication Document Design	Coreq: 103-143	3	2-2
	699-117 *	Research Fundamentals		3	2-2
	801-136	English Composition 1	Prereq: 831-103 (See Note 1)	3	3-0
	809-196	Sociology, Introduction to	Prereq: 838-105 (See Note 1&5)	3	3-0
<b>Semester 2</b>	204-107	Digital Photography, Intro to		3	2-2
	699-112 *	Editing	Prereq: 831-103 (See Note 1)	3	2-2
	699-114 *	Professional and Technical Writing	Prereq: 831-103 (See Note 1)	3	2-2
	*Take 9 credits from the list in Note 4 in Semesters 2, 3, or 4			9	
	801-196 <b>OR</b>	Oral/Interpersonal Communication	Prereq: 838-105 (See Note 1)	3	3-0
	801-198	Speech			
<b>Semester 3</b>	204-105	Computer Illustration & Drawing Tech		3	2-2
	699-111 *	Communication Project Management		3	2-2
	699-113 *	Information Design	Prereq: 831-103 (See Note 1)	3	2-2
	804-107	College Math	Prereq: 834-109 (See Note 1)	3	3-0
	809-198	Psychology, Introduction to	Prereq: 838-105 (See Note 1&5)	3	3-0
<b>Semester 4</b>	699-115	*OR Professional Communications Internship	Prereq: 699-113; 114; 117	3	1-0-0-8
	102-138	Biz Internship	Prereq: Instructor Consent		0-0-0-12
	699-116 *	Professional Communications Portfolio	Prereq: 699-113; 114; 117	1	1-0
	809-172	Diversity Studies, Introduction to	Prereq: 838-105 (See Note 1)	3	3-0
<b>Electives</b>	<b>Take 6 elective credits. Any associate degree level course may be taken as an elective.</b>			<b>6</b>	
	<b>Suggested Electives:</b>				
	699-130 Writing and Publishing (3 Cr)	699-135 Writing for the Web (3 Cr)			
	699-131 Writing Copy for Sales (3 Cr)	699-136 Writing Grant Proposals (3 Cr)			
	699-132 Writing for Organizations (3 Cr)	699-137 Writing Product Documentation (3 Cr)			
	699-133 Writing for Social Media (3 Cr)	699-138 Writing Software User Assist. (3 Cr)			
	699-134 Writing for the Media (3 Cr)				
<b>Minimum Program Total Credits Required</b>				<b>67</b>	

△ Courses may be taken out of suggested sequence as long as requisites have been met.



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Journalism and Broadcasting

PROFESSIONAL COMMUNICATIONS

(10-699-1)

Associate of Applied Science Degree  
Most Courses Offered at Racine Campus & Online

### PROGRAM DESCRIPTION

*Professional Communications* prepares students to research, plan, create, publish, and evaluate communication products. The curriculum develops the writing, design, and technology skills that students need to produce a variety of paper and electronic communication products, including articles, audiovisual scripts, grant proposals, promotional pieces, social media pages, user assistance, and websites. Professional communication skills are needed to meet the demands of the information age in business, government, and not-for-profit organizations.

### PROGRAM LEARNING OUTCOMES

**Graduates of the Professional Communications Associate Degree Program should be able to:**

1. Plan for a communication project.
2. Create a communication product.
3. Synthesize text, visual elements, and design in a communication product.
4. Manage all aspects of a communication project.
5. Produce a final communication product.

### CORE ABILITIES

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                     | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively | 7. Think critically and creatively                                  |
| 3. Demonstrate essential comp. skills  | 8. Work cooperatively   |
| 4. Demonstrate essential math skills   | 9. Value learning   |
| 5. Develop job seeking skills          |   |

### ADMISSION REQUIREMENTS

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.

### GRADUATION REQUIREMENTS

1. Minimum 67 credits with an average of 2.0 or above.
2. \*Minimum of 2.0 ("C") or above for these Major courses.

*For a complete list of Graduation Requirements check the Student Handbook.*

### NOTES

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).
3. Formerly 103-199, PC Basics/Microsoft Office.
4. Choose 9 credits from the following courses: 699-130; 699-131; 699-132; 699-133; 699-134; 699-135; 699-136; 699-137; 699-138 (noted in Electives list on front of sheet). If using a course to fulfill this requirement, students will not be allowed also to use the course to fulfill the elective requirement for the program. See an advisor for details.
5. Transfer credits in Social Science may substitute for this course. See an advisor for details.

### OTHER INFORMATION

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult WebAdvisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.  
For a complete list of course descriptions (and possible online courses) for this program, please consult WebAdvisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster</b> ▶	<b>Career Pathway</b> ▶	<b>SMALL BUSINESS ENTREPRENEURSHIP</b> <b>(31-145-1)</b> <i>Technical Diploma</i> Most Courses Offered at Kenosha Campus & Online
		General Management	

<sup>Δ</sup> <i>Suggested Sequence</i> ✓	<i>Course Number</i>	<i>Course Title</i>	<i>Requisites</i>	<i>Credits</i>	<i>Hrs/Wk Lec - Lab</i>
Semester 1	104-101 *	Marketing Principles		3	3-0
	101-112 *	Accounting for Business		3	3-0
	103-143 *	Computers for Professionals	Prereq: 103-142 (See Note 1&3)	3	2-2
	145-119 *	Entrepreneurship		3	3-0
	801-136	English Composition 1	Prereq: 831-103 (See Note 1)	3	3-0
Semester 2	145-120 *	Business Planning and Development	Prereq: 145-119	3	3-0
	104-105 *	Promotion Principles		3	3-0
	145-121 *	Small Business Ownership	Coreq: 145-120 & Inst. Consent	3	3-0
	145-106 *	Entrepreneurship 3 – Operations MGMT	Coreq: 145-119	3	3-0
	104-116 *	E-Marketing/Social Media	Prereq: 104-101	3	3-0
	104-104 *	Selling Principles		3	3-0

**Minimum Program Total Credits Required      33**

<sup>Δ</sup>*Courses may be taken out of suggested sequence as long as requisites have been met.*

Federal regulations require disclosure of the following information for this program:

<b>Books and Supplies</b>	<b>Resident Tuition and Fees</b>	<b>U.S. Department of Labor Standard Occupational (SOC) Code &amp; Occupational Profile – available at <a href="http://www.onetonline.org">http://www.onetonline.org</a></b>
\$1,425	\$4,815	<u>Managers (11-9199)</u>

 <b>Effective 2015/2016</b>	<b>Career Cluster ▶</b>	<b>Career Pathway ▶</b>	<b>SMALL BUSINESS ENTREPRENEURSHIP</b> <b>(31-145-1)</b> <i>Technical Diploma</i> Most Courses Offered at Kenosha Campus & Online
		General Management	

**PROGRAM DESCRIPTION**

Creating your own path through entrepreneurship takes inspiration, dedication, and the knowledge of the technical skills necessary to operate a business. You can complete the technical diploma in *Small Business Entrepreneurship* in two semesters. The coursework combines business theory with applied application to your proposed business. Whether you are launching your own venture, working for a small business, or working as a project manager for a large firm, the skills you will develop in this program will be an asset to your career.

**PROGRAM LEARNING OUTCOMES**

- Graduates of the Small Business Entrepreneurship Program should be able to:**
1. Develop a business plan for a small to medium sized business.
  2. Develop a marketing plan for a small to medium sized business.
  3. Demonstrate the tasks necessary to operate a small to medium sized business.
  4. Apply the proper marketing concepts for a successful business.
  5. Demonstrate the accounting skills necessary to manage a small to medium sized business.
  6. Demonstrate the capacity to allocate the resources needed to manage a small to medium sized business, including financial, human, and operational resources.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                     | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively | 7. Think critically and creatively                                  |
| 3. Demonstrate essential comp. skills  | 8. Work cooperatively   |
| 4. Demonstrate essential math skills   | 9. Value learning   |
| 5. Develop job seeking skills          |   |

**ADMISSION REQUIREMENTS**

1. Students must submit an application and \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.

**GRADUATION REQUIREMENTS**

1. Minimum 33 credits with an average of 2.0 or above.
2. \* Average of 2.0 ("C") or above for these major courses.

*For a complete list of Graduation Requirements check the Student Handbook.*

**NOTES**

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).
3. Formerly 103-199, PC Basics/Microsoft Office.

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
 EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.

For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_

 <b>Effective 2015/2016</b>	<b>Career Cluster</b> ▶ 	<b>Career Pathway</b> ▶ General Management	<b>SUPERVISORY MANAGEMENT</b> (10-196-1) <i>Associate of Applied Science Degree</i> Most Courses Offered at Elkhorn and Racine Campuses & Online

△ Suggested Sequence	✓	Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
<b>Semester 1</b>		196-129 *	Management Orientation	(See Note 5)	1	.5-1
		196-137 *	Certified Service Specialist		3	3-0
		196-190 *	Leadership Development		3	3-0
		196-191 *	Supervision		3	3-0
		801-136	English Composition 1	Prereq: 831-103 (See Note 2)	3	3-0
		801-198	Speech	Prereq: 838-105 (See Note 2)	3	3-0
		801-196	<b>OR</b> Oral/Interpersonal Communication		3	3-0
<b>Semester 2</b>		196-134 *	Legal Issues for Supervisors		3	3-0
		196-169 *	Diversity and Change Management		3	3-0
		196-193 *	Human Resource Management		3	3-0
		804-123	Math with Business Applications	Prereq: 834-109 (See Note 2)	3	3-0
		809-166	Ethics: Theory & Applications, Intro to	Prereq: 838-105 (See Note 2)	3	3-0
<b>Semester 3</b>		101-112	Accounting for Business		3	3-0
		196-136 *	Safety in the Workplace		3	3-0
		196-189 *	Team Building and Problem Solving		3	3-0
		196-192 *	Managing for Quality		3	3-0
		809-144	Macroeconomics	Prereq: 838-105 (See Note 2)	3	3-0
<b>Semester 4</b>		196-138 *	Management for Supervisors Capstone		2	2-0
		196-168 *	Organizational Development		3	3-0
		196-188 *	Project Management		3	3-0
		809-172	Diversity Studies, Introduction to	Prereq: 838-105 (See Note 2)	3	3-0
		809-198	Psychology, Introduction to	Prereq: 838-105 (See Note 2 & 6)	3	3-0
			<i>Take 3 credits from the list in Note 1.</i>		3	
<b>Electives</b>		<b>Take 6 elective credits. Any associate degree level course may be taken as an elective.</b>				<b>6</b>
		<b>Suggested Electives:</b> 104-101 Marketing Principles (3 Cr) 196-164 Personal Skills for Supervisors (3 Cr) 102-138 Biz Internship (3 Cr)				
<b>Minimum Program Total Credits Required</b>						<b>69</b>

△ Courses may be taken out of suggested sequence as long as requisites have been met.



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

General Management

## SUPERVISORY MANAGEMENT

(10-196-1)

Associate of Applied Science Degree  
Most Courses Offered at Elkhorn  
and Racine Campuses & Online

### PROGRAM DESCRIPTION

*Supervisory Management* provides opportunities for those interested in acquiring or improving managerial/supervisory skills. The curriculum provides a blend of human relations and management development disciplines. This background enables the supervisor or manager to better understand how to attain organizational goals through the positive motivation of employees. Emphasis is placed on the "how-to-approach" which allows the instruction to be transferred from the classroom to the job.

### PROGRAM LEARNING OUTCOMES

Graduates of the Supervisory Management Associate Degree Program should be able to:

1. Utilize quality strategies and tactics.
2. Apply effective leadership skills.
3. Apply Human Resource policies and procedures.
4. Perform supervisory management functions to achieve organizational objectives.

### CORE ABILITIES

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                     | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively | 7. Think critically and creatively                                  |
| 3. Demonstrate essential comp. skills  | 8. Work cooperatively   |
| 4. Demonstrate essential math skills   | 9. Value learning   |
| 5. Develop job seeking skills          |   |

### ADMISSION REQUIREMENTS

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.

### GRADUATION REQUIREMENTS

1. Minimum 69 credits with an average of 2.0 or above.
2. \*Average of 2.0 ("C") or above for these major courses.

*For a complete list of Graduation Requirements check the Student Handbook.*

### NOTES

1. Choose 3 credits from the following courses: 103-102; 103-109; 103-112; 103-110 or 103-143.
2. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
3. Enrollment for this program is intended for people currently employed in a position closely related to Supervisory Management or who wish to acquire skills to become a supervisor.
4. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).
5. It is recommended that students enroll in 196-129 Management Orientation as the first course in the program.
6. Transfer credits in Social Science may substitute for this course. See an advisor for details.

### OTHER INFORMATION

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.

For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_. My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster</b> ▶	<b>Career Pathway</b> ▶	<b>SURGICAL TECHNOLOGY</b> <b>(10-512-1)</b> <i>Associate of Applied Science Degree</i> <i>Most Courses Offered at Kenosha Campus</i>
		Therapeutic Services	

<sup>Δ</sup> <i>Suggested Sequence</i>	<i>Course Number</i>	<i>Course Title</i>	<i>Requisites</i>	<i>Credits</i>	<i>Hrs/Wk Lec - Lab</i>
<b>Summer</b>	806-177	* General Anatomy & Physiology	Prereq: 806-134 (See Note 7)	4	2-4
<b>Semester 1</b>	512-125	* Intro to Surgical Technology	Prereq: 806-177 & Advisor Consent Coreq: 501-101	4	2-4
	512-126	* Surgical Tech Fundamentals 1	Prereq: 806-177 & Advisor Consent Coreq: 501-101; 512-125	4	2-4
	512-127	* Exploring Surgical Issues	Prereq: Advisor Consent Coreq: 512-125; 126	2	2-0
	501-101	* Medical Terminology	Prereq: 838-105 (See Note 1)	3	3-0
	806-179	* Anatomy and Physiology, Advanced	Prereq: 806-177 (See Note 7)	4	2-4
<b>Semester 2</b>	512-128	* Surgical Tech Fundamentals 2	Prereq: 512-126; 501-101; 512-125; 512-127 Coreq: 806-179; 806-197; 512-129	4	2-4
	512-129	* Surgical Pharmacology	Prereq: 512-125; 512-126	2	2-0
	512-130	* Surgical Skills Applications 1	Prereq: 512-125; 126; 127; 128 & Inst. Consent Coreq: 512-129	2	0-2-3
	806-197	* Microbiology	Prereq: 806-177 OR 806-105 (See Note 7&12)	4	3-2
	801-136	English Composition 1	Prereq: 831-103 (See Note 1)	3	3-0
<b>Semester 3</b>	512-131	* Surgical Interventions 1	Prereq: 512-128; 512-130	4	4-0
	512-132	* Surgical Technology Clinical 1	Prereq: 512-128; 129; 130 & Instructor Consent Coreq: 512-131	3	0-0-9
	512-133	* Surgical Technology Clinical 2	Prereq: 512-129; 130; 132 & Instructor Consent Coreq: 512-131	3	0-0-9
	809-198	Psychology, Introduction to	Prereq: 838-105 (See Note 1 & 11)	3	3-0
	801-196	Oral/Interpersonal Communication	Prereq: 838-105 (See Note 1)	3	3-0
<b>Semester 4</b>	512-142	* Surgical Interventions II	Prereq: 512-131; 512-133 Coreq: 512-135; 512-136	4	4-0
	512-135	* Surgical Technology Clinical 3	Prereq: 512-131; 133 & Instructor Consent Coreq: 512-142	3	0-0-9
	512-136	* Surgical Technology Clinical 4	Prereq: 512-135 & Instructor Consent Coreq: 512-142	3	0-0-0-12
	809-196	Sociology, Introduction to	Prereq: 838-105 (See Note 1 & 11)	3	3-0
<b>Electives</b>	<b>Take 5 elective credits. Any associate degree level course may be taken as an elective.</b>			<b>5</b>	
	<b>Suggested Electives:</b>				
	804-107 College Mathematics (3 Cr)	103-143 Computers for Professionals (3 Cr)			

<sup>Δ</sup>Courses may be taken out of suggested sequence as long as requisites have been met. **Minimum Program Total Credits Required**

**70**



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Therapeutic Services

**SURGICAL TECHNOLOGY**

(10-512-1)

Associate of Applied Science Degree  
Most Courses Offered at Kenosha Campus

**PROGRAM DESCRIPTION**

*Surgical Technology* graduates are allied health professionals who are an integral part of the team of medical practitioners providing surgical care to patients in a variety of settings. The surgical technologist works under medical supervision to facilitate the safe and effective conduct of invasive surgical procedures. This individual works to ensure that the operating room environment is safe, that equipment functions properly, and that the operative procedure is conducted under conditions that maximize patient safety. A surgical technologist possesses expertise in the theory and application of sterile and aseptic technique and combines the knowledge of human anatomy, surgical procedures, and implementation tools and technologies to facilitate a physician's performance of invasive therapeutic and diagnostic procedures.

**ADMISSION REQUIREMENTS**

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript including a graduation or passing date.
4. Students must complete a Background Disclosure form and must request and pay for a background check. Applicants for all health science programs are subject to a review of their criminal backgrounds. Positive background checks may negatively impact your ability to pursue a health career at Gateway Technical College. Each case will be individually evaluated based on all available evidence provided to the college.
5. Students must complete a functional ability form verifying they have read and understand the functional abilities for the program.

**GRADUATION REQUIREMENTS**

1. Minimum 70 credits with an average of 2.0 or above.
2. \*A minimum grade of 2.0 ("C") or above for these major courses.
3. Complete the Certified Surgical Technologist exam upon completion of the program which includes an extra fee that the student is required to pay in addition to their normal tuition fees. This exam is an accreditation requirement per ARC-STSA and most employers located in this area require their surgical technology staff to have this certification within a year.

*For a complete list of Graduation Requirements check the Student Handbook.*

**PROGRAM LEARNING OUTCOMES**

Graduates of the Surgical Technology Program should be able to:

1. Apply healthcare and technological science principles to the perioperative environment.
2. Maintain principles of sterile technique in the surgical environment.
3. Provide a safe, efficient, and supportive environment for the patient.
4. Prepare the patient, operating room, and surgical team for the perioperative phase.
5. Perform intraoperative case management in the scrub role.
6. Perform postoperative case management.
7. Function as an ethical, legal, and professional member of the healthcare team as determined by governing bodies.

The Surgical Technology program is fully accredited by the Commission on Accreditation of Allied Health Education Programs:

1361 Park Street  
Clearwater, FL 33756  
Phone: (727) 210-2350  
Fax: (727) 210-2354

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

1. Act responsibly
2. Communicate clearly and effectively
3. Demonstrate essential comp. skills
4. Demonstrate essential math skills
5. Develop job seeking skills
6. Respect themselves and others as a member of a diverse community
7. Think critically and creatively
8. Work cooperatively
9. Value learning

**NOTES**

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. A liability fee is assessed on all clinical courses.
3. Clinical sites may require proof of insurance.
4. There is a daily exposure to latex products in this program. Those with latex sensitivity may find exposure to latex impossible to avoid in this environment.
5. Students will be selected for their initial core 512 courses using a petitioning process.
6. Students will be required to provide annual tuberculosis test results, proof of influenza immunization, and a 10 panel drug screen before clinical placements can occur. Additionally, students will be required to remain CPR certified for the HealthCare Provider with American Heart Association during the entire duration of the program.
7. The prereq for this course must have been completed with a min. grade of 'C'
8. This program has a second-tier admission process for clinical/practicum/program courses called petitioning. Students are selected based on completion of academic eligibility requirements and district residency. See <https://www.gtc.edu/student-services/admissions/what-petitioning> for additional information.
9. Students must complete a total of 120 surgical procedures (80 that are first scrub and 40 second scrub) during the clinical rotation per ARC-STSA requirements.
10. Please note that your program may require additional fee(s) for: Criminal Background Check, Medical Documentation Manager, and/or Drug Testing.
11. Transfer credits in Social Science may substitute for this course. See an advisor for details.
12. Students in this program should complete 806-177 as the pre-req for this course.

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.  
For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster ▶</b> 	<b>Career Pathway ▶</b> Production	<b>TOOL AND DIE TECHNICIAN</b> (31-439-1) <i>Technical Diploma</i> Most Courses Offered at Racine Campus

△ Suggested Sequence	✓	Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
<b>Semester 1</b>		420-329	* Industrial Print Interpretation		2	4-0
		420-333	* Metallurgy Principles		1	1-1
		420-334	* Precision Measuring and Gauging		1	1-1
		420-330	* Machine Tool I	Coreq: 420-334	4	2-6
		420-317	* CNC Machining Operations	Prereq: 420-330	2	2-2
		804-115	College Technical Math 1	Prereq: 834-110 (See Note 1)	5	5-0
<b>Semester 2</b>		420-328	* Heat Treating Processes	Prereq: 420-333	2	2-2
		420-332	* Machine Tool II	Prereq: 420-317	4	2-6
		420-335	* Surface Grinding	Prereq: 420-330	1	0-2
		420-319	* Electrical Discharge Machining	Prereq: 420-317	2	2-2
		420-326	* GD & T for Die Making	Prereq: 420-329	1	2-0
		420-318	* Die Stamping	Prereq: 420-332	4	2-6

**Minimum Program Total Credits Required      29**

△ Courses may be taken out of suggested sequence as long as requisites have been met.

Federal regulations require disclosure of the following information for this program:

Books and Supplies	Resident Tuition and Fees	U.S. Department of Labor Standard Occupational (SOC) Code & Occupational Profile – available at <a href="http://www.onetonline.org">http://www.onetonline.org</a>
\$2,180	\$4,600	<u>Tool and Die Makers (51-4111)</u>



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Production

**TOOL AND DIE TECHNICIAN**

(31-439-1)

Technical Diploma

Most Courses Offered at Racine Campus

**PROGRAM DESCRIPTION**

The Tool and Die Technician program prepares students for entry into the metal working industry. Instruction is offered on basic machine tools as well as machines such as the electrical discharge machine, along with jigs, fixtures, gauges, and machinist hand tools. Related training includes blueprint reading, mathematics, precision inspection, and the use of the latest tooling available. This area of study prepares students to enter the field by developing quality skills in precision machining and enables learning of the specific abilities used to create precise machine parts and components. The tool and die work environment centers around the machine shop, tool rooms, and working on factory floors.

**PROGRAM LEARNING OUTCOMES**

Graduates of the Tool and Die Technician Technical Diploma Program should be able to:

1. Adhere to all required safety regulations by wearing personal protective clothing and practicing safe work habits.
2. Interpret specifications and drawings.
3. Compute dimensions, sizes, shapes, and tolerances of assemblies based on specifications.
4. Select metals to be used based on properties such as hardness and heat tolerance.
5. Operate conventional or computer-numerically controlled machine parts, and produce parts to prescribed dimensions and finishes.
6. Use machine and hand tools to fit and assemble parts used to make common repairs or modify dies, jigs, gauges, and tools.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                     | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively | 7. Think critically and creatively                                  |
| 3. Demonstrate essential comp. skills  | 8. Work cooperatively   |
| 4. Demonstrate essential math skills   | 9. Value learning   |
| 5. Develop job seeking skills          |   |

**ADMISSION REQUIREMENTS**

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.

**GRADUATION REQUIREMENTS**

1. Minimum 29 credits with an average of 2.0 or above.
2. \*Average of 2.0 ("C") or above for these major courses.

For a complete list of Graduation Requirements check the Student Handbook.

**NOTES**

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.  
For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_. My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster</b> ▶	<b>Career Pathway</b> ▶	<b>URBAN FARMING</b> (10-810-20) <i>Advanced Technical Certificate</i> Most Courses Offered at Kenosha Campus
		Plant Systems	

√	<b>Course Number</b>	<b>Course Title</b>	<b>Requisites</b>	<b>Credits</b>	<b>Hrs/Wk Lec - Lab</b>
	001-108	* Business of Urban Farming	Prereq: Instructor Consent	3	1-4
	001-109	* Urban Farming and Market Gardening		3	1-4
	001-142	* Vegetable Science		3	2-2
	145-119	* Entrepreneurship		3	3-0
<b>Program Total Required</b>				<b>12</b>	

 <b>Effective 2015/2016</b>	<b>Career Cluster ▶</b>	<b>Career Pathway ▶</b>	<b>URBAN FARMING</b> <b>(10-810-20)</b> <i>Advanced Technical Certificate</i> Most Courses Offered at Kenosha Campus
		<b>Plant Systems</b>	

**PROGRAM DESCRIPTION**

The *Urban Farming* ATC will enable completers to intensively farm small plots of land and bring their crops to market profitably. The certificate will combine intensive farming curriculum with entrepreneurship and business methods training.

**EQUIVALENCY**

*This program is designed for students who have completed one of the following Gateway Technical College Associate Degrees (or have the equivalent knowledge and skills):*

Horticulture 10-001-1

Equivalency can be earned through a combination of prior class work and/or current work experience. For equivalency information, call the campus advisor.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                     | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively | 7. Think critically and creatively                                  |
| 3. Demonstrate essential comp. skills  | 8. Work cooperatively   |
| 4. Demonstrate essential math skills   | 9. Value learning   |
| 5. Develop job seeking skills          |   |

**ADMISSION REQUIREMENTS**

1. Related associate degree (official transcript required) or equivalent work experience (documented by advisor) required.

**GRADUATION REQUIREMENTS**

1. \*Minimum grade of 2.0 ("C") or above for these major courses.
- For a complete list of Graduation Requirements check the Student Handbook.*

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.  
 For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster ▶</b>	<b>Career Pathway ▶</b>	<b>VETERINARY ASSISTANT</b> (31-091-3) <i>Technical Diploma</i> Most Courses Offered at Elkhorn Campus
		Animal Systems	

<sup>Δ</sup> Suggested Sequence	✓	Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
Semester 1		091-101 *	Animal Care and Management	Prereq: Inst. Consent; Coreq: 806-105	3	2-2
		091-102 *	Veterinary Business Practices	Coreq: 091-101	3	2-2
		806-105	Principles of Animal Biology		4	3-2
		809-198	Psychology, Introduction to	Prereq: 838-105 (See Note 1 & 3)	3	3-0
Semester 2		091-103 *	Clinical Pathology I for Vet Sciences	Prereq: 091-101; 091-102	4	2-4
		091-105 *	Surgical Procedures I for Vet Sciences	Coreq: 091-103	3	2-2
		091-107 *	Imaging for Veterinary Sciences	Coreq: 091-103	3	2-2
		801-196	<b>OR</b> Oral/Interpersonal Communication Speech	Prereq: 838-105 (See Note 1)	3	3-0
		801-198				
Summer		091-108 *	Veterinary Pharmacology	Prereq: 834-109 (See Note 1); Coreq: 091-110	3	2-2
		091-110 *	Clinical Skills I for Vet Sciences	Prereq: 091-105 & Inst. Consent	2	0-0-0-8
		091-111 *	Clinical Skills II for Vet Sciences	Prereq: 091-110 & Inst. Consent	2	0-0-0-8
		091-120 *	Animal Behavior		1	1-0
		091-123 *	Veterinary Medical Terminology		2	2-2

**Minimum Program Total Credits Required      36**

<sup>Δ</sup>Courses may be taken out of suggested sequence as long as requisites have been met.



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Animal Systems

**VETERINARY ASSISTANT**

(31-091-3)

Technical Diploma

Most Courses Offered at Elkhorn Campus

**PROGRAM DESCRIPTION**

In this program, students learn basic veterinary assistant skills including how to care for and handle animals, provide medical and surgical nursing, and perform radiography and clinical laboratory procedures. Applicable federal, state, and local law and ethical guidelines are presented to students throughout the program. Students complete clinical work under the direction of certified veterinary technicians and veterinarians. Upon completion of the program, graduates can provide professional support to veterinarians and veterinary technicians in veterinary clinics.

**ADMISSION REQUIREMENTS**

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript including a graduation or passing date.
4. Students must complete a Background Disclosure form and must request and pay for a background check. Applicants for all health science programs are subject to a review of their criminal backgrounds. Positive background checks may negatively impact your ability to pursue a health career at Gateway Technical College. Each case will be individually evaluated based on all available evidence provided to the college.
5. Students must complete a functional ability form verifying they have read and understand the functional abilities for the program.

**GRADUATION REQUIREMENTS**

1. Minimum 36 credits with an average of 2.0 or above.
2. \*Minimum of 2.0 ("C") or above for these major courses.

*For a complete list of Graduation Requirements check the Student Handbook.*

**PROGRAM LEARNING OUTCOMES**

Graduates of the Veterinary Assistant program should be able to:

1. Participate in facility management utilizing traditional and electronic media and appropriate veterinary medical terminology and abbreviations.
2. Communicate in a professional manner in all formats - written, oral, non-verbal, and electronic.
3. Follow and uphold applicable laws and ethical codes involved in operation of a veterinary clinic in order to provide high quality care to patients.
4. Accurately and safely label, package, and store therapeutic agents and recognize general types of drugs used in a veterinary clinic.
5. Demonstrate and perform basic patient assessment and therapeutic techniques and husbandry in small companion animals.
6. Assist in performing surgical preparations and post-operative patient monitoring for common surgical procedures in small companion animals.
7. Understand and provide the appropriate instruments, supplies and environment to maintain asepsis for surgical procedures.
8. Demonstrate knowledge of proper handling, packaging and storage of specimens for laboratory analysis to ensure safety of patients, clients, and staff.
9. Safely assist with radiographic procedures and maintain radiographic equipment and records.

**NOTES**

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. Any course may be taken prior to entry in the program assuming prerequisites and corequisites have been satisfied (or waived with department approval).
3. Transfer credits in Social Science may substitute for this course. See an advisor for details.
4. Students must maintain minimum course grades of "C" or better for all courses marked with an (\*) to remain in the program.
5. A laptop computer, stethoscope, uniform, and other supplies will be needed.
6. Nearly daily exposure to latex and/or animal fur and dander will occur in this program. Those with sensitivities may find exposure impossible to avoid.
7. Immunocompromised individuals should consult their physician before enrollment.
8. Clinical sites are located throughout and potentially outside the district. Students are responsible for their own transportation.
9. Some clinical sites require TB testing and immunizations against tetanus and hepatitis B. Rabies immunization is recommended.
10. This program is full-time. Students should expect to be in class Monday-Friday 8 am-5 pm.
11. Please note that your program may require additional fee(s) for: Criminal Background Check, Medical Documentation Manager, and/or Drug Testing.
12. Microbiology (806-197) is recommended as an elective course.
13. Students admitted to the program must complete a volunteer shadowing experience in an approved clinical setting prior to registering for a Veterinary Assistant course. Documentation requirements will be included in the program admission packet.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                     | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively | 7. Think critically and creatively                                  |
| 3. Demonstrate essential comp. skills  | 8. Work cooperatively   |
| 4. Demonstrate essential math skills   | 9. Value learning   |
| 5. Develop job seeking skills          |   |

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.  
For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_. My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster ▶</b> 	<b>Career Pathway ▶</b> Animal Systems	<b>VETERINARY TECHNICIAN</b> (10-091-1) <i>Associate of Applied Science Degree</i> Most Courses Offered at Elkhorn Campus

Δ Suggested Sequence	✓ Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab	
Semester 1	091-101 *	Animal Care and Management	Prereq: Inst. Consent; Coreq: 806-105	3	2-2	
	091-102 *	Veterinary Business Practices	Coreq: 091-101	3	2-2	
	801-136	English Composition 1	Prereq: 831-103 (See Note 1)	3	3-0	
	806-105	Principles of Animal Biology		4	3-2	
Semester 2	091-103 *	Clinical Pathology I for Vet Sciences	Prereq: 091-101; 091-102	4	2-4	
	091-105 *	Surgical Procedures I for Vet Sciences	Coreq: 091-103	3	2-2	
	091-107 *	Imaging for Veterinary Sciences	Coreq: 091-103	3	2-2	
	801-196	<b>OR</b>	Oral/Interpersonal Communication	Prereq: 838-105 (See Note 1)	3	3-0
	801-198		Speech			
Summer	091-108 *	Veterinary Pharmacology	Prereq: 834-109 (See Note 1); Coreq: 091-110	3	2-2	
	091-110 *	Clinical Skills I for Vet Sciences	Prereq: 091-105 & Inst. Consent	2	0-0-0-8	
	091-111 *	Clinical Skills II for Vet Sciences	Prereq: 091-110 & Inst. Consent	2	0-0-0-8	
	806-197	Microbiology	Prereq: 806-105 OR 806-177 (See Note 1 & 4)	4	3-2	
Semester 3	091-104 *	Clinical Pathology II for Vet Sciences	Prereq: 806-197; Coreq: 091-106	4	2-4	
	091-106 *	Surgical Procedures II for Vet Sciences	Prereq: 091-108; 091-111	3	1-4	
	091-109 *	Lab Animals and Non-Traditional Pets	Coreq: 091-104	2	2-0	
	091-113 *	Anesthesia for Veterinary Technicians	Prereq: 091-108; 091-111; Coreq: 091-106	3	1-4	
	809-198	Psychology, Introduction to	Prereq: 838-105 (See Note 1 & 3)	3	3-0	
Semester 4	091-112 *	Clinical Skills III for Veterinary Science	Prereq: 091-106 & Inst. Consent	3	0-0-0-12	
	091-114 *	Veterinary Tech. Clinical Internship	Prereq: 091-112 & Inst. Consent	4	0-0-0-16	
	806-172	Basic Nutritional Science		3	3-0	
	809-166	Ethics: Theory and Apps, Intro to	Prereq: 838-105 (See Note 1)	3	3-0	
Electives	<b>Take 5 elective credits. Any associate degree level course may be taken as an elective.</b>			<b>5</b>		
	<b>Suggested Electives:</b> 091-120 Animal Behavior (1 Cr)                      091-122 Integrative Mod for Vet Sci (1 Cr) 091-121 Emergency Med for Vet Tech (1 Cr)                      091-123 Veterinary Med Term (2 Cr)					

**Minimum Program Total Credits Required      70**

Δ Courses may be taken out of suggested sequence as long as requisites have been met.



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Animal Systems

**VETERINARY TECHNICIAN**

(10-091-1)

Associate of Applied Science Degree  
Most Courses Offered at Elkhorn Campus

**PROGRAM DESCRIPTION**

In this program, students learn veterinary technical skills such as how to care for and handle animals, provide medical and surgical nursing including anesthesiology and dental prophylaxis, and perform radiography and clinical laboratory procedures. Applicable federal, state, and local law and ethical guidelines are presented to students throughout the program. Students complete clinical work under the direction of certified veterinary technicians and veterinarians. Upon completion of this program, graduates are eligible to take the Veterinary Technician National Exam (VTNE) administered by the Veterinary Examining Board of the Wisconsin Department of Safety and Professional Services. Certified Veterinary Technicians provide professional support to veterinarians in veterinary clinics and hospitals, biological research settings, animal control and humane organizations, zoos, and educational facilities.

**ADMISSION REQUIREMENTS**

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript including a graduation or passing date.
4. Students must complete a Background Disclosure form and must request and pay for a background check. Applicants for all health science programs are subject to a review of their criminal backgrounds. Positive background checks may negatively impact your ability to pursue a health career at Gateway Technical College. Each case will be individually evaluated based on all available evidence provided to the college.
5. Students must complete a functional ability form verifying they have read and understand the functional abilities for the program.

**GRADUATION REQUIREMENTS**

1. Minimum 70 credits with an average of 2.0 or above.
2. \*Minimum of 2.0 ("C") or above for these major courses.

*For a complete list of Graduation Requirements check the Student Handbook.*

**PROGRAM LEARNING OUTCOMES**

Graduates of the Veterinary Technician program should be able to:

1. Participate in facility management utilizing traditional and electronic media and appropriate veterinary medical terminology and abbreviations.
2. Communicate in a professional manner in all formats - written, oral, non-verbal, and electronic.
3. Follow and uphold applicable laws and the veterinary technology profession's ethical codes to provide high quality care to patients.
4. Safely and effectively administer prescribed drugs to patients and accurately dispense and explain prescribed drugs to clients.
5. Demonstrate and perform patient assessment techniques, husbandry, nutrition, therapeutic and dentistry techniques in a variety of animal species (including laboratory animal species, companion animals, and food animals).
6. Understand the approach to providing safe and effective care for birds, reptiles, amphibians, guinea pigs, hamsters, gerbils, and ferrets.
7. Safely and effectively manage and maintain patients in all phases of anesthesia as well as safely and effectively select, utilize and maintain anesthetic delivery and monitoring instruments and equipment.
8. Understand and integrate all aspects of patient management for common surgical procedures in a variety of animal species.
9. Understand and provide the appropriate instruments, supplies and environment to maintain asepsis during surgical procedures.
10. Properly perform analysis of laboratory specimens and properly package, handle and store specimens for laboratory analysis to ensure safety of patients, clients, and staff.
11. Safely and effectively produce diagnostic radiographic and non-radiographic images.
12. Safely and effectively handle common laboratory animals used in animal research.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                     | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively | 7. Think critically and creatively                                  |
| 3. Demonstrate essential comp. skills  | 8. Work cooperatively   |
| 4. Demonstrate essential math skills   | 9. Value learning   |
| 5. Develop job seeking skills          |   |

**NOTES**

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. Any course may be taken prior to entry in the program assuming prerequisites and corequisites have been satisfied (or waived with department approval).
3. Transfer credits in Social Science may substitute for this course. See an advisor for details.
4. Students in this program should complete 806-105 as the pre-req for this course.
5. Students must maintain minimum course grades of "C" or better for all courses marked with an (\*) to remain in the program.
6. A laptop computer, stethoscope, uniform, and other supplies will be needed.
7. Nearly daily exposure to latex and/or animal fur and dander will occur in this program. Those with sensitivities may find exposure impossible to avoid.
8. Immunocompromised individuals should consult their physician before enrollment.
9. Clinical sites are located throughout and potentially outside the district. Students are responsible for their own transportation.
10. Some clinical sites require TB testing and immunizations against tetanus and hepatitis B. Rabies immunization is recommended.
11. This program is full-time. Students should expect to be in class Monday-Friday 8 am-5 pm.
12. Please note that your program may require additional fee(s) for: Criminal Background Check, Medical Documentation Manager, and/or Drug Testing.
13. Students admitted to the program must complete a volunteer shadowing experience in an approved clinical setting prior to registering for a Veterinary Technician course. Documentation requirements will be included in the program admission packet.

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.  
For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_

 <b>Effective 2015/2016</b>	<b>Career Cluster</b> ▶ 	<b>Career Pathway</b> ▶ Production	<b>WELDING</b> (31-442-1B) – Advanced Welding <i>Technical Diploma</i> Most Courses Offered at Elkhorn and Racine Campuses

Δ Suggested Sequence	✓	Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
<b>Semester 1</b>		442-321	* Welding / Gas Metal Arc Welding		3	2-4
		442-322	* Welding / Shielded Metal Arc Welding		3	2-4
		442-323	* Welding / Gas Tungsten Arc Welding		3	2-4
		442-324	* Weld Printreading & Fab. Procedures		2	2-2
		442-334	* Welding / Oxyacetylene		3	2-4
		625-125	* Workplace Safety A MSSC		1	1-0
		801-301	Writing Principles	Prereq: 851-760 (See Note 1)	1	2-0
		804-370	Mathematics I / Applied	Prereq: 854-760 (See Note 1)	2	4-0
<b>Semester 2</b>		442-302	* Metal Fabrication I	Prereq: 442-324	3	2-4
		442-329	* Welding / Advanced Oxyacetylene	Prereq: 442-334	2	2-2
		442-330	* Welding / Adv. Shielded Metal Arc Welding	Prereq: 442-322	3	4-2
		442-332	* Welding / Adv. Gas Metal Arc Welding	Prereq: 442-321	3	4-2
		442-333	* Welding / Adv. Gas Tungsten Arc Welding	Prereq: 442-323	3	2-4

**Minimum Program Total Credits Required      32**

Δ Courses may be taken out of suggested sequence as long as requisites have been met.

Federal regulations require disclosure of the following information for this program:

Books and Supplies	Resident Tuition and Fees	Median Loan Debt <sup>1</sup>	On-time Graduation Rate <sup>2</sup>	U.S. Department of Labor Standard Occupational (SOC) Code & Occupational Profile – available at <a href="http://www.onetonline.org">http://www.onetonline.org</a>
\$940	\$6,100	\$0	18%	<u>Welders, Cutters, Solderers, Brazers (51-4121)</u>

<sup>1</sup> **Median Loan Debt:** Based on eligibility, students can receive loans to help pay for the total cost of attending college. The cost is comprised of tuition and fees, books and supplies, transportation costs, room and board, and miscellaneous personal expenses. Therefore, medial loan debt may be more than the listed tuition, fees, books, and supplies cost.

<sup>2</sup> **On-time Graduation Rate:** Dependent upon students' choice to attend college part-time or full-time. Students decide to attend college part-time for a number of reasons including work schedule/demands and family responsibilities. 76 percent of students at Gateway attend part-time, therefore taking longer to complete their chosen program of study.

 <b>Effective 2015/2016</b>	<b>Career Cluster ▶</b>	<b>Career Pathway ▶</b>	<b>WELDING</b> <b>(31-442-1B) – Advanced Welding</b> <i>Technical Diploma</i> Most Courses Offered at Elkhorn and Racine Campuses
		Production	

**PROGRAM DESCRIPTION**

*Welding* provides concentrated instruction, primarily through practical experience, on various welding techniques. The following processes are covered: O-A-Oxyacetylene welding, brazing, and cutting; GMAW-gas metal arc welding (wire, MIG, short arc); GTAW-gas tungsten arc welding (TIG, heliarc); SMAW-shielded metal arc welding (stick, arc), including plasma arc cutting; and robotic welding and cutting.

**PROGRAM LEARNING OUTCOMES**

- Graduates of the Welding Technical Diploma Program should be able to:**
1. Prepare three groups of metal plate (stainless steel, aluminum, and mild steel) for a butt joint.
  2. Use correct filler wire on welding machines.
  3. Use and demonstrate proper safety gear and equipment.
  4. Prepare pipe coupons for welding.
  5. Use a WPS for AWS D1.1 and ASME Sec IX.
  6. Correctly program housekeeping codes for processes used.
  7. Have robots perform operations with 100% accuracy.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                     | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively | 7. Think critically and creatively                                  |
| 3. Demonstrate essential comp. skills  | 8. Work cooperatively   |
| 4. Demonstrate essential math skills   | 9. Value learning   |
| 5. Develop job seeking skills          |   |

**ADMISSION REQUIREMENTS**

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.

**GRADUATION REQUIREMENTS**

1. Minimum 32 credits with an average of 2.0 or above.
2. \*Average of 2.0 ("C") or above for these major courses.

*For a complete list of Graduation Requirements check the Student Handbook.*

**NOTES**

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. Safety glasses are required in labs. If prescription glasses are required, allow a minimum of 90 days.
3. A hand calculator capable of trigonometric functions is recommended for 442-324; the cost is approximately \$20.
4. Students are required to have an arc welding helmet, oxy-acet goggles, chipping hammer and welding gloves (leather); the cost is approximately \$50. Students must be prepared to bring their own equipment.
5. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).
6. Metal fabrication skills may also be enhanced by enrolling in 442-336 Metal Fabrication II.

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR**  
**EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.

For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ . My advisor's contact information is \_\_\_\_\_ .

 <b>Effective 2015/2016</b>	<b>Career Cluster ▶</b> 	<b>Career Pathway ▶</b> Production	<b>WELDING</b> (31-442-1C) – Pipe Welding <i>Technical Diploma</i> Most Courses Offered at Elkhorn and Racine Campuses

△ Suggested Sequence	✓ Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
<b>Semester 1</b>	442-321	* Welding / Gas Metal Arc Welding		3	2-4
	442-322	* Welding / Shielded Metal Arc Welding		3	2-4
	442-323	* Welding / Gas Tungsten Arc Welding		3	2-4
	442-324	* Weld Printreading & Fab. Procedures		2	2-2
	442-334	* Welding / Oxyacetylene		3	2-4
	625-125	* Workplace Safety A MSSC		1	1-0
	801-301	Writing Principles	Prereq: 851-760 (See Note 1)	1	2-0
	804-370	Mathematics I / Applied	Prereq: 854-760 (See Note 1)	2	4-0
<b>Semester 2</b>	442-302	* Metal Fabrication I	Prereq: 442-324	3	2-4
	442-342	* Welding / Pipe Oxyacetylene Fitting	Prereq: 442-334	1	0-2
	442-343	* Welding / Pipe Shielded Metal Arc Welding	Prereq: 442-322	2	2-2
	442-344	* Welding / Pipe Shielded Metal Arc Welding Certification	Prereq: 442-322	2	2-2
	442-345	* Welding / Pipe Gas Tungsten Arc Welding	Prereq: 442-322; 442-323	2	2-2
	442-346	* Welding / Pipe Gas Tungsten Arc Welding Certification	Prereq: 442-323	2	2-2
	442-347	* Welding / Pipe Gas Metal Arc Welding	Prereq: 442-321	2	2-2

**Minimum Program Total Credits Required      32**

△ Courses may be taken out of suggested sequence as long as requisites have been met.

Federal regulations require disclosure of the following information for this program:

Books and Supplies	Resident Tuition and Fees	U.S. Department of Labor Standard Occupational (SOC) Code & Occupational Profile – available at <a href="http://www.onetonline.org">http://www.onetonline.org</a>
\$940	\$6,100	<u>Welders, Cutters, Solderers, Brazers (51-4121)</u>



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Production

**WELDING**

(31-442-1C) – Pipe Welding  
Technical Diploma  
Most Courses Offered at Elkhorn  
and Racine Campuses

**PROGRAM DESCRIPTION**

Welding provides concentrated instruction, primarily through practical experience, on various welding techniques. The following processes are covered: O-A-Oxyacetylene welding, brazing, and cutting; GMAW-gas metal arc welding (wire, MIG, short arc); GTAW-gas tungsten arc welding (TIG, heliarc); SMAW-shielded metal arc welding (stick, arc), including plasma arc cutting; and robotic welding and cutting.

**PROGRAM LEARNING OUTCOMES**

Graduates of the Welding Technical Diploma Program should be able to:

1. Prepare three groups of metal plate (stainless steel, aluminum, and mild steel) for a butt joint.
2. Use correct filler wire on welding machines.
3. Use and demonstrate proper safety gear and equipment.
4. Prepare pipe coupons for welding.
5. Use a WPS for AWS D1.1 and ASME Sec IX.
6. Correctly program housekeeping codes for processes used.
7. Have robots perform operations with 100% accuracy.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                     | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively | 7. Think critically and creatively                                  |
| 3. Demonstrate essential comp. skills  | 8. Work cooperatively   |
| 4. Demonstrate essential math skills   | 9. Value learning   |
| 5. Develop job seeking skills          |   |

**ADMISSION REQUIREMENTS**

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.

**GRADUATION REQUIREMENTS**

1. Minimum 32 credits with an average of 2.0 or above.
2. \*Average of 2.0 ("C") or above for these major courses.

For a complete list of Graduation Requirements check the Student Handbook.

**NOTES**

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. Safety glasses are required in labs. If prescription glasses are required, allow a minimum of 90 days.
3. A hand calculator capable of trigonometric functions is recommended for 442-324; the cost is approximately \$20.
4. Students are required to have an arc welding helmet, oxy-acet goggles, chipping hammer and welding gloves (leather); the cost is approximately \$50. Students must be prepared to bring their own equipment.
5. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).
6. Metal fabrication skills may also be enhanced by enrolling in 442-336 Metal Fabrication II.

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.

For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_.



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Production

**WELDING**  
 (31-442-1A) - Robotics  
 Technical Diploma  
 Most Courses Offered at Elkhorn  
 and Racine Campuses

Δ Suggested Sequence	✓	Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
Semester 1		442-321	* Welding / Gas Metal Arc Welding		3	2-4
		442-322	* Welding / Shielded Metal Arc Welding		3	2-4
		442-323	* Welding / Gas Tungsten Arc Welding		3	2-4
		442-324	* Weld Printreading & Fab. Procedures		2	2-2
		442-334	* Welding / Oxyacetylene		3	2-4
		625-125	* Workplace Safety A MSSC		1	1-0
		801-301	Writing Principles	Prereq: 851-760 (See Note 1)	1	2-0
		804-370	Mathematics I / Applied	Prereq: 854-760 (See Note 1)	2	4-0
Semester 2		442-302	* Metal Fabrication I	Prereq: 442-324	3	2-4
		442-326	* Welding / Robotic Advanced GTAW	Coreq: 442-335	4	4-4
		442-327	* Welding / Robotic Advanced GMAW	Coreq: 442-335	4	4-4
		442-328	* Welding / Robotic & Plasma Welding	Coreq: 442-335	2	2-2
		442-335	* Welding / Rob. Prgrm. & Plasma Cutting	Prereq: 442-321; 442-322; 442-323; 442-334	2	4-0

**Minimum Program Total Credits Required 33**

Δ Courses may be taken out of suggested sequence as long as requisites have been met.

Federal regulations require disclosure of the following information for this program:

Books and Supplies	Resident Tuition and Fees	U.S. Department of Labor Standard Occupational (SOC) Code & Occupational Profile – available at <a href="http://www.onetonline.org">http://www.onetonline.org</a>
\$940	\$6,155	Welders, Cutters, Solderers, Brazers (51-4121)



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Production

**WELDING**

(31-442-1A) - Robotics

Technical Diploma

Most Courses Offered at Elkhorn and Racine Campuses

**PROGRAM DESCRIPTION**

Welding provides concentrated instruction, primarily through practical experience, on various welding techniques. The following processes are covered: O-A-Oxyacetylene welding, brazing, and cutting; GMAW-gas metal arc welding (wire, MIG, short arc); GTAW-gas tungsten arc welding (TIG, heliarc); SMAW-shielded metal arc welding (stick, arc), including plasma arc cutting; and robotic welding and cutting.

**PROGRAM LEARNING OUTCOMES**

Graduates of the Welding Technical Diploma Program should be able to:

1. Prepare three groups of metal plate (stainless steel, aluminum, and mild steel) for a butt joint.
2. Use correct filler wire on welding machines.
3. Use and demonstrate proper safety gear and equipment.
4. Prepare pipe coupons for welding.
5. Use a WPS for AWS D1.1 and ASME Sec IX.
6. Correctly program housekeeping codes for processes used.
7. Have robots perform operations with 100% accuracy.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                     | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively | 7. Think critically and creatively                                  |
| 3. Demonstrate essential comp. skills  | 8. Work cooperatively   |
| 4. Demonstrate essential math skills   | 9. Value learning   |
| 5. Develop job seeking skills          |   |

**ADMISSION REQUIREMENTS**

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.

**GRADUATION REQUIREMENTS**

1. Minimum 33 credits with an average of 2.0 or above.
2. \*Average of 2.0 ("C") or above for these major courses.

For a complete list of Graduation Requirements check the Student Handbook.

**NOTES**

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. Safety glasses are required in labs. If prescription glasses are required, allow a minimum of 90 days.
3. A hand calculator capable of trigonometric functions is recommended for 442-324; the cost is approximately \$20.
4. Students are required to have an arc welding helmet, oxy-acet goggles, chipping hammer and welding gloves (leather); the cost is approximately \$50. Students must be prepared to bring their own equipment.
5. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).
6. Metal fabrication skills may also be enhanced by enrolling in 442-336 Metal Fabrication II.

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.

For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_ My advisor's contact information is \_\_\_\_\_.

 <b>Effective 2015/2016</b>	<b>Career Cluster ▶</b> 	<b>Career Pathway ▶</b> Production	<b>WELDING/MAINTENANCE &amp; FABRICATION</b> (30-442-2) Technical Diploma Most Courses Offered at Elkhorn and Racine Campuses

	√	Course Number	Course Title	Requisites	Credits	Hrs/Wk Lec - Lab
Semester 1	<input type="checkbox"/>	442-321	* Welding / Gas Metal Arc Welding		3	2-4
	<input type="checkbox"/>	442-322	* Welding / Shielded Metal Arc Welding		3	2-4
	<input type="checkbox"/>	442-323	* Welding / Gas Tungsten Arc Welding		3	2-4
	<input type="checkbox"/>	442-324	* Weld Printreading & Fab. Procedures		2	2-2
	<input type="checkbox"/>	442-334	* Welding / Oxyacetylene		3	2-4
	<input type="checkbox"/>	625-125	* Workplace Safety A MSSC		1	1-0
	<input type="checkbox"/>	801-301	Writing Principles	Prereq: 851-760 (See Note 1)	1	2-0
	<input type="checkbox"/>	804-370	Mathematics I / Applied	Prereq: 854-760 (See Note 1)	2	4-0

**Minimum Program Total Credits Required      18**



Effective 2015/2016

Career Cluster ▶



Career Pathway ▶

Production

**WELDING/MAINTENANCE & FABRICATION**

(30-442-2)

Technical Diploma

Most Courses Offered at Elkhorn and Racine Campuses

**PROGRAM DESCRIPTION**

Welding/Maintenance & Fabrication provides concentrated instruction, primarily through practical experience, on various welding techniques. The following processes are covered: O-A-Oxyacetylene welding, brazing, and cutting; GMAW-gas metal arc welding (wire, MIG, short arc); GTAW-gas tungsten arc welding (TIG, heliarc); and SMAW-shielded metal arc welding (stick, arc), including plasma arc cutting.

**PROGRAM LEARNING OUTCOMES**

Graduates of the Welding: Maintenance & Fabrication Technical Diploma Program should be able to:

1. Set up welding machines to operate on proper polarity.
2. Adjust welding machines to operate at various amperages for various fillers.
3. Weld flat position using proper fillers.
4. Weld horizontal position beads on plate using two diameters of E7018 electrodes.
5. Weld vertical position using proper fillers.
6. Weld overhead position using proper fillers.

**CORE ABILITIES**

Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed by all Gateway programs. All Gateway graduates should be able to:

- |  |   |
|--|---|
| 1. Act responsibly                     | 6. Respect themselves and others as a member of a diverse community |
| 2. Communicate clearly and effectively | 7. Think critically and creatively                                  |
| 3. Demonstrate essential comp. skills  | 8. Work cooperatively   |
| 4. Demonstrate essential math skills   | 9. Value learning   |
| 5. Develop job seeking skills          |   |

**ADMISSION REQUIREMENTS**

1. Students must submit an application & \$30 fee.
2. Students must complete reading, writing, math, and computer skills placement assessments.
3. Students must submit official high school, GED, or HSED transcript.

**GRADUATION REQUIREMENTS**

1. Minimum 18 credits with an average of 2.0 or above.
2. \*Average of 2.0 ("C") or above for these major courses.

For a complete list of Graduation Requirements check the Student Handbook.

**NOTES**

1. A satisfactory placement test score (or successful remediation) is required prior to enrollment. See an advisor for details.
2. Safety glasses are required in labs. If prescription glasses are required, allow a minimum of 90 days.
3. A hand calculator capable of trigonometric functions is recommended for 442-324; the cost is approximately \$20.
4. Students are required to have an arc welding helmet, oxy-acet goggles, chipping hammer and welding gloves (leather); the cost is approximately \$50. Students must be prepared to bring their own equipment.
5. Any course may be taken prior to entry in the program, assuming prerequisites and corequisites have been satisfied (or waived with department approval).

**OTHER INFORMATION**

Gateway Technical College reserves the right to modify curriculum requirements for students who interrupt enrollment for a period of two years or take over seven years to complete. Tuition and material fees are determined by the board of the Wisconsin Technical College System. Consult Web Advisor for exact fee amounts. Occasionally, the District may offer a particular course out of published sequence. By doing so, the District does not obligate itself to offer succeeding courses out of published sequence.

**EQUAL OPPORTUNITY EMPLOYER AND EDUCATOR  
EMPLEADOR Y EDUCADOR QUE OFRECE IGUALDAD DE OPORTUNIDADES**

To schedule an appointment with an advisor, please call 1-800-247-7122.

For a complete list of course descriptions (and possible online courses) for this program, please consult Web Advisor on our web page at [www.gtc.edu](http://www.gtc.edu).

My advisor is \_\_\_\_\_. My advisor's contact information is \_\_\_\_\_.



# Certificates of Completion

In addition to the state approved Associate Degrees, Technical Diplomas, and Advanced Technical Certificates that are part of the degree-granting programs at Gateway, a variety of internal Gateway Certificates are also offered. The courses required to complete these certificates are selected from various degree programs to meet specific and unique occupational needs. The following list represents those programs that will be provided by Gateway during the 2015–2016 academic year. Additional information about the certificates can be found at [gtc.edu/certificates](http://gtc.edu/certificates).

## Accounting–Elkhorn, Kenosha, Racine Campuses and Online

Small Business Accounting (90-101-1) .....	15 Credits
Personal Financial Planning (90-101-2) .....	10 Credits
Accounting for Vital Communities (90-101-3) .....	13 Credits
Advanced Income Tax Accounting (90-101-4) .....	14 Credits

## Administrative Professional–Elkhorn-Kenosha-Racine Campuses and Online

Computer Applications (90-106-5) .....	12 Credits
Administrative Professional Basics (90-106-6) .....	10 Credits
Administrative Professional Intermediate (90-106-7) .....	14 Credits
Administrative Professional Advanced (90-106-8) .....	14 Credits
Administrative Professional Growth (90-106-9) .....	15 Credits
Customer Service (90-106-10) .....	7 Credits

## Automated Manufacturing Systems Technician–Elkhorn Campus and Lakeview

Manufacturing Maintenance (90-628-1) .....	18 Credits
Programming for Manufacturing (90-628-2) .....	17 Credits

## Business Management–Elkhorn, Kenosha, Racine Campuses and Online

Leadership Management (90-102-1) .....	15 Credits
General Management (90-102-2) .....	13 Credits
Health Management Leadership (90-102-3) .....	16 Credits

## CNC Production Technician–Racine Campus

CNC Operator (90-444-1) .....	13 Credits
-------------------------------	------------

## Cosmetology–Racine Campus

Nail Technician (90-502-1) .....	9 Credits
----------------------------------	-----------

## Culinary Arts–Racine Campus

Basic Cooking Skills (90-316-1) .....	11 Credits
Design and Service (90-316-2) .....	15 Credits

Food and Beverage (90-316-3) .....	18 Credits
Institutional Food Service (90-316-4) .....	9 Credits
Line Cook (90-316-5) .....	17 Credits
Management Skills I (90-316-6) .....	11 Credits
National Restaurant Association–Professional Management Development Program (90-316-7) .....	13 Credits
Baking and Pastry Arts (90-316-8) .....	8 credits

## Developmental Education–Kenosha Campus

Intensive English Prog.–Intermediate Level (90-861-2) .....	20 Credits
---	------------

## Diesel Equipment Mechanic–Horizon Center

Industrial/Mobile Hydraulic Mechanic (90-412-1) .....	14 Credits
---	------------

## Early Childhood Education–Racine Campus

Pre-School Credential (90-307-6) .....	18 Credits
Inclusion Credential (90-307-5) .....	12 Credits
Administrator’s Credential (90-307-7) .....	18 Credits
Infant/Toddler Credential (90-307-2) .....	12 Credits

## General Studies–Communications–Kenosha and Racine Campuses

Spanish Proficiency (90-801-1) .....	16 Credits
Spanish Proficiency for Healthcare Providers (90-801-2) .....	15 Credits
Spanish Proficiency for Law Enforcement (90-801-3) .....	15 Credits

## Graphic Communications–Elkhorn and Racine Campuses

Desktop Publishing (90-204-1) .....	13 Credits
Digital Photography (90-204-6) .....	12 Credits

## Health and Human Services–Racine Campus

Aspects of Disabilities (90-520-1) .....	18 Credits
Gerontology (90-520-2) .....	18 Credits
Child Welfare (90-520-3) .....	18 Credits
Alcohol & Other Drug Abuse (AODA) (90-550-1) .....	24 Credits

# Certificates of Completion

## Health Occupations—Elkhorn-Kenosha-Racine Campuses

Introduction to Health Occupations (90-501-1) ..... 4 or 6 Credits

## Horticulture—Kenosha Campus

Professional Landscaping (90-001-1) ..... 15 Credits  
Professional Garden Center Operations (90-001-3) ..... 15 Credits  
Professional Floral Design (90-001-4) ..... 12 Credits  
Professional Grounds Maintenance (90-001-5) ..... 11 Credits  
Horticulture Therapy (90-001-6)..... 13 Credits  
Permaculture (90-001-7) ..... 3 Credits  
Environmental Studies (90-001-8)..... 3 Credits

## Information Technology—Elkhorn-Kenosha-Racine Campuses

Programmer/Analyst - AS/400 (90-107-2) ..... 10 Credits  
iSeries Operations (90-152-1) (Kenosha) ..... 10 Credits  
SharePoint Developer (90-152-3) (Racine, Burlington, Online) ..... 19 Credits

## Interior Design—Kenosha Campus

Fundamentals of Interior Design (90-304-1) ..... 10 Credits  
History of Design and Decorative Arts (90-304-2) ..... 9 Credits  
Introduction to Home Décor for the Beginner (90-304-3)..... 10 Credits  
Sustainable Design (90-304-4) ..... 9 Credits  
Technology for Interior Design (90-304-5) ..... 8 Credits

## Marketing—Varied Campuses

Marketing/Sales (90-104-2) (Kenosha/Racine) ..... 15 Credits  
Professional Selling (90-104-5) (Kenosha) ..... 14 Credits  
Sports and Event Marketing (90-104-7) (Kenosha) ..... 15 Credits  
Store Management (90-104-8) (Kenosha) ..... 15 Credits

## Medical Assistant—Racine Campus

Ophthalmic Medical Assisting Technician (90-509-5) ..... 13 Credits

## Nursing—Kenosha Campus

Gerontological and Rehabilitative Nursing Care (90-543-5)..... 9 Credits

## Professional Communications—Racine Campus and Online

Professional Communications Specialization (90-699-1) ..... 12 Credits  
Advanced Professional Communications (90-699-2) ..... 24 Credits  
Copywriter (90-699-3)..... 12 Credits  
Editor (90-699-4) ..... 12 Credits  
Freelance Writer (90-699-5) ..... 12 Credits  
Grant Writer (90-699-6) ..... 12 Credits  
Technical Journalist (90-699-7) ..... 15 Credits  
Technical Writer (90-699-8)..... 15 Credits  
Web Content Writer (90-699-9) ..... 15 Credits

## Small Business Entrepreneurship—Elkhorn-Kenosha-Racine Campuses and Online

Entrepreneurship (90-145-1) ..... 9 Credits

## Supervisory Management—Elkhorn-Racine Campuses and Online

Human Resources Management (90-196-10) ..... 10 Credits  
Project Manager (90-196-11) ..... 9 Credits  
Leadership Essentials (61-196-4)..... 10 Credits  
Technical Supervisor (90-196-13)..... 10 Credits

## Welding—Elkhorn-Racine Campuses and SC Johnson iMET Center

Gas Metal Arc Welding (90-442-1) ..... 8 Credits

---

## General Studies Transfer Certificates

### General Studies Transfer Agreement with UW Parkside—All Campuses

General Studies Transfer Certificate (90-800-2z) ..... 30 Credits

### General Studies Transfer Agreement with Mount Mary—All Campuses

Mount Mary General Studies Transfer Certificate (90-800-3) ..... 30 Credits

---

The apprenticeship program is part of the Wisconsin educational system which prepares people for skilled occupations. Gateway Technical College, in cooperation with employers, Joint Apprenticeship Committees, and the Wisconsin Department of Workforce Development—Bureau of Apprenticeship Standards, provides the related instruction for persons who are under contract as apprentices in Kenosha, Racine, and Walworth counties under the Wisconsin Apprenticeship Law.

The following list contains apprenticeship related instruction currently being offered at Gateway.

## Service Trades

### Barber

2 years – 4,000 hours training and instruction

Barbers cut, trim, shampoo, style hair, provide hair and scalp treatments, shave male customers, and give facial massages. Barbers keep their work area and tools clean and sanitized.

### Cosmetologist

2 years – 4,000 hours training and instruction

Cosmetologists cut, trim, shampoo, style, straighten, permanent wave, and color hair, as well as give manicures and scalp and facial treatments. They advise patrons how to care for their hair. Cosmetologists keep their work area and implements clean and sanitized.

### Wastewater Treatment

3 years - 6,000 hours training and instruction

Wastewater treatment plant operators (WWTPOs) monitor, operate, and adjust a wide variety of systems used in the treatment of wastewater. They control plant processes to ensure the plant operates effectively. They routinely monitor laboratory data, charts, and computer control systems, which indicate performance status of a wide variety of biological nutrient and chemical removal.

## Construction Trades

### Construction Electrical

5 years- 8,680 hours training and instruction

An electrician reads blueprints and installs materials for transmission of electricity to equipment for lighting, heating, and cooling. They may repair existing wiring and fixtures or inspect installations for conformity of electrical, fire, and safety codes.

### HVAC

5 years – 8,400 hours training and instruction

HVAC technicians install, maintain, and repair heating, ventilation, and air-conditioning systems. HVAC technicians must be able to understand the operating principals of different systems such as oil-fired furnaces and commercial refrigerators and to interpret written specifications.

### Plumbing

5 years – 8,000 hours training and instruction

Plumbers install and repair pipes for water, gas, sewage, and drainage systems. They install sanitary facilities such as toilets, tubs, bathroom fixtures, showers, kitchen fixtures, drinking fountains, and laundry equipment to code using hand and power tools as well as welding equipment.

### Sheet Metal

5 years – 10,000 hours training and instruction

Sheet metal workers make, install, and maintain a variety of sheet metal products for homes, commercial, and industrial buildings. Some workers specialize in fabrication, installation, or maintenance, but most do all three jobs.

## Industrial Trades

### Computer Numeric Control (CNC)

#### Machinist

4 years- 8,000 hours training and instruction

Sets up and operates computer numerically controlled machines to produce metal into intricate parts and instruments.

### Industrial Electrician

4 years – 8,000 hours training and instruction

Maintains, repairs, installs, and inspects electrical equipment and lighting systems.

### Industrial Manufacturing Technician

18 months– 3,264 hours training and instruction

Operates and sets-up production equipment, interprets technical information and demonstrates continuous process improvement.

### Machine Repair

4 years– 8,896 hours training and instruction

Operates, repairs, and maintains machinery and equipment in an industrial environment.

### Maintenance Mechanic/Millwright

4 years – 8,000 hours training and instruction

Uses blueprints to install or move machinery and equipment. Repairs equipment or facilities through methods such as pipefitting, pneumatics, welding, machining, and hydraulics.

### Tool and Die/Mold Maker

5 years– 10,000 hours training and instruction

Constructs metal dies through stamping and forging processes and repairs dies, cutting tools, jigs, fixtures, gauges and hand tools.

## Maintenance Technician

5 years - 10,400 hours training and instruction

Works on mechanical and electrical equipment and machines in industrial settings. Mechanical includes installing equipment, repairing and replacing units, maintaining equipment and using machines. Electrical includes working with electrical drawings, troubleshooting electrical motors, AC and DC drives and PLC's (programmable logic controllers) along with solid state devices.

## Welding/Fabrication

4 years – 8,400 hours training and instruction

Welds, fabricates, prepares lay out, aligns and fits parts of structural metal products according to blueprints and job orders or for structural repairs.

## Applying for an Apprenticeship

Apprenticeship selection is done by the individual employers or the Joint Apprenticeship Committee (JAC). Persons should apply with the employer or appropriate JAC (union).

## Selection Standards

Most employers prefer candidates for apprenticeships who are high school graduates or the equivalent, and have the mechanical aptitude required to perform the job. Testing requirements vary depending on the trade area the applicant is interested in seeking.

## Related Instruction

Apprentices must attend related instruction for a minimum number of hours, which varies depending on the trade area. Gateway provides the required classroom instruction in subjects related to the trade.

# Apprenticeship Program

## Contact Information

### Nicci Pagan

Divisional Apprenticeship Associate  
Apprenticeship Department  
Gateway Technical College—SC Johnson iMET Center  
2320 Renaissance Blvd., Room 404  
Sturtevant, WI 53177-1763  
262.564.2954  
paganj@gtc.edu

### Sandra Martin

Apprenticeship Training Representative  
Bureau of Apprenticeship Standards  
Gateway Technical College—SC Johnson iMET Center  
2320 Renaissance Blvd., Room 404  
Sturtevant, WI 53177-1763  
262.564.3210  
sandra.martin@dwd.wisconsin.gov

[gtc.edu/apprenticeship](http://gtc.edu/apprenticeship)



**001-102**  
**Plant Pests and Control** **3.00**

The identification and control of insects, diseases, and weeds of importance to the commercial horticulturist will be covered. The course emphasizes an integrated pest management approach in diagnosing pest problems and identifying the combination of biological, cultural, physical, and chemical control methods to be used. Rules and regulations regarding environmental and personal pesticide safety are taught. Students have the option to become state certified pesticide operators.

**001-103**  
**Permaculture Design Certification** **3.00**

Permaculture draws from several disciplines including organic farming, agroforestry, integrated farming, sustainable community development, alternative/natural building and applied ecology. This course will teach participants techniques to reduce dependence on fossil fuels and increase the long term sustainability of their homes and communities. Integrating organic food production into urban landscapes is a major focus of the course. Students will receive a Permaculture Design Certificate upon successful completion of the course and a design project.

**001-107**  
**Plant Biology for Horticulture** **3.00**

Study of structure and function of plants and how they are affected by light, water, temperature and nutrient availability. Labs include hands-on experience in potting, propagation, construction of dish gardens and terrariums.

**001-108**  
**Business of Urban Farming** **3.00**

This class will provide the skills to start and operate a fresh market vegetable business. Growing food is the first step, but we will teach you how to make smart decisions about marketing, pricing, capitalization and labor. You will become aware of current opportunities in urban farming, explore objectives, assess personal and financial resources, conduct preliminary market research, and develop a business plan. We will discuss market gardening start-up, weekly sales targets, yield and pricing, organic certification, organic marketing and labeling, and analyze the value of CSA's, direct marketing and farmers' markets.

**001-109**  
**Urban Farming and Market Gardening** **3.00**

Sustainable, intensive urban farming forms the important basis for long-term profitability because it maintains quality soils that can provide long-term stable yields. Our hands-on training in biointensive organic growing methods will help you advance from gardening novice to professional urban farmer. Learn about fertility management, greenhouse use, season extension, pest management, equipment needs, planning and budgeting. The course will focus on building and managing healthy soil and understanding how soils, plants, animals, and people form a dynamic living organism. We will use this knowledge to explore the methods to grow organic, nutrient dense produce.

**001-111**  
**Horticulture Practicum** **3.00**

Work independently, or in small groups, with instructor and staff to gain in depth

knowledge and experience in one of five program specialty areas; greenhouse growing, floral retailing and events, trial and display gardens, urban farm. Can also be used for internship with horticulture employer. PREREQUISITES: 001-151 - Greenhouse Crops 001-147 - Soils and Plant Nutrition

**001-117**  
**Landscape Design/Advanced** **3.00**

Advanced study of landscaping designed to fine-tune landscape drawing techniques. Course focuses on landscape construction methods, Japanese-style design principles, designing for energy conservation and how to attract wildlife. Labs include drawing plans and blueprinting. PREREQUISITES: 001-140 - Landscape Design/Introduction

**001-120**  
**Landscaping/Interior** **3.00**

Studies choosing plants to create pleasing and professional interior displays. Includes diagnosing and solving plant problems, drawing plans, and writing maintenance contracts. Labs provide hands-on experience and field trips to exemplary interior landscapes.

**001-122**  
**Horticulture Business Operations** **3.00**

Simulated operation of horticulture industries utilizing principles of marketing, economics and office management. Includes hands-on practice on computers used in each branch of the horticulture industry. Field trips and practice work are involved.

**001-128**  
**Horticulture Marketing** **3.00**

Learn how plants and flowers are marketed locally and internationally. This class offers professional marketing techniques for garden centers, greenhouses and floral shops. Students visit garden centers, flower shops, wholesale suppliers and trade markets to identify trends and meet with managers. Students gain practical experience organizing a plant promotion including identifying the customer, purchasing and pricing plants, advertising.

**001-129**  
**Pesticide Applicator Certification** **1.00**

Learn how to apply pesticides safely and legally. This class prepares students to take the Wisconsin State pesticide applicator exam with the certification exam given during class. Anyone applying chemicals to someone else's property is required to obtain this certification.

**001-130**  
**Landscape Plants I** **3.00**

Study of deciduous trees, shrubs, and vines grown for landscape use in residential and commercial settings. Examines environmental requirements, dormant characteristics, and landscape applications. Labs involve on-site identification of plant material.

**001-132**  
**Landscape Plants II** **3.00**

Continued emphasis on identification and evaluation of landscape plants with emphasis on evergreen landscape materials.

# Course Descriptions

<p><b>001-136</b> <b>Landscaping Management</b>                    <b>3.00</b></p> <p>Maintenance of industrial, public, institutional, and private grounds. Also covers operation and management of an ornamental nursery. Labs include pruning, balling and burlapping, procedures for preventing winter injury, and field trips.</p>	<p><b>001-142</b> <b>Vegetable Science</b>                            <b>3.00</b></p> <p>Students will study methods of vegetable gardening and become familiar with basic annual and perennial vegetables, herbs and edible flowers. Organic growing methods, composting, pest and disease control, and self-sustaining gardening methods will be discussed in detail. Field trips to local market gardens will be included in the course.</p>	<p><b>001-146</b> <b>Sustainable Landscape</b>                    <b>1.00</b></p> <p>Following guidelines set forth by the national Sustainable Site's Initiative students will learn how to improve the sustainability of urban landscapes. Identifying soil conditions, capturing storm water, using native plants, composting, waste and energy management are concepts learned in this class. Students have the opportunity to analyze their own property to find ways to improve sustainability while reducing chemical inputs and maintenance needs.</p>	<p>Plants 001-144 - Floral Design I/Commercial or 001-151 - Greenhouse Crops</p>
<p><b>001-137</b> <b>Greenhouse Business Planning</b>        <b>3.00</b></p> <p>Evaluate annual and perennial flowers, cut flowers and vegetable plants in display gardens from international plant breeders. Determine production, scheduling and market for greenhouse crops. Discuss greenhouse and hoop house construction, operation and mechanicals. Identify the role of hoop houses in providing local food through season extension. Identify greenhouse plants and foliage. Attend greenhouse conference and participate in field trips to growing operations and suppliers.</p>	<p><b>001-143</b> <b>Herbaceous Plants</b>                            <b>3.00</b></p> <p>Learn to identify and care for of annual and perennial flowering plants. Visit local gardens and professional sites to study plants and view design styles. Graphic skills used to create professional flower bed designs is also taught. Hands on experience propagating annuals and perennials and working with tropical foliage in the Gateway greenhouse is also included.</p>	<p><b>001-147</b> <b>Soils and Plant Nutrition</b>                    <b>1.00</b></p> <p>Students will study physical, chemical and biological properties of soils. Soil conservation practices, plant nutrition and composting will be discussed in detail. Labs involve soil testing and soil improvement.</p>	<p><b>001-150</b> <b>Floristry</b>    <b>3.00</b></p> <p>Practice skills learned in Floral Design 1 and expand knowledge to include: flower care and handling, visual merchandising and display, pricing floral products and services, customer service and sales, employee relations, specialty cut flowers and using local flowers, the wholesale and international floral trade. PREREQUISITES: 001-144 - Floral Design I/Commercial</p>
<p><b>001-140</b> <b>Landscaping Design/Introduction</b>       <b>3.00</b></p> <p>Covers how to plan and draw a professional landscape design. Focuses on selecting correct plant material, proper placement, and uses of landscape construction elements. Practical design and drawing experience provided in lab.</p>	<p><b>001-144</b> <b>Floral Design I/Commercial</b>                <b>3.00</b></p> <p>The basic principles, elements, and mechanics of floral design are practiced. Identification, care and handling of flowers and foliage will be involved. Includes hands-on designing of corsages, primary arrangements and holiday arrangements.</p>	<p><b>001-148</b> <b>Plant Pests and Beneficials</b>                <b>1.00</b></p> <p>Learn to identify the different lifecycle stages of plant pests in the greenhouse and landscape and how to control them using cultural, physical and biological control methods. Learn about beneficial insects and how to use predators, parasites and pathogens to control insects and diseases of plants.</p>	<p><b>001-151</b> <b>Greenhouse Crops</b>                            <b>3.00</b></p> <p>Focuses on growing cut flowers, potted plants and foliage plants in a greenhouse. Provides practical experience in growing/maintaining crops using equipment, and solving problems. Includes field trips to commercial greenhouse operations.</p>
<p><b>001-141</b> <b>Soils and Plant Nutrition</b>                    <b>3.00</b></p> <p>Covers physical, chemical and biological properties of soils/media. Includes soil conservation practices and composting. Labs involve soil testing and soil improvement.</p>	<p><b>001-145</b> <b>Floral Design II/Commercial</b>               <b>3.00</b></p> <p>Hands-on use of fresh flowers, fresh foliage, dried materials, silks and fruit in the more advanced floral designs. Emphasis will also be given to today's color theory as well as development of floral creativity. PREREQUISITES: 001-144 - Floral Design I/ Commercial</p>	<p><b>001-149</b> <b>Horticulture Events</b>                            <b>3.00</b></p> <p>Educational seminars and workshops, celebrations, tours and travel are increasingly important to garden centers, botanic gardens and resorts. Learn to plan and organize horticulture and floral events from the initial planning stages through set up to break down and billing. PREREQUISITES: 001-143 - Herbaceous</p>	<p><b>001-152</b> <b>Perennials</b>                                        <b>3.00</b></p> <p>This course covers the identification, growing and use of common herbaceous perennial plants in the landscape. Propagation, scheduling, and problem identification/solutions will also be taught.</p>
			<p><b>001-153</b> <b>Fruit Science</b>                                    <b>3.00</b></p> <p>Students will study methods of fruit growing and become familiar with basic cultivated tree fruits, small fruits, and native fruits and nuts. Organic growing methods, composting, pest and disease control, and self sustaining growing methods will be discussed in detail. Field trips to orchards and market fruit gardens will be included in the course.</p>

**001-154**  
**Alternative Growing Methods** 3.00

Students will study emerging growing methods that are "outside the box". These include vertical wall gardening, green roofs, hydroponics, aquaponics, and other innovative growing techniques.

**001-171**  
**Horticulture Field Study** 3.00

Hands on learning! Work with latest plant introductions from international plant breeders. Learn to identify a wide variety of annuals and perennials. Learn about the care and culture of annual and perennial plants. Design and install beds in Gateway's Learning Garden and Horticulture Center. Assist in evaluating 'trial garden' plants for vigor and garden performance. Learn professional techniques used by botanic gardens.

**001-177**  
**Floral Design III** 3.00

This course is designed for the advanced floral designer. You will explore the most advanced techniques in weddings, sympathy, and contemporary designs. PREREQUISITES: 001-145 - Floral Design II/ Commercial

**001-178**  
**Fruit and Vegetable Science** 3.00

Students will study methods of vegetable and fruit gardening and become familiar with basic vegetables, tree fruits, and small fruits. Organic growing methods, composting, pest and disease control, and self-sustaining gardening methods will be discussed in detail. Field trips to market gardens and orchards will be central to the course.

**001-180**  
**Horticulture Portfolio** 1.00

This capstone course will provide horticulture students the opportunity to pull together portfolio elements created in several classes into a cohesive professional portfolio for use when starting the career search. The portfolio will include samples of work, letters of reference, resume, horticultural resources and other pertinent career search and employment information, which can be used during employment interviews. Students will develop a high-quality professional portfolio as the final project. PREREQUISITES: 001-147 - Soils and Plant Nutrition 001-151 - Greenhouse Crops 001-130 - Landscape Plants I 001-143 - Herbaceous Plants COREQUISITES: 001-128 - Horticulture Marketing

**090-300**  
**Farm Business/Operating the** 3.00

Emphasizes management skills and concepts necessary for first year student. Student's entire farming operation is assessed and plans developed for future needs, goals and objectives. Special emphasis on establishing and recording farm business and family goals, organizing and maintaining farm business records, interpreting and analyzing the records to assist in making sound farm business management decisions.

**090-306**  
**Soils Management** 3.00

Prepare and implement a land use plan, take and understand soil testing procedures and reports. Make and implement fertilizer recommendations and budgets. Covers application of farm manure, chemicals, soil conservation practices and the management and safe use of farm machinery and equipment. Analysis of the farm business

and planning of cropping strategies to meet the farmers need.

**091-101**  
**Animal Care and Management** 3.00

In this course, students explore basic nutrition, housing needs, and behavior of common domestic animals to develop skills that enable them to assess animal condition. Upon completion of this course, students will be able to obtain a thorough history, perform a physical exam, administer medications, collect samples, and use proper restraint techniques COREQUISITES: 806-105 - Principles of Animal Biology

**091-102**  
**Veterinary Business Practices** 3.00

In this course, students develop practical workplace techniques for veterinary office procedures to develop customer service and veterinary team support skills. Upon completion of this course, students will be able to use veterinary software to manage records and financial applications, maximize client interactions, and participate in day-to-day operations of a veterinary facility. COREQUISITES: 091-101 - Animal Care and Management

**091-103**  
**Clinical Pathology I for Vet Sciences** 4.00

In this course, students examine basic laboratory equipment and procedures, as well as features of common veterinary diseases, to acquire skills needed to perform various diagnostic tests. Upon completion of this course, students will be able to collect and process appropriate samples for hematology, blood chemistry, urinalysis, and parasitology, and correlate veterinary clinical pathology findings to clinical signs.

PREREQUISITES: 091-101 - Animal Care and Management 091-102 - Veterinary Business Practices

**091-104**  
**Clinical Pathology II for Vet Sciences** 4.00

In this course, students examine additional laboratory procedures and other veterinary disease processes to establish understanding of appropriate methodology and recognition of accurate results. Upon completion of this course, students will be able to collect and process appropriate samples for mycology, cytology, serology, endocrinology, and coagulation and reproductive evaluations, and correlate veterinary clinical pathology findings to clinical signs. PREREQUISITES: 806-197 - Microbiology COREQUISITES: 091-106 - Surgical Procedures II for Vet Sciences

**091-105**  
**Surgical Procedures I for Vet Sciences** 3.00

In this course, students investigate surgical equipment and procedures to develop skills needed to assist with surgical care of animals. Upon completion of this course, students will be able to identify surgical instruments, develop sterile technique, maintain and operate surgical equipment, and assist with patient preparation, monitoring, and recovery. COREQUISITES: 091-103 - Clinical Pathology I for Vet Sciences

**091-106**  
**Surgical Procedures II for Vet Sciences** 3.00

In this course, students explore the veterinary technician's role in surgery to develop skills needed to manage veterinary patients in the pre-, intra-, and post-operative phases. Upon completion of this

# Course Descriptions

course, students will be able to anticipate needs of the surgeon, provide veterinary surgical assistance, manage wounds and incisions, and perform dental prophylaxis in dogs and cats. PREREQUISITES: 091-111 - Clinical Skills II for Vet Sciences 091-108 - Veterinary Pharmacology

**091-107  
Imaging for Veterinary Sciences 3.00**

In this course, students explore veterinary imaging concepts and apply veterinary imaging techniques to use radiographic equipment and support diagnostic studies. Upon completion of this course, students will be able to properly position veterinary patients, produce diagnostic images, process exposed films, and maintain equipment. COREQUISITES: 091-103 - Clinical Pathology I for Vet Sciences

**091-108  
Veterinary Pharmacology 3.00**

In this course, students examine drugs, vaccines, and other substances used in veterinary medicine to establish a knowledge base of their therapeutic use, administration, and side effects. Upon completion of this course, students will be able to accurately calculate dosages, prepare dispensed medications, safely administer drugs, and recognize normal and abnormal responses to medications. PREREQUISITES: 834-109 - Pre-Algebra COREQUISITES: 091-110 - Clinical Skills I for Vet Sciences

**091-109  
Lab Animals and Non-Traditional Pets 2.00**

In this course, students explore characteristics, basic care, illness, and treatment of animals that may be

encountered in research settings and/or kept as pets, to develop skills needed to participate in caring for these animals. Upon completion of this course, students will be able to properly restrain and examine mice, rats, rabbits, and birds, collect blood samples from rats and rabbits, and perform a necropsy on a laboratory animal. COREQUISITES: 091-104 - Clinical Pathology II for Vet Sciences

**091-110  
Clinical Skills I for Vet Sciences 2.00**

In this course, students assimilate skills in a clinical setting to develop proficiency in animal nursing techniques. Upon completion of this course, students will be able to perform routine veterinary clinic procedures such as venipuncture, urine collection, and subcutaneous injection. PREREQUISITES: 091-105 - Surgical Procedures I for Vet Sciences

**091-111  
Clinical Skills II for Vet Sciences 2.00**

In this course, students further assimilate skills in a clinical setting to develop proficiency in animal nursing techniques. Upon completion of this course, students will be able to perform more complex clinical procedures such as monitor patients in the anesthetic and recovery periods, properly restrain small animals, and prepare patients for surgery. PREREQUISITES: 091-110 - Clinical Skills I for Vet Sciences

**091-112  
Clinical Skills III for Veterinary Sci 3.00**

In this course, students assimilate higher level skills in a clinical setting to develop proficiency in animal nursing techniques for veterinary technicians. Upon completion

of this course, students will be able to place and care for intravenous catheters, administer intravenous and intramuscular injections, administer enemas, and apply and remove bandages and splints. PREREQUISITES: 091-106 - Surgical Procedures II for Vet Sciences

**091-113  
Anesthesia for Veterinary Technicians 3.00**

In this course, students investigate anesthetic delivery and monitoring equipment, pain management strategies, and appropriate responses to patient compromise to acquire skills needed to coordinate anesthetic events in veterinary patients. Upon completion of this course, students will be able to choose and administer appropriate veterinary anesthetic protocols, monitor and maintain patient status throughout anesthetic events, and maintain equipment and accurate anesthetic records. PREREQUISITES: 091-111 - Clinical Skills II for Vet Sciences 091-108 - Veterinary Pharmacology COREQUISITES: 091-106 - Surgical Procedures II for Vet Sciences

**091-114  
Veterinary Tech Clinical Internship 4.00**

In this course, students hone animal nursing skills in a clinical setting to achieve proficiency needed to function in the role of veterinary technician according to the standards set by CVTEA. Upon completion of this course, students will have the skills and knowledge required of an entry level veterinary technician. PREREQUISITES: 091-112 - Clinical Skills III for Veterinary Sci

**091-120  
Animal Behavior 1.00**

In this course, students consider normal and abnormal animal behavior, training methods, and the relationship between behavior and physical health to identify problem behaviors and potential solutions. Upon completion of this course, students will be able to recognize some behavior issues in domestic animals and choose appropriate resources for their modification.

**091-121  
Emergency Medicine for Vet Technicians 1.00**

In this course, students explore topics in advanced veterinary critical care to develop awareness of procedures and equipment available in specialty facilities. Upon completion of this course, students will be able to identify the appropriate application of central venous and intraosseous catheterization, active drainage/suction devices, dialysis, and intracranial pressure monitoring in veterinary medicine. PREREQUISITES: 091-113 - Anesthesia for Veterinary Technicians

**091-122  
Integrative Modalities for Vet Sciences 1.00**

In this course, students explore therapeutic options which may supplement traditional Western veterinary medicine to provide awareness of additional resources for patient care. Upon completion of this course, students will identify the appropriate application of spinal manipulation, acupuncture, massage, therapeutic ultrasound, homeopathy, and other treatment modalities in veterinary medicine. PREREQUISITES: 091-106 - Surgical Procedures II for Vet Sciences

**091-123  
Veterinary Medical Terminology 2.00**

In this course, students explore the construction, meaning, and pronunciation of veterinary medical terms to establish understanding and facilitate communication among veterinary team members. Upon completion of this course, students will be able to correctly formulate veterinary medical terms to describe specific concepts.

**101-100  
Accounting Program Orientation 1.00**

Students develop skills to enhance their success in the Gateway Technical College accounting program and their career. These skills include self-assessment, time management, study skills, learning styles, and stress management. Students research the accounting field through the Internet, periodicals, and surveys. Students design an accounting academic and career development plan and initiate their ongoing program portfolio.

**101-103  
Internship for Accounting 2.00**

This course is an on-the-job accounting related work experience. The student will perform 72 hours of accounting-related duties in a business, governmental or not-for-profit setting. Students are responsible for seeking and obtaining the internship workstation position (paid or unpaid). The student will make a summary of work activities. Job supervisor approval and instructor pre-approval are required.

**101-104  
Income Tax Accounting 4.00**

This course covers basic federal and state income tax laws. The student will

prepare manual and electronic Federal and manual Wisconsin individual tax returns (including self-employment), as well as basic federal partnership, S-Corp, and corporate tax returns. Additional areas of study will include: exemptions, gross income, deductions, credits, capital gains/losses, cost recovery, Sec. 1231 and 1245 recapture, passive activity losses, NOLs, AMT, and tax planning. Basic computer literacy required.

**101-105  
Accounting Career Readiness 2.00**

Accounting Career Readiness will prepare student for entry into the workforce. The student will develop a strategy for seeking, obtaining and retaining employment. The student will identify professional goals and develop a job search or job advancement career plan, resume, application letter, and prepare for interviews. The student will explore local employment resources and career opportunities. PREREQUISITES: 101-131 - Management Accounting

**101-106  
Accounting Spreadsheet Applications 3.00**

This course covers intermediate and advanced spreadsheet topics. The student will develop and edit business-related worksheets and charts, including linking worksheets and workbooks. The student will also work with data tables, Goal Seek, scenarios, and Solver to perform what-if calculations on various data. The student will also work with financial functions, macros, and create reports. This course will prepare the student to become Microsoft Office User Specialist (MOUS) certified in Excel at the Core of Expert level. PREREQUISITES: 101-114 - Accounting Principles or 101-

112 - Accounting for Business 103-102 - Microsoft Excel or 103-143 - Computers for Professionals

**101-107  
Accounting Capstone 3.00**

The accounting capstone course will guide the student in dealing with ethics, internal control and financial statement analysis in the accounting environment. Students will resolve accounting problems by applying skills and techniques acquired in previous courses. Students will apply business law and ethics to the accounting environment. PREREQUISITES: 101-104 - Income Tax Accounting 101-122 - Intermediate Accounting II 101-131 - Management Accounting 101-143 - Payroll Accounting 101-154 - Accounting Software Applications COREQUISITES: 101-155 - Financial Analysis/Management

**101-112  
Accounting for Business 3.00**

A practical approach to the study of accounting. Basic accounting practices and procedures are explained with particular emphasis on the transactional effect on the income statement and balance sheet. Other areas covered include adjusting and closing entries; accounting for cash, including bank reconciliations and payroll accounting.

**101-114  
Accounting Principles 4.00**

Accounting Principles is an introduction to the field of accounting. The accounting cycle - analyzing, journalizing, posting, adjusting entries, worksheet preparation, financial statements, and closing entries - will be covered. Details of accounting for receivables, payables, cash, subsidiary

ledgers, corporate organization, stock transactions, and dividends will be studied. Accounting Principles illustrates accounting methods for service and merchandising firms, partnerships, and corporations. Two comprehensive practice sets will be required.

**101-121  
Intermediate Accounting I 4.00**

Intermediate Accounting I will apply FASB principles and GAAP to corporations and will emphasize an in-depth understanding of the balance sheet. Students will learn to prepare classified balance sheets, account for receivables, inventory valuation and estimation, acquisition and disposition of fixed and intangible assets, current and long-term liabilities, including time value of money concepts. PREREQUISITES: 101-114 - Accounting Principles COREQUISITES: 101-100 - Accounting Program Orientation 804-123 - Math with Business Applications 103-102 - Microsoft Excel or 103-143 - Computers for Professionals

**101-122  
Intermediate Accounting II 4.00**

Intermediate Accounting II will cover advanced topics of corporate accounting with an emphasis on stockholders' equity and presentation of income statement items. Students will learn to prepare multi-step income statements and statements of cash flows, calculate EPS, account for investments in debt and equity securities, income taxes, and leases. They will utilize the revenue recognition principle, perform error analysis, and become familiar with the FASB's full disclosure requirements. Students will be expected to use Excel for preparation of designated projects.

# Course Descriptions

PREREQUISITES: 101-121 - Intermediate Accounting I

**101-124 Auditing 3.00**

This course will cover the theory, procedures, and standards of auditing with emphasis on evaluation and review of internal control. Students will examine and evaluate accounting records to provide data to support an opinion regarding the fairness and reliability of the records. Emphasis will be on generally accepted auditing standards (GAAS). PREREQUISITES: 101-121 - Intermediate Accounting I

**101-126 Accounting Spreadsheet Applications 2.00**

This course covers intermediate and advanced spreadsheet topics. The student will develop and edit business-related worksheets and charts, including linking worksheets and workbooks. The student will also work with data tables, Goal Seek, scenarios, and Solver to perform "what if" calculations on various data. The student will also work with financial functions, macros, and create reports. This course will prepare the student to become Microsoft Office User Specialist (MOUS) certified in Excel at the Core or Expert level. PREREQUISITES: 101-114 - Accounting Principles or 101-112 - Accounting for Business 103-102 - Microsoft Excel or 103-199

**101-127 Accounting Database Applications 2.00**

This course is designed to introduce the student to a database package that can be used to generate reports containing accounting information. The student will

learn the basics of database software, including tables, queries, and reports as they relate to the revenue, purchases, production, and payroll cycles. COREQUISITES: 101-126 - Accounting Spreadsheet Applications

**101-131 Management Accounting 4.00**

This course covers the fundamentals of managerial accounting for a manufacturing company. The student will learn the flow of costs through the accounting system, including material, labor, and factory overhead. The student will also learn job order vs. process cost accumulation, as well as computing and recording variances in a standard cost system. Cost behavior analysis, costing joint and by-products, and just-in-time manufacturing will also be covered. The student will use quantitative models and cost analysis to make managerial decisions. The student will also prepare a master budget for a manufacturing business. PREREQUISITES: 101-121 - Intermediate Accounting I

**101-143 Payroll Accounting 2.00**

Payroll accounting exposes students to the various tax rules and laws, tax rates, and reports that form the core of a payroll accountant's responsibility. Students will be working with tax tables and forms and will learn how to determine gross and net earnings of an employee. Deductions for social security, Medicare, and federal and state income taxes will be computed. Students will also be able to determine the employer's liability for payroll taxes, including unemployment and workman's compensation premiums. Other requirements include the completion of a Wisconsin Sales and UseTax form.

Electronic software will be utilized to input and run a company's payroll for one quarter along with manual preparation of federal tax forms.

**101-152 Accounting for Government and Nonprofit Entities 3.00**

The purpose of this course is to apply the objectives of the GASB to general purpose financial reporting for government and nonprofit organizations, in order to provide timely data for the administrators and users of these organizations. Specific techniques for reporting the resources and uses of funds are included, in addition to financial statement presentation and budgeting applications. PREREQUISITES: 101-121 - Intermediate Accounting I

**101-154 Accounting Software Applications 2.00**

This course is designed to introduce the student to commercially available accounting software. The student will keep data for customers, invoices, vendors, purchase orders, inventory, payroll, cash, and other data needed for both service and retail businesses. The student will also generate financial statements and other reports needed both for financial accounting and income tax purposes. PREREQUISITES: 101-114 - Accounting Principles or 101-112 - Accounting for Business

**101-155 Financial Analysis/Management 3.00**

The student will think critically and apply accounting knowledge, principles, and procedures by utilizing financial analysis and financial management techniques in managing the financial aspects of a "for

profit" business. The student will learn to measure risk/reward/return; analyze corporate financial statements, and use time value of money analysis to make long-term financing decisions. The student will analyze corporate merger techniques, apply working capital management techniques, develop cash budgets, utilize breakeven analysis, and develop pro forma financial statements. A corporate annual report project is required using spreadsheet and word processing software. PREREQUISITES: 101-106 - Accounting Spreadsheet Applications COREQUISITES: 101-122 - Intermediate Accounting II

**101-158 Accounting Capstone 4.00**

The accounting capstone course will guide the student in dealing with ethics, internal control, and financial statement analysis in the accounting environment. Students will resolve accounting problems by applying skills and techniques acquired in previous courses. Students will apply business law and ethics to the accounting environment. This course will prepare students to take the ABA (Accredited Business Accountant) exam. The ABA is a national certification supported by the National Society of Accountants. It is a certification designed for accountants with associate degrees. The capstone course will provide an assessment opportunity aimed at achieving national certification. PREREQUISITES: 101-104 - Income Tax Accounting 101-122 - Intermediate Accounting II 101-131 - Management Accounting 101-143 - Payroll Accounting COREQUISITES: 101-155 - Financial Analysis/Management

**101-159**  
**Income Tax Accounting II** **3.00**

Students enhance their Income Tax Accounting skills in this course which expands on the knowledge of individual income tax accounting and introduces the basics of partnership and corporate tax accounting. Students will prepare individual and basic partnership and corporate tax returns. Current taxation topics will be discussed. The course also enables students to obtain certification as a Volunteer Income Tax Assistance (VITA) program volunteer. PREREQUISITES: 101-104 - Income Tax Accounting

**101-162**  
**Accounting - Serving the Public Interest** **3.00**

Students will learn how accountants can give to the community by providing their services without a fee. This course consists of class time plus approximately 36 hours of community service time doing something that reinforces and supplements their academic knowledge of accounting. Students will be able to choose from a variety of service learning placements, such as working with an agency who serves adults and helping with a banking, budgeting and other money management skills workshop, developing and implementing a cost system for a non-profit organization, developing and implementing an inventory tracking system for a food bank, provide basic accounting functions, bank reconciliations, general ledger, or computerize an accounting system for a non-profit organization. PREREQUISITES: 101-114 - Accounting Principles

**101-163**  
**Triple Bottom Line Accounting** **3.00**

Students will look at financial and managerial accounting concepts with a focus on being responsible to all stakeholders, anyone who is influenced by the actions of the company, directly or indirectly. The triple bottom line is made up of economic, environmental and social factors. The ultimate goal is strong profits, a healthy environment and strong communities. Sustainability and the idea of global stewardship and responsible management of resources are emphasized. PREREQUISITES: 101-114 - Accounting Principles

**101-164**  
**Non-Profit Acctg Software Applications** **3.00**

Students will learn how to account for non-profit organizations using commercially available accounting software. Management of donors, grants, and pledges and topics such as allocating expenses to programs, handling donor restrictions, and generating the reports needed for donors and tax returns are covered.

**101-184**  
**Business Finance and Budgeting** **3.00**

In Business Finance and Budgeting, the learner applies the skills necessary to achieve an understanding of the fiscal/monetary aspects of business. Each learner will demonstrate application of business types, cycles, forecasting, budgeting, expense control, and financial statement interpretation relevant to the supervisor as a non-accountant.

**102-101**  
**Banking/Principles of** **2.00**

Comprehensive introduction to services offered by banking industry. Essential for new banking personnel. Includes material on bank accounting, pricing, profitability, personnel and security functions of the bank.

**102-118**  
**International Bizsquad Internship** **3.00**

International BIZSquad students will engage in multidisciplinary global projects. As projects go from creation to implementation the students will have to engage the clients and provide communication essential to positive outcomes. Project management skills help define the scope of the project that leads to successful implementation. Students will be required to travel internationally to complete these projects.

**102-121**  
**Credit Management** **3.00**

The learner will examine the world of personal and business credit and explore the implementation and consequences of various credit management policies. The learner will also examine applicable regulations as it pertains to consumer and business credit, as well as relationships with regulatory agencies, stakeholders and the management of the business as it relates to fiduciary responsibilities of the modern manager. PREREQUISITES: 804-123 - Math with Business Applications

**102-122**  
**Investments** **3.00**

This course acquaints the student with the fundamentals of investments. Topics include the operation of the securities and financial markets and the risk and timing

of investment decisions. Analysis factors such as the investment environment, the economy, the industry and the individual company are discussed in terms of equity, fixed income and specialized security analysis. Investment strategies are utilized to develop an investment plan and diversified portfolio. Other individual projects include mutual fund and stock selection and analysis.

**102-137**  
**Business/Introduction to** **3.00**

General orientation to the business world. Studies include organization and administration, production, labor and personnel, accounting and statistics, distribution, finance, and the relationship of business to society.

**102-138**  
**BIZ Internship** **3.00**

This course establishes an opportunity for the students to apply training and skills learned while participating on a multidisciplinary consulting team. The team will develop a strategic plan for a specified business. Students contract with the business and an MBA consultant to complete a project to the parameters mutually identified by the business and the MBA consultant. Evaluation of the student's performance will be a cooperative effort between the MBA Consultant and the Instructor(s).

**102-156**  
**International Business** **3.00**

A broad introductory course on the fundamentals of international trade. An overview of business in the international setting includes different involvements and

# Course Descriptions

structures of international business, global vs. multinational strategies, barriers to international business, legal frameworks, multinational economic communities, international personnel, marketing management and financial requirements for a global business.

**102-158  
International Business Cultures and Practices 2.00**

An overview of selected world cultures that influence business on a daily basis. Students will examine the obstacles in doing business transactions in a foreign market, modes of performing global business, and international business ethics.

**102-160  
Business Law 3.00**

Business Law is a survey course which introduces the student to relevant legal issues that affect business today. Students will learn the fundamentals of law from the U.S. Constitution to the Uniform Commercial Code, from Contract Law to Property Law, and will be able to identify the legal basis of various business activities.

**102-170  
Finance/Principles of 3.00**

This course serves as an introduction to financial markets, intermediation, institutions and management. It includes the scope of the financial system and its function. Topics include: the markets in which funds are traded, the institutions that participate in and aid the flow of funds, the basic financial instruments that trade in the markets, and the principles of financial management that guide participants in making sound financial decisions.

**102-182  
Business Operations 3.00**

In Business Operations, the learner assesses the role of business, its internal structure, and relationship to the external environment. Each learner analyzes the supervisor's role in the functions of business planning, information systems, operations management, information technology, marketing, and how they drive business activities.

**102-186  
Business Management Internship 3.00**

Establishes an opportunity for the student to apply training and skills in a business work environment. The student will spend 144 hours at the worksite(s). The worksite activities will allow the student to interact with a variety of management functions found in small to medium sized businesses. Classroom hours will include preparation of job portfolio materials and interview techniques.

**102-196  
Business Decision Management 4.00**

This capstone course within the Business Management Program will take the student through the decision process of a business enterprise. This class will pull together the breadth of the learner's business and general educational exposure, experience and education leading into this course and put practical use and application to this knowledge. Application concepts such as capital budgeting techniques, time value of money consideration, conventional and alternative sources of capital, mitigating risk and liability through utilizing various forms of business organizations as well as analysis of financial statements will be covered in detail. The learner will then assemble their own

business plan for a new venture, business line expansion, business acquisition or business divestiture. PREREQUISITES: 101-114 - Accounting Principles 104-101 - Marketing Principles 101-112 - Accounting for Business 103-103 - Microsoft Excel II 104-101 - Marketing Principles

**103-100  
Internet, Introduction to 1.00**

Students learn to use the Internet effectively, to access the net through the World Wide Web browser and other useful tools, and to use the Internet's vast resources to complete a research project in a field of interest.

**103-102  
Microsoft Excel 1.00**

Introduction to Excel spreadsheet software. Students will learn how to create, store, retrieve and edit a variety of spreadsheets and charts, format worksheets and use formulas. Basic functions will be stressed.

**103-103  
Microsoft Excel II 1.00**

This course will take students to the next level of competency in Excel. Topics covered include creating workbooks using templates, multiple sheets, 3-D references in formulas and linked workbooks, using database features of Excel, use copy, paste, paste special, and paste link features, and create charts using the Chart Wizard.

**103-104  
Microsoft Excel III 1.00**

Students will use the Function Wizard to create functions involving IF, Lookup, and PMT; use the tools menu to create, play and

edit macros; and integrate spreadsheets and charts with Word and Access tables.

**103-105  
Microsoft Access 1.00**

For beginning-level users of Microsoft Access. Students will discuss basic database terminology and design concepts; create and modify table structures; add, change, and delete records; and create simple selection queries to find, display, and print records.

**103-106  
Microsoft Access II 1.00**

For intermediate-level users of Microsoft Access. Students will create queries to sort records, compute record and group totals and statistics; and use different methods to create and print data entry forms and reports.

**103-107  
Microsoft Access III 1.00**

For advanced-level users of Microsoft Access. Students will create queries to crosstab, update, list top values, and join tables for data entry forms and reports; create a menu-driven application; and write macros to automate tasks.

**103-108  
Office 2007, Transition to 1.00**

Microsoft Office 2007 introduces many new features to help you get your work done more efficiently and effectively. If you're familiar with Office 93, 95, 2000, 2003 (Word, Excel, Access, PowerPoint) and want to upgrade to this new version of 2007, you'll want to take this class! This new version of Office presents the biggest change in features

in the last 10+ years. Note: This class is not intended for students who are new to working with computers and software.

**103-109  
Windows Operating Systems and Concepts 1.00**

This is the beginning course for students wishing to learn the Windows operating system. Creating and manipulating files and programs in this operating environment will be emphasized.

**103-110  
Microsoft PowerPoint 1.00**

This course will take the user of PowerPoint through the basic procedures necessary to create a presentation and related handout materials. The student will learn to use the wizards, toolbars, dialog boxes, menus, and various PowerPoint views to create a presentation.

**103-111  
Microsoft PowerPoint II 1.00**

This course will take the user of PowerPoint presentation graphics to an advanced level of competency. Inserting graphics, clip art, and organizational charts are emphasized. Adding sound to the presentation is also covered.

**103-112  
Microsoft Word 1.00**

This course is designed to teach the participant the fundamentals of word processing with Microsoft Word. A variety of business documents will be created to familiarize the learner with various commands and features.

**103-113  
Microsoft Word II 1.00**

This course will cover multi-page documents, tables, columns, graphics and other desktop publishing features.

**103-116  
Microsoft Visio 1.00**

This course will enable the student to communicate effectively with easy-to-assemble drawings and diagrams, create organizational charts and flowcharts, draw technical schematics and annotate CAD drawings, and manually and automatically work on network, software, and database design.

**103-118  
WordPerfect for Windows 1.00**

Introduction to word processing concepts. The student will learn to create, edit, format, and print documents. Editing will include insertion/ deletion of text, moving text within a document, saving and renaming documents. Formatting will include text enhancements, such as bolding, underlining, italicizing, using bullets, tabs, indents, use spell checker and page set-up features. Recommended that students have a basic knowledge of the Windows operating environment and keyboarding skills prior to enrolling in this class.

**103-119  
WordPerfect for Windows II 1.00**

Intermediate level word processing. The student will learn to manipulate multiple page documents, merge documents, print labels, create/format tables, use grammar checker and thesaurus features, bookmarks and styles, and document templates.

**103-123  
Microsoft Word III 1.00**

This course will cover merging, sorting, advanced editing techniques, file management and special document features. PREREQUISITES: 103-113 - Microsoft Word II

**103-125  
Web Page Development 1.00**

Using hypertext markup language (HTML) to develop Internet World Wide Web pages along with other Internet resources and development tools.

**103-132  
PhotoShop I 1.00**

Introduction to PhotoShop image editing software in the Windows environment. Students learn to create and edit digital images. Topics covered will be the basics of PhotoShop including the PhotoShop interface, scanning, making selections, layers, and graphic formats. Macintosh users may also benefit from this course.

**103-133  
Microsoft Outlook 1.00**

Outlook is a software application that allows you to send and receive electronic mail, maintain schedules, calendars, contacts, and tasks.

**103-134  
Microsoft Windows NT Workstation 1.00**

For students wishing to learn Windows NT workstation operating system concepts. Create and manipulate files and programs within the workstation environment.

**103-135  
Microsoft Project Manager 1.00**

This course will provide many new and improved features that will help you schedule, track, and communicate your project information faster and more efficiently than ever.

**103-137  
Windows NT 1.00**

Beginning course for students wishing to learn the Windows NT workstation operating system concepts. Creating and manipulating files and programs will be emphasized.

**103-138  
FrontPage - Beginning 1.00**

This is the entry-level course for creating, maintaining and publishing a website using web authoring software.

**103-139  
FrontPage - Advanced 1.00**

This course takes the user of FrontPage to the next level of proficiency. The participant will use FrontPage themes in a web site with shared borders, use advanced editing and publishing features, and incorporate forms and use appropriate forms handling. PREREQUISITES: 103-138 - FrontPage - Beginning

**103-140  
Preparing Graphics for the Web Using Image Ready 2.00**

Students will learn the basic skills and knowledge for creating/handling basic web graphics using industry-standard software. Basic file formats, graphics handling, and graphics editing will be covered in this course.

# Course Descriptions

**103-141**  
**Transition to Office 2010** **1.00**

Microsoft Office 2010 enhances the new user interface introduced initially in office 2007 to help you get your work done more efficiently and effectively. If you're familiar with Office 2003 (Word, Excel, Access, Powerpoint) and want to upgrade to this new version of 2010, you'll want to take this class! Upgrading from office 2003 to Office 2010 presents the most significant change in features in the last 10+ years. Note: This class is intended for students who are new to working with computers and software.

**103-142**  
**Basic Computing** **1.00**

This course will give the learner the skills to use electronic mail, Bb, Web Advisor, commonbeginning features of Microsoft Office, USB usage, printing at Gateway, and saving/opening files.

**103-143**  
**Computers for Professionals** **3.00**

This course introduces students to the use of a PC. Through hands-on practice, students will manage files, communicate using email, and use the Internet, word processing, spreadsheet, and presentation software. Students must use the version of Microsoft Office software in use at Gateway Technical College. Basic keyboarding skills are recommended. PREREQUISITES: 103-142 - Basic Computing

**103-144**  
**Windows 8: Basics** **1.00**

This course will prepare you to work in the new Windows 8 operating system and create an interface designed for your personal

needs. You will learn about new terminology, what happened to the Start Button, Icons and Taskbar. If you have a new computer that came with Windows 8 or recently upgraded, you will want to take this class. Students are required to have Windows 8 on their own personal computer/laptop (no tablets or iPads), as it will not be available in any campus labs.

**103-161**  
**Access Database for the Web** **2.00**

This course is an introduction to e-commerce and Access data access pages. Participants will create data access pages for data entry, create data access pages for interactive reporting, install a web server, and publish web pages. This course is also an introduction to other web-enabled database technologies. PREREQUISITES: 103-105 - Microsoft Access

**103-164**  
**Microsoft Publisher I** **1.00**

This course is designed to teach the fundamentals of Microsoft Publisher. The course will expose students to practical examples of desktop publishing. It will acquaint students with the proper procedures to create professional quality publications.

**103-170**  
**MS Windows** **1.00**

Class for DOC. Provides a basic overview of Microsoft Windows XP operating system. Focuses on window concepts and terminology. Learners manipulate icons and individual window applications. Learners develop skills in mouse input, working with windows and icons, using Windows

Explorer, files and folders manipulation, and printer controls.

**103-171**  
**MS Word** **2.00**

Class for DOC. Introduces word processing applications, functions, and features. Emphasizes creating, editing, saving and retrieving files, applying wizards and templates, applying watermarks, and using spell check. Produces documents with tables and charts generated from the tables. Windows-based software is used. PREREQUISITES: 103-170 - MS Windows

**103-172**  
**MS Excel** **2.00**

Class for DOC. Introduces spreadsheet applications, functions, and features. Emphasizes creating, editing, saving and retrieving files, and applying formulas and managing large worksheets. Produces charts, amortization schedules, and data tables and incorporates analysis tools. PREREQUISITES: 103-170 - MS Windows

**103-173**  
**MS PowerPoint** **2.00**

Class for DOC. This software facilitates the design and creation of presentation graphics in the form of text, free-from drawings, animation, organizational charts, and tables. Learner will produce interactive documents with sound and other enhancements. PREREQUISITES: 103-170 - MS Windows

**103-174**  
**MS Access** **2.00**

Class for DOC. Introduces the learners to basic database functions. Participants design and create a database; enter, sort,

and retrieve data; and produce reports. PREREQUISITES: 103-170 - MS Windows

**103-175**  
**MS Integration** **1.00**

Class for DOC. Provides hands-on experience integrating documents from/to database, word processing, presentation graphics and spreadsheet software programs PREREQUISITES: 103-172 - MS Excel 103-174 - MS Access 103-171 - MS Word

**104-101**  
**Marketing Principles** **3.00**

This course helps students understand the scope of marketing and the importance of marketing in our economy. Changes and trends in the consumer goods market of the United States and foreign markets. are covered. Consumer behavior is examined as well as retailing and wholesaling structures.

**104-103**  
**Marketing Careers** **1.00**

An introduction to all marketing careers is emphasized in this course. Marketing careers for both consumer and business-to-business marketing are analyzed with real-world applications.

**104-104**  
**Selling Principles** **3.00**

This course covers retail, business, industrial, and direct selling procedures which involve prospecting, pre-approaching the customer, discovering the customer's wants and needs, demonstrating the product, answering questions, meeting objections, closing the sale, and suggestion selling.

**104-105  
Promotion Principles I 3.00**

Advertising media and the institutions of advertising agencies, retail advertisers and general advertisers. Advertising media methods as they relate to goals. Creation of media advertising: newspaper, magazine, radio, television, and direct mail. The principles of copy layout, illustration and printing. The concepts of sales promotion, publicity, public relations, and visual merchandising.

**104-109  
Marketing/Sports and Event Introduction 3.00**

This course will provide students with an awareness of the careers available within sport/ event marketing industry and enable them to learn the introductory skills necessary to pursue employment in the field. A basic understanding of sports and event marketing followed with exposure to the major components of the industry will be covered. Students will also maintain an awareness of current trends and happenings in the industry.

**104-110  
Corporate Sponsorship Development 2.00**

This course will provide students with the necessary information and skills to develop marketable sponsorship proposals. In addition, they will explore both perspectives of sponsorship: the seller (representing an event, team, property or venue) and the buyer (representing a company with a desire to market and promote through a sport or event sponsorship). Students will develop skills necessary to sell their proposals.

**104-111  
Ticket Sales 1.00**

This course is intended to teach the importance of the sell out mentality for events. The class will cover developing a data base, discounting, creating a variety of ticket packages, targeting groups, developing a sales staff, and retaining season ticket holders through renewals.

**104-112  
Mastering Selling Skills-OMC 1.00**

Analyze customer's motivations and expectations in the selling/buying process.

**104-113  
Mastering Merchandising and Display-OMC 1.00**

This course covers the strategies to enhance marketing efforts utilizing merchandising and display in the showroom.

**104-114  
Selling Techniques 2.00**

Emphasis is placed on selling techniques. This includes the process used to plan, to make sales presentations, to handle sales resistance, to close a sale, and to implement the proper follow-up of the sale.

**104-115  
Marketing Capstone/Internship 3.00**

This course will allow you to prepare for entering the career of marketing. You will create and update career credentials (resume and portfolio) that will be necessary to compete in an employment market. To further enhance your employability you will be able to demonstrate your marketing skills in an applied internship. PREREQUISITES:

104-101 - Marketing Principles 104-104 - Selling Principles COREQUISITES: 104-116 - E-Marketing/Social Media 104-161 - Selling Principles/Advanced

**104-116  
E-Marketing/Social Media 3.00**

In this course the student will explore the concepts, trends and planning involved in developing a comprehensive electronic marketing strategy for a business, with an emphasis on social media. This will include looking at the proper design concepts for a web site, using successful social media techniques, identifying emerging trends in the marketplace and developing a comprehensive electronic marketing/social media campaign. PREREQUISITES: 104-101 - Marketing Principles

**104-118  
Advanced Promotion 3.00**

Go beyond the basics of promotion and learn the fundamentals of developing an integrated marketing communication campaign for an organization. Students will explore concepts of online video for promotional purposes, explore how to use traditional and emerging media outlets together, develop effective social media messages and create promotions for both consumer and business to business customers. PREREQUISITES: 104-105 - Promotion Principles I

**104-119  
Visual Merchandising 3.00**

Merchandising display and point of purchase advertising. The principles of display, harmony, rhythm, proportion, balance, emphasis and color. Creative efforts

through the production of several displays. Showcard and sign production.

**104-120  
Consumer Global Marketing 3.00**

An analysis of the marketing of products and services to the ultimate consumer with emphasis on consumer markets, retail, and new trends in consumer behavior and satisfaction globally.

**104-126  
Business Marketing I 3.00**

Process and systems analysis, inventory planning and control, quality control, marketing cost analysis, marketing plans all related to industrial goods. PREREQUISITES: 104-101 - Marketing Principles

**104-127  
Retailing 3.00**

An overview of retailing, trends, consumer and location analysis. Study of the organizational structure through human resources, merchandising, advertising and promotion, control and operations.

**104-134  
Marketing Internship 3.00**

This course provides the student with an opportunity to work in a marketing environment. The student will commit to 12 hours per week with an instructor and job contact. Competencies will vary, depending upon the work site.

# Course Descriptions

<p><b>104-150</b> <b>Marketing Professional Development</b> <b>1.00</b></p> <p>Visual poise, importance of nutrition and exercise, make-up and wardrobe selection for business are explored. Professional development skills, resume writing and employment interviewing are emphasized.</p>	<p><b>104-171</b> <b>Credit Procedures</b> <b>3.00</b></p> <p>Concepts and instruments necessary to operate a credit system. Credit is an essential function of marketing and the application of new marketing concepts and techniques in the credit system are stressed.</p>	<p>entrepreneurs, small business managers, and others in the field of management will be explored.</p>	<p><b>104-198</b> <b>E-Commerce/Marketing on the Internet</b> <b>3.00</b></p> <p>This course provides the student with a basic understanding of the components utilized in this technology. It examines how businesses integrate target marketing, market research, and the marketing mix elements onto the internet. The student will study both consumer and business-to-business situations affected by the intranet and extranet. Public policy, infrastructures, and payment systems for e-commerce are also analyzed and the individual is required to develop an e-commerce/internet marketing strategy plan. PREREQUISITES: 104-101 - Marketing Principles</p>
<p><b>104-161</b> <b>Selling Principles/Advanced</b> <b>3.00</b></p> <p>Student will be made aware of various sales careers and necessary qualifications. Time management, territory planning, motivation, telemarketing, direct marketing and negotiating for the salesperson will be studied. Sales meetings and practical sales demonstrations will be presented by the students. PREREQUISITES: 104-104 - Selling Principles</p>	<p><b>104-172</b> <b>Marketing Management</b> <b>3.00</b></p> <p>Decision-making activities involved in marketing functions through projects, simulation and case studies. PREREQUISITES: 104-101 - Marketing Principles</p>	<p><b>104-193</b> <b>Technical Customer Service</b> <b>2.00</b></p> <p>This course teaches the importance of customer service in the telecommunication field and includes such topic areas as dealing with difficult people, stress management and workers legal responsibilities.</p>	<p><b>104-307</b> <b>Sales/Fundamentals of</b> <b>1.00</b></p> <p>Basic skills in selling are stressed: the steps of the sale, merchandise information, selling problems and development of the sales personality.</p>
<p><b>104-169</b> <b>Management/Merchandising</b> <b>3.00</b></p> <p>View of the store buyer or manager as relates to consumer, subordinates, resources and management. Store image, sales records, merchandise planning, market trips, and merchandising math principles are applied.</p>	<p><b>104-173</b> <b>Marketing Research</b> <b>3.00</b></p> <p>This course covers the principles and practices of research. Students conduct research in the marketing field related to possible future employment. They draw upon previous knowledge in selecting the area of research and developing it. The collected data is organized into a written document. COREQUISITES: 104-101 - Marketing Principles</p>	<p><b>104-194</b> <b>International Marketing</b> <b>3.00</b></p> <p>The course is a study in the marketing of goods and services at the international level. The international uncontrollable variables of marketing are analyzed along with emphasis on market development, marketing research, product planning, international distribution, promotion, and pricing.</p>	<p><b>105-106</b> <b>Business Communications</b> <b>3.00</b></p> <p>In this course, students apply the skills and tools necessary to effectively compose business communication in a written format. Each student demonstrates the application of analyzing the communication situation, including: planning and preparing the message; developing persuasive, informational, and negative messages, sales letters, media releases, proposals and promotional materials; demonstrating skills in basic writing mechanics and English grammar; and effective electronic communication. PREREQUISITES: 801-136 - English Composition 1</p>
<p><b>104-170</b> <b>Business Purchasing</b> <b>3.00</b></p> <p>An understanding of industrial purchasing is developed through the study of the basic principles of buying; regulations and laws controlling purchasing; duties and qualifications of the buyer or purchasing agent.</p>	<p><b>104-191</b> <b>Internet Business Applications</b> <b>1.00</b></p> <p>This course will help participants gain the skills necessary to be able to evaluate the growing number of opportunities for both entrepreneurs and existing businesses which are becoming available on the World Wide Web daily. Internet compatible software and hardware will be discussed, as well as budgets, marketing, and various advertising strategies. Opportunities such as Job Searching, Information Resources, Publications, and Career Exploration for</p>	<p><b>104-196</b> <b>Export Techniques/ Documentation/ Payment</b> <b>2.00</b></p> <p>In-depth study of export documentation including the actual preparation of various documents normally used in international trade. Follows the flow of documentation from shipper to forwarder to bank. Complete review of letters of credit and related documents including an explanation of the various types of credit. Government laws and regulations that affect the flow of goods will also be reviewed.</p>	

<b>105-110</b> <b>Mathematics of Finance</b> <b>2.00</b>  Mathematical emphasis is placed on application to problems in finance, accounting, economics, spreadsheet and graph design and analysis, including use of financial calculators.	<b>106-001</b> <b>Computer Applications</b> <b>1.00</b>  This course provides an introduction to basic computer functions and applications. Students are introduced to the hardware and software components of modern computer systems and the application of computers in the workplace. The course emphasizes the use of common software packages, operating systems, file management, word processing, spreadsheet, internet, and electronic mail.	<b>106-007</b> <b>Business Software Solutions</b> <b>2.00</b>  Business Software Solutions is a capstone course integrating the aspects of wordprocessing, database, spreadsheet, graphics, and communications using a Windows environment. PREREQUISITES: 106-013 - Spreadsheet/Database for Business II or 106-142	<b>106-012</b> <b>Spreadsheet/DB for Business I</b> <b>3.00</b>  This course covers spreadsheet and database software for the business world. PREREQUISITES: 106-137 - Keyboarding Applications
<b>105-302</b> <b>Business Arithmetic</b> <b>2.00</b>  The arithmetic needed for recordkeeping, selling and general clerical occupations. Rules for checking for accurate answers, percentage and fractions emphasized.	<b>106-005</b> <b>Administrative Professional Internship</b> <b>2.00</b>  Students perform word processing, spreadsheet, and database application work in an on-the-job training situation in an office. The student employee, employer, and internship instructor interact during the training experience. The Internship includes 72 hours of employment credential preparation and software review before job placement.	<b>106-008</b> <b>Emerging Business Trends and Tech.</b> <b>2.00</b>  A capstone course integrating the aspects of word processing, database, spreadsheet, graphics, electronic mail, and calendaring applications.	<b>106-013</b> <b>Spreadsheet/Database for Business II</b> <b>3.00</b>  This course covers spreadsheet and database software for the business world. Emphasis will be on more advanced features of spreadsheets and databases. PREREQUISITES: 106-012 - Spreadsheet/DB for Business I or 106-138
<b>105-305</b> <b>Business Arithmetic/Calculators</b> <b>3.00</b>  Addition, subtraction, multiplication, and division of whole numbers and decimals. Work problems finding the base, rate and percentage. Procedures for checking work and estimating answers. Touch method of addition and subtraction on ten-key electronic calculators. Basic arithmetic procedures and business problems solved on electronic calculators.	<b>106-006</b> <b>Business Communication Skills</b> <b>3.00</b>  Effective written business communication principles are discussed and applied to the composition of routine business correspondence and reports. Oral communication presentations will be used to enhance the student's understanding of effective communication principles. Proper communication techniques for telephone use will be demonstrated. PREREQUISITES: 106-178 - Business Proofreading and Editing 106-137 - Keyboarding Applications 801-136 - English Composition 1	<b>106-009</b> <b>Meetings/Planning</b> <b>1.00</b>  This course introduces students to the scheduling and planning of business meetings.	<b>106-014</b> <b>WP for Business I</b> <b>2.00</b>  This class covers features of word processing software from the beginning level. Students develop expertise in the creation of business documents through the use of operational and text-editing features. Proofreading and language skills will be developed through the production of business documents. PREREQUISITES: 106-137 - Keyboarding Applications
<b>105-320</b> <b>Records Control</b> <b>2.00</b>  Maintain production records and manage magnetic media using standard records control procedures along with the basic filing rules.	<b>106-011</b> <b>Records Management</b> <b>1.00</b>  This course presents guidelines and procedures for controlling business information from its creation through its distribution, retention and retrieval, storage, preservation, protection, and final disposition. The main systems include alphabetic, numeric, and subject filing.	<b>106-010</b> <b>Publication Design for Business_</b> <b>2.00</b>  Create print-ready newsletters, brochures, flyers, forms, business cards, and other business publications. PREREQUISITES: 106-137	<b>106-015</b> <b>Word Processing for Business II</b> <b>2.00</b>  This class covers the features from an intermediate level. Proofreading and language skills will be developed through the production of business documents. PREREQUISITES: 106-014 - WP for Business I or 106-003

# Course Descriptions

<p><b>106-016</b> <b>Principles of Customer Service</b>      <b>3.00</b></p> <p>Provides a solid foundation in the areas of customer service and service excellence and provides techniques to retain customers and maintain loyalty in both a face-to-face environment and in remote settings via telephone and the Internet.</p>	<p><b>106-043A</b> <b>Judicial Reporting I Lab A</b>      <b>1.00</b></p> <p>Judicial Reporting I Lab A is designed for Testimony I students. This course will expand the learner's ability to write two-voice testimony at 160 wpm for three minutes with 95 percent transcription accuracy.</p>	<p><b>106-047</b> <b>Jury Charge II Lab</b>      <b>1.00</b></p> <p>Jury Charge II Lab expands the learner's ability to: write jury charge material dictated at a minimum speed of 200 wpm for five minutes, transcribe at least three timings with a minimum of 95 percent accuracy, and prepare salable transcripts.</p>	<p><b>106-105</b> <b>Office Essentials</b>      <b>1.00</b></p> <p>This course prepares the participant in basic office concepts including the Windows environment, incoming and outgoing communications, calendaring, office safety, and computer use for the collection of data.</p>
<p><b>106-017</b> <b>Customer Service Capstone</b>      <b>1.00</b></p> <p>Students will job shadow at a customer service call center.</p>	<p><b>106-043B</b> <b>Judicial Reporting I Lab B</b>      <b>1.00</b></p> <p>Judicial Reporting I Lab B is designed for Literary I and/or Jury Charge I students. This course will expand the learner's ability to write literary at 150 wpm and jury charge at 160 wpm for three minutes with 95 percent transcription accuracy.</p>	<p><b>106-048</b> <b>Testimony I Lab</b>      <b>1.00</b></p> <p>Testimony I Lab prepares the learner to: write, transcribe, and read back two-voice dictation; maintain a realtime dictionary; prepare salable transcripts from two-voice dictation; increase writing speed to 160 wpm at a minimum of 95% accuracy; write Latin and French words used in the legal system; increase vocabulary to include words used in Congressional records; and write non-dictated punctuation. PREREQUISITES: 106-124 - Realtime Reporting II</p>	<p><b>106-108</b> <b>Realtime Reporting Speed Development</b>      <b>3.00</b></p> <p>Realtime Reporting Speed Development further develops skills acquired in Realtime Reporting II on literary, jury charge, and testimony material, beginning at 120 wpm. Scheduled during the summer term, students must pass three 3-minute timings in two of these categories.</p>
<p><b>106-018</b> <b>Customer Service Management</b>      <b>3.00</b></p> <p>Includes instruction in customer behavior; using customer service databases; Internet searching and retrieval; and telephone, emailing, and communications skills. PREREQUISITES: 106-016 - Principles of Customer Service</p>	<p><b>106-044</b> <b>Realtime Reporting Orientation</b>      <b>1.00</b></p> <p>Realtime Reporting Orientation prepares the learned to execute laptop computer functions, create electronic files, send documents electronically, develop a time management plan, assess personal skills and characteristics, evaluate the requirements for occupations within the career field, and state the requirements to become a certified realtime reporter and a registered professional reporter.</p>	<p><b>106-059</b> <b>Legal Terminology</b>      <b>1.00</b></p> <p>Legal Terminology is an alternative delivery course designed to provide a background in basic legal terminology. Included are the correct spelling, pronunciation, and definition or the legal terms in this course. Thirteen areas of civil and criminal law are covered as well as terms dealing with the court, legal system, and litigation procedures. This class is intended for Judicial Reporting students.</p>	<p><b>106-119</b> <b>Professional Development</b>      <b>2.00</b></p> <p>Professional Development places emphasis on the development of a total professional image. Social and business intelligence, personal and professional goals, positive work attitude, time management, productive work habits, customer service knowledge, and job seeking skills, including the development of a job portfolio, are covered.</p>
<p><b>106-040</b> <b>Court Reporting Speed Maintenance</b>      <b>2.00</b></p> <p>Court Reporting Speed Maintenance provides the student with the ability to maintain and/or increase machine shorthand speed and accuracy.</p>	<p><b>106-046</b> <b>Literary II Lab</b>      <b>1.00</b></p> <p>Literary II Lab expands the learner's ability to write literary material dictated at a minimum speed of 180 wpm for five minutes, to transcribe at least three timings with a minimum of 95 percent accuracy, and to prepare salable transcripts.</p>	<p><b>106-084</b> <b>English for Realtime Reporters</b>      <b>1.00</b></p> <p>English for Realtime Reporters enhances the learner's ability to use proper English grammar, spelling, punctuation, capitalization, and vocabulary techniques in the transcription of the spoken word.</p>	<p><b>106-120</b> <b>Literary I</b>      <b>2.00</b></p> <p>Literary I prepares the learner to write literary material dictated at a minimum speed of 150 wpm for three minutes, to transcribe at least three timings with 95 percent accuracy, and to prepare salable transcripts. PREREQUISITES: 106-124A - Realtime Reporting II Lecture 106-124B - Realtime Reporting II Lab</p>

<b>106-120A</b> <b>Literary I - Lecture</b> <b>1.00</b>  Literary I - Lecture prepares the learner to write literary material dictated. PREREQUISITES: 106-124A - Realtime Reporting II Lecture 106-124B - Realtime Reporting II Lab	<b>106-124A</b> <b>Realtime Reporting II Lecture</b> <b>4.00</b>  Realtime Reporting II Lecture prepares the learner to write multi-syllabic words, punctuation and special symbols, short forms and phrases, prefixes and suffixes, numbers, frequently used words and phrases, contractions using the Z-rule, and the "Flagged Alphabet." Students apply realtime conflict elimination principles and realtime theory and write dictation using realtime theory. PREREQUISITES: 106-161A - Realtime Reporting I Lecture 106-161B - Realtime Reporting I Lab	accuracy. PREREQUISITES: 106-126 - Keyboarding  <b>106-128</b> <b>Jury Charge I</b> <b>2.00</b>  Jury Charge I prepares the learner to write jury charge material dictated at a minimum speed of 160 wpm for three minutes, to transcribe at least three timings with a minium of 95 percent accuracy, and to prepare salable transcripts. PREREQUISITES: 106-124 - Realtime Reporting II	<b>106-137</b> <b>Keyboarding Applications</b> <b>3.00</b>  This course is designed to develop keyboarding skills and basic document formatting techniques using word processing software.
<b>106-120B</b> <b>Literary I - Lab</b> <b>1.00</b>  Learners transcribe literary material with a minimum of 95% accuracy and prepare salable transcripts. PREREQUISITES: 106-124A - Realtime Reporting II Lecture 106-124B - Realtime Reporting II Lab	<b>106-124B</b> <b>Realtime Reporting II Lab</b> <b>1.00</b>  Realtime Reporting II Lab prepares the learner to write multi-syllabic words, punctuation and special symbols, short forms and phrases, prefixes and suffixes, numbers, frequently used words and phrases, contractions using the Z-rule, and the "Flagged Alphabet." Students apply realtime conflict elimination principles and realtime theory and write dictation using realtime theory. PREREQUISITES: 106-161A - Realtime Reporting I Lecture 106-161B - Realtime Reporting I Lab	<b>106-129</b> <b>Jury Charge II</b> <b>2.00</b>  Jury Charge II expands the learner's ability to: write jury charge material dictated at a minimum speed of 200 wpm for five minutes, transcribe at least three timings with a minimum of 95 percent accuracy, write and read back current events dictation, and prepare salable transcripts. PREREQUISITES: 106-128 - Jury Charge I	<b>106-137A</b> <b>Keyboarding Applications</b> <b>2.00</b>  This course is designed to develop basic document formatting techniques using wordprocessing software.
<b>106-121</b> <b>Literary II</b> <b>2.00</b>  Literary II expands the learner's ability to write literary material dictated at a minimum speed of 180 wpm for five minutes, to transcribe at least three timings with a minimum of 95 percent accuracy, and to prepare salable transcripts. PREREQUISITES: 106-120 - Literary I	<b>106-126</b> <b>Keyboarding</b> <b>1.00</b>  Develop touch method skills on the computer keyboard through fingering techniques, speed, and accuracy drills.	<b>106-134</b> <b>Skill Building II</b> <b>1.00</b>  An intermediate course designed to help students who already have basic keyboarding skills improve their speed and accuracy. PREREQUISITES: 106-126 - Keyboarding	<b>106-161</b> <b>Realtime Reporting I</b> <b>5.00</b>  Realtime Reporting I prepares the learner to use machine shorthand to write consonants, vowels, numbers, multi-syllabic words, multi-consonant words, punctuation and special symbols, short forms and phrases, words in their singular and plural forms, and prefixes and suffixes.
<b>106-124</b> <b>Realtime Reporting II</b> <b>5.00</b>  Realtime Reporting II prepares the learner to write multi-syllabic words, punctuation and special symbols, short forms and phrases, prefixes and suffixes, numbers, frequently used words and phrases, contractions using the Z-rule, and the "Flagged Alphabet," while applying realtime conflict elimination principles, applying realtime theory, and writing dictation using a realtime theory. PREREQUISITES: 106-161A - Realtime Reporting I Lecture 106-161B - Realtime Reporting I Lab	<b>106-127</b> <b>Skill Building I</b> <b>1.00</b>  A beginning course designed to help students who already have basic keyboarding skills improve their speed and	<b>106-135</b> <b>Skill Building III</b> <b>1.00</b>  An advanced course designed to help students who already have basic keyboarding skills improve their speed and accuracy. PREREQUISITES: 106-126 - Keyboarding	<b>106-161A</b> <b>Realtime Reporting I Lecture</b> <b>4.00</b>  Realtime Reporting I Lecture prepares the learner to use machine shorthand to write consonants, vowels, numbers, multi-syllabic words, multi-consonant words, punctuation and special symbols, short forms and phrases, words in their singular and plural forms, and prefixes and suffixes.
			<b>106-161B</b> <b>Realtime Reporting I Lab</b> <b>1.00</b>  Realtime Reporting I Lab prepares the learner to use machine shorthand to write consonants, vowels, numbers, multi-syllabic words, multi-consonant words, punctuation and special symbols, short

# Course Descriptions

forms and phrases, words in their singular and plural forms, and prefixes and suffixes. COREQUISITES: 106-161A - Realtime Reporting I Lecture

**106-173**  
**Judicial Reporting Procedures 3.00**

Judicial Reporting Procedures introduces the learner to judicial reporting procedures for which reporters are responsible in the courtroom, deposition, and realtime reporting environments, including preparing salable transcripts, researching legal citations, and developing professional development plans. PREREQUISITES: 106-132

**106-178**  
**Business Proofreading and Editing 2.00**

This course is designed to improve total effectiveness in written communication by providing a comprehensive review of the rules governing business communications. The current edition of the Gregg Reference Manual will be used in this course. In addition, the course provides tips for developing and strengthening good proofreading skills.

**106-184**  
**Word Processing II 3.00**

This class covers the specialized features of word processing software at an intermediate level and an understanding of the computer equipment being used. Students develop expertise in the creation of business documents through the use of operational and text-editing features such as document merges, newspaper and parallel columns, keyboard merges, graphics, and desktop publishing features. Proofreading and language skills will be developed

through the production of business documents. PREREQUISITES: 106-189 - Word Processing I

**106-189**  
**Word Processing I 3.00**

This course covers the basic features of a word processing software package and an understanding of the equipment being used. Students will learn to create, format, edit, and print business documents. Proofreading will be developed through the production of business documents that have been transcribed from recorded voice dictation. PREREQUISITES: 106-137 - Keyboarding Applications

**106-190**  
**Administrative Office Procedures 3.00**

This course will develop professional skills and attitudes needed in today's global business environment. Topics include making ethical decisions, working independently and as a team member, and managing time. Telecommunications, mail processing, travel arrangements and conferences, public relations, and ergonomics will be included. PREREQUISITES: 106-012 - Spreadsheet/DB for Business I or 106-138

**106-191**  
**Introduction to Desktop Publishing 3.00**

Students will apply graphic design concepts to produce desktop publishing projects. In so doing, they will understand the three components of desktop publishing: input, composition, and output. Using scanners and importing text from other programs are also covered.

**106-199**  
**Web Pages for the Office 2.00**

This is an entry level course for the office systems technology professional who wishes to modify, publish, and maintain a web site. This course will focus on what the Internet is and how it is used in a business environment. Web publishing software will be used for: revising and publishing web pages and web sites; using lists, hyperlinks, images, and the task list; creating tables and frames in web pages; using advanced editing and publishing features; and incorporating forms and using appropriate forms handling. To be successful, the student must have an understanding of any one of the Windows 95/98/ME/XP operating systems and file management.

**106-370**  
**Medical Transcription I 4.00**

Structured to help students become skilled in translating physician's dictated reports into final written form acceptable for use in the patient's medical record. COREQUISITES: 106-178 - Business Proofreading and Editing 501-101 - Medical Terminology 509-302 - Human Body in Health & Disease

**106-371**  
**Medical Transcription II 4.00**

Students increase and sharpen skills in transcribing medical reports. Includes working with foreign accents. PREREQUISITES: 106-370 - Medical Transcription I

**106-373**  
**Medical Transcription Functions 3.00**

Introduces the response of the body to interruptions in normal functioning as with

injury and disease. Diagnostic measures and treatment modalities associated with pathophysiology, clinical laboratory and pharmacology will be identified. Professional and ethical conduct will be emphasized. PREREQUISITES: 106-370 - Medical Transcription I 509-302 - Human Body in Health & Disease

**106-374**  
**Medical Transcription Externship 1.00**

The externship will be done in an affiliated hospital or medical clinic. Opportunity to put into practice the skill mastered in the academic setting will be provided. Supervision, guidance and evaluation will be completed by the externship site and Gateway Technical College staff.

**106-384**  
**Word Processing Applied 3.00**

Introduces the basic concept and operation of word processing software package and an understanding of the equipment being used. Some of the operations included in this course are storing and retrieving, formatting, editing and printing documents. The class will provide applications using multiple-page, merged and tabulated documents, and file management. PREREQUISITES: 106-001 - Computer Applications or 106-178 - Business Proofreading and Editing

**106-392**  
**Office Field Study 1.00**

This course provides the student with the opportunity to observe basic office procedures and personnel on a job site. The student will be responsible for making arrangements for two four-hour observations and one eight-hour job shadowing experience. Students will be expected to report orally and in writing on their

observations and shadowing experience.  
**PREREQUISITES:** 106-137 - Keyboarding Applications  
**COREQUISITES:** 106-119 - Professional Development

**107-003  
 Network+ Exam Prep 1.00**

This course will prepare an individual for the Network+ certification exam. It is intended for individuals who have completed the CCNA classes (107-135 Data Communications, 107-162 Routing Principles, 107-167 Switching Basics, and 107-168 WAN Technologies) or have a background in network installation, troubleshooting, and maintenance.

**107-009  
 A+ Essentials Review Class 1.00**

This course will prepare an individual for the A+ Essentials Certification Exam. This is the first of two exams that must be passed for an individual to achieve the A+ certification. This class is intended for individuals who have completed coursework in basic computer support or have a background in PC troubleshooting. The focus of this class is the fundamentals of: personal computer components, laptop and portable devices, operating systems, printers and scanners, networks, security, safety and environmental issues, and communication and professionalism. This class will consist of lectures on the essential material for this exam and will not provide class time to perform labs. All students will be required to purchase a book and a certification test bank (self-test software).

**107-010  
 A+ 602 Review Class 1.00**

This course will prepare an individual for the A+ 602 Certification Exam. This is the second of two exams for an individual to achieve A+ certification. This class is intended for individuals who have passed the A+ Essentials exam and have completed coursework in computer support or have a background in PC troubleshooting. The focus of this class is the advanced topics of: personal computer components, laptop and portable devices, operating systems, printers and scanners, networks, security, safety and environmental issues, and communication and professionalism. This class will consist of lectures on the essential material for this exam and will not provide class time to perform labs. All students will be required to purchase a book and a certification test bank (self-test software).

**107-011  
 IT in Business 3.00**

This course is a basic introduction to Information Technology (IT) and how it impacts our lives. It will focus on how IT professionals implement industry tools and applications throughout businesses. Students will learn proper terminology as well as industry trends and concepts.

**107-013  
 IT Job Search Skills 1.00**

Learn how to start your IT job search! Students will develop a job search plan and prepare a professional job search portfolio. Different job search tools will be utilized in order to assist the student in finding the best job for them. Current job searching trends and interviewing techniques will be discussed and applied. **PREREQUISITES:** 150-114 - Network Concepts - CCNA1

**107-177  
 IT Project Management 4.00**

Focus will be on project management from the information systems professional perspective while keeping a customer-based orientation and business focus. Cooperative team-based business strategies will be stressed. Students will develop written and oral communications, as necessary, to complete the steps within the project management process. Project management software will be utilized, within all phases of the systems development as the students progress through a team-based project simulation. **PREREQUISITES:** 154-113 - IT Apps Server & Support or 152-131 - Systems Design and Development

**107-193  
 IT Essentials 3.00**

IT Essentials focuses on the relationship between hardware and system software. The course topics include PCs, peripherals, networking, security, troubleshooting, and communication skills. IT Essentials is an introductory course that presents a foundation toward the pursuit of CompTIA A+ certification.

**107-193A  
 Computer Hardware Essentials for Teacher 2.00**

The Computer hardware and software course helps teachers gain greater skills in working with laptops and portable devices, wireless connectivity, security, safety and environmental issues and communication skills. Teachers will gain access to materials that include: course guides, reference guides, PowerPoint presentations, lab materials and activities.

**109-101  
 Hospitality/Principles of 3.00**

Introduction to origin, development, current scope, future outlook of hospitality field. Prepares student to interact with people, social and corporate etiquette addressed.

**109-107  
 Legal Aspects of Hospitality Management 3.00**

Identifies the role of management in avoiding criminal or tortious legal difficulties. Applies legal principles to the development, implementation, and supervision of hospitality-based management programs.

**109-110  
 Rooms Division Management 3.00**

Communications, guest services and housekeeping departments are examined. Management techniques common to all departments include scheduling, inspection and documentation of staff functions. Personal skills necessary for interacting with guests are evaluated.

**109-111  
 Front Office Management 3.00**

Reservations and front office departments are examined. Techniques common to these include guest interaction, reservation taking, registration and yield management. Students become familiar with various types of information and communication systems.

**109-114  
 Managing Services/ Hospitality Industry 3.00**

Students simulate a customer service cycle for hospitality industry businesses. Cycle includes analyzing the customer market,

# Course Descriptions

quality standards; team building; human resources and pro-active problem solving.

**109-136 Lodging Field Experience 1.00**

Observation and some hands-on experience in the front office and housekeeping areas of a lodging property. Time is also spent in at least one other department determined by the student, instructor and property-based supervisor. COREQUISITES: 109-101 - Hospitality/Principles of

**109-137 Hospitality Portfolio 1.00**

Hospitality students will go through the process of developing a personal portfolio that will include samples of their work, letters of reference, a resume, and other pertinent career search and employment information, which can be used during employment interviews. PREREQUISITES: 109-136 - Lodging Field Experience 109-144 - Hospitality Internship

**109-144 Hospitality Internship 3.00**

Students learn and perform duties of at least one position at a hospitality related business. Some examples of eligible businesses are hotels, restaurants, entertainment venues, tourism information centers and convention bureaus. Time is scheduled every other week for sharing insight about the experience with the instructor and other students. PREREQUISITES: 109-110 - Rooms Division Management 109-111 - Front Office Management 109-145 - Conference Center Internship 109-171 - Hospitality Sales and Marketing

**109-145 Conference Center Internship 2.00**

Hands-on experience in operating Gateway Conference Center on Racine Campus. Examine standard and innovative practices in other conference facilities. Team work and self-examination emphasized. First Aid/CPR certification completed in course.

**109-171 Hospitality Sales and Marketing 3.00**

Apply marketing techniques to hospitality industry. Emphasis given to convention and group sales concepts. Preferences and considerations of various market segments are addressed.

**114-101 Personal Financial Planning 3.00**

This course considers finance from the perspective of the individual or family unit. A broad range of topics in personal finance are discussed including: planning and managing your personal finances, making purchasing and credit decisions, insuring assets, investing and controlling your financial future.

**114-102 Corporate Financial Management 3.00**

This course views finance from the perspective of the financial manager. Students will think critically and apply both finance and accounting principles to topics including: forecasting and budgeting, break-even analysis, operating and financial leverage, financing decision techniques, utilizing time, value of money concepts, cost of capital, long-term debt and equity financing, acquisition and merger tactics, and basic financial statement ratio analysis.

**140-102 International Study-German Language 2.00**

This course is designed for students participating in an international exchange with KSII school in Hessen, Germany. Students will be exposed to basic German language skills, cultural information, business etiquette, global business practices, and development of an oral presentation.

**140-103 International Study-China 2.00**

This course is designed for students participating in an international exchange to China. Students will be exposed to basic Chinese language skills, cultural information, business etiquette, global business practices, and development of an oral presentation.

**140-104 International Study-French Language 2.00**

This course is designed for students participating in an international exchange to Canada. Students will be exposed to basic French Canadian language skills, cultural information, business etiquette, global business practices, and development of an oral presentation.

**140-105 International Field Study 3.00**

Provides students with first-hand knowledge of working and studying in their program related area in the international environment. While abroad, students will gain cultural knowledge and understanding of values and behaviors in a different society and workplace. Upon completion of the course,

students will be able to incorporate a global perspective into a comparison of professional and social practices in the US and the country visited. They will share their experiences and findings in a formal presentation.

**140-105A International Field Study Project 2.00**

Provides students with first-hand knowledge of working and studying in their program related area in the international environment. Course includes a project designed by the Study Abroad Leader to enhance the students skills. While abroad, students will gain cultural knowledge and understanding of values and behaviors in a different society and workplace. Upon completion of the course, students will be able to incorporate a global perspective into a comparison of professional and social practices in the US and the country visited. They will share their experiences and findings in a formal presentation.

**140-105C Cultural Elements of Study Abroad 1.00**

Students will become familiar with geography, climate, demographics, conventions, customs, beliefs and safe travel practices of the country they are visiting in preparation for their study abroad experience. While abroad, students will gain cultural knowledge and understanding of values and behaviors in a different society and workplace.

**140-417 Spanish! a Conversar! Level 2 0.30**

This is a non-intimidating and motivating Spanish class that encourages conversation. Flash cards and working with a partner

stimulates an active role where you learn to speak not just learn grammar. Level 2: you will learn the preterite tense and object pronouns and a working vocabulary of 300 words.

**140-418**  
**Spanish! A Conversar! 3B** **0.30**

This is a nonintimidating and motivating Spanish class that encourages conversation. Flash cards and working with a partner stimulates an active role where you learn to speak not just learn grammar. Level 3B: Express your personality and thoughts in Spanish as you learn to use and integrate seven tenses. Build an extensive Spanish vocabulary. This is a continuation of level 3.

**141-101**  
**Chinese for International Travel** **1.00**

Students will learn the fundamentals of a Chinese language spoken in the country they are visiting and become familiar with modes of transportation, currency, and food in preparation for their study abroad experience.

**141-102**  
**French for International Travel** **1.00**

Students will learn the fundamentals of the French language spoken in the country they are visiting and become familiar with modes of transportation, currency, and food in preparation for their study abroad experience.

**141-103**  
**German for International Travel** **1.00**

Students will learn the fundamentals of the German language spoken in the country they are visiting and become familiar with

modes of transportation, currency, and food in preparation for their study abroad experience.

**141-104**  
**Spanish for International Travel** **1.00**

Students will learn the fundamentals of the Spanish language spoken in the country they are visiting and become familiar with modes of transportation, currency, and food in preparation for their study abroad experience.

**141-105**  
**Dutch for International Travel** **1.00**

Students will learn the fundamentals of the Dutch language spoken in the country they are visiting and become familiar with modes of transportation, currency, and food in preparation for their study abroad experience.

**141-106**  
**Culture and Language of Italy** **3.00**

This course is designed as an introduction to the Italian language in which a formal presentation of the proper language and correct grammatical structures will be presented through listening, reading, writing, and speaking in Italian. The course includes cultural studies of Italy including business, art, government, education, geography, music and travel. In addition, learners will examine cultural behaviors essential to engage successfully in Italian business and social settings.

**141-107**  
**Cultural Elements of Study Abroad** **1.00**

Students will become familiar with geography, climate, demographics,

conventions, customs, beliefs and safe travel practices of the country they are visiting in preparation for their study abroad experience. While abroad, students will gain cultural knowledge and understanding of values and behaviors in a different society and workplace.

**141-108**  
**Italian for International Travel** **1.00**

Students will learn the fundamentals of the Italian language spoken in the country they are visiting and become familiar with modes of transportation, currency, and food in preparation for their study abroad experience.

**145-101**  
**Entrepreneurship I** **2.00**

This course provides an opportunity for students to identify and develop a current business start-up in a field of their choice. Identify characteristics necessary for a successful entrepreneur and assess their personal skills, attitudes, education and experience. Explore entrepreneurial opportunities for product/service. Analyze demographics and psychographics of a targeted market. Select a location for business. Determine ownership and financing for business. Plan personnel, including job descriptions. Assess insurance and licensing needs. Create a marketing plan.

**145-102**  
**Entrepreneurship II** **1.00**

Student will develop a complete business plan for a new entrepreneurial endeavor. Develop a formalized business. Critique business plans. Present a business plan.

**145-103**  
**Principles of Small Business Operations** **2.00**

This course covers the fundamentals of business life needed to profitably operate a small business, including site selection, building needs, financing know-how, personnel relations, franchises, and automation.

**145-106**  
**Entrepreneurship 3 - Operations MGMT** **3.00**

This course covers the aspect of effectively managing the resources of a small business. Covering the topics of managing finances, staff, marketing and technology. The student will work on projects that will be focused on their specific business needs and will assist the student in planning how to handle their day to day operations. COREQUISITES: 145-119 - Entrepreneurship

**145-119**  
**Entrepreneurship** **3.00**

Can your idea be turned into a profitable business? Will power and hard work are not enough to guarantee success. You must first determine the feasibility of your idea. Before you quit your job, invest your life savings or dedicate time to complete a business plan, wouldn't it be nice to know whether business ownership is right for you? In this class, you'll examine your business idea from every angle. Not only will it help you make a decision about starting your business, you will discover whether the life of an entrepreneur is right for you.

# Course Descriptions

**145-120  
Business Planning and  
Development 3.00**

Regardless if you need financing or not, a business plan is essential for the entrepreneur to be successful. This course will take a comprehensive look at your prospective business. Looking at key components that will include evaluating and developing your product/service offering, marketing plan, financial plan and growth plan. At the end of class you will develop a business plan for your proposed business. PREREQUISITES: 145-119 - Entrepreneurship

**145-121  
Small Business Ownership 3.00**

This course goes beyond the business plan and students will have the opportunity to start their own business. Students will combine classroom experience with the management of their business. To make this happen students will be assigned a mentor that will help them through the process. The goal of the course is to assist students in implementing their businesses in an ethical and socially responsible manner that ultimately enhances the local business community. COREQUISITES: 145-120

**150-101  
Networking Essentials 1.00**

This course provides an introduction to computer networking. Key topics of discussion include network protocols, sockets, network devices, and network management. This course may only be offered by authorized e-business advanced career education program providers with IBM authorized instructors, software, and hardware. PREREQUISITES: 152-104 - RDBMS & SQL Concepts

**150-103  
Data Communications 3.00**

This course provides classroom and laboratory experience in current and emerging networking technology. This includes, but is not limited to, networking, network technology and protocols, network standards, LANs, WANs, the OSI model, cabling, cabling tools, routers, ethernet, IP addressing, and network standards.

**150-104  
Routing Principles 3.00**

This course provides classroom and lab experience in current and emerging networking technology. It includes, but is not limited to, OSI reference models, LANs, WANs, TCP/IP addresses, routers, router configurations, routing protocols, internetwork open system (IOS) images, and network troubleshooting techniques. Students will become familiar with the use of command protocols that are used when configuring networks and will learn how to troubleshoot a multi-router topology. PREREQUISITES: 150-103 - Data Communications

**150-105  
Network/Web Concepts,  
Introduction to 3.00**

This course will introduce networking and web concepts. Topics will include the internet, OSI model, wireless, security, logical and physical topologies, hacking, and web pages. Individuals will learn real world skills related to employment.

**150-106  
Intrusion Detection Systems 3.00**

Learn the basic concepts and techniques of Intrusion Detection Systems (IDS)

and other network related defense strategies. Students will setup, configure, and monitor an Intrusion Detection System utilizing different leading edge products. Current network defense strategies will be discussed and popular tools will be used. Students will be able to apply the correct IDS and defense strategies for different business goals. PREREQUISITES: 150-194 - Network Security

**150-107  
Scripting 3.00**

Windows Powershell is used in the Microsoft world for administration and management of Windows Clients. This class will introduce IT students to Powershell and how it is used for administering Microsoft networks. Students will develop a sound understanding of administering Windows environments using Powershell and developing scripts using basic programming logic. COREQUISITES: 150-111 - Network Administration - Microsoft

**150-108  
Virtual Technologies 3.00**

Learn the basic concepts and techniques of virtual technologies. Students will setup, configure, and monitor virtual systems utilizing different leading edge products. Current virtual technologies configurations will be discussed and popular tools will be used. Students will be able to apply the correct virtual solution to different business goals.

**150-111  
Network Administration - Microsoft 3.00**

This course is an introduction to basic and intermediate administration tasks in a Windows NT network environment.

**150-112  
Network Administration - Novell 3.00**

Introduction to basic and intermediate administration tasks in a Novell Intra Network network environment. COREQUISITES: 150-105 - Network/Web Concepts, Introduction to

**150-113  
Network Administration - Linux/Unix 4.00**

Advanced administration concepts and applications will be discussed and implemented. Topics include: implementing an enterprise network that incorporates a host system, multimedia, multiple platforms, UNIX, and other advanced network administration tasks.

**150-114  
Network Concepts - CCNA1 3.00**

This course will provide you with more in depth networking concepts. Topics will include the Internet, OSI model, wireless, security, logical and physical topologies, instant messaging, basic router setup and switch configuration, network connectivity, and hardware and software configurations. You will also learn how to create local area networks and wide area networks. Individuals will learn real-world skills related to employment.

**150-121  
Switching Basics & Intermediate  
Routing /LAN Design 3.00**

Students work with a threaded case study, which involves creating/upgrading a LAN. Topics include, but are not limited to: review of the OSI reference model, study of the OSI layer functions, LAN switching, ethernet and virtual LANs, LAN design, IGRP, ACLs, Novel IPX, and network management. Emphasis

is given to the ability to apply learning from previous semesters and to explain how and why a particular strategy is employed. PREREQUISITES: 150-104 - Routing Principles

**150-122**  
**WAN Technologies** **3.00**

Students continue to work with the threaded case study. This includes, but is not limited to, a review of LAN switching, VLANs, LAN design, routing protocols, access lists, WANs, OSI reference models, networking, point to point protocols, ISDN, dial-on-demand routing, frame relay, and network management. Again, emphasis will be on the student's ability to demonstrate and apply learning from previous semesters to a network and explain how and why a particular strategy is employed. PREREQUISITES: 150-121 - Switching Basics & Intermediate Routing /LAN Design

**150-123**  
**Application Server Administration** **3.00**

Learn how to provide administration support for a variety of leading-edge application servers. Different types of application server software will be chosen to match the current trends in industry. Students will have hands-on experience installing, configuring, and supporting these application servers. PREREQUISITES: 150-111 - Network Administration - Microsoft

**150-124**  
**Routing CCNA 2** **3.00**

Provides classroom and lab experience in current and emerging networking technology. Includes the following networking concepts and technologies: OSI reference

model, LANs, WANs, TCP/IP addressing, routers, router configuration, routed and routing protocols, Internetwork Open System (IOS) images and network troubleshooting. Students will become familiar with the use of commands and protocols that are used when configuring networks and will learn how to troubleshoot a multi-router topology. PREREQUISITES: 150-114 - Network Concepts - CCNA1

**150-125**  
**CCNA Security** **4.00**

This course will lead to CCNA Security certification. This course will enhance the student's knowledge of securing Cisco routers and switches and their associated networks. Acquired skills include installation, troubleshooting and monitoring of network devices in order to maintain integrity, confidentiality and availability of data and devices. Develops competency in the technologies that Cisco uses in its security infrastructure. PREREQUISITES: 150-135 - Switching & Wan's - CCNA 3 & 4

**150-126**  
**Network Security Design** **3.00**

This course affords the network security specialist the opportunity to design a secure network in a team environment using the skills learned from the prerequisite classes. The student must demonstrate the ability to design, plan and execute an infrastructure that represents the services offered by a common business or organization. The student will research, design and prepare documents including notes, diagrams, references, and implementation instructions. PREREQUISITES: 150-135 - Switching & Wan's - CCNA 3 & 4

**150-127**  
**Security Laws/Policies** **3.00**

Students will learn about business and/or medical security laws, policies and procedures. This will include interpreting laws and policies as well as learning to write security policies and procedures to protect information, people, and property, while complying with legal and policy requirements. Students will develop an understanding of why certain procedures and policies must be followed in the business or medical field.

**150-128**  
**Voice over Internet Protocol (VoIP)** **4.00**

This course will provide the student with an understanding of converged voice and data networks and also the challenges faced by the various network technologies. The course will provide students with hands on experience in building and configuring an IP Telephony Infrastructure using Cisco Call Manager Express and Cisco VOIP phones. Students will modify the current LAN and WAN to accommodate the various IP Protocols. PREREQUISITES: 150-135 - Switching & Wan's - CCNA 3 & 4

**150-129**  
**Mobile Security** **3.00**

This course focuses on leading-edge industry solutions for mobile technology and related security. Topics will include best practices for connecting and securing mobile devices, updating, recognizing the threats mobile devices pose to organizations, authenticating, encrypting, troubleshooting, theft services and wireless hot spot protection. PREREQUISITES: 150-124 - Routing CCNA 2

**150-131**  
**Network Specialist Internship** **3.00**

Establishes an opportunity for the student to apply training and skills in a business/ industrial/ academic work environment. The student will spend 144 hours at the worksite. Student contracts with the employer and the instructor regarding the work agreement and competencies. Classroom hours will include preparation of job portfolio materials and practicing interview techniques. PREREQUISITES: 150-114 - Network Concepts - CCNA1 107-193 - IT Essentials

**150-132**  
**Active Directory Administration** **3.00**

This course will prepare a network professional to work in a medium to very large computing environment that uses the windows network operating system. Hands-on labs will provide real-life tasks involved in implementing and administering directory services. PREREQUISITES: 150-111 - Network Administration - Microsoft

**150-133**  
**Message Services Administration** **4.00**

Students will learn to install, configure, and maintain a messaging server. This will include, but not be limited to, preparing for deployment, server installation, creation of user accounts, server management, and disaster recovery. PREREQUISITES: 150-111 - Network Administration - Microsoft

**150-134**  
**Web Servers and Security** **3.00**

This class will discuss the current trends and techniques in web server administration. Students will learn how to install, configure, and manage a variety of web server

# Course Descriptions

platforms. Additional topics to be covered include firewalls (both hardware and software) and security. PREREQUISITES: 150-191 - Fundamentals Linux/UNIX 107-193 - IT Essentials

## **150-135 Switching & Wan's - CCNA 3 & 4 4.00**

Continue to grow your networking skills by applying your knowledge from the two previous classes and learning more advanced concepts. New skills that will be explored include: configuring switches, implementing intermediate routing, calculating VLSMs, WAN services, NAT, PAT, configuring DHCP. Hands-on experience will be acquired by applying your knowledge to complete a comprehensive threaded case study. PREREQUISITES: 150-124 - Routing CCNA 2

## **150-136 Server Technologies 3.00**

Learn advanced server technology skills to prepare you to support a production server. These skills include server upgrades, fault tolerance, advanced networking, disaster planning and more. Develop a basic technology plan which includes server management and disaster recovery plans. This class will also prepare you to take the CompTIA's Server+ industry certification exam. PREREQUISITES: 150-105 - Network/Web Concepts, Introduction to 107-193 - IT Essentials

## **150-180 What's in the Cloud? 3.00**

Learn about the IT cloud. This course is designed to teach students the basic concepts and terminology of cloud computing. In addition to learning the

definition of cloud computing, the students will be able to describe the various service delivery options of a cloud computing architecture, and cloud deployment models including private, public and community clouds. Students also learn about the security challenges that cloud deployments experience, and how these are addressed. Current cloud technologies, tools, configurations and trends will be discussed. PREREQUISITES: 150-194 - Network Security

## **150-191 Fundamentals Linux/UNIX 2.00**

The Fundamentals Linux/UNIX course is a very hands-on course. The course will provide students with the necessary knowledge and skills to use a command line interface to create and modify files, manage files and directories, control the user work environment, create users and groups, manage file ownership, permissions, processes and job control, perform file backups and restores as well as manage remote connections. Students will also construct basic Shell Scripts. COREQUISITES: 107-193 - IT Essentials

## **150-192 Administration 1 - Unix 3.00**

The Administration 1 - Unix course provides students with the necessary knowledge and skills to perform essential system administration tasks in the Solaris operating environment, such as installing software, managing file systems, performing system boot procedures, performing user and security administration, managing network printers and system processes, and performing system backups and restores. This course is the second in a two-part series that students take in preparation for the Sun Certified System Administrator for the Solaris Operating Environment,

Part I, exam. PREREQUISITES: 150-191 - Fundamentals Linux/UNIX

## **150-193 Administration 2 - Unix 3.00**

The Administration 2 - Unix course provides students with the necessary knowledge and skills to perform network basics, manage virtual file systems and core dumps, manage storage volumes, control access and configure system messaging, set up naming services, and understand installation procedures. This course is taken in preparation for Part II of the Sun System Administration certification exam. PREREQUISITES: 150-192 - Administration 1 - Unix

## **150-194 Network Security 3.00**

Students will learn how to maintain security in the workplace. Security plans will be created based on, but not limited to, ten key security technologies: access control, network security, management security procedures, systems development security, cryptography, security models, operations security, disaster recovery, laws and ethics, and physical security.

## **150-195 Security Policies and Procedures 3.00**

Students will learn how to develop a security vision statement. These will be simple written security policies and procedures to protect information, people, and property. It will include controlling e-commerce and information systems, while complying with legal and policy requirements. Students will evaluate information systems, assign ownership and responsibilities, and develop an emergency response plan.

PREREQUISITES: 150-194 - Network Security

## **150-196 Security Measures and Hacking Detection 3.00**

Students will learn about the events that occur on network systems from audit trails, network monitoring systems, and intrusion detection systems. Students will develop a system to provide early warning of an information attack. Students will learn how to identify explicit and secure well known and little-known vulnerabilities in various operating systems. Students will explore common weaknesses in router and firewall installations, exposing the ways that are used to circumvent traditional and hardened security filters or firewalls. Protective measures and incident response checklists will be covered. PREREQUISITES: 150-194 - Network Security

## **150-197 Securing Wireless Devices and Networks 3.00**

This introductory course to wireless LANs focuses on the design, planning, implementation, operation, and troubleshooting of wireless LANs. It covers an overview of technologies, security, and design best practices, with particular emphasis on hands on skills, including wireless LAN setup and troubleshooting, 802.11 technologies, products, and solutions, radio technologies, WLAN applications and site surveys, design, installation, configuration, and troubleshooting, WLAN security, and emerging wireless technologies. PREREQUISITES: 150-194 - Network Security

**150-198**  
**Interconnecting Cisco**  
**Network Dev P1** **1.00**

640-822 ICND1: Interconnecting Cisco Networking Devices Part 1, this course focuses on providing the skills and knowledge necessary to install, operate, and troubleshoot a small branch office Enterprise network, including configuring a switch, router, and connecting to a WAN and implementing network security. A student should be able to complete configuration and implementation of a small branch office network under supervision. PREREQUISITES: 150-124 - Routing CCNA 2

**150-199**  
**Interconnecting Cisco**  
**Network Dev P2** **1.00**

640-816 ICND2: Interconnecting Cisco Networking Devices Part 2 this course focuses on providing the skills and knowledge necessary to install, operate, and troubleshoot a small to medium-size branch office Enterprise network, including configuring several switches and routers, connecting to a WAN and implementing network security. PREREQUISITES: 150-135 - Switching & Wan's - CCNA 3 & 4

**152-091**  
**iSeries Application**  
**Integration Tools** **3.00**

Using both theoretical and practical components, students will learn why integration of the enterprise has emerged as a critical issue for organizations in all business sectors striving to maintain competitive advantage. This course will teach the theory and concepts of application integration. Students will use the IBM WebSphere Application Server (WAS),

WebSphere Development Studio, and WebFacing Tool in class projects and lab assignments. PREREQUISITES: 152-141 - Java Programming-IBM iSeries

**152-093**  
**IBM Advanced Java Programming** **3.00**

This course will introduce dynamic web application development using Java Servlets and JSP technologies. Moreover databases in web applications and the Java Database Connectivity (JDBC) API will also be covered. Students will also be learning to program Java Applications using XML (Extensible Markup Language), multithreading, 110, and network programming. Students will be learning to develop N-Tier e-Business applications. PREREQUISITES: 152-141 - Java Programming-IBM iSeries 152-145 - Internet Programming

**152-094**  
**IBM Servers Configuration**  
**and Security** **3.00**

Servers covered will include WebSphere, Apache and ZendServer for IBM servers. Topics included will be installation, configuration and proper security of the servers as well as the IFS file system. PREREQUISITES: 152-149 - IBM i System Administration

**152-104**  
**RDBMS & SQL Concepts** **2.00**

Knowledge of databases is required for any commercial application development. This course begins with an introduction to database systems and treatment of the fundamentals, such as ER modeling, database design, and normalization. Students are also provided with a comprehensive overview of SQL, database

management, and security. This course may only be offered by authorized e-business advanced career education program providers with IBM authorized instructors, software, and hardware.

**152-105**  
**System i Concepts** **2.00**

System i Concepts will provide an overview of the i5 Operating System functions and capabilities. Emphasis will be placed upon utilities intrinsic to the operating system and provide a prelude to the programming environment. Some of the features discussed are file structures, library organization, application development tools, control language commands, and structured query. The course will demonstrate business applications without the use of formal programming languages. The labs will focus on data collection, processing, and reporting. At the end of the course, the learner should be able to access the user support facilities, command prompting, online help, and various commands to organize and manipulate the system. It is the intent of the course to make the learner knowledgeable and comfortable enough with the platform and operating system to focus on the programming languages supported by i5/OS Operating System. COREQUISITES: 107-011 - IT in Business

**152-107**  
**Database Concepts and**  
**Applications** **3.00**

This course covers microcomputer database concepts and applications, including design concepts, creating, querying, updating, reporting, developing menus, and applications. Students will evaluate and integrate an assortment of microcomputer database software. PREREQUISITES: 107-

101 - Microcomputer Operating Systems  
 107-113 - Computer Concepts

**152-109**  
**Scripting Technologies** **3.00**

This course will prepare the student to enhance the functionality of Web pages through the use of scripting techniques. Current best practices on scripting technologies will be utilized.

**152-110**  
**DBA Part 1 - Oracle** **3.00**

This course is designed to give students a firm foundation in basic administration of a large database. In this class, students learn how to install and maintain Oracle Database 11g. Students gain a conceptual understanding of the database architecture and how its components work and interact with one another. Students learn how to create an operational database and properly manage the various structures in an effective and efficient manner including performance monitoring, database security, user management, and backup/recovery techniques. In addition to learning the various commands needed to perform the DBA tasks, the course also provides students with instruction to perform the same DBA tasks using the Graphical User Interface tools. The lesson topics are reinforced with structured hands-on practices.

**152-118**  
**Enterprise Java I** **4.00**

This course first provides an introduction to IBM's new generation application development tool, WebSphere Studio Application Developer (WSAD), and enables the students to gain awareness

# Course Descriptions

and familiarity with the rich set of features available with Application Developer. The scope of this course is on developing and testing of server-side applications that use Servlets and Java Server Pages (JSPs). It enables students to develop Servlets, JSPs, and JavaBeans using IBM Websphere Studio Application Developer (WSAD) and deploy them on IBM WebSphere Application Servers (WAS). This course may only be offered by authorized e-business advanced career education program providers with IBM authorized instructors, software, and hardware.

**152-120**  
**Enterprise Application Development Using XML** **3.00**

XML has become the backbone technology for enterprise data exchange. The usage of XML technology is required for any enterprise application development. This course provides an in-depth coverage of both the conceptual and programming aspects of XML technology. This course may only be offered by authorized e-business advanced career education program providers with IBM authorized instructors, software, and hardware.

**152-121**  
**IBM Project Based Learning II** **2.00**

This project enables students to apply the concepts addressed in this module, namely the development and integration of enterprise-wide applications, in a practical situation. The project requires the application of object oriented analysis and design concepts, database design concepts, J2EE, and XML. Students are required to carry out the project using enterprise computing technologies and IBM tools for e-business application development

and integration. This course may only be offered by authorized e-business advanced career education program providers with IBM authorized instructors, software, and hardware.

**152-122**  
**Computer Programming RPG/IV (ILE)** **3.00**

Business oriented programming language. Topics include: specification forms, logic cycle, RPG structure commands, physical and logical file structures, externally described printer files, table and array processing, joined logical files, multiple physical files, extensive programming and documentation of business related applications. PREREQUISITES: 152-105 - System i Concepts 152-126 - Programming & Database, Introduction to Concepts

**152-124**  
**Computer Programming C** **3.00**

Learn the principles of object oriented programming using C++. Topics include: formatted 1/10 streams, variables, constants, references, functions, decisions, loops, classes, objects, inheritance, memory management, libraries, and error handlers. PREREQUISITES: 152-126 - Programming & Database, Introduction to Concepts

**152-125**  
**Computer Programming RPG/IV (ILE), Adv** **3.00**

Describe and define syntax for constructing online business applications using IBM's High Level Language RPG/400. Competencies learned in RPG/400 are enhanced with additional focus on the following topics: creating sub-file structures, interactive programming techniques, use

of arrays and matrixes, creating and using Help screens, introduction to group update techniques and to DB2 relational database. PREREQUISITES: 152-122 - Computer Programming RPG/IV (ILE)

**152-126**  
**Programming & Database, Introduction to Concepts** **4.00**

This class will introduce students to the structures, logic, and controls of programming techniques and database applications. Students will be able to develop a program that will utilize a database.

**152-127**  
**DBA - Part 2 - Oracle** **3.00**

This Oracle 11g database course takes the student beyond the basic tasks of database administration. The student begins by gaining a much deeper understanding of possibly the most important job of a DBA backup and recovery. The concepts and architecture that support backup and recovery, along with the steps of how to carry it out in various ways and situations, are covered in detail. This includes how to define and test your own backup and recovery scenarios. Also, the student learns how to manage memory effectively and how to perform some performance evaluation and tuning tasks, including using some of the advisors. Flashback technologies, scheduling jobs inside and outside of the database, and controlling system resource usage are also covered. The lesson topics are reinforced with structured hands-on labs. PREREQUISITES: 152-110 - DBA Part 1 - Oracle

**152-128**  
**DBA - Part 3 - Oracle** **3.00**

In this Oracle 11g database course students learn how to use Oracle Database 11g automatic tuning features such as SQL Tuning Advisor, SQL Access Advisor, Automatic Workload Repository and Automatic Database Diagnostic Monitor, and practice these tuning methods. The course focuses on the tuning tasks expected of a DBA: reactive tuning of SQL statements, maintaining SQL statement performance, and tuning the Oracle Database Instance components. Throughout the course, students practice the art of tuning an Oracle Instance through a series of workshops. The methodology is practiced in the workshops rather than taught. PREREQUISITES: 152-110 - DBA Part 1 - Oracle

**152-129**  
**Web Project Management** **2.00**

This course covers the fundamentals of project management for web projects. The course covers the full project management lifecycle, from the basics of getting started (defining the project and scope, prioritizing and estimating features) to developing and deploying the website. In this course the students will work with a business client to design, develop and deploy a website. PREREQUISITES: 152-146 - Databases, Advanced COREQUISITES: 152-188 - PHP Web Programming

**152-130**  
**Database Programming** **3.00**

Students will learn the fundamentals of designing and coding custom database applications on the microcomputer platform. Projects will be completed from beginning to end, including designing the database,

coding and testing of the application, creating proper industry standard documentation, error handling techniques, security, and disaster recovery.

**152-131  
Systems Design and Development 3.00**

Introduction to systems development and design concepts. Survey of business applications and their relationship to computers. Students will develop a business system and its associated documentation. PREREQUISITES: 152-122 - Computer Programming RPG/IV (ILE)

**152-132  
Systems Design and Development II 3.00**

System analysis, information flow-charting techniques, documentation forms analysis and design, formalization and records management. Examples of systems from industry. As a class project, an entire industrial system is designed and implemented. PREREQUISITES: 107-124 107-139;

**152-133  
System i Control Language 2.00**

AS/400 Control Language (CL) commands, functions, and applications are used in a hands-on environment. PREREQUISITES: 152-105 - System i Concepts

**152-138  
Java, Introduction to 3.00**

The course provides an introduction to all core aspects of Java. Students will be provided an overview of Java, Object Oriented programming concepts, GUI components, threading, development tools, error handling, and graphics. Java Language

has become the preferred choice for Application Development, Internet solutions, and e-business solution development. PREREQUISITES: 152-126 - Programming & Database, Introduction to Concepts 152-148 - Web Programming Concepts

**152-139  
RUBY 3.00**

This course introduces the student to Ruby, a popular, open-source, dynamic object-oriented scripting language. Topics will include installing Ruby, an introduction to the Ruby programming language, an overview of the Rails framework, ActiveRecord basics, ActionController coding, Action Views, AJAX and the Web 2.0 Action mailer basics, security, deployment and scaling. Students will produce a very modern web application that can be adapted to many professional web development needs. PREREQUISITES: 152-188 - PHP Web Programming

**152-140  
Web Internship 3.00**

This course establishes an opportunity for the student to apply training and skills in a business/industrial/academic work environment. The student will spend 144 hours at the worksite and contracts with the employer and the instructor regarding the work agreement and competencies. Classroom hours will include preparation of job portfolio materials and practicing interview techniques.

**152-141  
Java Programming-IBM iSeries 3.00**

This course introduces the new learner to the Java programming language, specifically as it relates to the IBM iSeries platform. Specific iSeries subjects covered will include using

WebSphere Development Studio, accessing AS/400 objects from Java, working with AS/400 databases, and building AS/400 graphical applications. PREREQUISITES: 152-105 - System i Concepts 152-126 - Programming & Database, Introduction to Concepts

**152-144  
IT E-Commerce 3.00**

This course describes the basic concepts of an e-commerce web site and applies these concepts to real world applications. Topics will include how to create and market a successful web presence, build a shopping cart, manage security, choose the correct electronic payment systems, market the site through search engine listings and other techniques, and discuss the legal issues surrounding the e-commerce model. PREREQUISITES: 152-146 - Databases, Advanced COREQUISITES: 150-134 - Web Servers and Security

**152-145  
Internet Programming 3.00**

This introduction to web programming will explore a variety of tools used for web page creation. An introduction to client side internet website programming, this course covers HTML, CSS, DHTML, and JavaScript. PREREQUISITES: 152-126 - Programming & Database, Introduction to Concepts

**152-146  
Databases, Advanced 3.00**

This course offers students an introduction to enterprise data server technology. The class covers the concepts of both relational and object relational databases and the powerful SQL programming language. Students are taught to create and maintain

database objects and to store, retrieve, and manipulate data. Demonstrations and hands-on practice reinforce the fundamental concepts. PREREQUISITES: 152-126 - Programming & Database, Introduction to Concepts

**152-147  
IT Web Graphics - Flash 2.00**

This course will teach students basic design principles, such as color theory and layout, as they relate to interface design and interactive graphics creation. Students will use Flash to create graphics, animation, and rollover buttons. Web sites and multimedia will be designed and programmed using action script, which is the builtin programming language in Flash. COREQUISITES: 150-105 - Network/Web Concepts, Introduction to

**152-148  
Web Programming Concepts 3.00**

This course teaches students essential Web page development skills. Students will learn to develop websites using HTML, XHTML and CSS. Students will learn how to write code manually as well as use a GUI authoring tool. Students will also learn to insert images, create hyperlinks, and add tables, forms and frames to web pages. Other topics include validating their code, recognizing the importance of marketing, and implementing fundamental design concepts. Students will learn how to control web resources with client-side web scripts. They will also learn how to analyze elements of a website that will add to its functionality from a client-side perspective.



**152-163**  
**PHP Web Development** **2.00**

This course introduces the student to dynamic web page development using the PHP programming language. Students will learn how PHP works, how to effectively use many of its powerful features, and how to design and build their own PHP web applications. PREREQUISITES: 150-191 - Fundamentals Linux/UNIX 152-148 -Web Programming Concepts

**152-164**  
**Mobile Device Application Programming** **3.00**

This course teaches students to develop applications for mobile platforms. Students will utilize a Software Development Kit (SDK) to develop working applications. PREREQUISITES: 152-126

**152-165**  
**Mobile App Development Apple iOS** **3.00**

This hands-on course introduces software developers to iOS Programming. You will learn how to use tools such as Xcode and Interface Builder to write applications for all iOS devices: iPhone, iPod Touch, and iPad. After reviewing the Objective-C programming language, the course will cover iOS concepts such as tables, persistent storage, views, view controllers, controls and device features such as location, touch and alert handling. PREREQUISITES: 152-124 - Computer Programming C

**152-166**  
**Mobile Application Development Windows** **3.00**

This hands-on training course introduces students to application development for the Windows Phone operating system.

This course requires some knowledge of programming fundamentals, however will teach students programming concepts in the framework of Windows Phone 7 development. Students will be introduced to Windows Phone Application Development environment/tools and fundamental concepts of Windows Phone. Students will also be introduced to Silverlight and XNA Frameworks. Students will also learn about user interface design, execution model, frame and page navigation, themes, isolated storage, launchers and choosers, performance, security, data services, and Windows Phone Marketplace. PREREQUISITES: 152-126 - Programming & Database, Introduction to Concepts

**152-167**  
**IBM Zend Application Programming** **3.00**

Topics covered include techniques for modernizing traditional applications using i5 Toolkit Utilizing DB2 Storage Engine for MySQL. Development techniques necessary for the full PHP application lifecycle using a comprehensive set of editing, debugging, analysis, optimization, database tools and testing. Zend Studio for Eclipse i5 Edition. PREREQUISITES: 152-141 - Java Programming-IBM iSeries

**152-168**  
**IBM and .NET Enterprise Programming** **3.00**

Topics covered include advanced .NET tools for creating front end applications for the IBM i. Additional topics include database access using ADO.NET and ASP.Net, XML, Multithreaded and Parallel Programming. The course will also examine advanced .NET topics like WPF and LINQ. PREREQUISITES: 152-151 - Microcomputer Programming Advanced

**152-169**  
**Intermediate Java** **3.00**

This course provides Web Developers greater depth into the Java programming language utilizing some of the more advanced capabilities. PREREQUISITES: 152-138 - Java, Introduction to

**152-170**  
**IT Web Project Lab I** **4.00**

In this lab course students will apply their knowledge and skills of Visual Basic Programming and HTML to develop project(s) for business clients. This class will provide students with additional lab time to be mentored by instructors and work with their peers on hands-on projects which are designed to further develop their technical competencies in these areas.

**152-171**  
**IT Web Project Lab 2** **5.00**

In this lab course students will apply their knowledge and skills of HTML, CSS, JavaScript, Java, C+, and SQL to develop project(s) for business clients. This class will provide students with additional lab time to be mentored by instructors and work with their peers on hands-on projects which are designed to further develop their technical competencies in these areas.

**152-172**  
**IT Web Project Lab 3** **5.00**

In this lab course students will apply their knowledge and skills of HTML, CSS, JavaScript, PHP, MySQL and Java to develop projects(s) for business clients. This class will provide students with additional lab time to be mentored by instructors and work with their peers on hands-on projects

which are designed to further develop their technical competencies in these areas.

**152-173**  
**IT Web Project Lab 4** **5.00**

In this lab course students will apply their knowledge and skills of HTML, CSS, JavaScript, ASP.NET, and SharePoint Programming to develop project(s) for business clients. This class will provide students with additional lab time to be mentored by instructors and work with their peers on hands-on projects which are designed to further develop their technical competencies in these areas.

**152-174**  
**Java Programming 2** **3.00**

This course focuses on the advanced language features of Java. Topics will include Java servlets, database access with Java Database Connectivity (JDBC), JavaServer Pages and JavaBeans. A portion of the class deals with application design issues in a web environment as well as connecting to a backed database server. Labs and hands-on projects are a required element to this class and provide the student with experience working with the more advanced features of the Java language. PREREQUISITES: 152-184 - Java Programming 1

**152-175**  
**MCSD HTML w JavaScript & CSS Review** **1.00**

This course helps prepare an individual for the MCSD HTML with JavaScript and CSS certification exam. This is the first of four exams that must be passed for an individual to achieve the Microsoft Certified Sharepoint Developer certification. PREREQUISITES: 152-150 - Web Programming 2

# Course Descriptions

**152-176**  
**Adv Prog Sharepoint Solutions 3.00**

In this course students will learn the information needed to implement SharePoint solutions using Enterprise Search, Managed Metadata Service (MMS), Business Connectivity Services (BCS), Enterprise Content Management (ECM), Web Content Management (WCM), Social computing features and SharePoint Apps. This course will help prepare students for exam 70-489. PREREQUISITES: 152-177 - Core Prog Sharepoint Solutions

**152-177**  
**Core Prog Sharepoint Solutions 3.00**

In this course students will cover core skills that are common to almost all SharePoint development activities. Including working with the server-and client-side object models, developing and deploying features, solutions and apps, managing identity and permissions, querying and updating list data, managing taxonomy, using workflow to manage business processes, and customizing the user interface. This course will help prepare students for exam 70-488. PREREQUISITES: 152-178 - Developing ASP.NET Web Apps

**152-178**  
**Developing ASP.NET Web Apps 3.00**

In this course students will learn to use .NET Framework tools and technologies to develop advanced ASP.NET MVC applications. The focus will be on coding activities that improve performance and scalability of Web site applications. ASP.NET MVC will be introduced and compared with Web Forms so that students know when each should/could be used. This course will help prepare students for exam 70-486.

PREREQUISITES: 152-126 - Programming & Database, Introduction to Concepts

**152-179**  
**MSCD ASP.NET MVC Review 1.00**

This course helps prepare an individual for the MSCD ASP.NET MVC Web Applications certification exam. This is the second of four exams that must be passed for an individual to achieve the Microsoft Certified SharePoint Developer certification. PREREQUISITES: 152-178 - Developing ASP.NET Web Apps

**152-180**  
**MCSO Server Advanced Review 1.00**

This course helps prepare an individual for the MCSO Server Advanced Solutions certification exam. This is the last of four exams that must be passed for an individual to achieve the Microsoft Certified SharePoint Developer certification. PREREQUISITES: 152-176 - Adv Prog Sharepoint Solutions

**152-181**  
**MCSO Server Core Review 1.00**

This course helps prepare an individual for the MCSO Server Core Solutions certification exam. This is the third of four exams that must be passed for an individual to achieve the Microsoft Certified SharePoint certification. PREREQUISITES: 152-177 - Core Prog Sharepoint Solutions

**152-182**  
**Web Programming 1 3.00**

This course teaches students essential Web page development skills. Students will build an understanding of how to manage the Application Life Cycle, build the User Interface by Using HTML5, and format the User Interface by Using CSS, code by Using

JavaScript. Other topics include validating HTML and CSS code, recognizing the importance of marketing, and implementing fundamental design concepts.

**152-183**  
**Review MTA 98-375 Exam 1.00**

This focused course helps prepare a student to take the HTML5 Application Development Fundamentals: MTA Exam 98-375. the Microsoft Technology Associate exam focuses on the areas of Managing the Application Life Cycle, building the User Interface by Using HTML5, formatting the User Interface by Using CSS, and Coding by Using JavaScript. PREREQUISITES: 152-182 - Web Programming 1

**152-184**  
**Java Programming 1 3.00**

The course introduces the student to the fundamentals of object-oriented programming using the Java programming language. Students will learn the core aspects of Java including how to write and debug Java code. Labs and hands-on projects are a required element to this class and provide the student with experience working with the Java language. PREREQUISITES: 152-126 - Programming & Database, Introduction to Concepts

**152-185**  
**Advanced PHP 3.00**

This course prepares the student to develop advanced PHP and MySQL web applications. Students will learn advanced techniques for session management, validation, and authentication. Advanced web application features such as shopping carts, content management using Drupal, web forums and connecting to web services

are discussed. PREREQUISITES: 152-188 - PHP Web Programming

**152-186**  
**Mobile Game Programming 3.00**

This class is designed to give students a foundation for writing games on mobile devices. PREREQUISITES: 152-157 - Game Programming I

**152-187**  
**Web Developer/Administrator Orientation 1.00**

Students develop skills to enhance their success in the Gateway Technical College Web Developer/Administrator program and their career. These skills include self-assessment, time management, study skills, learning styles, and stress management. Students research the Web Programming/Administrator field through the Internet, periodicals, and surveys. Students design an academic and career development plan and initiate their ongoing program portfolio.

**152-188**  
**PHP Web Programming 3.00**

This hands-on PHP Web Programming course provides the knowledge necessary to design and develop dynamic, database-driven web pages. Students will learn how to write and debug PHP code, how to effectively use many of its powerful features, and how to design and build their own PHP web applications. Students will design and create a WebDatabase using the popular MySQL DBMS to function as a backend database for their PHP website. PREREQUISITES: 152-182 - Web Programming 1

**152-189  
Graphics Programming with  
Dynamic Elements 3.00**

This advanced course uses the languages and elements introduced in the prerequisite and extend the dynamic interaction and animation of HTML5 and Javascript. Students will use JQuery and Ajax Animator to create animations; use still and video motion to further enrich dynamic websites that could be used for desktop and mobile computing alike. Students will use Web based Object Oriented programming to create interactive projects. PREREQUISITES: 152-190 - Elements of Dynamic Web Design

**152-190  
Elements of Dynamic Web Design 2.00**

This course will introduce students to how to add intuitive, dynamic and animated interaction between their webpages and its visitors. Using HTML5 as a base, we will be using the universal languages of Javascript and Ajax to react to user actions and change webpage structure, content, and appearance. Through this course, we will learn how to dynamically refine design appearance and create content within a medium that is used for both desktop and mobile device computing. PREREQUISITES: 152-182 - Web Programming 1

**152-192  
Integrated Web Applications -  
Macromedia 3.00**

The student will design and develop an integrated web application using a popular WYSIWYG environment. The primary focus will be on site development with an introduction to other components within the environment.

**152-193  
Dynamic Web Applications -  
Macromedia 3.00**

The student will design and develop a dynamic web application using a popular WYSIWYG environment. The focus will be on development of an interactive data driven web site. PREREQUISITES: 152-192 - Integrated Web Applications - Macromedia

**152-194  
SQL Fundamentals - Oracle 3.00**

This course introduces students to the fundamentals of SQL using Oracle Database 11g database technology. In this course students learn the concepts of relational databases and the powerful SQL programming language. This course provides the essential SQL skills that allow developers to write queries against single and multiple tables, manipulate data in tables, and create database objects. The students also learn to use single row functions to customize output, use conversion functions and conditional expressions and use group functions to report aggregated data. Demonstrations and hands-on labs reinforce the fundamental concepts. This course counts towards the Hands-on course requirement for the Oracle Database 11g Administrator Certification.

**154-106  
PC Hardware and Software I 4.00**

Students will learn basic troubleshooting skills and installation and configuration of major microcomputer components, including network interface cards, data storage devices, I/O devices, and memory. Students will also learn how to use the Internet for troubleshooting and upgrading hardware. Exposure to system diagnostics and utility software will round out the course.

PREREQUISITES: 107-101 - Microcomputer Operating Systems

**154-107  
PC Hardware and Software II 3.00**

Students continuing on to PC Hardware and Software II will develop additional troubleshooting skills working on multiple platforms. Advanced configurations and troubleshooting skills will be learned. Students will develop troubleshooting skills with Apple, PC, and notebook computer systems. Students will develop advanced configuration concepts. COREQUISITES: 801-197 - Technical Reporting

**154-108  
IT Help Desk/User Support 3.00**

Introduces the student to the service concepts, skill sets, career paths, and operations of the help desk industry. Help desk concepts are presented from an educational and business application perspective. PREREQUISITES: 154-106 - PC Hardware and Software I COREQUISITES: 150-111 - Network Administration - Microsoft 150-112 - Network Administration - Novell

**154-109  
Computer Support Specialist  
Internship 3.00**

Establishes an opportunity for the student to apply training and skills in a business/ industrial/ academic work environment. The student will spend 144 hours at the worksite. Student contracts with the employer and the instructor regarding the work agreement and competencies. Classroom hours will include preparation of job portfolio materials and practicing interview techniques. COREQUISITES: 154-113 - IT Apps Server

& Support 154-114 - Hardware & Software Support

**154-112  
Data Security & Recovery Support 3.00**

Focus will be on desktop data security, data retention and recovery. Students will be introduced to computer forensics / data recovery tools, local security issues, disaster recovery plans and legal data requirements (i.e. HIPPA requirements, Sarbanes-Oxley Act, etc.). PREREQUISITES: 154-114 - Hardware & Software Support

**154-113  
IT Apps Server & Support 3.00**

Students will learn to resolve operating system and application issues by telephone, remote access, or by visiting an end user's desktop. Students will gain a working knowledge of operating in a workgroup and a client/server environment. NOTE: This course will help prepare the student to take the Microsoft Certified Desktop Technician Exam 70-272. PREREQUISITES: 154-114 - Hardware & Software Support

**154-114  
Hardware & Software Support 3.00**

Students will learn to resolve hardware and software issues in a multiplatform environment. Students will troubleshoot and repair various systems and applications, as well as desktop issues. NOTE: This course will help prepare students to attain certifications if desired. PREREQUISITES: 154-119 - System Software Support 107-193 - IT Essentials

# Course Descriptions

**154-115  
IT Customer Service Support 3.00**

This capstone class broadens the students' customer service skill set. The course continues to build on end user communication methods, both oral and written. Students will be expected to prepare and deliver end user training, create written and online manuals and FAQs (Frequently Asked Questions), and perform the day-to-day duties in a variety of help desk environments. PREREQUISITES: 154-113 - IT Apps Server & Support COREQUISITES: 801-197 - Technical Reporting

**154-116  
Emerging Technologies & Applications 2.00**

Students will research, explore and evaluate new and future hardware and software advancements and trends. Areas to investigate may include contemporary package development applications, collaboration tools, reporting software, and innovative equipment and hardware, as well as new versions of current standards in software and applications. PREREQUISITES: 154-112 - Data Security & Recovery Support 154-113 - IT Apps Server & Support

**154-118  
CSS Skills Implementation & Career Prep 3.00**

This capstone class will provide students with opportunities to apply knowledge and concepts acquired in program coursework. Students will develop proficiency while resolving issues in a simulated, scenario-based environment. In addition to reinforcement of concepts previously covered in the curriculum, the course will include employment seeking skills (resumes, portfolios, interviewing), image

creation and deployment, and remote desktop diagnostics/troubleshooting. PREREQUISITES: 154-112 - Data Security & Recovery Support 154-113 - IT Apps Server & Support COREQUISITES: 801-197 - Technical Reporting

**154-119  
System Software Support 3.00**

Focus will be on the principles of system software and utilities. This course will enable the learner to effectively configure and troubleshoot system software in multiple environments. Students will be introduced to integrated tools within the software and the different methods for interacting with system software. Topics will include Windows command-line, Linux GUI and command-line, emulation/connectivity to other non-PC-based systems and network directory services. COREQUISITES: 154-121 - CSS Program Orientation

**154-120  
Advanced Help Service Desk 3.00**

This capstone class broadens the students' customer service skill set. The course continues to build on end user communication methods, both oral and written. Students will be exposed to Information Technology Infrastructure Library (ITIL) methodology and Help Desk Institute (HDI) best practices. PREREQUISITES: 154-122 - Help Service Desk, Intro

**154-121  
CSS Program Orientation 1.00**

Students will develop skills to enhance their success in the Gateway Technical College Computer Support Specialist program and their career. These skills include self-assessment, time management, study skills,

learning styles, and stress management. Students research the CSS field through the Internet, periodicals, and surveys. Students will design an academic and career development plan and initiate their ongoing program portfolio. PREREQUISITES: 103-142 - Basic Computing

**154-122  
Help Service Desk, Intro 3.00**

This class broadens the students' customer service skill set. The course continues to build on end user communication methods, both oral and written. Students will be expected to prepare and deliver end user training, create written and online manuals and FAQs (Frequently Asked Questions), and perform the day-to-day duties in a variety of help desk environments. PREREQUISITES: 107-193 - IT Essentials

**170-100  
Captioning/CART I Lab 1.00**

Captioning/CART I prepares the learner to: write dictation at 160 wpm; broadcast 10 minutes non-stop; write new punctuation and symbols, new flagged alphabet characters, environmental sounds, web/internet addresses, common proper names, common female and male first names, governmental/ political terms, terms applicable to food, and the names of animals; fingerspell words, increase vocabulary, use terms applicable to criminology, and manage dictionaries.

**170-102  
Captioning/CART II Lab 1.00**

Captioning/CART II Lab prepares the learner to: write dictation at 160 wpm; broadcast 10 minutes non-stop; write new punctuation and symbols, new flagged

alphabet characters, environmental sounds, web/internet addresses, common proper names, common female and male first names, governmental/ political terms, terms applicable to food, and the names of animals; fingerspell words; increase vocabulary; use terms applicable to criminology; and manage dictionaries.

**170-103  
Captioning/CART III Lab 1.00**

Captioning/CART III Lab prepares the learner to: write dictation at 180 wpm; broadcast 30 minute news broadcasts non-stop; write new punctuation and symbols, new flagged alphabet characters, environmental sounds and descriptors, web/internet addresses, meteorological terms, terms used in the fine arts, terms used in literature, scientific terms, and terms used in common world religions; increase vocabulary; finger-spell words; and manage dictionaries.

**182-135  
Principles of Operation Management 2.00**

This course deals with the design of systems to produce goods and services and the operation of these systems. It discusses relationships within the company environment, particularly with marketing and product design. Additional topics include facilities planning, total quality management, cost analysis, project planning, and operations resource management.

**182-137  
Principles of Inventory Control 2.00**

This course deals with essential vocabulary and skills in identifying and applying basic principles of inventory management. Basic methods of planning and controlling

inventory in manufacturing, institutional, distribution, and retail environments are covered. Questions of what to stock are addressed through an examination of current and evolving technologies of inventory management.

**182-150  
Lean Operating Principles and Techniques 1.00**

This course investigates how to improve quality, eliminate waste, reduce manufacturing lead time and inventory, and develop productive customer and supplier relationships. Also discussed are cycle time, kanban, demand-pull, and order push techniques to reduce inventory in an organization's supply chain.

**182-151  
APICS: Enterprise Concepts and Fundamentals 2.00**

This is the first of five courses covering the body of knowledge of the (APICS) American Society for Production and Inventory Control, Certified in Resource Management (CIRM) program. This course introduces the strategies and roles of the cross-functional enterprise, the management concepts of organizational design, and structure of a value driven organization. The four basic functions of quality, human resources, finance, and informational systems will be reviewed.

**182-152  
APICS: Identifying and Creating Demand 2.00**

This is the second of five courses covering the body of knowledge of the American Society for Production and Inventory Control (APICS), Certified in Resource Management

(CIRM) program. This course deals with strategies and tactics which identify, define, and qualify customer wants and needs and how to translate this information into requirements for value-added products and services to be delivered by the organization. Also discussed is how to integrate marketing and sales, increase customer demand, and improve field service, market research, competitive analysis, pricing, and supplier relationships. PREREQUISITES: 182-151 - APICS: Enterprise Concepts and Fundamentals

**182-153  
APICS: Designing Products and Processes 2.00**

This is the third of five courses covering the body of knowledge of the American Society for Production and Inventory Control (APICS), Certified in Resource Management (CIRM). This course converts a customer or market need into a product, process, or service that meets the expectations of both the enterprise and the customer. It also explores the conceptual design process from the identification of need, through the definition of requirements, design creation and development, testing, and the final implementation of the concept. PREREQUISITES: 182-151 - APICS: Enterprise Concepts and Fundamentals COREQUISITES: 182-152 - APICS: Identifying and Creating Demand 182-154 - APICS: Delivering Products and Services

**182-154  
APICS: Delivering Products and Services 2.00**

This course is the fourth of five courses covering the body of knowledge of the American Society for Production and Inventory Control (APICS), Certified in

Resource Management (CIRM) program. The course addresses how to integrate systems, approaches, and strategies to make the transition from concept to product and customer expectations and product delivery. Also discussed is the integration of planning systems for the control of all resources and the business processes of the enterprise required to deliver products and services to customers. PREREQUISITES: 182-151 - APICS: Enterprise Concepts and Fundamentals COREQUISITES: 182-152 - APICS: Identifying and Creating Demand 182-153 - APICS: Designing Products and Processes

**182-155  
APICS: Integrated Enterprise Management 2.00**

This course is the fifth of five courses covering the body of knowledge of the (APICS) American Society for Production and Inventory Control, Certified in Resource Management (CIRM) program. The course explores business strategies and aids in assessing strategic decisions, management practices, and the effects of new technologies to gain a greater understanding of the importance of the team perspective in today's organization. PREREQUISITES: 182-152 - APICS: Identifying and Creating Demand 182-153 - APICS: Designing Products and Processes 182-154 - APICS: Delivering Products and Services

**182-156  
APICS: Strategic Management of Resources, Advanced Concepts 3.00**

In this capstone module, participants explore the relationship of existing and emerging processes and technologies to manufacturing strategy and supply chain related functions. The course addresses

aligning resources with the strategic plan, configuring and integrating operating processes to support the strategic plan, and implementing change. COREQUISITES: 182-161 - Basics of Supply Chain Management 182-162 - Detailed Scheduling & Planning 182-163 - Execution and Control of Operations 182-164 - Master Planning of Resources

**182-160  
Integrated Computer Systems Applications 2.00**

Computerized systems applications planning provides practical uses of a closed loop system. Areas covered will be company bills of material, inventory records, vendor files, material requirements planning, master production schedule, sales order, and costing.

**182-161  
Basics of Supply Chain Management 3.00**

This course explains the basic concepts in managing the flow of materials in a supply chain. In the basics you get a complete overview of material flow, from internal and external suppliers and to and from your organization. It is designed to be preparation for APICS certification.

**182-162  
Detailed Scheduling & Planning 3.00**

This course centers on the various techniques for material and capacity scheduling. This course includes demand planning (MRP), capacity requirements planning (CRP), inventory management practices, and procurement practices. It is designed to be preparation for APICS certification.

# Course Descriptions

**182-163**  
**Execution and Control of Operations** **3.00**

The focus is on areas of prioritizing and sequencing work, executing work plans, and implementing plans and feedback on performance. The course explains techniques for scheduling and controlling production processes and continuous improvement plans. It is designed to be preparation for APICS certification.

**182-164**  
**Master Planning of Resources** **3.00**

This course explores processes used to develop sales and operations plans and identify and assess demand and forecasting requirements. The course focuses on the importance of producing achievable master schedules that are considering resource constraints. It is designed as preparation for APICS certification.

**182-165**  
**Strategic Management of Resources** **2.00**

Students explore the relationship of existing and emerging processes and technologies to manufacturing. This course addresses three main topics: aligning resources with the strategic plan, configuring and integrating, and implementing change in competitive markets. It is designed as preparation for APICS certification.

**182-166**  
**Business Purchasing International** **3.00**

A study of advanced purchasing activities. The course covers global suppliers, traffic, financial commitments, systems and procedures, and administrative functions. The course will provide a broader base

of purchasing knowledge necessary for a purchasing career. CPM points are available upon completion of the course. Studies focus on the areas of: International Purchasing/ISO9000 and Certification in Purchasing Management Exam preparation.

**182-167**  
**Materials Management Internship** **3.00**

Students perform production and inventory planning applications, work in an on-the-job training situation, in companies that are working with the latest systems. The purpose is to allow the student the opportunity to apply knowledge learned in the classroom to the real world. Student employee, employer, and internship instructor interact to accomplish the training experience. The student must have fourth-semester standing or equivalent before taking this course.

**182-170**  
**Materials Requirement Planning/ Capacity Requirement Planning** **3.00**

Principles, concepts and other aspects of materials requirements planning and capacity requirements planning. The interrelationship between these key functions in the organizational materials control system will be emphasized. Topics include systems design and specifications, time planning, lot sizing, safety stock, priority planning, measurement of capacity, resource requirements planning, scheduling practices, and capacity control.

**182-170A**  
**Materials Requirement Plan/CRT A** **2.00**

This course concentrates on topics covered in American Production and Inventory Society, CPIM Exam Master Planning of

Resources. Participants explore processes used to develop sales and operations plans, as well as a master schedule. Topics include: demand management, sales and operations planning, master scheduling, and measuring the business plan.

**182-170B**  
**Materials Requirement Plan/CRT B** **1.00**

The principles and concepts of materials requirements and capacity requirements planning will be taught. Other topics includes systems design, systems specifications, time planning, lot sizing, and safety stock.

**182-171**  
**Master Planning** **2.00**

Topics include production and priority planning, master production scheduling policies and procedures, performance measurements, forecasting, made to order/ made to stock approaches, and process inventory.

**182-172**  
**Supply Chain Management Basics** **2.00**

Determine the EOQ under varying cost and demand situations. Compute safety stock needs, order quantity. Revise an MRP plan for different production needs. Manage and integrate a distribution requirements system into planning. APICS certification preparation is stressed.

**182-173**  
**Advanced Sourcing Principles** **3.00**

Advanced Sourcing Principles in an introduction to the world of professional purchasing. Basic issues are studied, including investment recovery, legal aspects of purchasing, international purchasing,

public purchasing, the acquisition of capital assets, the acquisition of services, and special emphasis on purchasing negotiation. In addition, major changes taking place in the world in continuous improvement, customer satisfaction, and management philosophy are incorporated in the course. CPM points available.

**182-174**  
**Transportation Management** **3.00**

Fundamentals of the administration aspects of transportation operations; hands-on exercises in freight classification, tariffs, carrier pricing schedules, rates, bills of lading, contracts, and freight claims. CPM points are available upon completion of the course.

**182-175**  
**Negotiation & Value Analysis** **2.00**

This course is designed to provide students with content and skills associated with successful negotiation. These skills are important aids in dealing with suppliers, salespeople, purchasers, government officials, and others. The course uses case studies, role playing, software, database searching, and lecture/discussion to provide a hands-on approach. CPM points available.

**182-176**  
**Export/Import** **3.00**

This course is an overview of international trade; entering the overseas market, distribution, payment, letters of credit, shipping documents, importing, custom house brokers, government requirements, and sources of assistance and information are covered. CPM points available.

**182-177  
Transportation Negotiation  
and Pricing 3.00**

An examination of freight classification rules, rates, and regulations in all modes of transportation. Students study modern computerized tariffs, learn to negotiate contracts, including favorable rates and value-added services, gain knowledge in how deregulation has changed transportation pricing in all modes.

**182-178  
Freight Claims 3.00**

A study of freight loss, damage claims, and adjustments of claims in various modes of transportation, including carrier and shipper liability, transportation documents, and claim filing procedures, along with legal implications.

**182-179  
Distribution Resource Planning 3.00**

Distribution Resource Planning (D.R.P.) is a method of distribution management. It is the application of the M.R.P. principals and techniques to distribution inventories. Emphasis is placed on scheduling rather than ordering and on people rather than techniques. Its methods will improve customer service, reduce inventory, reduce distribution costs and obsolescence by a substantial amount.

**182-180  
Customer Service Management 2.00**

Students will learn to develop professional telephone etiquette, explore customer service work environments, identify and analyze customer service failures, resolve problems cost effectively, and set complaint

policies and communication techniques to handle complaining customers.

**182-181  
Certified Supply Chain  
Management 3.00**

The Certified Supply Chain Management course is designed to examine SupplyChain Management Fundamentals; Building Competitive Operations, Planning, and Logistics Systems; Managing Customer and Supplier Relationships; and Using Information Technology to Enable Supply Chain Management. Topics include creating and executing supply chain strategies that meet customer needs and increase profits; learning how successful supply chain management adds value to your organization; understanding customer loyalty and the lifetime value of a customer; understanding the role of data and information technology in support of the supply chain; and exploring the IT infrastructure as it relates to supply chain management systems.

**194-100  
Real Estate Precertification for  
Sales License 4.00**

Students will learn the fundamentals of real estate and the principles of real estate law. Required preparation for State License Exam. Text required.

**196-100  
Accelerated Learning 1.00**

In Accelerated Learning, the learner will acquire the skills and tools necessary to be successful in an accelerated learning environment.

**196-102  
Accelerated Teaching-  
Train the Trainers 2.00**

This course will train the trainers on accelerated learning/teaching techniques.

**196-103  
Role of HR in Organizations 1.00**

This course is designed to give supervisors/managers a basic understanding of how their role supports the human resource management function. In this module HRM, participants will become familiar with operational HR versus strategic HR as well as understanding the functions of each.

**196-104  
Job Analysis, Descriptions, and  
Specifications 1.00**

This module emphasizes the basic building blocks of HR management: job analysis, job descriptions, and job specifications.

**196-105  
Recruiting, Interviewing,  
and Selecting 1.00**

This HR module emphasizes the staffing process, including recruiting, interviewing, selecting, and retaining. A strategic approach to recruiting and retaining has become more important as competitive pressures have shifted in many types of business. Regardless of organizational size, participants need to understand the staffing decisions that need to be made.

**196-106  
Performance Review  
and Recognition 1.00**

Formal performance appraisals are a vital management tool used to evaluate

and improve employee performance and motivation. Fair and carefully prepared appraisals help link compensation to performance, identify employees for promotion and training, help employees set and accomplish career objectives, and, in some cases, lay groundwork for removing unsatisfactory performers. In this course, students will learn how to use the performance appraisal in all of these situations.

**196-107  
Constructive Feedback  
and Discipline 1.00**

This course builds supervisory skill in delivering objective, honest feedback relevant and useful to the employee. Disciplining involves taking prompt action to correct unproductive actions and behaviors and for replacing punitive measures with a high-priority action plan for getting the employee back on track. Students will learn and practice the strategies of giving constructive feedback and administering discipline to employees.

**196-108  
Wage and Benefit Compensation 1.00**

It is important for supervisors to have a good understanding of the state and federal laws governing pay standards. Topics covered in this course include child labor laws and related issues of hours worked and pay. Defining benefits beyond vacation time, health insurance, holiday pay, to COBRA, HIPAA, ERISA, FICA, and unemployment insurance will also be covered. Students will learn the concept of compensation and how organizations determine pay scales for various jobs.

# Course Descriptions

**196-109 Occupational Health and Safety 1.00**

The Occupational Safety and Health Act (OSHA) requires employers to provide a safe and healthy workplace. This course emphasizes that every supervisor, manager, and other employee must give safety their daily commitment and attention. In this course, students will learn the provisions of OSHA and the "right to know" law and the key elements of emergency planning and response.

**196-113 Introduction to Industrial Management 1.00**

The student will examine a variety of manufacturing scenarios. In teams, they will examine the five basic management functions and research possible solutions.

**196-115 Marketing/Physical Distribution 3.00**

Fundamentals of warehousing, recordkeeping, dual warehousing and organizations of distribution versus materials management concept. Essential elements of material handling, basic phases of an efficient plant layout. Methods and equipment used in horizontal, vertical and overhead movement of materials. Problems in product protection, packaging and storage are analyzed.

**196-117 Issues with a Diverse Workforce 1.00**

Worldwide demographic trends show that employers who learn to take full advantage of diversity are most likely to prosper, while those who allow biased or stereotyped thinking to influence management decisions are undermining their chances or survival.

The purpose of this course is to make all participants sensitive to the issues of diversity, teach methods that promote positive attitudes toward diversity in the workplace, define diversity, and learn how to overcome roadblocks and obstacles to promoting diversity.

**196-118 Working in Union Organizations 1.00**

In this course, participants will learn about the history of unionizing, the federal and state laws that address unionizing activities, and especially about what managers and supervisors can and cannot do during a unionizing effort. Topics include private and public sector labor relations, the role of unions, and how to maintain a positive relationship in a union organization.

**196-119 Human Resource Management Capstone Project 2.00**

This course is the concluding one for the Human Resource Management Certificate and cannot be taken until all previous courses have been completed or satisfied. In this course, students are required to identify a project that demonstrates his/her understanding of the human resource function. An original research project related to the participant's current employer or a research paper reflecting the latest research on one of the topics covered in previous human resource management courses is required.

**196-123 Problem Solving and Decision Making 2.00**

Practice sessions on problems faced on the job, problem resolution using various

techniques learned in the classroom. Topics: marginal analysis; psychological decision making; cause and effect; intuition; experimental, past experience and follow-the-leader approaches, group problem-solving techniques.

**196-129 Management Orientation 1.00**

This course will introduce the student to the skills necessary to be successful in the Supervisory Management and Business Management programs. The language and navigation of the accelerated learning model will be explored. The student will demonstrate the use of Blackboard and Mind Mapping as well as the software used in the program such as Microsoft Word, PowerPoint and use of the internet as a research tool. This is the first course a student should take within the Supervisory Management and Business management programs.

**196-134 Legal Issues for Supervisors 3.00**

In Legal Issues for Supervisors, the learner applies the skills and tools necessary for a supervisor to effectively function in today's legal work environment. Each learner will demonstrate the application of legal practices in both union and nonunion environments, the analysis of the impact of U.S. employment laws, the impact of the global economy, and the appeal process. Students will also learn to deal with harassment and privacy issues and summarize legal issues facing contemporary supervisors.

**196-135 Business Ethics, Concepts, & Principles 2.00**

This course emphasizes the practical application of ethics and values to decision making in a business setting. Participants will experience lesson topics in the importance of values in the workplace, learning about your own personal values, using values to make decisions, applying ethics and values to the workplace, and creating a code of ethics.

**196-136 Safety in the Workplace 3.00**

In Safety in the Workplace, the learner applies the skills and tools necessary to provide a safe and secure work environment. Each learner will demonstrate the application of safety awareness, federal/state/local compliance, incident investigation and documentation, human relations techniques, safety orientation, inspections, risk analysis, issues of workplace violence, substance abuse, health hazards, first aid and CPR, fire and electrical safety, emergency preparedness, and liaison with external agencies.

**196-137 Certified Service Specialist 3.00**

This course validates the students interpersonal and business skills by providing the necessary work to prepare for the certification exam to earn the Certified Service Specialist Certification. The exam is the final exam for the course and certifies the student's ability to work with customers. This course explores the skills of communications, policies and procedure manuals, record keeping and evaluating performance. Focus on teams and proper functioning roles within teams

in a company setting that values ethical actions in the workplace and respect for the customer and fellow workers. Problem solving, interpersonal relationships and sales and marketing skills will be honed throughout this course. Successful students will be able to represent themselves with a national certification that illustrates their understanding of the skills necessary for the service and manufacturing industry as an employee or employer.

**196-138  
Management for Supervisors  
Capstone 2.00**

This course is designed to be the capstone of the Supervisory Management Program. This course validates the student's management skills by providing the necessary work to prepare for the certification exam to earn the Certified Service Manager Certification. The exam is the final exam for the course and certifies the student's ability to work with customers and team members. This course explores the knowledge of business management, project management and employee management. The student's mastery of skills in managing employees and teams are exemplified in change management, conflict resolution and leadership skills. Students will explore basic financial reports and employee management. Successful students will be able to represent themselves with a national certification that illustrates their understanding of the skills necessary for management in the service and manufacturing industries as a supervisor.

**196-139  
Finance for Non-Financial  
Managers 2.00**

Provides an understanding of budget concepts as applied to the supervisor. Includes basic terminology, how to organize and plan a budget, and how to use the budget as a management tool.

**196-140  
Law for the Manager 1.00**

Designed to give supervisors a general overview of laws pertinent to their position in a business organization. Although this course is introductory, it places considerable emphasis on governmental laws and regulations which are difficult to deal with due to their complexity and number. Topics covered include: laws and the legal process; contract law; employee and employment laws; and other government regulations pertinent to the manager in a business organization.

**196-141  
Business Concepts for Supervisors 1.00**

Gives supervisors an understanding and working knowledge of modern business concepts and practices. Topics include: understanding economic system; knowing your business, organizational information system and financial management system, improving quality and productivity; and dealing with our technologically changing world.

**196-142  
Communication Skills for  
Supervisors 1.00**

Focus on supervisor's situations and problems involving communication. Topics covered include: basics of

communication; resolving communication problems; developing oral and listening skills; improving writing and reading skills; effectiveness in meetings and presentations; and communicating effectively with employees and within organizations. The major goal of this course is to equip each supervisor with communication skills and concepts that will make them more effective as managers.

**196-143  
Interpersonal Relationships 1.00**

Deals with how a supervisor can increase effectiveness in interpersonal relationships. Topics covered include: interpersonal effectiveness for supervisors; improvement of skills in dealing with people; handling conflict; dealing with groups; working with supervisors, peers and subordinates; and building effective interpersonal relationships. Emphasis is on building the skills necessary to deal with people.

**196-144  
New Employees/Challenge of 1.00**

Teaches the supervisor how to work with new employees to get them started properly and to develop a positive orientation toward the job. Topics covered include: the new employee and you; planning a position; orienting the new employee; teaching and training; building performance; and special situations involving the new employee.

**196-145  
Developing Employee Performance 1.00**

Teaches supervisors how to develop and maintain employee performance. Topics include: the nature of work performance; developing systems for managing performance; planning and setting

performance goals; monitoring employee performance; and reviewing, appraising and maintaining good performance.

**196-146  
Supervisory Counseling 1.00**

Stresses day-to-day informal counseling which typically involves the supervisor. Topics include the basics of counseling and interviewing for supervisors; counseling on work performance; dealing with personal problems; coaching; a day-to-day guidance and counseling technique; and, selection and departure interviewing.

**196-147  
Leadership Techniques 1.00**

Devoted to the leadership behaviors, characteristics and traits which are necessary for a supervisor to get things done through people. Topics covered include: effective leadership and decision making, choosing the best leadership style, and being a leader through following organizational leader examples.

**196-148  
Stress Management 1.00**

Teaches supervisors how to identify, deal with and channel everyday stress constructively. Topics covered include: Type A versus Type B behavior patterns; causes of stress; personal and organizational stress; and conflict resolution techniques.

**196-149  
Time Management 1.00**

Teaches supervisors how to manage their time to become more effective on the job. Topics covered include: motivating through effective planning; job analysis; identification

# Course Descriptions

and elimination of time wasters; effective delegation of work; and how to set measurable, achievable goals.

**196-153  
Supervisory Management  
Orientation 1.00**

This course will introduce the student to the skills necessary to be successful in the Supervisory Management program. The language and navigation of the accelerated learning model will be explored. The student will demonstrate the use of Blackboard and Mind Mapping as well as the programs used in the program such as Microsoft Word, PowerPoint and use of the internet as a research tool. This is the first course a student should take within the Supervisory Management program.

**196-155  
Certified Customer Service 1.00**

This course helps students build the necessary skills needed to be successful in working with internal and external customers. Students learn how to work with customers in a professional manner by providing world class customer service. The course prepares them for the ETA-I Customer Service Specialist (CSS) exam.

**196-160  
Cost and Price Analysis 3.00**

A course that will provide the student with experience in basic blueprint reading, manufacturing methods, time study procedures, bill of material determinations and estimated procedures. Knowledge in this course should enable the student to assist the purchasing analyst in doing the basic price research. PREREQUISITES: 809-195 - Economics

**196-162  
Operations Management/  
Value Analysis 3.00**

Studies the broad spectrum of centralized management in a production setting. Studies techniques to identify unnecessary costs before, during and after production of a product. American Production Inventory Control Society certification training for JIT plus systems and technologies are also part of the course.

**196-164  
Personal Skills for Supervisors 3.00**

In Personal Skills for Supervisors, the learner applies the skills and tools necessary to deal with the time management, stress, and related challenges to a supervisor. Each learner will demonstrate the application of time management techniques, personal planning, continuous learning, valuing rights and responsibilities of others, effective communication, assertiveness, and dealing effectively with stress.

**196-164A  
Time Management 1.00**

Teaches supervisors how to manage their time to become more effective on the job. Topics covered include: motivating through effective planning; job analysis; identification and elimination of time wasters; effective delegation of work; and how to set measurable, achievable goals.

**196-164B  
Stress Management 1.00**

Teaches supervisors how to identify, deal with and channel everyday stress constructively. Topics covered include: Type A versus Type B behavior patterns; causes

of stress; personal and organizational stress; and conflict resolution techniques.

**196-164C  
Assertive Behavior 1.00**

In Assertive Behavior, the learner will apply the skills and tools necessary to be an effective supervisor in today's modern organization. Each learner will demonstrate assertiveness skills in communication with employees and others. In addition, the learners will demonstrate that the rights and responsibilities of others are valued.

**196-168  
Organizational Development 3.00**

In Organizational Development, the learner applies the skills and tools necessary to deal with organizational behavior and change. Each learner will demonstrate the application of the impacts of globalization on an organization, dealing with organizational culture, change and future challenges affecting the total organization, organizational decision making, vision, goals, performance management, and planning, and the role of organizational structure.

**196-169  
Diversity and Change Management 3.00**

In Diversity and Change Management, the learner applies the skills and tools necessary to implement and maintain a diverse work environment which values change. Each learner will demonstrate the application of: assessing the current extent of diversity in the workplace; analyzing the effect of perceptions, attitudes, biases, and organizational culture on diversity; dealing with barriers; changing management strategies, processes, and reactions;

measuring progress; and celebrating success.

**196-169A  
Change Management 1.00**

In Change Management, the learner will analyze the change process and reactions to change and develop a change management strategy to create a motivating environment during times of change while measuring progress and celebrating success.

**196-169B  
Diversity Management 2.00**

In Diversity Management, the learner will assess the current extent of diversity in the workplace, analyze the effect of perceptions, attitudes, biases, and organization culture on diversity. Each learner will develop the skills and strategies necessary to implement and maintain a diverse work environment while measuring progress and celebrating success.

**196-181  
GTEA/Gateway District Contract  
Interpretation 2.00**

This certification course teaches the GTEA/Gateway contract. Participants will learn the history and interpretation of contract language.

**196-188  
Project Management 3.00**

In Project Management, the learner applies the skills and tools necessary to design, implement, and evaluate formal projects. Each learner will: demonstrate the application of the role of project management; develop a project proposal; use relevant software; work with project

teams; sequence tasks; chart progress; and deal with variations, budgets, resources, implementation, and assessment.

**196-189**  
**Team Building and Problem Solving 3.00**

In Team Building and Problem Solving, the learner applies the skills and tools necessary to facilitate problem solving in a team environment. Each learner will demonstrate the application of the benefits and challenges of group work, necessary roles in a team, stages of team development, different approaches to problem solving, consensus, a systematic process of problem definition, data acquisition, analysis, the development of alternative solutions, solution implementation, and evaluation.

**196-190**  
**Leadership Development 3.00**

In Leadership Development, the learner applies the skills and tools necessary to fulfill his/her role as a modern leader. Each learner will demonstrate the application of: evaluating leadership effectiveness and organization requirements, using individual and group motivation strategies, implementing mission and goals, observing ethical behavior, developing personal leadership style and adaptation, understanding the impact of power, facilitating employee development, coaching, managing change, and resolving conflict effectively.

**196-191**  
**Supervision 3.00**

In Supervision, the learner applies the skills and tools necessary to perform the functions of a frontline leader. Each learner

will demonstrate the application of strategies and transition to a contemporary supervisory role, including day-to-day operations, analysis, delegation, controlling, staffing, leadership, problem-solving, team skills, motivation, and training.

**196-192**  
**Managing for Quality 3.00**

This course is designed to examine the role of the supervisor in assisting an organization to produce a quality product or service. The meaning and benefits of quality, the cost of quality, how to interact with customers, and problem solving tools for continuous improvement will be covered.

**196-193**  
**Human Resource Management 3.00**

This course establishes a foundation for development of employee effectiveness by focusing on the supervisor's role in understanding, communicating, and implementing organizational policies. The organizational topics covered include: employee hiring, training, performance management, contract compliance, employment law, employee assistance programs, and related topics that affect the supervisor's work group.

**196-199**  
**Supervision Applications/Advanced 3.00**

An advanced applications course in supervisory techniques: the course includes group participation, negotiation strategies, situational management decision making. There is a research component in this course. PREREQUISITES: 196-191 - Supervision COREQUISITES: 196-140 - Law for the Manager

**196-199A**  
**Supervision Applications Advanced/  
 Project Introduction 1.00**

Project Introduction: Overview of whole course content, grading. Discussion of guidelines for writing major research papers. Generate ideas for project topics, write project statement. Discussion of criteria for project selection. PREREQUISITES: 196-191 - Supervision COREQUISITES: 196-140 - Law for the Manager

**196-199B**  
**Supervision Applications Advanced/  
 Project Presentation 1.00**

Project presentation: Each student will present a synopsis of their research effort, indicating major considerations in project selections, proposal development, information gatherings, applications of supervisory principles, revisions and conclusions. PREREQUISITES: 196-191 - Supervision COREQUISITES: 196-140 - Law for the Manager

**196-199C**  
**Supervision Applications Advanced/  
 Project Maintenance 1.00**

Project Maintenance: Review of progress and discussion of common problems. Identification of information gathering problems and other research related problems. Individual counseling sessions with instructor. Discuss presentation options.

**196-199D**  
**Supervision Applications Advanced/  
 Project Proposal 0.50**

Project Proposal: A written summary of what you propose to do in your project.

Sharing of project ideas and suggestions for clarification/ amplification of research methodology. Review of plan of action for project completion.

**203-120**  
**Field Photography 2.00**

This course will explore the use of cameras, lenses and digital media as they apply to newsworthy photography as well as location and nature photography. Students will learn how to get good shots in fast paced environments like sporting events. Special tools used in field of photography will be examined. PREREQUISITES: 204-107 - Digital Photography/ Introduction to

**203-121**  
**Studio Lighting and Tools 2.00**

Students will examine lighting, drapes, reflectors and special studio photography tools, for a variety of subjects. Shutter and aperture settings will be explained. Commercial photography, portraiture, food photography and macro photography will be explored. Students will plan photo shoots and coordinate all aspects of a shoot. PREREQUISITES: 204-107 - Digital Photography/ Introduction to

**204-100**  
**Design Concepts 4.00**

Students will study typography, color, and layout. Studies include symmetrical and symmetrical compositions, grid method systems, designing with type, image, and the graphic functions of typography. Students will develop an understanding of the basic design principles, including space, line, form, color, and the use of letterforms and design contrasts to convey a visual message. Students will be introduced to target markets

# Course Descriptions

and designing for an audience. Projects will be completed with various design media while exploring the importance of working in stages from research to rough idea to finished design work.

**204-103  
Layout and Typography 3.00**

Students will execute layouts and layout lettering on a Macintosh computer. Emphasis is placed on the study of structure and form of type as well as basic concepts in layout, and how the two can work together to create designs. COREQUISITES: 204-123 - Introduction to Design and Publishing on The Mac

**204-105  
Computer Illustration/Drawing Techniques 3.00**

Students will use a variety of illustrations and graphic design software for illustration, technical drawing, composition, and implementation of created art into page layout. Students will also incorporate traditional drawing skills and scanning methods into their digital illustrations and drawings. Composition, digital color specification and current graphic design trends will be emphasized.

**204-107  
Digital Photography/ Introduction to 3.00**

This course explores the use of digital photography, desktop scanning and photo manipulation software in the creation of photo compositions and support materials for graphic design.

**204-109  
Graphic Design Professional Practices 3.00**

This course introduces students to the workflow of graphic design, from the initial conceptualization of a project to the printed piece. Attention to customer needs, development of presentation materials, and cost estimates are discussed. Students will become familiar with graphic design, job titles and duties. Stress management and time management are incorporated into the course. Legal and ethical issues, as well as those involving copyrights and trademarks, are discussed. PREREQUISITES: 204-126 - Design & Publishing

**204-111  
Graphic Design Problems/ Advanced 3.00**

Covers advanced skills in graphic design. Students will produce documents integrating various software programs. Emphasis will be placed on solving advanced visual problems, creating portfolio quality pieces, and participating in classroom critique. PREREQUISITES: 204-119 - Advanced Design & Publishing

**204-112  
Print Production Methods 3.00**

Students will explore and apply concepts in print production from planning a project through completion of the project. Students will develop problem-solving techniques to guide them through the process of organizing a complete project, including analysis of the project components, color (ink) selections, paper selection, photography, die-cutting, foil stamping, embossing and binding. Reproduction issues including timelines, budgets, ink properties, paper properties and design

mechanics will be applied to individual projects.

**204-113  
Digital Prepress Fundamentals 2.00**

Students will study basic concepts in traditional and digital prepress fundamentals used in preparing graphic design artwork for printing and publishing. Students will become familiar with the complete graphic design creation process: from initial concept and planning through final printed collateral. Camera-ready layouts, simple color separated, trapped and/or press ready is the main focus of this course. History and discussion of traditional and digital prepress equipment and techniques will be emphasized. Customer needs, technical. COREQUISITES: 204-107 - Digital Photography/ Introduction to 204-119 - Advanced Design & Publishing

**204-114  
Internship and Portfolio Development 3.00**

Students will focus on an area of interest in their graphic design field through a match with to an appropriate employer. This match can be directed by the student or the instructor. The student will meet with the instructor to discuss job issues and assist in the development of a student portfolio. Career exploration and networking will also be discussed with a focus on the professional development of the individual student.

**204-115  
Digital Photography/Advanced 3.00**

Course focuses on advanced use of photomanipulation software including special effects and new applications. In

addition, the basics of good photography and its use in the various areas of graphic design will be studied. PREREQUISITES: 204-107 - Digital Photography/ Introduction to

**204-116  
Webpage Design for Graphic Designers 3.00**

Students will examine the appearance and structure of existing web pages using a browser, and learn how to design their own home pages. An emphasis will be placed on using current web page design software to create pleasing on-line documents that follow the principles of good graphic design and marketing. PREREQUISITES: 204-107 - Digital Photography/ Introduction to

**204-117  
Drawing Principles 2.00**

A study of basic traditional and technical drawing skills, emphasizing sound craftsmanship and technical skill. This introductory class includes the study of perspective, proportion, construction of solid forms, and light and shade. A variety of traditional drawing media will be introduced.

**204-118  
2D Design 3.00**

This course guides students through an organized experimentation of traditional art media. Problem solving, visual organization, and basic composition will be emphasized. This course will include a study of perspective, light, shade, and color theory. Current design and color trends will be explored.

**204-119**  
**Advanced Design & Publishing** 3.00

This course includes advanced layout, advanced illustration, scanning, and importing of text and graphics. File formats and their compatibility with various software will be explained. Information on cropping, spot color separation, and four color process separation will also be offered. PREREQUISITES: 106-191 - Introduction to Desktop Publishing 204-105 - Computer Illustration/Drawing Techniques

**204-120**  
**Multimedia Survey** 3.00

This course offers tips on presentation design and the use of multimedia in the graphic design field. Students will learn how to create slides, overheads, and on screen presentations. Transition effects and the use of sound and video will be incorporated into on screen presentations. Students will create an interactive portfolio and at least on presentation for class demonstration.

**204-121**  
**Advanced Illustration** 2.00

This advanced course explores advanced features used in illustration software, including layers, special effects, and drawing in 3D. Three dimensional software will be introduced and used to create original illustrations. 3D, drawing, and painting software will be combined to create complex illustrations. PREREQUISITES: 204-105 - Computer Illustration/Drawing Techniques 204-107 - Digital Photography/ Introduction to

**204-122**  
**Commercial Art Aesthetics** 1.00

Critical assessment of visual communications is the focus of this course. The learner will explore: design processes, design strategy, critical evaluation of design, successful design, and visual logic. Students will apply critical thinking strategies and evaluate commercial art.

**204-123**  
**Introduction to Design and / Publishing on The Mac** 2.00

This beginning course on the Macintosh computer introduces essential computer concepts, terminology, and file management. An introduction to various software applications is included.

**204-124**  
**Introduction to Design and Publishing on The Personal Computer** 3.00

This course examines the basic concepts in desktop publishing and focuses on the principles, equipment, software, and skills used in the publishing process. The basic concepts to be covered are page layout and design and combining text and graphics using desktop publishing software.

**204-125**  
**Illustration Media Concepts** 3.00

This course guides students through an organized experimentation of traditional art media to create images that convey specific messages to viewers. A variety of media is used, including: watercolor, acrylic, oil, pastel, inks, dyes, collage, and computers. Good composition, visual organization, development of creative thinking, and visual problem solving will be emphasized. This course will include a study of perspective,

light, shade, and color theory. Current design and color trends will be explored.

**204-126**  
**Design & Publishing** 3.00

This course examines the basic concepts of graphic design page layout and focuses on the principles, equipment, software, and workflow used in the design and publishing process. Students will integrate basic marketing principles in their design strategies and will apply graphic design concepts to produce page layout projects. In so doing, they will understand the primary components of design and publishing: research, strategy, input, composition, project development, and output. Using scanners and importing text from other programs are also covered. PREREQUISITES: 204-100 - Design Concepts

**204-127**  
**Digital Prepress Fundamentals** 3.00

Students will study basic concepts in digital prepress fundamentals used in preparing graphic design artwork for printing and publishing. They will become familiar with the complete graphic design creation process: from initial concept and planning through to the final printed collateral. Simple color separations and trapped and/or press ready artwork is the main focus of this course. History and discussion of traditional and digital prepress equipment and techniques will be introduced. Customer needs, technical accuracy, prepress troubleshooting issues, timelines, and proofing will be included. COREQUISITES: 204-126 - Design & Publishing

**204-128**  
**Business of Photography** 2.00

This course deals with all aspects of running a photography business, including studio management, copyright law, career options, contracts, proposals, marketing and self-promotion. Student will create a digital portfolio and examine several successful photography businesses. History of photography from film to digital will be studied.

**204-129**  
**Field Photography** 2.00

This course will explore the use of cameras, lenses and digital media as they apply to newsworthy photography as well as location and nature photography. Students will learn how to get good shots in fast paced environments like sporting events. Special tools used in field photography will be examined.

**204-130**  
**Studio Lighting and Tools** 2.00

Students will examine lighting, drapes, reflectors and special studio photography tools, for a variety of subjects. Shutter and aperture settings will be explained. Commercial photography, portraiture, food photography and macro photography will be explored. Students will plan photo shoots and coordinate all aspects of a shoot.

**204-131**  
**Introduction to Web Graphics** 3.00

Students will be introduced to principles of good design, as it applies to web design. Color theory, layout, typography, and copyright issues will be discussed. Site maps and storyboards will be developed and graphic optimization issues will be

# Course Descriptions

addressed. PREREQUISITES: 107-188 - Internet Concepts & Technologies

**204-132  
Advanced Web Graphics 3.00**

Students will explore advanced design techniques and interface design. Students will create animation and explore video and sound as it applies to web development. Uploading and testing web pages will be emphasized. PREREQUISITES: 204-131 - Introduction to Web Graphics

**204-133  
IT Web Graphics 3.00**

Students will examine design theory and techniques as they apply to interface design. Creation of low resolution bitmapped graphics as well as vector graphics will be explored. Web pages will be constructed using a WYSIWYG page creation tool. Students will create animation and explore video and sound as it applies to web development. Uploading and testing web pages will be emphasized.

**204-134  
Problems in Graphic Design,  
Advanced 3.00**

Students will produce advanced level projects in graphic design. Various software applications will be integrated in the creation process. Emphasis will be placed on solving advanced visual problems, creating portfolio quality pieces, participating in classroom critiques and final production options and issues. Students will develop problem-solving techniques to guide them through the process of organizing a complete project, including research, marketing, conceptualization, full design development, file preparation, analysis of the

project components, color (ink) selections, paper selection, photography, and various finishing techniques. Reproduction issues including timelines, budgets, ink properties, paper properties and design mechanics will be applied to individual projects. PREREQUISITES: 204-126 - Design & Publishing

**204-135  
Design Concepts, Advanced 4.00**

This course examines advanced concepts of graphic design page layout and focuses on the marketing, software, and workflow used in the design and publishing process. Students will use layout, illustration, and photomanipulation software at and advanced level to create portfolio quality projects. Color usage, scanning principles, file formats, importing of text and graphics will be reinforced. All projects will be properly prepared for commercial production. Students will integrate research, and marketing principles in their design strategies. Projects will be presented and critiqued through written and oral presentation processes. PREREQUISITES: 204-126 - Design & Publishing

**204-136  
Digital Media Analysis and Design 3.00**

This course explores design and analysis of social media. Students will create, analyze, and evaluate digital media. A range of analytical and conceptual models will be applied to the creative design process.

**204-137  
Digital Media Development &  
Application 3.00**

This course examines development and application of social media. Students will

analyze the digital media development process, evaluate potential applications, and use multimedia tools and software to develop a social media presence.

**204-138  
Social Media Campaigns 3.00**

This course examines digital technologies businesses and non-profit agencies can use to create and deploy a social media campaign. Using the tools, techniques and strategies of social media campaigns, students will design digital experiences to communicate and interact with customers and to promote a brand and engage customers.

**204-139  
Multimedia Strategies for  
Social Media 3.00**

This course explores social media and its relationship to multimedia digital content. Students will create visual content for distribution through social media.

**204-142  
Applied Exit Strategies/  
Display Graphics 3.00**

Students will focus on resume, portfolio development and interview practices. Career exploration, professional practices, networking will also be discussed. All aspects of this course will lend to the professional development of the individual student. In order to showcase and promote the accomplishments of the student, a graduate design display requirement will be met at the Annual Student Design Show. COREQUISITES: 204-109 - Graphic Design Professional Practices

**204-143  
Illustration, Advanced Illustration,  
Advanced 3.00**

This course will teach students the basics of using 3D software for design. Animation, modeling and storyboarding will be examined, as well as the technical aspects and vocabulary involved in mastering 3D software. 3D computer graphics will be compared to 2D. Practical applications for 3D software will be examined as they relate to graphic design, web design, and game design.

**204-144  
Multimedia PC/Macintosh  
Introduction 3.00**

Design presentations using presentation software on IBM compatible computer. Learn to create outlines and speaker notes for presentations, slides, overheads and on-screen presentations. Transition effects, use of sound and video. Students responsible to create at least one presentation for class demonstration.

**204-145  
Authoring Tools - Flash 2.00**

Students will use authoring tools to create an interactive program that can function independently. They will also explore multimedia creations in existence for education and training. Students will explore a variety of multimedia products and creations being designed today including presentation, entertainment, publishing, advertising, and training. Experience with authoring programs and technology on both the Macintosh and the PC will be emphasized.

**204-146**  
**Video Editing** **2.00**

Students will learn how to capture sound and video through the use of recording devices and a digital camera and camcorder. These elements will be incorporated into presentations and programs. An emphasis will be placed on the various file formats available to import and export files across multimedia programs.

**204-147**  
**Multimedia Graphics and Animation** **2.00**

Exploration and creation of graphics for use in multimedia is the focus of this course. Digital camera will be used to capture photographic images. Animation and morphing software will be explored as well as 3-D programs and special effects programs. An emphasis will be placed on experiencing a wide variety of alternative media. Instruction will be given on the use of online services to access the vast expanse of quickly changing information as well as downloading graphics, video, and sound for use in projects.

**204-148**  
**Multimedia Applications** **3.00**

This advanced course challenges students to bring all skills learned in previous certificate courses together to create professional quality multimedia tools and applications. Project planning, troubleshooting, and distribution options will be discussed. PREREQUISITES: 204-144 - Multimedia PC/Macintosh Introduction 204-145 - Authoring Tools - Flash 204-146 - Video Editing 204-147 - Multimedia Graphics and Animation

**204-149**  
**Advanced Webpage Design** **3.00**

Students will build upon the knowledge learned from the prerequisite course. Emphasis will be placed on current webpage editors, while adding video and animation elements to their own website. The course will include current topics in web development. Principles of web design for development and posting of websites will be emphasized. PREREQUISITES: 204-116 - Webpage Design for Graphic Designers

**204-150**  
**Content Management Systems, Intro to** **3.00**

This CMS (Content Management System) course will introduce students to the workflow of how to build Web sites and online applications using open source. Students will examine best practices for building, deploying and maintaining applications for user-centered Web sites.

**204-162**  
**Graphics for Gaming** **1.00**

This course is designed to introduce programming students to graphics and graphics creation. Specifically, the graphics used in computer games will be discussed.

**204-180**  
**Graphic Communications Orientation** **1.00**

This course presents skills for students to enhance their success in the Gateway Technical College Graphic Communications Program and their career. These skills include self assessment, time management, study skills, learning styles, and stress management. Students research the

graphics field through the Internet, periodicals, and surveys. Students design an graphic communication academic and career development plan and initiate their ongoing program portfolio.

**206-101**  
**Traditional Animation and History** **2.00**

This course will explore traditional art forms such as storyboarding, traditional life drawing, and cartooning. The history of animation will be studied as well, and students will study the animation production process from storyboard to production.

**206-102**  
**2D Computer Animation Techniques (flash)** **2.00**

Basic 2D animation techniques and software will be explored through multiple projects. Applications for 2D animation such as web, gaming, and movie making will be explored. The design process from concept to creation and production will be explored. Students will create several portfolio quality animations.

**206-103**  
**Character Design** **3.00**

This unique course will begin with the study of traditional character creation and development. Students will practice drawing skills necessary to create an original character. Traditional media will then be used to create a 3D clay model of a character. That character will then be photographed at multiple angles and modeled using 3D software. The class will conclude with the addition of an appropriate soundtrack and animation of the character.

**206-104**  
**Advanced Animation and Motion Graphics** **2.00**

This course will explore advanced aspects of the new technology available to create digital effects and animation. Students will learn After Effects to create successful motion graphics projects, as well as Maya advanced animation techniques. Additional animation and 3D software will be explored.

**303-325**  
**Nutrition/Principles of** **1.00**

Focuses on the normal and therapeutic nutritional needs of the family. Areas of interest are: the well balanced diet, food fads and fallacies, energy nutrients, energy metabolism, vitamins and minerals.

**304-101**  
**History of Furniture and Decorative Arts** **3.00**

Emphasizes the history of decorative arts from ancient times through the technological era especially concerning furnishings and interiors. Interior design careers, projects and markets are surveyed.

**304-102**  
**Interior Design, Principles of** **3.00**

This course will provide the beginning college student with the fundamentals of interior design. Students will explore the elements and principles of art and design as they are applied to interior environments. The learner will also gain knowledge of basic concepts in the design process, human ecology, space planning, selecting finishes and furnishings, and design communications techniques.

# Course Descriptions

**304-103  
AutoCAD, Introduction to 3.00**

This course is a basic introduction to AutoCAD used in the field of Interior Design. Applications covered include equipment overview, Windows, computer technology and use of the current version of AutoCAD. Major emphasis will be on learning AutoCAD commands, menus and input needed to generate 2D drawings used in the industry. Emphasizes mastering a basic level of proficiency. PREREQUISITES: 304-115 - Drafting for Interiors

**304-103A  
AutoCAD for Interiors I/  
Intro Lecture 1.00**

An introductory level course to familiarize the student with basic commands in 2-D drafting. Most drawing commands and controls of AutoCAD will be taught.

**304-103B  
AutoCAD for Interiors II/  
Introduction To 1.00**

An introductory level course to familiarize the student with basic commands in 2-D drafting. Drawing commands, include geometric constructions and object snap will be taught. Students will learn editing commands and methods to change drawings. PREREQUISITES: 304-103A - AutoCAD for Interiors I/Intro Lecture

**304-103C  
AutoCAD for Interiors III/  
Introduction To 1.00**

An introductory level course to familiarize the student with basic commands in 2-D drafting. The student will review drawing commands, apply basic dimensions, and text on a drawing. Methods of plotting a

drawing will be taught. PREREQUISITES: 304-103B - AutoCAD for Interiors II/ Introduction To

**304-104  
Advanced Technology for  
Interior Design 3.00**

Students will learn to integrate technology across different phases of design and learn to produce well composed and thorough designs quickly and efficiently. The student will develop a strategic overview of the design process, examining how different software can be best woven into the traditional phases of an interior design project and demonstrate tactics within those programs to optimize workflow and interoperability. By lining the standard phases and processes of an interior design project with the capabilities of the software most commonly used student will produce enhanced deliverables such as presentations, renderings and construction drawings. PREREQUISITES: 607-170 - AutoCAD for Construction Sciences 614-150 - 3D CAD:Building information Model 304-116 - Kitchen and Bathroom Planning

**304-106  
Interior Lighting/Fundamentals of 3.00**

Students will study interior lighting application, assess client and site requirements, use compositional techniques for lighting design, evaluate construction constraints, select light sources and fixtures, and communicate the design through drawings and documents. PREREQUISITES: 304-115 -Drafting for Interiors 304-140 - Rendering Techniques

**304-115  
Drafting for Interiors 3.00**

The student will design floor plans through the fundamental knowledge and use of drafting equipment. This course will build the student's understanding of floor plans, site plans, site selection, architectural styles and concepts, layout and final design drawings.

**304-116  
Kitchen and Bathroom Planning 3.00**

Students will develop the skills of planning and remodeling kitchens and bathrooms through drawing methods using the National Kitchen and Bath Association (NKBA) standards. The course provides client-oriented design problems and includes planning using standard components and fixtures. PREREQUISITES: 607-170 - AutoCAD for Construction Sciences

**304-117  
Color Theory 3.00**

Selection and arrangement of tasteful color schemes are designed through sample use. Expressive use of color; color conditioning problems. Psychology and physics of color are explored as these relate to designing and decorating.

**304-118  
Art History 3.00**

Briefly traces western arts from prehistoric through contemporary art. Surveys Oriental and American art. Delves into the complexities of artwork, created by females. Makes application to the field of Interior Design, including art media, techniques, art terms, current artists, replica art methods, and resources for original and duplicate artworks. CD-ROM, internet computer programs, slides, videos, and prints provide

visual sources as well as a beautifully illustrated textbook with thousands of examples. This class is culturally and educationally expanding for the student.

**304-119  
Portfolio Presentation 1.00**

The learner gains knowledge and assistance in preparing a professional portfolio. The course culminates with a portfolio show presenting the student's design achievement, body of work, and skills to the professional community.

**304-120  
Interior Design Internship & Sales 3.00**

This includes, planning, presentation, handling resistance, and closing the sale. The internship portion introduces students to entry level interior design work experiences and career planning skills. Students will select an area of interest in the design field where they will complete 72 hours of internship. PREREQUISITES: 304-156 - Residential Design Studio COREQUISITES: 304-152 - Commercial Design Studio

**304-122  
Textiles 3.00**

Students will study the selection, use and care of textile fabrics. All fibers, natural and synthetic, will be dealt with. The most recent technology in construction, finishes and color application will be emphasized.

**304-123  
Business of Interior Design 3.00**

Design business procedures and resources used by designers to expedite dealing with clients, vendors, and contractors. Surveys methods of billing, business forms and types

of businesses. Introduces students to the various types of window treatments and methods for fabrication, measurement and charging.

**304-127  
Interior Space Plan and Design 3.00**

Interior Space Planning and Design combines the study of human factors, codes, regulations, standards, and universal design, the selection and specification of; furniture, fixtures, equipment, and accessories in planning interior spaces. Projects include the steps of the design process, from space planning through design finalization, for both residential and commercial spaces. Students will explore various problem solving methods, working in a design team, and presenting design solutions as if working with actual clients. PREREQUISITES: 304-101 - History of Furniture and Decorative Arts 304-102 - Interior Design, Principles of 304-103 - AutoCAD, Introduction to 304-117 - Color Theory 304-122 - Textiles 304-133 - Sustainable Materials and Finishes 304-140 - Rendering Techniques 304-115 - Drafting for Interiors

**304-133  
Sustainable Materials and Finishes 3.00**

Focuses on identifying building materials to satisfy the design criteria. Students will learn appropriate selection of: materials, finishes, and products based on their properties, sustainability, performance criteria, installation methods, and maintenance requirements. Additionally insight will be gained in procedures within the construction industry from; organizational culture, to the interior designer's role, responsibilities and documentation of specifications.

**304-140  
Rendering Techniques 3.00**

This course will introduce students to a broad range of drawing and rendering methods. Floor plan, elevation, one, two, and three point perspectives are used in illustration of furnishings and room interiors are discussed. Surveys use of neutral and color media, shadow, texture, signage and presentation techniques.

**304-146  
Interior Project Design, Advanced 3.00**

The design of large scale spaces is studied with actual experience in designing residential and commercial interiors. The course includes an exploration of complete solutions based on client criteria, space analysis, codes, standards, budget factors, selection and specification of; materials, finishes, fixtures, and products. The student will use computer technologies in the design and presentation process. PREREQUISITES: 304-101 - History of Furniture and Decorative Arts 304-102 - Interior Design, Principles of 304-103 - AutoCAD, Introduction to 304-106 - Interior Lighting/Fundamentals of 304-115 - Drafting for Interiors 304-116 - Kitchen and Bathroom Planning 304-117 - Color Theory 304-122 - Textiles 304-123 - Business of Interior Design 304-127 - Interior Space Plan and Design 304-133 - Sustainable Materials and Finishes 304-140 - Rendering Techniques COREQUISITES: 304-147 104-114 - Selling Techniques

**304-148  
Interior Design Internship II 2.00**

The internship course will allow students to gain meaningful work experience in a specialty area of the interior design industry. Students will work in an environment that

will allow them to apply their skills and knowledge at an actual business. This course requires a minimum of 144 hours of occupational / internship work, and students will submit the required agreement forms prior to commencing the work experience. Additionally, students seeking credit hours that comply with NKBA and or NCIDQ must have the written permission of the course instructor and provide the necessary documentation to verify the internship supervisor's professional credentials prior to beginning the internship work.

**304-149  
Kitchen and Bath Planning, Advanced 3.00**

Through this studio, Kitchen and Bath Design students gain advanced approaches to their design solutions, including knowledge of NKBA Planning Guidelines for the kitchen, and NKBA Access Planning Guidelines used in universal design projects. Building upon skills learned in K&B Design, students improve their ability to develop and present a design concept and theme. In addition, a focus will be learning to produce professional working documents of advanced kitchen projects as they progress from inception to completion. PREREQUISITES: 304-116 - Kitchen and Bathroom Planning

**304-150  
Architectural History 3.00**

This course is introductory and assumes no background in architecture or architectural history. It seeks to provide students with an introduction to basic foundations for studying architecture.

**304-151  
Center for Sust. Living: Practicum 1.00**

With the creation of a "green room" Interior Design students will apply what they have learned in 304-155 Principles of Interior Design and 304-133 Sustainable Materials and Finishes. Students will confirm that preliminary space plans and design concepts are safe, functional, aesthetically appropriate, and meet all public health, safety and welfare requirements, and sustainability guidelines. Students will be performing and learning all duties related to the installation of materials, finishes and products. The space will feature re-purposed furnishings and finishes that promote sustainable and green design. PREREQUISITES: 304-133 - Sustainable Materials and Finishes

**304-152  
Commercial Design Studio 3.00**

Examine the elements of commercial interiors through the study of human factors, codes, space planning guides with ADA and universal design, the selection and specification of; furniture, fixtures, equipment, comprehensive lighting solutions, and accessories in planning interior spaces. Projects include the steps of the design process, from programming through design finalization, for commercial spaces such as retail, restaurants, and health care facilities. Students will explore various problem solving methods, working in a design team, and presenting design solutions as if working with actual clients. PREREQUISITES: 304-101 - History of Furniture and Decorative Arts 304-104 - Advanced Technology for Interior Design 304-116 - Kitchen and Bathroom Planning 304-122 - Textiles 304-123 - Business of Interior Design 304-133 - Sustainable Materials and Finishes 304-153 - Drafting and Rendering Techniques 304-154 - Interior

# Course Descriptions

Elements of Building Const. 304-155  
 - Principles of Interior Design 304-156 - Residential Design Studio 304-151 - Center for Sust. Living: Practicum 304-150 - Architectural History 607-170 - AutoCAD for Construction Sciences COREQUISITES: 104-114 - Selling Techniques

**304-153**  
**Drafting and Rendering Techniques 4.00**

This course covers the development of 2D and 3-D graphic communication techniques in developing preliminary and final interior design presentations to convey design concepts and solutions. Student will use manual and digital methods to produce construction plans, perspective drawings, axonometric, presentation boards, 3-D models, freehand sketching and rendered drawings using pen and ink, color media. PREREQUISITES: 607-170 - AutoCAD for Construction Sciences COREQUISITES: 614-150 - 3D CAD:Building information Model

**304-154**  
**Interior Elements of Building Const. 2.00**

This course will introduce students to basic components of building construction, including structural components and mechanical systems. Students will learn basic structural principles applied to the building environment through a review of common building methods including timber frame, masonry, and steel construction for residential and commercial projects as applicable. Sustainable design and the health and welfare of occupants will be considered throughout. PREREQUISITES: 304-155 - Principles of Interior Design 304-116 - Kitchen and Bathroom Planning 304-122 - Textiles 304-133 - Sustainable Materials and Finishes 304-153 - Drafting

and Rendering Techniques 607-170 - AutoCAD for Construction Sciences 614-150 - 3D CAD:Building information Model COREQUISITES: 304-156 - Residential Design Studio

**304-155**  
**Principles of Interior Design 4.00**

This course will provide the beginning college student with the fundamentals of interior design. Study and apply elements of interior design to interior environments while focusing on basic concepts in the design process, human ecology, space planning, color theory, selecting finishes and furnishings, and design communication techniques. Develop an understanding of the space allocation skills required for the practical and aesthetic manipulation of a building's interior space. Use the fundamentals of design in hands-on lab experiences.

**304-156**  
**Residential Design Studio 3.00**

This course focuses on the problem-solving discipline of the design process and its application to residential design. Students develop concepts to achieve design goals and apply theoretical knowledge and technical skills to their design solutions as they work on a variety of professionally relevant interior design projects. Student will examine the elements of residential interiors through the study of human factors, codes, space planning guides with ADA and universal design, the selection and specification of; furniture, fixtures, equipment, comprehensive lighting solutions, and accessories in planning interior spaces. Projects include the steps of the design process, from programming through design finalization, for residential

spaces such as single family homes, multi-unit residences and other specialized areas. Students will explore various problem solving methods, working in a design team, and presenting design solutions as if working with actual clients. PREREQUISITES: 304-101 - History of Furniture and Decorative Arts 304-155 - Principles of Interior Design 304-122 - Textiles 304-153 - Drafting and Rendering Techniques 304-133 - Sustainable Materials and Finishes 607-170 - AutoCAD for Construction Sciences 614-150 - 3D CAD:Building information Model

**304-195**  
**Global Interior Design Field Study 1.00**

This class provides the opportunity for students to investigate the interior design industry, learn about global markets, cultural and design influences on products in the industry, how to forecast market trends, and apply networking skills to professional venues.

**307-100**  
**Children's Spontaneous Play 3.00**

This course examines the essential role of children's spontaneous play in their development and the strategies teachers utilize to promote it. Course competencies include: analyze the critical of child-initiated spontaneous play; analyze children's play skills based on assessment; enrich a developmentally appropriate environment to support children's spontaneous play; examine the role of the teacher in participating/intervening in children's spontaneous play; develop strategies for participating/intervening in children's spontaneous play; identify strategies that support diversity and anti-bias perspective; and utilize positive interpersonal skills with children.

**307-102**  
**Child Development I 3.00**

Physical, social, emotional, cognitive development of children, 2 1/2 to 6.

**307-103**  
**Health/Safety and Nutrition 3.00**

Health and safety practices within responsibility, licensing requirements, identify childhood illness and disease prevention, special food needs of young children, planning nutritious snacks, sanitation, social environment for snack and meal times.

**307-103A**  
**Health for the Young Child 1.00**

Identify ways that health and health issues affect the care, nurturing and optimal physical and cognitive growth and development of the young child. Analyze state licensing rules.

**307-103B**  
**Safety for the Young Child 1.00**

Identify ways that safety and safety issues affect the care, nurturing and optimal physical and cognitive growth of the young child. Analyze state licensing rules.

**307-103C**  
**Nutrition for the Young Child 1.00**

Identify ways nutrition and nutrition issues affect the care, nurturing and optimal physical and cognitive development of the young child. Analyze state licensing rules.

<b>307-104</b> <b>Early Childhood Observation and Recording</b> <b>3.00</b>  Develop objectivity and proficiency in observing behavior of young children in individual and group situations. COREQUISITES: 307-102 - Child Development I	<b>307-107</b> <b>Curriculum Planning</b> <b>3.00</b>  Develop curriculum for early childhood programs. Emphasis on writing lesson and unit plans, objectives and learning activities. PREREQUISITES: 307-104 - Early Childhood Observation and Recording	<b>307-109B</b> <b>Science-Antibias</b> <b>1.00</b>  Understand developmental processes children progress through to learn science. Develop sequence topics and learning activities in science for young children.	<b>307-111</b> <b>Children's Literature and Language</b> <b>2.00</b>  Role of literature and language arts in early childhood programs and child's development, appreciation and ability for self expression.
<b>307-105</b> <b>Child Development II</b> <b>3.00</b>  This course covers physical, social, emotional, and cognitive development of children 2 1/2 to 8 years of age. PREREQUISITES: 307-102 - Child Development I	<b>307-108</b> <b>Supervised Student Participation and Seminar</b> <b>4.00</b>  Opportunity for interaction with young children in two early childhood programs. Student will act as a teacher's aide to gain procedures for guiding child behavior and development. PREREQUISITES: 307-104 - Early Childhood Observation and Recording	<b>307-109C</b> <b>Math - Antibias</b> <b>1.00</b>  Understand developmental processes children progress through to learn math. Develop, sequence topics and learning activities in math for young children.	<b>307-112</b> <b>Supervised Student Teaching and Seminar</b> <b>5.00</b>  Opportunity for interaction with young children as a teacher in one early childhood program. Practical experience to apply acquired knowledge. PREREQUISITES: 307-107 - Curriculum Planning 307-108 - Supervised Student Participation and Seminar
<b>307-106</b> <b>Building Self Esteem in Adults/ Children</b> <b>2.00</b>  Positive guidance and behavior methods to enhance child's self-confidence.	<b>307-109</b> <b>Math/ Science/ Social Studies Antibias Curriculum</b> <b>3.00</b>  Understand developmental processes children progress through to learn math, science and social study skills. Develop, sequence topics and learning activities in math, science and social studies/anti-bias curriculum for young children.	<b>307-110</b> <b>Creative Arts for the Young Child</b> <b>2.00</b>  Prepares students to plan and implement the creative arts component of an early childhood program. Create the physical and interpersonal environment which promotes creativity and self-expression of children.	<b>307-113</b> <b>Infant and Toddler Care</b> <b>2.00</b>  Development, care, stimulation, environment, licensing rules and regulations as they affect infant and toddler care. PREREQUISITES: 307-102 - Child Development I
<b>307-106A</b> <b>Building Self Esteem in Adults</b> <b>1.00</b>  Assess own self-esteem and practice strategies for building or maintaining self-esteem of family, co-workers and parents.	<b>307-109A</b> <b>Social Studies-Antibias</b> <b>1.00</b>  Students completing this course will understand developmental processes children progress through to learn social studies. They will also develop sequence topics and learning activities in social studies for young children.	<b>307-110A</b> <b>Art Young Child</b> <b>1.00</b>  Prepares students to plan and implement art activities in an early childhood program. Create the physical and interpersonal environment which promotes creativity and self-expression of children.	<b>307-114</b> <b>Exceptional Child</b> <b>2.00</b>  Interpretation of various types of exceptionality among children and special procedures, materials and facilities necessary for teaching children with exceptional needs. PREREQUISITES: 307-105 - Child Development II
<b>307-106B</b> <b>Building Self-Esteem in Children</b> <b>1.00</b>  Practice strategies for building and maintaining self-esteem of children. Learn to guide the behavior of individual and groups of young children in ways that are sensitive to their needs and are developmentally appropriate.		<b>307-110B</b> <b>Music, Movement, Drama - Young Child</b> <b>1.00</b>  Prepares students to plan and implement music, movement, and drama activities in an early childhood program. Create the physical and interpersonal environment which promotes creativity and self-expression of children.	<b>307-116</b> <b>Teachers and Family Partnerships</b> <b>2.00</b>  Understand dynamics of family interaction and effects upon children, formal and informal communications with

# Course Descriptions

parents, involving parents in programs and community resources available.  
PREREQUISITES: 307-112 - Supervised Student Teaching and Seminar

**307-117**  
**ECE: Credit for Prior Learning** 3.00

This course examines early childhood professional experience for the purpose of receiving credit for prior learning.

**307-119**  
**Creative Play Experiences** 2.00

Prepares students to understand the significance and value of spontaneous and self-directed play of young children. Plan indoor and outdoor environments, select equipment and materials, design experiences, interact with children to promote growth and development through play.

**307-120**  
**CDA Credential** 2.00

Students will gain an understanding of the CDA credentialing process: registration, assessment request, selecting a local assessment team and completion of portfolio. The portfolio contains evidence of student's competence in each of the 13 functional areas.

**307-122**  
**Early Childhood/Professional Growth in** 4.00

Discussion and analysis of current issues and ethical dilemmas in the early childhood profession. Students will practice and refine techniques for teaching, directing, or managing an early childhood program.

PREREQUISITES: 307-112 - Supervised Student Teaching and Seminar

**307-123**  
**Early Childhood I** 2.00

Learn licensing regulations, principles of growth and development, program design and environments, interactions with children, relationships among staff. Meets DHSS certification for assistant teacher.

**307-124**  
**Introduction to Early Childhood Education** 2.00

This course introduces learners to the early childhood education profession and provides opportunities to examine the principles of developmentally appropriate curriculum. Learners examine types of early childhood education settings, the history of early childhood education, legal and ethical responsibilities of early childhood educational professionals, and early childhood education professional organizations. Learners will assess their ability to work in this profession and initiate development of a professional plan.

**307-125**  
**Inclusive Classroom/The** 2.00

Define the reality of including special needs children in a program with typically developing children. Establish criteria for redesigning environments and adapting learning activities. Special focus will be placed on developing strategies for working with children with challenging behaviors.

**307-126**  
**Resources/Collaboration Children With Special Needs** 2.00

Detail the process of identification, referral and assessment of children with special needs. Stages of family reaction and family support systems will be identified. Community agencies may present resources available to families and teachers. The role of the teacher in achieving effective collaboration among all involved agencies will be defined.

**307-127**  
**Introduction to Early Childhood Education** 3.00

This course introduces learners to the early childhood education profession and provides opportunities to examine the principles of developmentally appropriate curriculum. Learners examine types of early childhood education settings, the history of early childhood education, legal and ethical responsibilities of early childhood educational professionals, and early childhood education professional organizations. Learners will assess their ability to work in this profession and initiate development of a professional plan.

**307-128**  
**Portfolio Assessment** 1.00

Students will develop a meaningful portfolio for each child in their classroom. Portfolios will feature each child's strengths and capabilities and support parents' confidence in their child's abilities.

**307-129**  
**Behavior Challenges** 1.00

In this course, students learn methods of support and intervention that teachers

use to promote children's understanding, appropriate expression of their emotions, and competent social interaction skills.  
PREREQUISITES: 307-106 - Building Self Esteem in Adults/Children

**307-131**  
**Early Childhood Teacher Seminar** 2.00

This seminar is designed for experienced early childhood teachers skilled in developmentally appropriate practice, who seek further knowledge, skills, and concepts in mentoring other adults (proteges). The seminar examines key elements in teachers' professional and adult development as they explore new roles as mentors. Among topics addressed are: improving communications, conferencing skills, effective observation and environmental assessment, reflective practice and goal setting, culturally relevant anti-bias education among teachers, children and families, the process of change and leadership/advocacy development.

**307-132**  
**Child Care Mentors and Proteges** 3.00

This course is designed for mentor teachers and their proteges in early childhood settings to examine critical elements and theories of mentoring as they consider their own situations. The course structure includes both seminar and fieldwork. In the seminar, mentors and proteges will examine the following topics: observation and assessment of environments, classroom management, planning and implementing curriculum, stress management, diversity, conflict resolution, reflective practice, goal setting, communication and team building, adult learning styles, professional and leadership development.

**307-133**  
**Issues in Infant Toddler Care** **1.00**

Students in this course will explore the implications of brain development research on infant-toddler care giving practices. They will also examine culturally appropriate and inclusive practices for group and family child care settings.

**307-134**  
**Programs, Family, & Society** **3.00**

Students in this course will explore ways in which caregiver-family partnerships are built and supported. They will also identify the challenges and opportunities for collaboration in infant-toddler care and define professionalism for caregivers in group and family child care settings.

**307-135**  
**Infant Toddler Capstone Experience** **3.00**

Students complete 6 hours per week of field placement in a regulated infant toddler setting (group or family child care). Students will demonstrate best practices and prepare a portfolio for final assessment prior to being awarded the Infant Toddler Credential.

**307-136**  
**Early Childhood/Professional Growth in** **3.00**

Discussion and analysis of current issues and ethical dilemmas in the early childhood profession. Students will practice and refine techniques for teaching, directing, or managing an early childhood program. PREREQUISITES: 307-112 - Supervised Student Teaching and Seminar

**307-137**  
**Family Child Care** **3.00**

Plan a licensed family child care considering management skills, legal and financial issues, equipment and educational needs of young children.

**307-138**  
**Project Work** **1.00**

Students will learn to use Project Work in an early childhood classroom by hands-on planning and documenting a project.

**307-139**  
**Behavior Challenges** **1.00**

This course covers methods of support and intervention teachers use to promote children's understanding and appropriate expression of their emotions and competent social interaction skills. PREREQUISITES: 307-106 - Building Self Esteem in Adults/Children

**307-140**  
**ECE: Behavior and Emotional Challenges** **3.00**

This course helps promote children's success by building relationships and creating supportive environments, and learning how to demonstrate positive social-emotional teaching strategies. Specific discipline and guidance strategies will be described. Individualized intensive interventions for developing behavior support plans as they relate to challenging behavior will be created and evaluated.

**307-141**  
**ECE: Spec Health Care Needs** **3.00**

This course explores the frequently encountered specialized health care

needs of young children with disabilities. PREREQUISITES: 307-187 - ECE: Children with Differing Abilities

**307-142**  
**ECE: Inclusion Cred Capstone** **3.00**

This course is designed to enhance the students understanding of the impact a child with a disability has on the family system. Students will have the opportunity to participate with a child and his/her family in daily routines and community settings. PREREQUISITES: 307-187 - ECE: Children with Differing Abilities

**307-143**  
**Administration/Supervision in EC Progs** **3.00**

This course provides an overview of roles and responsibilities of directors, coordinators, supervisors and other administrators in early childhood programs.

**307-144**  
**Administrative Seminar** **3.00**

This is the culminating experience in the Early Childhood Administrator /credential course sequence. Major individual projects are required with a focus on the integration of program aspects in developing strategic planning for change.

**307-145**  
**Best Practices for Children and Families** **3.00**

Establishing and maintaining quality programs based on professional standards and the best available information on child growth and development and family friendly environment/services. Coursework includes a review of the literature and research

studies, licensing laws and regulations, criteria for staff credentials (CDA) and the accreditation of programs by the National Academy of Early Childhood Programs and funding requirements and performance standards such as those for Head Start.

**307-146**  
**EC Programs and External Environment** **3.00**

Review of external factors which affect the operation of early care and education programs including determination of community child care needs, marketing, laws and regulations, working with government and community agencies, political and social issues and trends.

**307-147**  
**Financial Management in EC Programs** **3.00**

This course includes principles and practices in budget planning, preparation and fiscal management including hands-on preparation with program applications.

**307-148**  
**ECE: Foundations of Early Childhood Education** **3.00**

This three credit course introduces you to the early childhood profession. Course competencies include: integrate strategies that support diversity and anti-bias perspectives; investigate the history of early childhood education; summarize types of early childhood education settings; identify the components of a quality early childhood education program; summarize responsibilities of early childhood education professionals; and explore early childhood curriculum models.

# Course Descriptions

**307-149**  
**Operations Management in EC Programs** **3.00**

This course includes discussion and practical applications related to scheduling, staffing, facilities management, equipment acquisition and maintenance, record keeping, and communication.

**307-150**  
**Emerging Literacy** **3.00**

This three credit course focuses on the role of the teacher in supporting the emerging literacy of all children. Course competencies include: use developmentally appropriate strategies that support emerging literacy as a source of enjoyment; promote vocabulary and language development; promote phonological awareness; increase children's knowledge of print; promote children's knowledge of letters and words; build children's comprehension skills; and promote understanding of books and other texts.

**307-151**  
**ECE: Infant & Toddler Development** **3.00**

In this three credit course, you will study infant and toddler development as it applies to an early childhood education setting. Course competencies include: integrate strategies that support diversity and anti-bias perspectives; analyze development of infants and toddlers (conception to three years); correlate prenatal conditions with development; summarize child development theories; analyze the role of heredity and the environment; examine research-based models; and examine culturally and developmentally appropriate environments for infants and toddlers.

**307-166**  
**ECE: Curriculum Planning** **3.00**

This three credit course examines the components of curriculum planning in early childhood education. Course competencies include: integrate strategies that support diversity and anti-bias perspectives; examine the critical role of play; establish a developmentally appropriate environment; examine caregiving routines as curriculum; develop activity plans that promote child development and learning; and analyze early childhood curriculum models. PREREQUISITES: 307-174 - ECE: Practicum 1

**307-167**  
**ECE: Health, Safety, & Nutrition** **3.00**

This three credit course examines the topics of health, safety, and nutrition within the context of the early childhood educational setting. Course competencies include: integrate strategies that support diversity and anti-bias perspectives; follow governmental regulations and professional standards as they apply to health, safety, and nutrition; provide a safe early childhood program; provide a healthy early childhood program; provide a nutritionally sound early childhood program; adhere to child abuse and neglect mandates; apply Sudden Infant Death Syndrome (SIDS) risk reduction strategies; and incorporate health, safety, and nutrition concepts into the children's curriculum.

**307-167B**  
**ECE: Safety** **1.00**

This one credit course examines the topics of safety within the context of the early childhood educational setting. Course competencies include: follow governmental

regulations and professional standards as they apply to safety; provide a safe early childhood program; adhere to child abuse and neglect mandates; apply Sudden Infant Death Syndrome (SIDS) risk reduction strategies; and incorporate safety concepts into the children's curriculum.

**307-174**  
**ECE: Practicum 1** **3.00**

In this practicum course, you will learn about and apply the course competencies in an actual child care setting. The course competencies include: document children's behavior; explore the standards for quality early childhood education; explore strategies that support diversity and anti-bias perspectives; implement activities developed by the co-op teacher/instructor; demonstrate professional behaviors; practice caregiving routines as curriculum; practice positive interpersonal skills with children; and practice positive interpersonal skills with adults. COREQUISITES: 307-167 - ECE: Health, Safety, & Nutrition

**307-178**  
**ECE: Art, Music, and Language Arts** **3.00**

This three credit course will focus on beginning level curriculum development in the specific content areas of art, music, and language arts. Course competencies include: integrate strategies that support diversity and anti-bias perspectives; examine the critical role of play; establish a developmentally appropriate environment; develop activity plans that promote child development and learning; analyze caregiving routines as curriculum; create developmentally appropriate language, literature, and literacy activities; create developmentally appropriate art activities;

and create developmentally appropriate music and movement activities.

**307-179**  
**ECE: Child Development** **3.00**

This three credit course examines child development within the context of the early childhood education setting. Course competencies include: analyze social, cultural, and economic influences on child development; summarize child development theories; analyze development of children age three through eight; summarize the methods and designs of child development research; and analyze the role of heredity and environment.

**307-187**  
**ECE: Children with Differing Abilities** **3.00**

This three credit course focuses on the child with differing abilities in an early childhood education setting. Course competencies include: integrate strategies that support diversity and anti-bias perspectives; provide inclusive programs for young children; apply legal and ethical requirements including, but not limited to, ADA and IDEA; differentiate between typical and exceptional development; analyze the differing abilities of children with physical, cognitive, health/medical, communication, and/or behavioral/emotional disorders; work collaboratively with community and professional resources; utilize an individual educational plan (IEP/IFSP) for children with developmental differences; adapt curriculum to meet the needs of children with developmental differences; and cultivate partnerships with families who have children with developmental differences.

**307-188**  
**ECE: Guiding Children's Behavior 3.00**

This three credit course examines positive strategies to guide children's behavior in the early childhood education setting. Course competencies include: integrate strategies that support diversity and anti-bias perspectives; summarize early childhood guidance principles; analyze factors that affect the behavior of children; practice positive guidance strategies; develop guidance strategies to meet individual needs; and create a guidance philosophy.

**307-189**  
**Group Care for Infants and Toddlers 3.00**

This course focuses on caring for infants and toddlers in center based and family child care settings. Materials will cover program quality, philosophy, structure, environments, health and safety, and developmentally appropriate practice.

**307-190**  
**Preschool Credential Capstone 3.00**

The capstone is the last course all students take prior to completing the Preschool Credential. The intent of this capstone course is to cover and revisit the important themes from the prior five courses. The student will synthesize the information and demonstrate best practices and mastery of the competencies through the completion of a portfolio. PREREQUISITES: 307-148 - ECE: Foundations of Early Childhood Education 307-179 - ECE: Child Development 307-167 - ECE: Health, Safety, & Nutrition 307-188 - ECE: Guiding Children's Behavior 307-178 - ECE: Art, Music, and Language Arts

**307-191**  
**Infant/Toddler Credential Capstone 3.00**

This course integrates the theory, practice and reflection of courses 1-3in the Infant/Toddler Credential and requires demonstration of best practices. PREREQUISITES: 307-151 - ECE: Infant & Toddler Development 307-195 - ECE: Family and Community Relationships 307-189 - Group Care for Infants and Toddlers

**307-192**  
**ECE: Practicum 2 3.00**

In this three credit practicum course, you will learn about and apply the course competencies in an actual child care setting. The course competencies include: identify children's growth and development; maintain the standards for quality early childhood education; practice strategies that support diversity and anti-bias perspectives; implement student-teacher developed activity plans; identify the elements of a developmentally appropriate environment; implement positive guidance strategies; demonstrate professional behavior; utilize caregiving routines as curriculum; utilize positive interpersonal skills with children; and utilize positive interpersonal skills with adults. PREREQUISITES: 307-174 - ECE: Practicum 1 307-167 - ECE: Health, Safety, & Nutrition

**307-194**  
**ECE: Math, Science, & Social Studies 3.00**

This three credit course will focus on beginning level curriculum development in the specific areas of math, science, and social studies. Course competencies include: integrate strategies that support diversity and anti-bias perspectives;

examine the critical role of play; establish a developmentally appropriate environment; develop activity plans that promote child development and learning; create developmentally appropriate science activities; create developmentally appropriate math activities; and create developmentally appropriate social studies activities.

**307-194A**  
**ECE: Math 1.00**

This one credit course will focus on beginning level curriculum development in the specific area of math. Course competencies include: develop activity plans that promote child development and learning; create developmentally appropriate math activities.

**307-195**  
**ECE: Family and Community Relationships 3.00**

In this three credit course, you will examine the role of relationships with family and community in early childhood education. Course competencies include: implement strategies that support diversity and anti-bias perspectives when working with families and community; analyze contemporary family patterns, trends, and relationships; utilize effective communication strategies; establish ongoing relationships with families; advocate for children and families; and work collaboratively with community resources.

**307-197**  
**ECE: Practicum 3 3.00**

In this three credit practicum course, you will learn about and apply the course competencies in an actual child care setting. The course competencies include:

assess children's growth and development; implement the standards for quality early childhood education; integrate strategies that support diversity and anti-bias perspectives; build meaningful curriculum; provide a developmentally appropriate environment; facilitate positive guidance strategies; evaluate one's own professional behaviors and practices; lead caregiving routines as curriculum; utilize positive interpersonal skills with children; and utilize positive interpersonal skills with adults. PREREQUISITES: 307-192 - ECE: Practicum 2 COREQUISITES: 307-151 - ECE: Infant & Toddler Development

**307-198**  
**ECE: Administering an Early Childhood Education Program 3.00**

This three credit course focuses on the administration of an early childhood education program. Course competencies include: integrate strategies that support diversity and anti-bias perspectives; analyze the components of an ECE facility; design an ECE program; analyze the aspects of personnel supervision; outline financial components of an ECE program; apply laws and regulations related to an ECE facility; and advocate for the early childhood profession.

**307-199**  
**ECE: Practicum 4 3.00**

In this three credit practicum course, you will learn about and apply the course competencies in an actual child care setting. Course competencies include: analyze children's growth and development based on assessment; integrate strategies that support diversity and anti-bias perspectives; promote professional behaviors and practices; implement meaningful curriculum; create

# Course Descriptions

respectful, reciprocal relationships; evaluate early childhood education programs for quality; and explore professional options in early childhood education. PREREQUISITES: 307-197- ECE: Practicum 3

**316-100  
Foods, Basic 3.00**

Basic theory of food and hands-on preparation. Emphasis on evaluation of products, teamwork, safety and sanitation.

**316-104  
Short Order/Deli 2.00**

Practice in short order food preparation; frying, grilling, sandwich making, salad and dessert preparation. Analysis of cost and returns. COREQUISITES: 316-170 - Sanitation and Hygiene 316-131 - Culinary Skills I

**316-105  
International Buffets 4.00**

Organization and service of buffets are stressed. Includes menu planning, cost control and dining room set up. Emphasis is placed on preparation and cooking of international cuisine. PREREQUISITES: 316-132 - Culinary Skills II

**316-108  
Commercial Food Operations 2.00**

Field trips to include a cross section of food services. Classroom discussions include evaluation and student observation of the different food services. Students write reports on the different establishments and a term paper on some phase of food service operation.

**316-110  
Baking for Chefs 3.00**

Baking techniques and procedures as related to food service operations. Use of and care of equipment. Sanitation and hygiene considerations. PREREQUISITES: 316-131 - Culinary Skills I 316-132 - Culinary Skills II

**316-125  
Fine Dining 4.00**

Training in the duties of a waiter is given including table setting, taking orders and placing in the kitchen and clearing the table. Students also learn how to set up foods in the service line, serve hot and cold foods, prepare beverages and keep a flow of foods in the service line. PREREQUISITES: 316-131 - Culinary Skills I 316-132 - Culinary Skills II 316-135 - Catering/Banquets

**316-126  
Dining Room Service 3.00**

Emphasis on procedures for hosting, bussing, and serving customers in fine dining. Set up and serve different styles of service. Assist as a team member of the food service team.

**316-130  
Nutrition 2.00**

Basic principles and current nutritional concepts are explored with emphasis on meeting the nutritional needs of various individuals.

**316-131  
Culinary Skills I 4.00**

Practical experience in basic food preparation is emphasized by using fundamental concepts and developing

skills and techniques used in professional cookery. Luncheon items will be prepared and served by students for cafeteria patrons during the final weeks of this course. COREQUISITES: 316-170 - Sanitation and Hygiene

**316-132  
Culinary Skills II 4.00**

Students reinforce knowledge and skills learned in Culinary Skills I to begin building on that knowledge. Includes cooking luncheon menus, garnishing, plate presentation and kitchen management. PREREQUISITES: 316-131 - Culinary Skills I

**316-133  
Menu Planning Purchasing  
Cost Control 3.00**

Menu planning as affected by acceptability, cost, labor requirements, available space and equipment. Principles of purchasing, receiving, issuing and managing food products, restaurant wares and equipment. Study and utilization of several systems used in the food service business to provide management information in food and beverage cost.

**316-134  
Garde Manger 1.00**

Preparation of decorative meats and centerpieces and decorating and arranging food platters for buffet presentation.

**316-135  
Catering/Banquets 2.00**

Practical experience in organizing, menu planning, room set-up, preparation, cooking and serving banquets of various sizes. PREREQUISITES: 316-132 - Culinary Skills II

**316-136  
Culinary Competition I 1.00**

This course introduces new students to the rules and regulations of culinary competition. Emphasis is on food styling concepts that meet the American Culinary Federation's judging standards. As a final project, students compete in the WRA student culinary arts salon.

**316-137  
Culinary Competition II 1.00**

This course builds on skills and knowledge gained in Culinary Competition I. Emphasis is on food styling concepts that meet the American Culinary Federation's judging standards. As a final project, students compete in the WRA student culinary arts salon.

**316-138  
Basic Baking 2.00**

This course presents basic baking techniques and procedures related to food service operations. Use and care of equipment are presented. Sanitation and hygiene considerations are reviewed. COREQUISITES: 316-170 - Sanitation and Hygiene 316-131 - Culinary Skills I

**316-139  
Convenience Baking 1.00**

This course presents convenience baking techniques and procedures related to food service operations. Use and care of equipment are presented. Sanitation and hygiene considerations are reviewed. COREQUISITES: 316-170 - Sanitation and Hygiene 316-131 - Culinary Skills I

<p><b>316-140</b> <b>Basic Baking Techniques</b>      <b>3.00</b></p> <p>This course presents basic baking techniques and convenience baking techniques and procedures related to food service operations. Use and care of equipment are presented. Sanitation and hygiene considerations are reviewed.</p>	<p><b>401-501</b> <b>Introduction to HVAC</b>      <b>1.00</b></p> <p>This introductory course introduces the student to the terminology used; the basic math concepts relevant to the HVAC industry and basic electrical concepts are covered.</p>	<p><b>401-508</b> <b>Cooling Fundamentals</b>      <b>1.00</b></p> <p>This course introduces the student to the concepts of heat transfer, the refrigeration cycle and use of the P/T chart. Evacuation, recovery, leak detection and basic troubleshooting are covered.</p>	<p><b>401-514</b> <b>Commercial Concepts</b>      <b>1.00</b></p> <p>Cooling towers, water quality and treatment, steam plant commissioning and idling are introduced.</p>
<p><b>316-158</b> <b>Food and Beverage Cost Control</b>      <b>2.00</b></p> <p>Study and utilization of several systems used in the food service business to provide management information in food and beverage costs and investment return.</p>	<p><b>401-502</b> <b>Tube and Piping Skills</b>      <b>1.00</b></p> <p>This course introduces the mechanical skills necessary to identify, select, and construct plastic, copper and ferrous tubing and pipe to industry and Code standards.</p>	<p><b>401-509</b> <b>Troubleshooting HVAC</b>      <b>1.00</b></p> <p>Expanded troubleshooting of gas, electric furnaces and central air forced air systems are covered in detail.</p>	<p><b>401-515</b> <b>Heat Pumps</b>      <b>1.00</b></p> <p>The student is introduced to the operation, maintenance and troubleshooting of heat pumps.</p>
<p><b>316-170</b> <b>Sanitation and Hygiene</b>      <b>1.00</b></p> <p>A study of sanitary conditions and the methods used in applying the measure effectively. Includes organisms responsible for food contamination, spoilage, and the diseases transmitted by food. Personal health habits necessary for food service personnel and the laws regarding sanitary practices are interpreted.</p>	<p><b>401-503</b> <b>Ductwork</b>      <b>1.00</b></p> <p>The design and application of sheet steel, fiberglass and flexible duct layout and construction are extensively covered.</p>	<p><b>401-510</b> <b>Hydronics</b>      <b>1.00</b></p> <p>This course covers Hydronic equipment, types of piping circuits, safety components, pumps and near boiler piping. Also basic steam and chilled water technology is introduced.</p>	<p><b>401-516</b> <b>Commercial Refrigeration Systems</b>      <b>1.00</b></p> <p>The types of common industrial and commercial refrigeration equipment are covered. Advanced troubleshooting skills are introduced for the technician.</p>
<p><b>316-190</b> <b>Food Service Supervision</b>      <b>3.00</b></p> <p>How to fulfill a leadership role; how to organize resources of people, time, equipment and jobs; how to motivate people and communicate effectively with subordinates; how to select, interview and appraise employees; how to handle problems of discipline, morale and grievances.</p>	<p><b>401-505</b> <b>Alternating Current and Contr</b>      <b>1.00</b></p> <p>Types of motors, transformers and capacitors are covered in depth. The application of electronics in HVAC are introduced and basic troubleshooting of common electromechanical and electronic devices are explored.</p>	<p><b>401-512</b> <b>Heating and Cooling Design</b>      <b>1.00</b></p> <p>Interpretation and use of construction drawings, heat loss and gains, and site factors that affect equipment selection and duct design are introduced.</p>	<p><b>401-517</b> <b>Troubleshooting Gas Furnaces</b>      <b>1.00</b></p> <p>The importance of proper venting, vent design and basic troubleshooting of today's Standard and High Efficiency furnaces is introduced.</p>
	<p><b>401-506</b> <b>Forced Air Heating Intro to</b>      <b>1.00</b></p> <p>The theory of heating using air as the medium is introduced. The common components of each fuel are covered and how efficiency changes affects the heating cycle. The importance of proper venting and vent design and basic troubleshooting are introduced.</p>	<p><b>401-513</b> <b>Indoor Air Quality and DDC Controls</b>      <b>1.00</b></p> <p>Factors that affect IAQ, the use of DDC controls in energy management are covered. Economizers, energy recovery and ice storage concepts are introduced.</p>	<p><b>401-518</b> <b>Troubleshooting Cooling</b>      <b>1.00</b></p> <p>Evacuation, recovery, leak detection methods and basic troubleshooting of A/C equipment are introduced.</p>
			<p><b>401-519</b> <b>Com/Ind Refrigeration and Alter. Systems</b>      <b>1.00</b></p> <p>Refrigeration components and techniques used in large refrigeration plants are covered. Also introduced to the student is alternative heating/cooling methods that are emerging in our renewable society.</p>

# Course Descriptions

**401-520 Refrigeration Fundamentals 2.00**

The topics covered in this class include refrigeration principles and terms, thermodynamic processes, refrigerants, vapor compression cycles, mechanical refrigeration components, use of electrical controls, refrigeration applications, and refrigeration tools and materials.

**401-521 Heating Systems Applications 2.00**

Topics include introduction to HVAC, heat principles, temperature measurement, fuels, sources of heat, types of combustion, basic heating systems, basic furnace design, gas furnace design and operation, ventilation principals, Trade mathematics, proper tool use, Safety and basic pipefitting.

**401-522 Control Circuit Applications 2.00**

Topics include introduction to control circuit terminology, measuring devices and control systems. The principals of self contained, pneumatic, and other electronic-electric controls are examined and applied to control systems operation and design.

**401-523 HVAC IV Refrig Apps GL NAV 2.00**

Topics include commercial refrigeration systems, applications, installation, servicing, troubleshooting, heat loads and piping, absorption systems and special refrigeration systems. PREREQUISITES: 401-520 - Refrigeration Fundamentals; 401-522 - Control Circuit Applications

**401-524 Heating Applications GL NAV 2.00**

The topics covered in this class include the service and repair of Commercial Heating Cooling equipment. Units covered will include forced air gas and oil fired equipment, heat pumps, hydronic hot water, steam heating systems and direct and indirect cooling systems. Fresh air calculations and economizer operation will also be covered. PREREQUISITES: 401-523 - HVAC IV Refrig Apps GL NAV 401-520 - Refrigeration Fundamentals

**401-525 Electronic Energy Management GL NAV 2.00**

Topics include introduction to the role of computers and their use in energy management in the HVAC Industry. Emphasis will be on the identification, installation, function, repair, and upgrading of EEM Systems used to control the HVAC environment in commercial applications. PREREQUISITES: 401-520 - Refrigeration Fundamentals 401-523 - HVAC IV Refrig Apps GL NAV 401-524 - Heating Applications GL NAV

**401-526 Electronic Energy Management 2 GL NAV 2.00**

Topics include computers and their use in energy management in the HVAC Industry. Emphasis will be on use of EEM Systems to control the HVAC environment in commercial applications. Students will learn the use of Trending and Scheduling practices, the use of overrides and the importance of proper sequencing of equipment. PREREQUISITES: 401-520 - Refrigeration Fundamentals 401-523 - HVAC IV Refrig Apps GL NAV 401-524 - Heating Applications GL NAV 401-525 - Electronic Energy Management GL NAV

**401-560 Comm/Ind Refrigeration & Alt. Systems 1.00**

This week will deepen the student's understanding of the complex controls and operation of large scale refrigeration equipment. The week will also introduce the student to emerging technologies that have not been used in large scale to date. Geothermal, radiant, waste heat, and other alternatives are explored.

**401-561 Heating & Cooling Design 1.00**

Use of construction drawings, the fundamentals of heat loss/gain, equipment selection, and the fundamentals of leadership are covered in the student's final week.

**401-562 Commercial Concepts, Advanced 1.00**

This week broadens the knowledge base for the fourth year student. Topics include the effects of water quality on cooling towers, boilers and chillers, proper startup/shutdown of physical plants, and how new energy conservation equipment is being used in HVAC.

**401-563 IAQ/DDC Controls & Air Balancing 1.00**

This week covers the factors that affect IAQ, the use of automated controls in our energy management, and the effects of proper airflow on comfort in structures.

**401-564 Heat Pumps 1.00**

This week moves the student from the introduction of the fundamentals of

heat pump technology to component identification and troubleshooting of the various kinds of heat pumps. The student is also introduced to customer relation principles as they move towards their last year.

**401-565 Refrigerant; Advanced Topics 1.00**

This week covers troubleshooting techniques a student needs when working on A/C and refrigeration systems. This week also introduces the student to the emerging VRF, ductless and zoned systems that have entered into the marketplace.

**401-566 Troubleshooting HVAC Systems 1.00**

This intense week contains concentrated review of troubleshooting techniques for fuel fired appliances, motors, and controls. The correct use of installation fasteners, terminal connectors, and hardware are also covered.

**401-567 Hydronics & Steam Systems 1.00**

This week expands on the student's general knowledge of hydronics by covering individual components, their function, and operation. The student is then introduced to the operation of unique controls of steam plants.

**401-568 Venting & Introduction to Hydronics 1.00**

This week is split between the complex requirements for venting fuel burning appliances and introducing the student to the basics of hydronic heating concepts and the components used.

**401-569**  
**Alternating Current and PM Basics 1.00**

This week expands on the student's basic understanding of AC electricity by covering motors, transformers and other loads found in HVAC equipment. This week also covers basic preventative maintenance procedures for typical HVAC equipment.

**401-570**  
**Ductwork Construction & Airside Basics 1.00**

This week covers the selection and fabrication of common materials used in ductwork applications and the uses of those delivery systems in commercial buildings.

**401-571**  
**Mechanical Refrigeration Circuit 1.00**

This comprehensive week focuses on the major working components of a mechanical refrigeration device. Refrigerant oils, types of refrigerants, leak detection, recovery and proper charging techniques are covered in depth.

**402-120**  
**Aeronautical Decision Making 2.00**

The student will apply theories and procedures learned in Aviation Safety in simulated flight conditions. Analysis and evaluation of student actions, individual and as a flight crew, will be completed for each flight scenario. COREQUISITES: 402-177 - Professional Piloting IV 402-138 - Aero Science Aviation Safety

**402-122**  
**Aircraft Systems-Advanced 3.00**

This lecture based course covers the principles of turbine engine theory and

operation. Turbine aircraft systems are studied, including pressurization, anti and de-ice systems, pneumatic and hydraulic systems and aircraft control systems. Advanced electronic and navigation systems are learned. Low and high performance aircraft structures are evaluated and compared. FAR's pertaining to advanced aircraft are learned and applied to a daily flight routine. PREREQUISITES: 402-139 - Aero Science Engine/ Structures/ Systems

**402-129**  
**Aviation/Introduction 3.00**

An introductory aviation ground course designed to prepare the student for the FAA Private Pilot Airplane written examination.

**402-131**  
**Aero Science Fundamentals of Instruction 2.00**

An advanced aviation ground course designed to prepare the student for the FAA Fundamentals of Instruction written examination. PREREQUISITES: 402-140 - Flight Private Pilot

**402-133**  
**Aero Science Commercial 3.00**

An advanced aviation ground course designed to prepare the student for the FAA Commercial Pilot Airplane written examination. PREREQUISITES: 402-140 - Flight Private Pilot or 402-140D - Flight Private Pilot B

**402-134**  
**Aero Science Certified Flight Instructor Airplane 2.00**

An advanced aviation ground course designed to prepare the student for the

FAA Airplane Flight Instructor written examination. PREREQUISITES: 402-140 - Flight Private Pilot

**402-135**  
**Aero Science Aerophysics/ Aerodynamics 3.00**

Principles of physics as applied to the flight topics of velocity and acceleration and application to take-off and landing performance. Lift, gravity, thrust and drag relationships in accelerated and unaccelerated flight are included.

**402-136**  
**Aero Science Aviation Weather 3.00**

Covers basic concepts of aviation meteorology including temperature, pressure, moisture, stability, clouds, air masses, fronts, thunderstorms, icing and fog. Analysis and use of weather data for flight planning and safe flying and interpretation of U.S. Weather Bureau maps, reports and forecast are discussed.

**402-137**  
**Aero Science Instrument 3.00**

An advanced aviation ground course designed to prepare a student for the FAA Instrument Airplane rating written examination. PREREQUISITES: 402-140 - Flight Private Pilot or 402-140D - Flight Private Pilot B

**402-138**  
**Aero Science Aviation Safety 3.00**

This course will develop the student's awareness and understanding of the safe, legal, and efficient operation of an aircraft in the modern aviation environment. This will be accomplished through the study

of specific listed topics, NTSB reports, and presentation by aviation professionals.

**402-139**  
**Aero Science Engine/ Structures/ Systems 3.00**

Principles of aircraft engine theory and operation including construction, lubrication, carburetion, ignition, supercharging and propellers. Principles of aircraft structures including basic stresses, types of construction, advantage of each type and an overview of FAA repair procedures.

**402-140**  
**Flight Private Pilot 3.00**

Introduces the student to flight. Develops the necessary skills and knowledge to solo and prepare for the private pilot flight test. COREQUISITES: 402-129 - Aviation/ Introduction

**402-140C**  
**Flight Private Pilot A 1.00**

This is the first of 2 courses (402-140C and 402-140D) required to attain a private pilot certificate. Introduces the student to flight. Develops the necessary skills and knowledge to solo. Part B must be taken either the same semester as Part A, or no later than the following semester. COREQUISITES: 402-129 - Aviation/ Introduction

**402-140D**  
**Flight Private Pilot B 2.00**

This is the second of two courses (402-140C and 402-140D) required to attain a private pilot certificate. Develops the necessary skills and knowledge to prepare for the private pilot flight test. Part B must

# Course Descriptions

be taken either the same semester as Part A, or no later than the following semester. PREREQUISITES: 402-140C - Flight Private Pilot A

**402-145  
Flight/Certified Flight  
Instructor Airplane 2.00**

Prepares the commercial rated pilot for the FAA flight instructor airplane certificate. PREREQUISITES: 402-177 - Professional Piloting IV COREQUISITES: 402-134 - Aero Science Certified Flight Instructor Airplane 402-131 - Aero Science Fundamentals of Instruction

**402-146  
Flight Certified Instructor  
Instrument 1.00**

Prepares the CFI for the addition of an instrument instructor rating to the flight instructor certificate. PREREQUISITES: 402-145 - Flight/Certified Flight Instructor Airplane

**402-150  
Flight Internship 3.00**

The internship experience will give the student insight into the working world of aviation. A wide variety of job situations may be acceptable to meet the objective of this course. Cooperatively, the student and employer will identify a proper work site and structure the experience to meet the needs and abilities of the student. This experience may or may not be a paid position.

**402-166  
Aeronautical Skills Development 1.00**

This flight course will prepare the student for the completion of an FAA certificate or rating.

**402-171  
Professional Piloting I 2.00**

This is the first in a series of four courses approved as an FAA Part 141 combined commercial/ instrument certification course. This course will focus on the addition of the multi-engine rating to the student's existing private pilot certification. PREREQUISITES: 402-140 - Flight Private Pilot or 402-140D - Flight Private Pilot B COREQUISITES: 402-137 - Aero Science Instrument

**402-173  
Professional Piloting II 2.00**

This is the second course in a series of four courses approved as an FAA Part 141 combined commercial/instrument certification course. This course will focus on the addition of instrument rating to the student's existing private pilot certificate. Flight instruction will be conducted in a single-engine aircraft. PREREQUISITES: 402-171 - Professional Piloting I

**402-175  
Professional Piloting III 2.00**

This is the third course in a series of four courses approved as an FAA Part 141 combined commercial/instrument certification course. This course will focus on the student's gaining cross-country experience and will provide multi-engine instrument privileges. PREREQUISITES: 402-173 - ProfessionalPiloting II COREQUISITES: 402-133 - Aero Science Commercial

**402-177  
Professional Piloting IV 2.00**

This is the fourth course in a series of courses approved as an FAA Part 141 combined commercial/ instrument certification course. This course will focus on gaining the required skills necessary to meet the requirements of the FAA Commercial Pilot Certification, both single and multi-engine. COREQUISITES: 402-175 - Professional Piloting III

**403-338  
Blueprint Reading Power House 1.00**

Footings and foundations, floor plans, elevations, below-grade piping, above-grade piping, isometric piping diagrams, schedules and details, electrical floor plans, ventilating and air conditioning.

**404-300  
Auto Mechanics/Fundamentals 2.00**

Topics covered in classroom lecture and automotive shop laboratory experience include basic mechanics, welding fundamentals, automotive shop fundamentals, hand tools, fasteners, cutting, shaping of metal, sharpening of cutting tools, use of measuring tools, electrical wiring repair and related shop safety procedures.

**404-310  
Service Simulation I - Brakes/  
Heat and Air Conditioning 1.00**

This course will allow the students to perform acquired skills in the areas of brakes, heating and air conditioning. The affected repairs are to be done on customers' vehicles, simulating a shop environment. A strong emphasis will

be placed on customer relations and communications.

**404-311  
Auto Cooling Systems/Heating 2.00**

The diagnosis and repairs of AC systems, components, accessories and the diagnosis and repair of heating and engine cooling systems will be covered.

**404-312  
Auto Electricity/Basic 2.00**

This course will cover batteries, charging systems, and starting systems as they relate to the automobile. Also covers the support wiring systems with the systematic test procedures and use of the wiring diagrams.

**404-313  
Service Simulation II - Electricity/  
Alignment/ Suspension 1.00**

This course will allow the students to perform acquired skills in the areas of electricity, alignment and suspension. The affected repairs are to be done on customer's vehicles, simulating a shop environment. A strong emphasis will be placed on customer relations and communications.

**404-314  
Engine Fundamentals 2.00**

A study of the various automotive engine power plants and their related support systems. It covers the effects of support systems on induction and exhaust systems and the basic engine mechanical relationships. Diagnosis and testing will be covered.

**404-315**  
**Auto Fuel Systems Basic** **3.00**

Covers theory of air fuel mixing devices, carburetion and injections. Also covered will be fuel storage delivery devices and plumbing.

**404-316**  
**Service Simulation Fuel Systems/Engine** **1.00**

This course will allow the students to perform acquired skills in the areas of engines and fuel systems. The affected repairs are to be done on customer's vehicles, simulating a shop environment. A strong emphasis is placed on customer relations and communications.

**404-317**  
**Auto Emission Systems** **2.00**

Covers the basic diagnosis and repair of the exhaust systems, and emission systems including the support systems that effect the emissions. The testing will be done by the use of the two-gas analyzer.

**404-318**  
**Auto Engine Electrical Systems** **2.00**

Covers the ignition system diagnosis and repair including wiring and sensing devices for both conventional and electronic ignition systems also gives a brief introduction to computerized ignition systems.

**404-319**  
**Service Simulation IV Emission/Engine Electrical** **1.00**

Covers service procedures and actual shop simulation of the materials covered in the emissions/engine electrical courses.

**404-321**  
**Alignment/Suspension** **2.00**

Covers wheels, tires and alignment systems both front and rear wheel drive. Also covers the diagnosis, adjustment and repair of steering and suspension systems and their related parts.

**404-360A**  
**Service Simulation I Brakes 1 Cr** **1.00**

This course will allow the students to perform acquired skills in the areas of brakes. The affected repairs are to be done on customers' vehicles, simulating a shop environment. A strong emphasis placed on customer relations and communications.

**404-360B**  
**Service Simulation I Heating/AC 1 Cr** **1.00**

This course will allow the students to perform acquired skills in the areas of heating and air conditioning. The affected repairs are to be done on customers' vehicles, simulating a shop environment. A strong emphasis placed on customer communications.

**404-361A**  
**Service Simulation II Electricity 1 Cr** **1.00**

This course will allow the students to perform acquired skills in the areas of electricity. The affected repairs are to be done on customers' vehicles, simulating a shop environment. A strong emphasis placed on customer relations and communications.

**404-361B**  
**Service Simulation II Alignment/Suspension 1 Cr** **1.00**

This course will allow the student to perform acquired skills in the areas of alignment and suspension. The affected repairs are to be done on customers' vehicles, simulating a shop environment. A strong emphasis placed on customer relations and communications.

**404-371**  
**Automotive Internship II** **2.00**

The student, through direct occupational experience, will demonstrate the program competencies in the areas of electricity, alignment, suspension, and customer relations.

**404-372**  
**Automotive Internship III** **2.00**

The student, through direct occupational experience, will demonstrate the program competencies in the areas of engines, fuel systems, and customer relations.

**404-373**  
**Automotive Internship IV** **2.00**

The student, through direct occupation experience, will demonstrate the program competencies in the areas of emissions, engine electrical and customer relations.

**404-510**  
**Automotive Systems Part 1: Mechanical Fundamentals** **1.00**

Topics covered in classroom lecture and automotive shop laboratory experience include basic mechanics, welding fundamentals, automotive shop

fundamentals, hand tools, fasteners, cutting, shaping of metal, sharpening of cutting tools, use of measuring tools, electrical wiring repair, and related shop safety procedures.

**404-515**  
**Automotive Systems Part 2: Information Fundamentals** **0.50**

This course will explore service reference materials and their applications. Both computer and hardcopy references will be utilized. Students will write work orders using both written and electronic forms. Parts ordering will be explained using both written and electronic formats. Inventory control methods will be discussed.

**404-520**  
**Automotive Electrical Systems Part 1: Basic Wiring and Meters** **1.00**

This course covers the support wiring systems with the systematic test procedures and use of the wiring diagrams. It will cover all types of meters, standards DVOMs, graphing DVOMs, and labscope.

**404-525**  
**Automotive Electrical Systems Part 2: Troubleshooting** **1.00**

This course covers the electrical safety and accessory systems used on automobiles and light trucks. Emphasis is placed on circuit operation, testing, and diagnosis.

**404-530**  
**Automotive Starting, Charging, and Ignition Systems: Part 1 - Testing** **1.00**

This course covers basic auto electrical circuit diagnosis, battery, starting and charging systems, ignition systems

# Course Descriptions

(including conventional and electronic), and an introduction to computerized ignition systems.

**404-535  
Automotive Starting & Charging  
Systems Part 2: Overhaul** 1.00

This course will cover bench testing of alternators and starters. Students will be required to overhaul a variety of alternators and starters.

**404-540  
Automotive Engines Part 1:  
Theory of Engine Operations** 1.00

This course is a study of the various engine power plants and their related support systems. It covers the effects of support systems on induction and exhaust systems and the basic engine mechanical relationships. Diagnosis and testing will be covered.

**404-545  
Automotive Engines Part 2: Engine  
Inspection and Repair** 1.00

This course will allow the student to perform acquired skills in the areas of major engine repair. The affected repairs are to be done on customer vehicles, simulating a shop environment. A strong emphasis will be placed on customer relations and communication.

**408-500  
Brick Masonry Technology I** 2.0

**408-510  
Brick Masonry Technology II** 2.00

**408-520  
Brick Masonry Technology III** 2.00

**408-530  
Brick Masonry Technology IV** 2.00

**408-540  
Brick Masonry Technology V** 2.00

**408-550  
Brick Masonry Technology VI** 2.00

**408-580  
Math and Blueprint Reading I for  
Bricklayers** 0.50

**408-583  
Math and Blueprint Reading II for  
Bricklayers** 0.50

**408-584  
Math and Blueprint Reading III for  
Bricklayers** 0.50

**408-585  
Math and Blueprint Reading IV for  
Bricklayers** 0.50

**408-586  
Math and Blueprint Reading V for  
Bricklayers** 0.50

**408-587  
Math and Blueprint Reading VI for  
Bricklayers** 0.50

**408-591  
Cement Mason Technician I** 2.00

Students will cover the following subject areas: history of trade, basic safety and first aid, measuring and estimating. Math and blueprint reading will be integrated into appropriate subject areas.

**408-592  
Cement Mason Technician II** 2.00

Students will study the following subject areas: ingredients of concrete, designing mixes, admixtures, specs and testing, tools, and miscellaneous equipment. Math and blueprint reading will be integrated into appropriate subject areas.

**408-593  
Cement Mason Technician III** 2.00

Students will study leveling instruments, edge forms, on-grade curb and gutters, screeds, bulkheads, placing and leveling of concrete. Math and blueprint reading will be integrated into appropriate subject areas.

**408-594  
Cement Mason Technician IV** 2.00

Students will study the following subject areas: floors, roofs, steps, sidewalks and patios. Math and blueprint reading will be integrated into appropriate subject areas.

**408-595  
Cement Mason Technician V** 2.00

Student will study the following subject areas: drives, approaches, curbs and gutters, pavements, concrete bases, tilt-up panels, precast and lift slabs. Math and blueprint readings will be integrated into appropriate subject areas.

**408-596  
Cement Mason Technician VI** 2.00

The following subject areas will be covered: concrete joints, curing of concrete, protection, surface defects, patching, grinding, rubbing and sacking.

Math and blueprint reading will be integrated into appropriate subject areas.

**410-500  
Carpentry I/Related** 2.00

This course covers math related to carpentry, use of the framing square and its tables for layout and the fundamentals of BPR.

**410-500A  
Carpentry I Related - 36 Hr** 1.00

**410-501  
Carpentry II/Related** 2.00

This course addresses the principles of site development and building layout and the various principles involved in building foundations and footings.

**410-502  
Carpentry III/Related** 2.00

This course addresses the principles of floor and wall construction for both residential and commercial considerations.

**410-503  
Carpentry IV/Related** 2.00

This course covers the principles of roof framing including architectural drafting of plan and elevation views for roofs. It also covers the principles of layout and cutting of all roof framing members for both equal and unequal pitch roofs.

**410-504  
Carpentry V/Related** 2.00

This course covers exterior trim considerations, including roofing, siding, and exterior windows and doors. It also includes an introduction to the principles of stair construction.

**410-505**  
**Carpentry VI/Related** **2.00**

This course continues the principles of stair construction and addresses more sophisticated stair layout problems such as L-shaped, U-shaped, circular stairs. In addition, this course covers carpentry principles regarding interior finish work including door hanging, hardware, crown moldings, and various principles relating to interior finishing work.

**410-506**  
**Carpentry Review** **1.00**

An overview of construction Carpentry principles including printreading, site layout, foundation, floor, wall, and roof construction, exterior and interior finish work and stairbuilding.

**412-101**  
**Diesel, Intro to** **3.00**

Theory and laboratory experiences in this course are designed to introduce the student to the diesel systems used on today's modern trucks and construction equipment. Students develop basic knowledge of design, construction and operating principles of the diesel engine. The course emphasizes the service, maintenance and the types of repairs made on diesel engines. Introduces shop procedures, safety practices, tools and using service information. PREREQUISITES: 602-148 - Auto Mechanic Fundamentals and Service References

**412-102**  
**Diesel Fuel and Emissions** **3.00**

This combined lecture and lab course will use the latest in diagnostic equipment to evaluate engine performance and diagnose

power complaints on modern hydro-mechanical diesel fuel injection systems.

**412-103**  
**Diesel Electrical/  
 Electronic Systems** **3.00**

This combined lecture and laboratory course is designed to give the student the knowledge and skills needed to diagnose, service, and repair heavy-duty electrical systems found on today's modern heavy duty trucks and off-road equipment.

**412-104**  
**Diesel Hydraulics/Pneumatics** **3.00**

This combined lecture and lab course prepares the student with the knowledge and skills needed to adjust, diagnose, service and repair mobile hydraulic systems found on heavy duty trucks and construction equipment.

**412-105**  
**Diesel Control Systems, Advanced** **4.00**

This course will continue to develop the knowledge and skills required to troubleshoot, repair and maintain heavy duty vehicle control systems. Emphasis will be placed on the skills that are required of a technician to utilize advanced electronic diagnostic tools. Topics include multiplex systems, active and inactive codes, system reprogramming intermittent codes (EBS), electronic braking systems, control systems and hydraulic control systems. The theory and operation of the Global Positioning System (GPS) and related systems will be covered. This course will help the student prepare for ASE certification. PREREQUISITES: 412-111 - Diesel Maintenance Fundamental 412-108 - Diesel Electricity 2 412-109 - Diesel Engine Service

412-112 - Diesel Drive Trains 412-113 - Diesel Fuel Systems, Advanced 412-114 - Diesel Heating, Cooling & Air Cond

**412-106**  
**Diesel Brake Systems** **4.00**

This course will develop the knowledge and skills required to troubleshoot, repair and maintain heavy duty vehicle braking systems. Hydraulic and pneumatic drum and disc systems will be covered. This course will help prepare for ASE certification. PREREQUISITES: 412-111 - Diesel Maintenance Fundamental 412-117 - Diesel Suspension & Steering Systems

**412-107**  
**Diesel Electricity 1** **4.00**

This course will develop the basic knowledge and skills required to troubleshoot, repair and maintain basic electrical/electronic systems that are utilized on today's heavy duty vehicles. Emphasis will be placed on the Direct Current (DC) fundamentals and vehicle charging and starting systems. This course will help the student prepare for ASE certification. PREREQUISITES: 412-111 - Diesel Maintenance Fundamental

**412-108**  
**Diesel Electricity 2** **3.00**

This course will focus on the development of troubleshooting and repair skills as they relate to electrical systems found on heavy duty vehicles. An emphasis will be placed on the understanding and application of electronic diagnostic tools and their application to modern heavy duty vehicles. This course will help the student prepare for ASE certification. PREREQUISITES: 412-111 - Diesel Maintenance Fundamental 412-107 - Diesel Electricity 1

**412-109**  
**Diesel Engine Service** **5.00**

This course provides the student with the knowledge and skills required to maintain basic diesel engines. Students will gain practical experience in rebuilding, testing, and troubleshooting by disassembling a diesel engine, inspecting its components, explaining their function and reassembly. Diesel engine cooling and lubrication systems will be included. This course will help the student prepare for ASE certification. PREREQUISITES: 412-111 - Diesel Maintenance Fundamental 412-110 - Diesel Fuel Systems

**412-110**  
**Diesel Fuel Systems** **3.00**

This course develops the knowledge and skills required to maintain basic diesel fuel systems. Operation and troubleshooting of system components such as fuel supply systems, fuel injection pumps and injectors, intake systems, turbo chargers and exhaust systems will be included. This course will help the student prepare for ASE certification. PREREQUISITES: 412-111 - Diesel Maintenance Fundamental

**412-111**  
**Diesel Maintenance Fundamental** **2.00**

The student will develop the knowledge and skills to operate in today's heavy-duty vehicle repair facility. Shop safety, hazardous material handling, hand tool identification and tool and personal safety will be emphasized. Skills development will be stress in the areas of precision measurement instrument usage, basic mechanical skills, and basic wiring skills learn the basic skills. Additionally, the course will include

# Course Descriptions

instruction on use of electronic information services, hard copy shop manuals and Wisconsin automotive practice regulations (ATCP132.)

## **412-112 Diesel Drive Trains 4.00**

The student will develop the knowledge and skills required to troubleshoot, repair and maintain heavy duty vehicle power trains. Topics will include clutches, manual transmissions, drive shafts, universal joints, and drive axles. This course will help the student prepare for ASE certification. PREREQUISITES: 412-106 - Diesel Brake Systems 412-111 - Diesel Maintenance Fundamental

## **412-113 Diesel Fuel Systems, Advanced 3.00**

The student will develop the knowledge and skills required to troubleshoot and repair advanced heavy duty vehicle fuel systems. Fuel designs and characteristics (including alternative fuels), electronic management control and emission control systems will be emphasized. Exploration of diesel hybrid systems will be included. This course will help the student prepare for ASE certification. PREREQUISITES: 412-111 - Diesel Maintenance Fundamental 412-110 - Diesel Fuel Systems 412-107 - Diesel Electricity 1 412-108 - Diesel Electricity 2

## **412-114 Diesel Heating, Cooling & Air Cond 3.00**

This course will develop the knowledge and skills required to troubleshoot, repair and maintain heavy duty vehicle heating, cooling and air-conditioning systems. Students will be required to take and pass the federal

and state air-conditioning certification. This course will help the student prepare for ASE certification. PREREQUISITES: 412-107 - Diesel Electricity 1 412-111 - Diesel Maintenance Fundamental

## **412-115 Diesel Hydraulic Systems 2.00**

This course will provide the application of basic hydraulic principles as they relate to typical heavy duty vehicle applications. The student will develop the knowledge and skills required to diagnose, service and repair and maintain hydraulic systems and components including valves, pumps, and cylinders. Servicing, diagnosing and preventive maintenance procedures will be performed on trucks and other equipment. This course will help the student prepare for ASE certification. PREREQUISITES: 412-111 - Diesel Maintenance Fundamental

## **412-116 Diesel Preventative Maintenance 3.00**

The student will develop the knowledge and skills that are required to conduct preventative maintenance on today's heavy duty vehicles. Students will become familiar with established industry standards and regulations (state and federal) and the NORTH AMERICAN out of service criteria. Vehicle inspections will be conducted on both on and off road vehicles with emphasis on component identification and inspections and preventative maintenance services. This course will help the student prepare for ASE certification. PREREQUISITES: 412-106- Diesel Brake Systems 412-111 - Diesel Maintenance Fundamental 412-112 - Diesel Drive Trains

## **412-117 Diesel Suspension & Steering Systems 3.00**

This course will focus on the skills and knowledge required for today's technician to effectively diagnose, service and repair heavy duty suspension systems. Analysis of the construction and working principles of chassis components including vehicle frames, suspension systems, steering systems, wheels and tires will be covered along with wheel alignment. This course will help the student prepare for ASE certification. PREREQUISITES: 412-111 - Diesel Maintenance Fundamental

## **412-118 I/C Engines 3.00**

This course provides the student with knowledge of gas and diesel engine theory. Its focus will be operation, maintenance, and repair of diesel and gasoline powered engines. Lubrication and cooling systems will also be covered. PREREQUISITES: 412-121 - Shop Tools and Safety Principles

## **412-119 Mobile Electrical Systems 3.00**

This course introduces the student to electrical theory in terms of voltage, amperage, resistance, and impedance in various circuits. Operation and troubleshooting methods using multimeters will be covered. Students will learn how to read and utilize electrical schematics and symbols. Batteries, starting circuits, charging circuits and electrical accessories will be covered.

## **412-120 Mobile Hydraulic Systems 3.00**

This course introduces the students to the fundamentals of fluid power, components, different hydraulic systems, hydraulic schematics and terminology of the hydraulic systems used on modern mobile equipment. Includes operation of fluid flow on various systems, maintenance, and system diagnostics.

## **412-121 Shop Tools and Safety Principles 2.00**

This course will introduce the student to the diverse mechanical skills required in today's service and repair facilities for mobile equipment. The student will demonstrate, through practical hands-on lab exercises, the proper care and use of common hand and power tools. General drilling, tapping, threading, and proper lifting and supporting various mobile equipment will also be focused on. The student will also be required to use test instruments to gather data on length, volume, area, depth, and torque. Safety is stressed in this course.

## **412-122 Professional Practices 3.00**

In this course, students will investigate best business practices, examine workplace liability topics, and explore professional communication. Students will be introduced to monitoring agencies (OSHA, EPA, DOT, DNR) and federal, state, and local regulations. PREREQUISITES: 412-116 - Diesel Preventative Maintenance

**412-123 Diesel Equipment Technology Internship 3.00**

In this internship, students will participate in a planned diesel equipment technology learning experience in the workplace. Through direct occupational experience, students will participate in the supervised performance of maintenance, troubleshooting, and repair activities of diesel components. Worksite activities will focus on advanced fuel systems, engine overhaul, advanced control systems, and hydraulics. PREREQUISITES: 412-116 - Diesel Preventative Maintenance 801-196 - Oral/Interpersonal Communication 801-197 - Technical Reporting

**412-124 Diesel Equipment Mechanic Internship 3.00**

In this internship, students will participate in a planned diesel equipment mechanic learning experience in the workplace. Through direct occupational experience, students will participate in the supervised performance of maintenance, troubleshooting, and repair activities of diesel components. Work site activities will focus on basic electrical, HVAC, steering and suspension, brakes, drive train, and preventative maintenance. PREREQUISITES: 412-116 - Diesel Preventative Maintenance

**413-100 Industrial Electricity 3.00**

Industrial electricity covers advanced electrical functions, such as: sizing, conductors, wiring methods, battery maintenance, UPS systems, low voltage and high voltage switchgear, transformers, electrical distribution, lighting, electric head, industrial electronics, and programmable

controllers. This is an advanced course for the electrician who wants to learn new opportunities and challenges.

**413-500 Commercial Electrical Blueprint Reading 1.00**

Students interpret plans for commercial type buildings in regard to the electrical installation involved. NEC requirements that pertain to commercial installation are analyzed.

**413-501 Arithmetic and Introduction to Algebra For Electrical Crafts 1.00**

This course is an intensive review of arithmetic, with emphasis on common and decimal fractions, ratio and proportion, percentage, systems, units of measurement, conversions, and square root. An introduction to algebra, including terminology, additive functions, grouping symbols, axioms, basic procedures, multiplication, and division, is included.

**413-502 Electrical Circuitry Algebra and Trigonometry 1.00**

This course covers sign numbers, grouping symbols, factoring equations in one unknown, fractions, fractional equations, exponents and radicals, solution of simultaneous equations, and an introduction to factors.

**413-503 Basic AC/DC Current Motor Control 1.00**

This course is an introduction to DC and AC motor control concepts. Topics include: fundamental concepts of electricity and

magnetism, three phase motors, single-phase motors, DC motors and generators, and DC motor controls.

**413-504 Electrical Equipment and Introduction to Machine Circuits 1.00**

After a brief introduction to the fundamentals of electricity, this course covers wire size, insulation, connections, and wiring methods. Also covered are switches, relays, motor starters, and other control components. Machine tool control circuits are introduced along with maintenance procedures and safe working practices.

**413-505 AC/DC Fundamentals Apprentice 1.00**

**413-506 Electrical Theory I/Construction 4.00**

**413-508 National Electrical Code 1.00**

The principle objective is to acquaint the student with the use and contents of the National Electrical Code which is the standard for safe electrical wiring.

**413-509 Motor Control/Advanced 1.50**

This is a continuation of basic motor control. Developing the ability to read and draw control circuits given many control problems, using solid state devices.

**413-510 Motor Control 1.00**

The principle objective is to present the fundamentals of motor control by developing the ability to read and draw control circuits

given many control problems using schematic, wiring and piping diagrams.

**413-512 Logic/Basic 2.00**

Basic concepts and applications of digital electronics are covered by actually wiring the circuits in the laboratory. This course covers all the basic gates, numbering systems, decoders, flip-flops, counters, registers, binary addition and subtraction, Karnaugh mapping, and shift registers.

**413-513 Logic/Advanced 2.00**

This is a continuation of basic logic going into additional gates, basic laws of Boolean Algebra, 1's and 2's complement, multiplying and dividing, digital to analog and analog to digital, digital control, comparator, memory and read/write 4-bit word, using Digiac 3010 and 4010 logic trainers.

**413-514 Programmable Logic Controllers/Basic 2.00**

This course will cover the four major sections of a programmable controller, the data table and program language. Upon completion, the student will convert, enter, edit, and troubleshoot basic ladder programs. They will use basic relay type instructions, timer/counters instructions.

**413-515 Programmable Logic Controllers/Advanced 2.00**

This program will cover data manipulation and comparison instructions, basic math instructions and block instructions. These block instructions include file moves,

# Course Descriptions

sequencers and block transfers. Special programming techniques will also be covered.

**413-516**  
**Electrical Theory II/Construction** 4.00

**413-517**  
**Microprocessor/Understanding and Troubleshooting** 4.00

This course is to dispel the mystery that surrounds microprocessors and microprocessor systems. Each element of the MP is analyzed to show what it must do, how it is organized to accomplish its function, and how to check it when trouble develops using the 8080 MP on the MMD-1 trainer and the 8085 MP on the Hewlett Packard trainer.

**413-518**  
**Microprocessor Applications** 4.00

This course shows practical ways to adopt and utilize the power of the MP. Completely covered are temperature, light, position, motion, force, pressure, flow and level sensors and transducers. Also covered are control devices, and motors including transistor arrays, SCR's, triac's, relays, DC motors, stepper motors, and phase-locked loops using the 6808 MP.

**413-519**  
**Microprocessors/Advanced** 4.00

This course provides an in-depth study of 16-bit MP's including terms, architecture, programming, interfacing, assembly language, addressing modes, memory, logic and control lines, dynamic and static ram, and input/output interfacing using the 8088 MP.

**413-520**  
**National Electric Code Updates** 0.50

This course comprehensively covers the National Electric Code revisions. It is designed to acquaint the student with the current year's revisions/updates/changes with NEC calculations, NEC theory, and NEC content. This program explains the strategies of taking an exam regarding the revisions to the NEC and prepares you to take the Journeyman or Masters Electrical Exam.

**413-521**  
**Polyphase Alternating Current Fundamentals** 1.00

Students learn about three and four wire two-phase circuits, three-phase induction, star and delta circuits, power balanced and unbalanced loads, transformer principles, characteristics, and connection, electrical instruments, self synchronous systems, protective relays, lamps, and illumination.

**413-522**  
**Electrical-Mechanical Blueprint Reading** 1.00

This course consists of practice in: print reading using large blueprints for process control for temperature control, flow, and pressure; delta-Y connections; application of electronic controls; circuits for automated systems; systems using programmable controllers; application of motor control circuits; power wiring layout; plant layout; and interconnecting wiring.

**413-523**  
**Fiber Optics** 4.00

This is a basic course to give the electrician an understanding and respect for the care

and ever widening use of fiber optic cable to connect and control electrical equipment. It covers safety, the physics of optical energy and components such as mirrors, lenses, and prisms. The development, construction and characteristics of fiber optic cable, light sources, receivers and systems are also studied.

**413-524**  
**Robotics** 4.00

This is a practical application of the microprocessor along with other electrical and mechanical components utilized in robots and automated systems. The course covers the essential terminology and basic operation of robots, various power supply systems, hydraulic system, pneumatic systems, servo systems, electric motors and mechanical drives and robot interfacing.

**413-525**  
**Electrical Code/Residential** 0.50

Load testing, losses and efficiency, voltage regulation, single and three-phase systems and auto transformers are studied and connected in the laboratory experiments.

**413-526**  
**Electrical Theory III/Construction** 4.00

**413-527**  
**AC Circuitry Trigonometry & Vectors** 0.50

This course covers angles, angular measure (in degrees and radians), angular velocity frequency, similar triangles, trigonometric functions, solutions of right triangles, law of cosines, vector addition and subtraction, vector components, and graphing trigonometric functions.

**413-528**  
**Direct Current Fundamentals** 1.00

This course covers electron theory, Ohm's Law, series and parallel circuits, power, Kirchoff's Law, work effective heat torque, motor sizes, wire sizes, voltage drop, wiring systems, and kinds of wire insulation.

**413-529**  
**Single Phase AC Fundamentals** 1.00

This course covers properties of alternating current, AC measurement, inductance and inductive resistance, capacitance and capacitive resistance, impedance, series and parallel AC circuits, resonance, and power and power factor correction.

**413-530**  
**Direct Current Motors and Instruments** 0.50

Direct current motors and principles of operation, kinds of DC motors and their characteristics and control, permanent magnet meter movement, ammeter and voltmeter construction, operation, care, and use, watt-meters, and Wheatstone bridges are topics covered in this course, which includes laboratory experience with DC motors.

**413-531**  
**Industrial Electronics Fundamentals** 1.00

This course is an introduction to electronics, which includes semi-conductor theory and circuits, transistor theory and circuits, power supplies, integrated circuits, oscillator circuits, photosensitive devices, and pulse circuits.

**413-532**  
**Electrical Theory 1.50**

Basic DC theories are reinforced by actually assembling and connecting the various circuits in the laboratory starting with Ohm's Law, simple and combination circuits, electromagnets, solenoids, and relays.

**413-533**  
**National Electrical Code/Grounding 1.00**

This course analyzes the how and why of grounding and bonding. It examines ground and bonding in virtually every article of the code in addition to the major requirements of article 250.

**413-534**  
**Electronics/Basic Apprentice 1.50**

The laboratory work goes into the basics of transistors and semiconductors, where various circuits are assembled and connected starting with diode rectifiers and advancing through many different types of transistors and sensing circuits used in everyday industry. This should give the student a basic background for solid state motor control circuits.

**413-535**  
**Electronics/Advanced Apprentice 2.50**

The laboratory work goes into industrial applications of electronics by actually assembling and connecting various circuits starting with thyatron controls, phase shifting, SCR controls, thermister and photoelectric controls, bridge circuits and logic gates. Students work individually at their own pace.

**413-536**  
**Electrical Theory IV/Construction 4.00**

**413-537**  
**Wiring Commercial & Industrial 1.00**

This course covers the accurate interpretation of the requirements of the NEC with regard to industrial wiring. The text includes industrial building plans and blueprints. The course builds upon the knowledge and experience gained from working with the text, the NEC, and blueprints.

**413-538**  
**Alternating Current Fundamentals 1.00**

This course covers alternators, rotating magnetic fields, AC motors, speed control, types of winding, and an introduction to AC motor control.

**413-539**  
**National Electric Code (BAT) 1.00**

This course is a study of national and local electrical codes for wiring and apparatus. It covers wiring design and protection, wiring methods and materials, general use equipment, special occupancies, special equipment, and the use of tables and diagrams for the solution of practical wiring problems.

**413-540**  
**Automation Circuits & Introduction to Programmable Logic Controllers 1.00**

This course is an introduction to programmable controllers, specifically the Allen Bradley SLC-500. It covers basic instructions, programming software, input and output files, timers and counters, and programming instructions.

**413-541**  
**Electronic Controller Applications 1.00**

This course covers electronic motor controls, DC motor control by means of phase shifters, three phase rectifiers, AC motor controls, adjustable frequency drives, and synchronous motor controls.

**413-542**  
**Math II/Industrial Electrician 0.50**

**413-543**  
**Industrial Controls 1.00**

This course is an introduction to digital and analog control of industrial machines.

**413-544**  
**Motor Control Industrial 1.25**

This course provides a systematic approach to the study and application of motor control. The presentation of subject matter includes: both magnetic and electronic principles; motors, starters, and pilot devices; and control circuits (including the development of both wiring diagrams and schematics). This course should enable the student to understand motors of all types and to develop the ability to draw and wire basic control circuits. Troubleshooting of these circuits is stressed.

**413-545**  
**Troubleshooting Electrical Motors 1.00**

This course presents the procedures needed to locate and correct a malfunction in an electric motor quickly and efficiently. It first gives an understanding of electric motor operation. Then, it covers troubleshooting of AC (single and three phases), DC, and universal motors.

**413-546**  
**Electrical Theory V/Construction 4.00**

**413-547**  
**Troubleshooting Electrical Systems 1.00**

This course is a presentation of step by step applications and activities on how to troubleshoot electrical and electronic systems. Applications present information that a skilled technician should know in order to successfully troubleshoot electrical and electronic systems. Activities provide practical experience in troubleshooting typical circuits and applying the information studied.

**413-548**  
**Programmable Logic Controllers I 1.00**

This course is an introduction to programming techniques, hardware configuration, and theory of operation of a programmable logic controller. The Modicon industrial controller is the system to be studied.

**413-549**  
**Programmable Logic Controllers II 1.00**

This course is an introduction to programming techniques, hardware configuration, and theory of operation of a programmable logic controller. The system to be studied is the Modicon Industrial Controller.

**413-556**  
**Electrical Theory VI/Construction 4.00**

**413-560**  
**Blueprint Reading I/Industrial Wiring 0.50**

A small manufacturing plant serves as the problem in a typical industrial wiring installation.

# Course Descriptions

**413-561  
Blueprint Reading II/  
Commercial Wiring 0.50**

The design and installation of circuits for a small diversified commercial building is presented.

**413-565  
Math I/Industrial Electrician 0.50**

**413-574  
Math III/Industrial Electrician 0.50**

**413-575  
Blueprint Reading III/  
Electrical Ground 0.50**

Covers grounding for safety, electrical theory applicable to grounding, faults and grounding electrode systems. Defines the difference between bonding and grounding. Also covers calculating fault currents.

**413-590  
National Electrical Codes 1.25**

This course comprehensively covers the National Electrical Code. It is designed to acquaint the student with NEC calculations, NEC theory, and NEC content. This program explains the strategies of taking an exam & you get to see how prepared you are by taking simulated tests for the Journeyman or Masters Electrician Exam.

**413-591  
Troubleshooting Electrical Systems 1.00**

Learn electrical and electronic system applications, alternate energy systems, NFPA 70E requirements, step by step procedures for troubleshooting and hands on activities. Gain knowledge for troubleshooting modern technology such

as solar, security systems, robotics, lighting systems, charging systems wind turbines and others.

**413-592  
Troubleshooting Elect Motors 1.00**

Learn procedures for troubleshooting motors, generators and motor circuits commonly used in commercial, industrial, institutional and residential applications. Learn: how to locate problems using test instruments, proper motor replacement, safety, latest technology applications, proper code compliance and how to analyze problems for best solution.

**413-593  
Grounding and Bonding  
Electrical System 1.00**

This in-depth course provides the student with practical knowledge of code compliant grounding and bonding of electrical systems. Students will learn when and when not to ground electrical systems, different types of grounding techniques and how to properly install them.

**413-594  
Grounding and Bonding II 1.00**

This in-depth course provides the student with practical knowledge of code compliant grounding and bonding of electrical systems. Students will learn when and when not to ground electrical systems, different types of grounding techniques and how to properly install them.

**413-701  
Elect. Safety & Print Reading  
Electrical Safety & Print Reading 1.00**

This course is designed to provide basic electrical skills to those who need to perform first-line electrical maintenance tasks including the safe isolation, replacement, and testing of a range of common electrical devices (motors, sensors, heating elements, solenoids, etc.) in a safe and effective manner. In addition to basic electrical skills, this course will acquaint the student with the interpretation of "Prints" (blueprints) and other engineering and manufacturing documentation. The primary focus of the course will be on the basics of prints and how they are used to convey information to technicians. Application of electrical prints from industrial settings will be studied. Importantly, the format of the course is specifically designed so that, when combined with suitable on-site consolidation of training, it will assist the maintenance manager in meeting the legal requirements for employee competence in electrical work.

**413-705  
Codes for Industrial Electricians 2.25**

This course introduces the student to the layout and purpose of the National Electric Code. It also strives to teach the student proper methodology to research a code question and correctly interpret what they are reading. Students will research the structure of the National Electric Code and define the requirements of the code that are common to all electrical installations. In addition, students will examine the installation requirements for fire pumps, emergency systems and fire alarms, plan for the installation of overcurrent protection devices and how to select the proper boxes, cabinets, and conduit, the application of

grounding, examine Article 250, Article 300 of the NEC and wiring methods, determine sizing requirements for cords and cables for installations common to industrial facilities, the selection of proper conductors and raceways for industrial facilities, the code requirements which provide for the protection of various industrial transformer installations.

**414-301  
Auto Body Electricity and Service 2.00**

Knowledge of basic electricity and automotive wiring systems. Learn proper procedures and precautions for replacing electrical components. Front end alignment is covered as well as other automotive service techniques applicable to auto body repair industry.

**414-305  
Electricity for Machine Repair 3.00**

Develops specific skills needed to troubleshoot, repair and/or replace inoperative or defective electrical components on typical machine shop equipment. Introduces working knowledge of machine control circuitry and programmable logic controllers.

**414-340  
Electricity for Machine Repair 2.00**

Develops specific skills needed to troubleshoot, repair and/or replace inoperative or defective electrical components on typical machine shop equipment. Introduces a working knowledge of machine control circuitry. PREREQUISITES: 414-397 - Electricity/Basic

**414-397**  
**Electricity/Basic** **2.00**

Develops skills in measuring voltage, amperage, resistance, capacitance and inductance in electrical circuits; calculate and measure electrical power and interpret circuit diagrams.

**419-315**  
**Hydraulics/Basic** **3.00**

This course will emphasize basic hydraulic principles, valves, actuators, pumps and circuits. The fundamental equations used to calculate various system parameters are introduced to the student. Graphical symbols and their use in hydraulic circuits and the ability to follow a hydraulic schematic are taught. The student will be able to design and build basic hydraulic circuits upon successful completion of this course.

**419-317**  
**Hydraulic Circuits II** **3.00**

This course is a continuation of Hydraulic Circuits I. The student will design and build more advanced hydraulic circuits using a variety of pressure and flow control valves. They will study and analyze the effects of various control valve applications.

**419-318**  
**Hydraulic Components** **3.00**

This course will emphasize the disassembly and repair of hydraulic cylinders, motors, pumps and valves. The student will also make calculations to determine the proper component selection for various fluid power systems.

**419-320**  
**Pneumatics I** **3.00**

This course will emphasize the basic design and principles of pneumatic valves and circuits. A variety of pneumatic circuits will be constructed by the student to learn the use of valves and actuators. Types of air compressors and their applications, along with practical system design will be learned by the student.

**419-321**  
**Pneumatics II** **3.00**

This course will emphasize the disassembly and repair of air compressors, filters, regulators, lubricators and air tools. In this course you will run air compressor efficiency tests and analyze the results.

**419-321A**  
**Pneumatics II - 36 Hrs** **1.00**

This course introduces the student to all the basic concepts without going into detail and applications.

**419-323**  
**Fluid Power Introduction** **3.00**

Operation and repair of hydraulic and pneumatic assemblies, cylinders, valves, hoses, etc. and applications to industrial equipment and machinery. Students will be required to furnish tools, safety glasses, and a hand calculator capable of trigonometric functions.

**419-324**  
**Electrohydraulic Circuits I** **3.00**

This course will emphasize the basic design, wiring and repair of electrohydraulic circuits. Practical ways are shown using switches, relays, solenoid valves and other electrical

components that can be used to control fluid power circuits. The student will design electrical ladder diagrams using JIC graphic symbols and will build and troubleshoot the circuits in a fluid power lab.

**419-325**  
**Electrohydraulic Circuits II** **3.00**

This course is a continuation of electrohydraulics that deals with advanced ladder diagrams, proportional and servo control valve principles, and introduces PLC control of fluid power circuits.

**419-326**  
**Hydraulic Circuits** **3.00**

This course will emphasize hydraulic accumulators, pressure control valves, and their effect on system performance. This course expands on the knowledge gained in previous courses.

**419-340**  
**Fluid Power/Introduction to** **2.00**

Operation and repair of hydraulic and pneumatic assemblies, cylinders, valves, hoses, etc. and their applications to industrial equipment and machinery. Students will be required to furnish tools, safety glasses and a hand calculator capable of trigonometric functions.

**419-500**  
**Hydraulics Apprenticeship** **1.50**

Apprentice will learn hydraulics, pneumatics and electrical hardware by use of videotapes, reference material, and computer simulation software.

**419-511**  
**Hydraulic Pumps Apprenticeship** **0.75**

The student will be able to design hydraulic pumps using a variety of pressure and flow control valves.

**419-512**  
**Hydraulic Controls Apprenticeship** **1.00**

The student will study and analyze the effects of various control valve applications.

**419-551**  
**Pneumatics Apprentice** **1.00**

Learning is accomplished with lecture and laboratory using hydraulic, pneumatic, and electrical hardware, videotapes, multi-media interactive video, reference books, and computer simulation software.

**419-554**  
**Servo & Proportional Valves/Basic** **1.00**

This course covers the equipment necessary for open and closed loop control of fluids in both flow and level environments. Strategies include feedback (proportional, integral, derivative), feed forward, ratio, cascade, and adaptive control.

**419-561**  
**Pneumatics I** **1.50**

Learning is accomplished with lecture and laboratory using hydraulic, pneumatic, and electrical hardware, videotapes, multi-media interactive video, reference books, and computer simulation software.

**419-562**  
**Hydraulic Circuits** **1.00**

The student will be able to design more advanced hydraulic circuits using a variety

# Course Descriptions

of pressure and flow control valves. The student will study and analyze the effects of various control valve applications.

**419-563  
Hydraulic Components 1.00**

This course will analyze the disassembly and repair of hydraulic cylinders, motors, pumps and valves. The student will be able to make calculations to determine the proper component selection for various fluid power systems.

**419-564  
Servo & Proportional Valves/  
Advanced 1.00**

Students in this course will define and describe the different types of servo-control valves and proportional valves. They will understand the methods used to control these valves and connect various circuits to make them operational. Through laboratory experiments, they will learn the difference between open-loop and closed-loop controls.

**419-566  
Pneumatics II 1.00**

This course will emphasize the advanced design and principles of pneumatic valves and circuits. A variety of pneumatic circuits will be constructed by the students to learn the use of valves and actuators. The students will learn types of air compressors and their applications, along with practical system design.

**419-567  
Basic Hydraulics Beginning 1.00**

Students study all the basic components of hydraulics in simple fluid power systems, covering topics such as symbols, flow

control valves, pressure control valves, and directional control valves and pumps.

**419-568  
Basic Hydraulics Intermediate 1.00**

Students study basic hydraulic systems and the proper use of components to achieve proper operation. This course will cover a more in depth study of various hydraulic components, including pump tests.

**419-570  
Fluid Power - Apprentice 1.00**

This course introduces the student to all the basic concepts without going into detail and applications.

**420-317  
CNC Machining Operations 2.00**

This course presents Computer Numerical Control (CNC) concepts and skills. Students learn how to setup and operate CNC machinery. Basic programming, G and M codes, and fundamental features of CNC control panels are introduced. PREREQUISITES: 420-330 - Machine Tool I

**420-318  
Die Stamping 4.00**

This course presents concepts and skills used in the construction of progressive dies. Through critical thinking and practical applications, students will construct two progressive pierce and blank dies that will produce the parts for a non-twist clamp. They will make the hardware that turns the stamped pieces into five separate working clamps and perform entry-level machining tasks for employment in the machining industry. PREREQUISITES: 420-332 - Machine Tool II

**420-319  
Electrical Discharge Machining 2.00**

This course presents concepts and skills needed to use CNC programming to operate a wire Electrical Discharge Machine (EDM). Students will program a Mitsubishi wire EDM and perform routine maintenance of the machine and part set-up. PREREQUISITES: 420-317 - CNC Machining Operations

**420-326  
GD & T for Die Making 1.00**

This course presents concepts to interpret more complex prints and tolerancing techniques. Students will examine part dimensions and assemblies and construct stamping dies. PREREQUISITES: 420-329 - Industrial Print Interpretation

**420-328  
Heat Treating Processes 2.00**

This course explores the properties of industrial metals with a focus on ferrous metals and tool steels. Students will examine a variety of heat treating applications and will perform metal hardness and stress testing. PREREQUISITES: 420-333 - Metallurgy Principles

**420-329  
Industrial Print Interpretation 2.00**

This course presents universal techniques for interpreting mechanical and industrial prints. Students learn to visualize parts and assembly through interpretation and sketching activities. Drawing standards, abbreviations, dimensioning rules and sectional views are emphasized. Geometric dimensioning and tolerancing are introduced.

**420-330  
Machine Tool I 4.00**

This course introduces the basic concepts and skills needed to operate engine lathes, power saws, drill presses and bench applications. Safe and proper operation of tools and machines is emphasized. Students will operate speeds, feeds, cutting tools, tool geometry, tool grinding and work-holding devices. Dimensional accuracy and finished quality will be emphasized. COREQUISITES: 420-334 - Precision Measuring and Gauging

**420-332  
Machine Tool II 4.00**

This course expands on the basic concepts and skills introduced in Machine Tool I related to engine lathes, power saws, drill presses, bench applications, CNC setup and operation. Safety and proper operation of tools and machines is emphasized. Speeds feeds, cutting tools, tool geometry, tool grinding and work-holding devices are examined. Dimensional accuracy and finished quality are emphasized. PREREQUISITES: 420-317 - CNC Machining Operations

**420-333  
Metallurgy Principles 1.00**

This course examines the principles concerning the metals used in the industrial world. The production and properties of these materials are presented as well as their application. Students investigate the behavior of ferrous and non ferrous metals with an introduction to steel alloys.

**420-334  
Precision Measuring and Gauging 1.00**

This course introduces the student to precision measuring equipment and techniques. Students will measure a wide variety of interior and exterior part features. Advanced equipment such as the dial caliper and outside micrometer will be presented.

**420-335  
Surface Grinding 1.00**

This course presents techniques for the precision grinding of various metals. Students perform a variety of complex setups and precise machining. Safety and cleanliness are emphasized. PREREQUISITES: 420-330 - Machine Tool I

**420-342  
CNC Introduction and Support Equipment Basics 1.00**

This course is designed to give the students a familiarization with the necessary practices and techniques used to operate Computer Numerical Controlled (CNC) machines. Some of the topics covered include CNC machine introduction, safe practices and techniques used to remove burrs, Machinery's Handbook usage, basic CNC machine operator maintenance, and production support equipment use and operation. COREQUISITES: 420-345 - Gauging/ Inspection 623-147 - Manufacturing Shop Safety

**420-343  
CNC Machine Tool Operation 4.00**

This course is actual run time in the lab for hands-on machine operation. Students will work in groups and as individuals to gain

experience in machine operation during a production run. Students bring together all of the theories learned in other classes and apply them to the production process.

**420-344  
CNC Offsets and Operations 1.00**

In this course, we will cover CNC machine operations. Topics covered include machine homing, tooling used, an understanding of offsets, setting offsets, and the application of offsets in the CNC machine. COREQUISITES: 420-345 - Gauging/ Inspection

**420-345  
Gauging/Inspection 2.00**

Students will learn to apply blueprint specifications, perform shop math calculations, understand geometric dimensions and tolerances, and correctly use many different analog and digital measuring instruments, including various types of micrometers, calipers, staves, gauges (height, plug, thread, and surface roughness), and optical comparators. COREQUISITES: 421-376 - Blueprint Reading 804-370 - Mathematics I/Applied

**420-347  
Advanced Measurement and Gauging 2.00**

Students will learn to apply geometric dimensions and tolerances to actual measurements of machined parts. Measuring instruments to be utilized for part measurements will be analog and digital measuring instruments, including various types of micrometers, calipers, scales, gauges, and optical comparators, with an emphasis on proficiency, as determined by industry standards and expectations.

PREREQUISITES: 420-345 - Gauging/ Inspection

**420-371  
Machine Shop Fundamentals (1A) 3.00**

This course provides an introduction to the Machine Tool Technician program. In addition to safety, topics include the use of rules, micrometers, vernier measurement, indirect and angular measurement, sawing machines and procedures, and layout tools and procedures. Students will also learn about the selection and use of files and screw thread identification and procedures. COREQUISITES: 804-370 - Mathematics I/ Applied 421-376 - Blueprint Reading

**420-372  
Machine Shop Basic Applications (1B) 3.00**

This course covers such topics as types of metals and alloys, defining and calculating speed and feed rates, drill press procedures, cutting tools, holding devices, setups, and operations. PREREQUISITES: 420-371 - Machine Shop Fundamentals (1A)

**420-373  
Turning Fundamentals - Manual (2A) 3.00**

This course covers lathe safety, lathe identification, lathe construction and controls, lathe maintenance, lathe accessories, lathe workholding devices, lathe cutting tools, grinding and sharpening of lathe cutters, and lathe machining speeds and feeds. PREREQUISITES: 420-372 - Machine Shop Basic Applications (1B)

**420-374  
Turning Applications - Manual (2B) 3.00**

This course covers O.D. and I.D. turning operations in manual lathes holding parts

between centers and in chucks. Operations include turning, facing, drilling, reaming, tapping, grooving, chamfering, boring, knurling, tapering, and thread cutting. PREREQUISITES: 420-373 - Turning Fundamentals - Manual (2A)

**420-375  
Milling Fundamentals - Manual (3A) 3.00**

Students will learn the principles of milling operations. This course will cover safety, terminology, and types of milling machines. It also covers the proper use and care of various cutters, including indexable carbide cutters, and an introduction to set-up of a milling machine and its basic operations. PREREQUISITES: 420-372 - Machine Shop Basic Applications (1B)

**420-376  
Milling Applications - Manual (3B) 3.00**

This course covers various milling substances. The student will learn and perform various operations to produce slots, steps, angles, and holes to print specifications. The student will also demonstrate the proper use and care of accessories such as edge finders, digital readouts, dial indicators, and boring heads. An introduction to CNC (Computer Numerical Control) milling machines is included. PREREQUISITES: 420-375 - Milling Fundamentals - Manual (3A)

**420-377  
Advanced Manual Machining (4) 4.00**

This course will cover advanced manual manufacturing techniques and practices, such as proper use and care of sine plates, steady rests, special milling cutters, and dividing heads. Students will use carbide insert tooling in advanced

# Course Descriptions

turning applications. Safety and the proper procedures for operation of surface grinders are also taught. Students gain experience in building a multi-piece assembly involving fits and tolerances, using all machine shop techniques learned. PREREQUISITES: 420-374 - Turning Applications - Manual (2B) 420-376 - Milling Applications - Manual (3B) COREQUISITES: 804-371 - Mathematics II/ Applied

**420-494  
Cost Estimating 0.25**

This course will provide the learner knowledge of the necessary steps to cost and build the various components used in manufacturing, including dies, mold, fixtures and gauges. The learner will utilize a hands-on approach to performing cost estimations as if they were in the position of doing so in the real world for a company.

**420-495  
Grinding, Drilling, & Cut-Off Machine 1.00**

In this course, the techniques and machines used for surface grinding, hand grinding, and ID+OD grinding will be reviewed. The use of different types of drilling machines and their functions will be presented, including how they benefit the tool and die maker. The importance of cut-off machines including the various types, pros and cons will also be discussed.

**420-502  
Machine Shop for Metal Trades 2.00**

This course will cover the basics of the machine shop as it applies/relates to other machine trade apprenticeship programs.

**420-505  
Machine Technology I 1.00**

Survey different areas of machine technology. Variety of areas covered are: safety, measurement, layout, hand tools, drills, grinding, lathe, milling.

**420-507  
Machine Technology II 1.00**

Advanced manual machine operation will be explored in this course. Practical tasks and assignments will be performed on the drill press, lathe, and milling machine.

**420-516  
Precision Measurement 1.00**

This course introduces students to the use of various types of precision measurement instruments used in the CNC/Tool & Die manufacturing environment. The students will learn about different types of Micrometers, Calipers, Gage blocks, and Gage pins. The students will be taught how to measure inside the part with telescoping gauges or Bore gauges. The students will also be introduced to SPC. The method of holding light tolerances will be discussed in this course also.

**420-517  
Cutting Tools 0.50**

This course will introduce various types of cutting tools used in the Tool & Die/ Mold Maker fields. While in the class, the students will learn the basics of drills and taps to the many different types of inserts, cutting edges and angles associated with these cutting tools. We will also discuss the different types of tool holders for these tools and the pros and cons of the different types of holders.

**420-518  
Machinery Handbook 0.25**

This course is designed to introduce the students to the Machinery's Handbook. The Machinery's Handbook is an in depth book comprised of information pertaining to the manufacturing world. We will focus on the Tool & Die/Mold making information found in the book. The students will also focus on various ways to look up information using this book.

**420-519  
Geometric Dimensioning & Tolerancing 0.25**

This course is designed to introduce the students to Geometric Dimensioning & Tolerancing (GD&T) systems. We will discuss the 5 different groups and the symbols associated within the GD&T groups. The students will be shown how and why the GD&T symbols are used on a blueprint. While introducing the different symbols for GD&T, the students will be shown how to check or verify the manufactured parts using these various symbols.

**420-520  
Precision Measurement 0.50**

This course introduces students to the use of various types of precision measurement instruments used in the CNC/Tool & Die manufacturing environment. The students will learn about different types of Micrometers, Calipers, Gage blocks, and Gage pins. The students will be taught how to measure inside the part with telescoping gauges or Bore gauges. The students will also be introduced to SPC. The method of holding light tolerances will be discussed in this course also.

**420-542  
Metal Science for Metal Trades 1.00**

This course provides the apprentice with technical related instruction in metallurgy, to learn the proper terminology and technical information used by tool and die makers.

**420-560  
Machine Trades/Mathematics 3 1.00**

**420-561  
Machine Trades/Mathematics 4 1.00**

**420-569  
Electrical Discharge Machining Apprenticeship 1.00**

Course is designed to give apprentices a basic understanding of theory and process of sinker and wire EDM in toolmaking.

**420-592  
Numerical Control 1.00**

This course is a basic course as it relates to machine tools. Learning the operation of numerical control and the programming of simple jobs. Designed to introduce numerical control to machine trades apprentices.

**420-593  
Mechanical Drive Components 2.75**

This course will deliver the necessary information so the student will be able to select, install, adjust and inspect the following industrial drive components: belts/pulleys, couplings, bearings, chains/sprockets and gears. Furthermore this course will give the student the opportunity to incorporate the above listed industrial drive components into complex mechanical power transmission systems. The lecture portion of the course will be augmented with hands-on exercises.

**421-316  
Blueprint Reading/Advanced 2.00**

Review of basic blueprint reading principles. Deals with more forgings, castings and complex prints. New material introduced includes surface textures, fits, auxiliary views, cast iron, pin fasteners, gears, cams, ratchet wheels, and additional GDT coverage. Students read information units, perform mathematical calculations, and answer questions pertaining to part prints. PREREQUISITES: 444-337 - Fund of Blueprint and Shop Safety

**421-323  
Mechanical/CAD Drafting  
Advanced III 2.00**

Students will draw single line, double line orthographic pipe and isometric single line drawings using CAD. Basic sheet metal shapes will be drawn using AutoCAD or the board.

**421-325  
Electromechanical Device Design 2.00**

Studies the operating principles, applications and characteristics of various electromechanical power and control devices used in industrial applications with emphasis on design and safety.

**421-376  
Blueprint Reading 2.00**

Read and interpret information found on shop prints. Students answer questions in text relating to part prints. Learn to visualize objects from various views provided. Perform math calculations to obtain necessary dimensions and tolerances shown by symbols, notes and various views. Covers rectangular coordinate system and inch/

metric systems. Introductory information on geometric dimensioning and tolerancing (GD&T).

**421-397  
Metric Print Interpretation 1.00**

The basic principles of metric print interpretation will be taught using a lecture/lab arrangement.

**421-501  
3-D Interpretations Apprentice 1.00**

Learning is accomplished by using a combination of lecture and practical lab assignments. Principles of 3-D interpretation will be pursued.

**421-505  
Drafting and Sketching 1.00**

One of the most important communication tools used in the modern factory is the drawing. Drawings and sketches are the graphic language used universally in the manufacturing world. Anything from simple mechanisms to complex systems can be graphically described. The skill of drafting and sketching needs to be a part of every mechanic's knowledge base. This course will focus on learning this valuable communication tool. Topics covered include using drafting and sketching tools properly and learning to read and interpret the drawings and sketchings of others. Lecture will be supplemented by individual class exercises that provide actual practice for participants.

**421-515  
Blueprint Reading I/Metal Trades 1.00**

This course covers the basic principles necessary for training in the interpretation

of blueprints and free hand drawings of machine parts.

**421-516  
Blueprint Reading 2/Machine Trades 1.00**

This course teaches students proficiency in the interpretation of blueprints which illustrate job procedure tactics and their relation to drafting. Special attention is given to drawings which represent common machine processes.

**421-520  
Blueprint Interpretation 0.50**

Learning is accomplished by using a combination of lecture and practical lab assignments. Principles of blueprint interpretation will be pursued.

**422-310  
Metallurgy/ Machine Tool/  
Iron/ Steel Alloy 1.00**

The Machine Shop students are introduced to the science of metals and alloys. The crystalline structure and microstructure of metals and their effect on the properties of metals are studied. Prime consideration is given to heat treatment operations dealing with ferrous metals.

**422-505  
Metal Science and Basic Heat Treat 1.00**

**423-500  
Millwright Apprentice 1 4.00**

Course is designed to provide the millwright apprentice with the necessary related instruction to become a competent journey level worker. Subjects dealing with the necessary BPR and trade theory are studied.

**423-501  
Equipment Installation 0.75**

Students will layout equipment installations, plan for moving equipment, and set and level equipment.

**423-502  
Mechanical Power Transmission 0.75**

Course examines drive transmission systems and their applications, including roller chains. Students will develop skills inspecting power transmission systems and troubleshooting mechanical drive systems.

**423-503  
Packings, Seals, Gaskets 0.50**

Students will examine packing, seals, and gaskets and compare materials and applications. Then skills in layout, cutting, inspecting, removing, and installing these components will be developed.

**423-504  
Pipefitting and Valves 0.75**

Course introduces students to pipe sizes, materials and schedules, examines fittings, tubing and valves, and develops skills related to layout, installation, and maintenance.

**423-505  
Millwright Apprentice 2 4.00**

This course is designed to provide the millwright apprentice with the necessary related instruction to become a competent journey level worker. Subjects with the necessary BPR and trade theory are studied.

# Course Descriptions

**423-506**  
**Sheet Metal & Structural Steel Fab 0.75**

Course compares types of sheet metal and tools used by the trade. Students will develop skills related to fabricating sheet metal and structural steel and then erecting structural steel.

**423-507**  
**Vacuum Systems 0.75**

Course introduces principles of vacuum systems and interpreting vacuum system schematics. Students will then develop skills related to installing, repairing, replacing and applying troubleshooting principles to vacuum systems and components. Course examines preventative maintenance techniques commonly used on the job.

**423-508**  
**Fasteners 0.25**

Course provides students with a chance to compare fasteners and their uses, analyze fastener failures, and install mechanical fasteners.

**423-510**  
**Millwright Trade Theory 1.00**

**423-515**  
**Millwright Apprentice 3 4.00**

Course is designed to provide the millwright apprentice with the necessary related instruction to become a competent journey level worker. Subjects with the necessary BPR and trade theory are studied.

**423-520**  
**Millwright Apprentice 4 4.00**

Course is designed to provide the millwright apprentice with the necessary related

instruction to become a competent journey level worker. Subjects with the necessary BPR and trade theory are studied.

**423-525**  
**Millwright Apprentice 5 4.00**

Course is designed to provide the millwright apprentice with the necessary related instruction to become a competent journey level worker. Subjects dealing with the necessary BPR and trade theory are studied.

**423-530**  
**Principles of Power and Hand Tools 0.50**

The basic principles of hand tools and power tools will be explained. Learning will be accomplished by using a combination of lecture and lab.

**423-535**  
**Principles of Power Transmission and Lubrication 1.00**

The basic principles of mechanical power transmission and lubrication will be explored. Learning is accomplished by using a combination of lecture and practical lab.

**423-540**  
**Equipment Installation 0.50**

The basic principles of equipment installation will be explored. Learning is accomplished by using a combination of lecture and practical lab.

**423-545**  
**Principles of Bearings, Couplings, and Conveyors 1.00**

The basic principles of bearings, couplings, and conveyors will be explored. Learning

is accomplished by using a combination of lecture and practical lab.

**423-550**  
**Principles of Carpentry & Concrete Work 1.00**

Learning is accomplished by using a combination of lecture and practical lab assignments. The basic principles of carpentry and concrete work will be explored.

**423-555**  
**Principles of Structural Steel, Sheet Metal, and Metal Work 1.00**

Learning is accomplished by using a combination of lecture and practical lab assignments. The basic principles of structural steel, sheet metal, and metal working will be explored.

**423-560**  
**Principles of Screw Threads, Mechanical Fasteners, Adhesives, and Sealants 0.50**

Learning is accomplished by using a combination of lecture and practical lab assignments. The identification, application, selection, and making of screw threads and other mechanical fasteners will be explored.

**423-565**  
**Principles of Rigging 0.50**

Learning is accomplished by using a combination of lecture and practical lab assignments. The basic principles of safe rigging will be explored.

**423-716**  
**Metallurgy 1.00**

This course develops skills regarding metallurgical concepts. Students will compare various metals and their applications, apply metallurgical techniques to work processes, test metals for hardness, and examine heat treating applications.

**423-724**  
**Preventative & Predictive Maintenance 1.00**

Course examines both preventative and predictive maintenance concepts as they apply to millwright work processes and machine maintenance. Students will develop skills related to assessing machine conditions and faults based on both preventative and predictive maintenance.

**423-730**  
**Bearings 0.75**

Students will examine bearing types and applications, and compare equipment bearings. Learners will develop skills related to bearing inspection, selection, removal, mounting, lubrication and diagnosing bearing failures.

**423-731**  
**Couplings & Alignment 1.00**

Course compares different coupling types and examines common misalignment problems. Learners will develop skills related to inspecting, troubleshooting, and preparing couplings for removal and installation, and also aligning and lubricating couplings.

**424-501  
Drywall Texture, Spraying, and  
Alternate Techniques 2.00**

This course covers spray painting safety, conventional spray paint equipment, air compressors, texture spray materials, texture spray equipment, texture spray techniques, trade math, and blueprint reading estimation.

**424-502  
Drywall History, Terminology,  
Safety, Tools, and Taping 2.00**

This course covers trade history, safety overview, trade terminology, drywall finishing tools, types of gypsum board, filling compounds, preparations, hand embedding, filling by hand broad knife and trowel, automatic taping tools, finishing boxes, repair, and correction texturing.

**424-503  
Drywall Finishing 1.00**

This course will allow students to complete their required course hours and take and pass the drywall taping and finishing final exam.

**424-510  
Painting/Decorating I/ Related 2.00**

History of apprenticeship, painting and trade organizations. Common trade terms, mathematical review. Materials of the trade, tools and equipment, ladders and scaffolding. Surface preparation and application procedures. Paint failures and remedies, safety will be covered.

**424-511  
Painting/Decorating II/Related 2.00**

Subjects covered: color, its nature and effects. Characteristics and relationship of color. Preparation and mixing of colors. Types of ladders and their limitations and use. Ground based scaffolds, rigging and off the ground work platforms. Mobile and power scaffolds. Safety and personal protection in ladder and scaffoldwork.

**424-512  
Painting/Decorating III/Related 2.00**

Surface preparation for wallcoverings. Tools, equipment and adhesives. Wallcovering materials, wallcovering estimating and application. Conventional air spray systems, use of. Safety in spray painting. Airless spray systems. Specialized spray systems and equipment.

**424-513  
Painting/Decorating IV/Related 2.00**

Subjects covered: wood and wood products. Materials and procedures for wood surface preparations. Wood finishing materials and procedures. Maintenance and repair of old finishes. Finishing schedules and finishing problems. Corrosion, film thickness and surface preparation. Safety with special coatings, materials and their use, inspection and testing.

**424-514  
Painting/Decorating V/Related 2.00**

Subjects covered: types of abrasive blasting equipment and their use. Surface preparations with abrasive blasting, selection of abrasives. Blasting standards and specifications. Water blasting, steam cleaning. Blasting exposed aggregate

finishes, various parts of a set of blueprints and specifications. Lines, symbols, scales and dimensions. Practice reading architectural and engineering drawings.

**424-515  
Painting/Decorating VI/Related 2.00**

Subjects covered: drywall tools and equipment. Materials of the trade, taping and finishing applications, texturing and special effects, common problems and corrections. Techniques, materials and tools for: glazing, antiquing, woodgraining, marbleizing, stipple finishing, texturing, gilding, stenciling.

**424-516  
Painting & Decorating VII 1.00**

This course allows students to finish incomplete program material, learn special decorative (faux) finishes, and complete the final three year exam in painting and decorating.

**424-517  
Painting and Decorating VII 2.00**

The history of painting, decorating and apprenticeship will be covered along with trade organizations. Painting failures and remedies will be covered and demonstrated.

**427-500  
Plumbing I/Related 2.00**

**427-501  
Plumbing II/Related 2.00**

**427-502  
Plumbing III/Related 2.00**

**427-503  
Plumbing IV/Related 2.00**

**427-504  
Plumbing V/Related 2.00**

**427-505  
Plumbing VI/Related 2.00**

**427-506  
Math I/Plumbers 0.50**

**427-507  
Math II/Plumbers 0.50**

**427-508  
Math III/Plumbers 0.50**

**427-509  
Waste Vent & Drain Apprenticeship 1.00**

Students will learn the basic fundamental practices and techniques of waste, vent, and drain piping as they relate to the plumbing code. Learning will be accomplished through a combination of class discussion and practical exercises.

**427-510  
Blueprint Reading I/Plumbers 0.50**

**427-511  
Blueprint Reading II/Plumber 0.50**

**427-512  
Blueprint Reading III/Plumbers 0.50**

**427-514  
Plumbing Related 8 1.00**

This course is a continuation of the Plumbing Apprentice's Day School Instruction. It is a half semester course to enable the Plumbing Apprentice to reach the required 440 hours of paid related instruction. The subject matter will be a review of Plumbing Code to prepare the apprentice for the Final Exam, which is an all-day mock Journeyman Plumbers Exam.

# Course Descriptions

<b>427-515</b> <b>Plumbing Fundamentals</b> <b>Apprenticeship</b>	1.00	Students will learn the basic fundamental practices and techniques of the plumbing trade with an emphasis on safety throughout the course. Learning will be accomplished through a combination of class discussion and practical exercises.	<b>432-511A</b> <b>Sheet Metal Techniques II - 54 Hr</b>	1.50	<b>432-511B</b> <b>Sheet Metal Review</b>	0.50	An overview of Sheet metal construction and final exam based on previous courses to prepare apprentices for journey worker level work.	<b>432-585</b> <b>Math and Blueprint Reading VI /</b> <b>Sheet Metal</b>	0.50	<b>435-100</b> <b>Piping Fundamentals</b>	1.00	Piping fundamentals will introduce the student to basic plumbing/pipefitter skills and the Wisconsin Administrative Plumbing Code. This course will use a combination of lecture and laboratory projects to deliver information on the joining and installation of various types of piping, installation of fixtures, installation of faucets, and the repair of these items.	This course is a measurement of all we have learned previously and should allow the student to showcase the skills learned.	
<b>427-516</b> <b>Plumbing Heating Apprenticeship</b>	1.00	Students will learn the fundamental principles of various types of hot waterheating systems. Learning will be accomplished through a combination of class discussion and practical exercises.	<b>432-512</b> <b>Sheet Metal Techniques III</b>	2.00	<b>432-513</b> <b>Sheet Metal Techniques IV</b>	2.00	<b>432-514</b> <b>Sheet Metal Techniques V</b>	2.00	<b>435-505</b> <b>Industrial Pipefitting I</b> <b>Apprenticeship</b>	1.00	The purpose of this course is to provide the student with knowledge and experience in specifying and selecting materials for a particular piping system. Often, there may not be a set design to a specific piping system. A general system may have been designed, but it is the experienced pipefitter who must select components and determine the location and size of piping runs. Pipefitting I is an engineering course that will focus on the mechanical design of a piping system and how to make it both safe and efficient.	<b>435-526</b> <b>Drafting for Pipefitters-</b> <b>Apprenticeship</b>	1.00	This course instructs students in very basic pipe drafting, graphicsymbols for piping, use of the architectural scale rule, visualizations, plan views, and isometric and oblique drawings.
<b>427-517</b> <b>Plumbing Code Apprenticeship</b>	1.00	Students will learn to use and apply the information contained in the plumbing code book. Learning will be accomplished through a combination of class discussion and practical exercises.	<b>432-515</b> <b>Sheet Metal Techniques VI</b>	2.00	<b>432-516</b> <b>Sheet Metal Techniques VII</b>	2.00	<b>432-580</b> <b>Math and Blueprint Reading I/</b> <b>Sheet Metal</b>	0.50	<b>435-506</b> <b>Industrial Pipefitting II</b> <b>Apprenticeship</b>	1.00	In our Pipefitting I course, we used an engineering approach to design piping systems. Pipefitting II will take the skills learned in this course and apply them to the actual hands-on application. The student must not only design the piping system, but select the components and build the system.	<b>439-505</b> <b>Stamping and Die Design</b> <b>Applications</b>	1.00	This course presents concepts and skills used in the construction of various types of stamping and forming dies. Students will learn how stamping dies work and what parts make-up the design.
<b>427-579</b> <b>Plumbing Advanced Topics</b>	2.00	Plumbing Apprentices will be required to interpret building plans and specifications, and apply code requirements to site plans, floor plans, and isometric drawings of DWV, water, POWTS, and stormwater systems.	<b>432-581</b> <b>Math and Blueprint Reading II/</b> <b>Sheet Metal</b>	0.50	<b>432-582</b> <b>Math and Blueprint Reading III/</b> <b>Sheet Metal</b>	0.50	<b>432-583</b> <b>Math and Blueprint Reading IV/</b> <b>Sheet Metal</b>	0.50	<b>439-506</b> <b>Mold Die Design Applications</b>	1.00	Students will research design applications and the construction of various types of molds used in industry today. Instruction will include how molds work and what parts make-up the mold design.			
<b>432-510</b> <b>Sheet Metal Techniques I</b>	2.00		<b>432-584</b> <b>Math and Blueprint Reading V/</b> <b>Sheet Metal</b>	0.50			<b>439-507</b> <b>Milling/Turning 1</b>	1.00	This course introduces the basic and minor advanced Milling and Turning used in industry today. Safe and proper operation of tools and machines is emphasized. Students will learn speeds and feeds and use various types of tools used on the lathe and mill.					
<b>432-511</b> <b>Sheet Metal Techniques II</b>	2.00						<b>439-529</b> <b>Die Making Apprentice</b>	1.50						

**439-530**  
**Die Making/Apprentice** 1.00

**439-535**  
**Jig and Fixture Design** 1.00

This course explores the basic types and functions of jigs and Fixtures, design economics. Design and construction of jigs, fixtures, and specialized workholding topics.

**442-101**  
**Welding Basics** 1.00

This lab course covers the fundamentals of welding. Welding, soldering, brazing, and fabrication of various metals are included.

**442-102**  
**Introduction to Welding** 2.00

This course provides the theory and practical experience for arc and gas welding techniques. An emphasis is placed on basic safety, equipment usage, and proper procedures. The welding of ferrous and non-ferrous metals will be explored.

**442-302**  
**Metal Fabrication I** 3.00

This course is an introduction to basic metal fabrication, including safety, measuring, hand tools, layout, and applications with shearing, drilling, bending, tack welding, and inspection of final projects. PREREQUISITES: 442-324 - Weld Printreading and Fabrication Procedures

**442-314**  
**Welding/Fundamentals of** 2.00

This course covers the four main welding processes of gas metal ARC (mig wire) shielded metal arc (stick) gas tungsten arc

(tig, heliarc) and oxyacetylene weld, cut and braze. Ideal course for beginners, home welders or apprentices.

**442-321**  
**Welding/Gas Metal Arc Welding** 3.00

(GMAW; MIG; Short-Arc; Wire. Instructs in basic safety, equipment usages and procedures with various filler metal in four basic welding positions. Instruction in plasma arc cutting of various metals. Provides considerable hands-on experience as well as technical information.

**442-321A**  
**Welding/GMAW Part 1 of 3** 1.00

This course instructs in the basic set up and operations of gas metal arc welding machines and plasma cutting machines.

**442-321B**  
**Welding/GMAW Part 2 of 3** 1.00

This course instructs in the basic set up and operations of the gas metal arc welding machine and plasma cutting machine. weld in horizontal position.

**442-321C**  
**Welding/GMAW Part 3 of 3** 1.00

This course instructs in the basic set-up and operations of the gas metal arc welding machines and plasma cutting machines.

**442-322**  
**Welding/Shielded Metal Arc Welding** 3.00

(SMAW,Stick,Stick-Arc) Instructs in basic safety, equipment usages and procedures with five basic welding electrodes in four basic welding positions. Provides

considerable hands-on experience as well as technical information. Allows for simulated structural steel welding certification opportunity.

**442-322A**  
**Welding/SMAW Part 1 of 3** 1.00

Instructs in basic safety, equipment usages and procedures with five basic weldingelectrodes in two basic weld positions.

**442-322B**  
**Welding/SMAW Part 2 of 3** 1.00

Instructs in basic safety equipment usages and procedures with five basic welding electrodes in one weld position.

**442-322C**  
**Welding/SMAW Part 3 of 3** 1.00

Instructs in basic safety equipment usages and procedures with five basic welding electrodes in two basic weld positions. Provides for simulated A.W.S. certification tests.

**442-323**  
**Welding/Gas Tungsten Arc Welding** 3.00

(GTAW, TIG, Heli-Arc, Tungsten) Instructs in basic safety, equipment usages and procedures with various filler rods in three basic welding positions. Provides considerable hands-on experience as well as technical information.

**442-323A**  
**Welding/GTAW Part 1 of 3** 1.00

(GTAW, TIG, Heli-Arc, Tungsten) Instructs in basic safety, equipment usages and procedures with various filler rods in

one basic welding position. Provides considerable hands-on experience as well as technical information.

**442-323B**  
**Welding/GTAW Part 2 of 3** 1.00

(GTAW, TIG, Heli-Arc, Tungsten) Instructs in basic safety, equipment usages and procedures with various filler rods in one basic welding position. Provides considerable hands-on experience as well as technical information.

**442-323C**  
**Welding/GTAW Part 3 of 3** 1.00

(GTAW, TIG, Heli-Arc, Tungsten) Instructs in basic safety, equipment usages and procedures with various filler rods in one basic welding position. Provides considerable hands-on experience as well as technical information.

**442-324**  
**Weld Printreading and Fabrication Procedures** 2.00

Instructs in basic graphic communication relating to the welding field. Provides for hands-on application of fabrication from blueprints. Follows American Welding Society welding symbol format.

**442-326**  
**Welding/Robotic Advanced GTAW** 4.00

This course covers basic safety, equipment usage, and procedures with a Panasonic VR 008 G2 series robot on programming and advanced gas metal arc welding. COREQUISITES: 442-335 - Welding/Robotic Program and Plasma Cutting

# Course Descriptions

**442-326A**  
**Welding/Robotic Advanced**  
**GTAW Part 1 of 4** **1.00**

This course covers basic safety, equipment usage, and procedures with a Panasonic G2 series robot on programming and advanced gas metal arc welding.

**442-326B**  
**Welding/Robotic Advanced**  
**GTAW Part 2 of 4** **1.00**

This course covers basic safety, equipment usage, and procedures with a Panasonic G2 series robot on programming and advanced gas metal arc welding.

**442-326C**  
**Welding/Robotic Advanced**  
**GTAW Part 3 of 4** **1.00**

This course covers basic safety, equipment usage, and procedures with a Panasonic G2 series robot on programming and advanced gas metal arc welding.

**442-326D**  
**Welding/Robotic Advanced**  
**GTAW Part 4 of 4** **1.00**

This course covers basic safety, equipment usage, and procedures with a Panasonic G2 series robot on programming and advanced gas metal arc welding.

**442-327**  
**Welding/Robotic Advanced GMAW** **4.00**

This course covers basic safety, equipment usage, and procedures with a Panasonic VR 008 G2 series robot on programming and advanced gas tungsten arc welding. COREQUISITES: 442-335 - Welding/Robotic Program and Plasma Cutting

**442-327A**  
**Welding/Robotic Advanced**  
**GMAW Part 1 of 4** **1.00**

This course covers basic safety, equipment usage, and procedures with a Panasonic G2 series robot on programming and advanced gas tungsten arc welding. Demonstrate the use of the printer to show programs, welding data and errors.

**442-327B**  
**Welding/Robotic Advanced**  
**GMAW Part 2 of 4** **1.00**

This course covers basic safety, equipment usage, and procedures with a Panasonic G2 Series robot on programming and advanced gas tungsten arc welding.

**442-327C**  
**Welding/Robotic Advanced**  
**GMAW Part 3 of 4** **1.00**

This course covers basic safety, equipment usage, and procedures with a Panasonic G2 series robot on programming and advanced gas tungsten arc welding.

**442-327D**  
**Welding/Robotic Advanced**  
**GMAW Part 4 of 4** **1.00**

This course covers basic safety, equipment usage, and procedures with a Panasonic G2 series robot on programming and advanced gas tungsten arc welding.

**442-328**  
**Welding/Robotic and**  
**Plasma Welding** **2.00**

This course covers basic safety, equipment usage, and procedures with a Panasonic VR 008 G2 series robot on programming and

plasma welding. COREQUISITES: 442-335 - Welding/Robotic Program and Plasma Cutting

**442-329**  
**Welding/Advanced Oxyacetylene** **2.00**

Provides advanced welding applications in O-A welding, torch cutting and fitting of structural steel and brazing of alloy materials. Includes Gateway Technical College small pipe weld certification. PREREQUISITES: 442-334 - Welding/Oxyacetylene

**442-329A**  
**Welding/Advanced Oxyacetylene**  
**Part 1 of 2** **1.00**

Provides advanced welding applications in O-A welding, torch cutting and fitting of structural steel and brazing of alloy materials. Includes Gateway Technical College small pipe weld certification. PREREQUISITES: 442-334 - Welding/Oxyacetylene

**442-329B**  
**Welding/Advanced Oxyacetylene**  
**Part 2 of 2** **1.00**

Provides advanced welding applications in O-A welding, torch cutting and fitting of structural steel and brazing of alloy materials. Includes Gateway Technical College small pipe weld certification. PREREQUISITES: 442-334 - Welding/Oxyacetylene

**442-330**  
**Welding/Advanced Shielded**  
**Metal Arc Welding** **3.00**

Provides advanced welding applications in SMAW welding with small (3/23 inch)

and large (5/32 inch) electrodes hardface, aluminum, structural and pipe applications. PREREQUISITES: 442-322 - Welding/Shielded Metal Arc Welding

**442-330A**  
**Welding/Advanced SMAW**  
**Part 1 of 3** **1.00**

Provides advanced welding applications in SMAW welding with small (1/16 inch) and large (5/32 inch 3/16 inch) electrodes hardface, aluminum, structural and pipe applications. PREREQUISITES: 442-322 - Welding/Shielded Metal Arc Welding

**442-330B**  
**Welding/Advanced SMAW**  
**Part 2 of 3** **1.00**

Provides advanced welding applications in SMAW welding with small (1/16 inch) and large (5/32 inch 3/16 inch) electrodes hardface, aluminum, structural and pipe applications. PREREQUISITES: 442-322 - Welding/Shielded Metal Arc Welding

**442-330C**  
**Welding/Advanced SMAW**  
**Part 3 of 3** **1.00**

Provides advanced welding applications in SMAW welding with small (1/16 inch) and large (5/32 inch 3/16 inch) electrodes hardface, aluminum, structural and pipe applications. PREREQUISITES: 442-322 - Welding/Shielded Metal Arc Welding

**442-332**  
**Welding/Advanced Gas Metal**  
**Arc Welding** **3.00**

Provide advanced welding applications in GMAW welding using various size and types of electrodes of hard and soft

wires on structural applications. Includes Gateway Technical College flux cored weld certification. PREREQUISITES: 442-321 - Welding/Gas Metal Arc Welding

**442-332A**  
**Welding/Advanced GMAW**  
**Part 1 of 3** 1.00

Provide advanced welding applications in GMAW welding using various size and types of electrodes of hard and soft wires on structural applications. Includes Gateway Technical College flux cored weld certification. PREREQUISITES: 442-321 - Welding/Gas Metal Arc Welding

**442-332B**  
**Welding/Advanced GMAW**  
**Part 2 of 3** 1.00

Provide advanced welding applications in GMAW welding using various size and types of electrodes of hard and soft wires on structural applications. Includes Gateway Technical College flux cored weld certification. PREREQUISITES: 442-321 - Welding/Gas Metal Arc Welding

**442-332C**  
**Welding/Advanced GMAW**  
**Part 3 of 3** 1.00

Provide advanced welding applications in GMAW welding using various size and types of electrodes of hard and soft wires on structural applications. Includes Gateway Technical College flux cored weld certification.

**442-333**  
**Welding/Advanced Gas**  
**Tungsten Arc Weld** 3.00

Provides advanced welding applications in GTAW welding using stainless steel, aluminum and mild steel. Includes Gateway Technical College aluminum tensile certification and steel plate certification. PREREQUISITES: 442-323 - Welding/Gas Tungsten Arc Welding

**442-333A**  
**Welding/Advanced GTAW**  
**Part 1 of 3** 1.00

Provides advanced welding applications in GTAW welding using stainless steel, aluminum and mild steel. Includes Gateway Technical College aluminum tensile certification and steel plate certification. PREREQUISITES: 442-323 - Welding/Gas Tungsten Arc Welding

**442-333B**  
**Welding/Advanced GTAW**  
**Part 2 of 3** 1.00

Provides advanced welding applications in GTAW welding using stainless steel, aluminum and mild steel. Includes Gateway Technical College aluminum tensile certification and steel plate certification. PREREQUISITES: 442-323 - Welding/Gas Tungsten Arc Welding

**442-333C**  
**Welding/Advanced GTAW**  
**Part 3 of 3** 1.00

Provides advanced welding applications in GTAW welding using stainless steel, aluminum and mild steel. Includes Gateway

Technical College aluminum tensile certification and steel plate certification. PREREQUISITES: 442-323 - Welding/Gas Tungsten Arc Welding

**442-334**  
**Welding/Oxyacetylene** 3.00

(O-A; Gas) Instructs in basic safety, equipment usage and procedures with steel and braze filler rods in the four basic welding positions. Instructs in O-A cutting; providing considerable hands-on experience as well as technical information.

**442-334A**  
**Welding/Oxyacetylene Part 1 of 3** 1.00

(O-A; Gas) Instructs in basic safety, equipment usage and procedures with steel and braze filler rods in the four basic welding positions. Instructs in O-A cutting; providing considerable hands-on experience as well as technical information.

**442-334B**  
**Welding/Oxyacetylene Part 2 of 3** 1.00

(O-A; Gas) Instructs in basic safety, equipment usage and procedures with steel and braze filler rods in the four basic welding positions. Instructs in O-A cutting; providing considerable hands-on experience as well as technical information.

**442-334C**  
**Welding/Oxyacetylene Part 3 of 3** 1.00

(O-A; Gas) Instructs in basic safety, equipment usage and procedures with steel and braze filler rods in the four basic welding positions. Instructs in O-A cutting; providing considerable hands-on experience as well as technical information.

**442-335**  
**Welding/Robotic Program and**  
**Plasma Cutting** 2.00

This course covers basic safety, equipment usage, and procedures with a Panasonic VR 008 G2 series robot on programming and plasma cutting. PREREQUISITES: 442-334 - Welding/Oxyacetylene 442-321 - Welding/Gas Metal Arc Welding 442-322 - Welding/Shielded Metal Arc Welding 442-323 - Welding/Gas Tungsten Arc Welding

**442-336**  
**Metal Fabrication II** 3.00

This course presents layout application, blueprint and weld symbol interpretation, welding, fabrication, equipment set ups, and operation skills to safely complete metal fabrications. Selection of fabrication equipment and its safe operation is emphasized. Tools and techniques used in metal fabrication are introduced and students practice their use. PREREQUISITES: 442-302 - Metal Fabrication I 442-324 - Weld Printreading and Fabrication Procedures 804-370 - Mathematics I/Applied 442-321 - Welding/Gas Metal Arc Welding 442-322 - Welding/Shielded Metal Arc Welding or 442-323 - Welding/Gas Tungsten Arc Welding

**442-342**  
**Welding/Pipe Oxyacetylene Fitting** 1.00

Provide cutting and fitting of basic pipe joints. Includes pipe layout. PREREQUISITES: 442-334 - Welding/Oxyacetylene

# Course Descriptions

<p><b>442-343</b> <b>Welding/Pipe Shielded Metal Arc Welding</b> <b>2.00</b></p> <p>Provide open butt SMAW welding with E6010 in 2G, 5G and 6G positions. PREREQUISITES: 442-322 - Welding/ Shielded Metal Arc Welding</p>	<p><b>442-347</b> <b>Welding/Pipe Gas Metal Arc Welding</b> <b>2.00</b></p> <p>Provides open butt GMAW in 2G, 5G and 6G positions. PREREQUISITES: 442-321 - Welding/Gas Metal Arc Welding</p>	<p><b>443-101</b> <b>Forklift Operation and Maintenance</b> <b>1.00</b></p> <p>This course is intended to prevent accidents, injuries, and fatalities that may be caused by the improper and unsafe use of forklifts. The course will cover pre-operation, operation, and load handling by means of presentations and hands-on training. Course participants will earn certification after passing a driving test on a forklift.</p>	<p><b>443-314</b> <b>Mechanical Systems</b> <b>2.00</b></p> <p>The knowledge and skills required to perform basic plumbing installations and repairs are covered. COREQUISITES: 601-111 - Workplace Fundamentals</p>
<p><b>442-344</b> <b>Welding/Pipe Shielded Metal Arc Certification</b> <b>2.00</b></p> <p>Provide open butt SMAW welding with E6010 root, E7018 fill in 2G, 5G and 6G positions. Includes Gateway Technical College pipe certification. PREREQUISITES: 442-322 - Welding/ Shielded Metal Arc Welding</p>	<p><b>442-500</b> <b>Welding Technology</b> <b>1.00</b></p> <p>Students will learn all safety rules and procedures regarding welding and will become familiar with the various types of gases used in welding and when to use each type for different surfaces.</p>	<p><b>443-311</b> <b>Electrical Applications</b> <b>3.00</b></p> <p>This course introduces the student to the basics of building electrical maintenance. Repair and replacement of 110 and 220 volt electrical components are emphasized. PREREQUISITES: 605-107 - Fundamentals of Electricity/Electronics COREQUISITES: 601-111 - Workplace Fundamentals</p>	<p><b>443-315</b> <b>Industrial Preventative Maintenance</b> <b>2.00</b></p> <p>This course will cover the basics of industrial preventative maintenance equipment, scheduling, and repair that will be covered in lecture and lab. COREQUISITES: 601-111 - Workplace Fundamentals</p>
<p><b>442-345</b> <b>Welding/Pipe Gas Tungsten Arc Welding</b> <b>2.00</b></p> <p>Provide open butt GTAW with ER70S-2 filler and E7018 filler in 2G, 5G, 6G positions. PREREQUISITES: 442-322 - Welding/ Shielded Metal Arc Welding 442-323 - Welding/Gas Tungsten Arc Welding</p>	<p><b>442-510</b> <b>Welding Fundamentals (apprentices)</b> <b>1.00</b></p> <p><b>442-560</b> <b>Arc Welding/Fundamentals of</b> <b>0.50</b></p> <p>Safe use of shielded metal arc welding equipment will be discussed along with basic fundamental principles.</p>	<p><b>443-312</b> <b>Carpentry and Repair, Basic</b> <b>2.00</b></p> <p>Basic construction methods and building materials are discussed. Students develop the knowledge and skills to perform a wide range of building maintenance activities. COREQUISITES: 601-111 - Workplace Fundamentals</p>	<p><b>444-325</b> <b>CNC Lathe Setup and Programming 1</b> <b>3.00</b></p> <p>The programming and setup of CNC Lathes is covered in this course. Applications include writing G and M code programs, selecting tooling and work holding devices, setting tool and work coordinate positions, and loading programs. Proving out your program and running your own program with your own set up are also covered in this course.</p>
<p><b>442-346</b> <b>Welding/Pipe Gas Tungsten Arc Certification</b> <b>2.00</b></p> <p>Provide open butt GTAW root and fillers with ER70S-2 in 2G, 5G and 6G positions. Provides Gateway Technical College welding certification. PREREQUISITES: 442-323 - Welding/Gas Tungsten Arc Welding</p>	<p><b>442-580</b> <b>Welding Tech I</b> <b>1.00</b></p> <p>Students learn how to set up and operate gas welding and shielded metal arc welding equipment and safely function in a welding shop. They weld various joints using gas welding and arc welding processes in the flat position.</p>	<p><b>443-313</b> <b>Interior Finishing</b> <b>2.00</b></p> <p>This course will introduce the student to the basics of building interior finishing. Drywalling, painting, wall papering, and preventative maintenance will be emphasized. COREQUISITES: 601-111 - Workplace Fundamentals</p>	<p><b>444-326</b> <b>CNC Lathes Setup and Programming 2</b> <b>3.00</b></p> <p>This class is a continuation of CNC Lathe Setup and Programming 1. The intermediate setup and programming of CNC Lathes is covered. Applications include writing G &amp; M code programs including G71 and G70 canned cycles, selecting tooling and work holding devices, including collet chucks, 3 jaw chucks and fixtures, setting tool and work coordinate offset positions, and loading</p>
<p><b>442-581</b> <b>Welding Tech II</b> <b>1.00</b></p> <p>Students learn how to set up and operate Acetylene and Mapp gas welding equipment and safely function in a welding shop. They weld various joints using Acetylene and Mapp gas welding processes in the various positions.</p>			

programs. Feature CAM will also be used to write CNC Programs. Learners will also learn to make job pockets including; process sheets, set up sheets, tool lists, work instructions and inspection reports. Four axis lathe with live tooling and barfeeder will also be set up and programmed. Students will learn how to inspect and sign off on first piece inspections.

**444-327  
CNC Mill Setup and Programming 1 3.00**

The programming and setup of CNC Machining Centers is covered in this course. Applications include writing G and M code programs, selecting tooling and work holding devices, setting tool and work coordinate positions, and loading programs. Proving out your program and running your own program with your own set up are also covered in this course.

**444-328  
CNC Mill Setup and Programming 2 3.00**

This class is a continuation of CNC Mill Setup and Programming 1. The intermediate setup and programming of CNC Machining Centers is covered in this course. Applications include writing G and M code programs including G81, G83 and G84 canned cycles, selecting tooling and work holding devices including chucks, vices and fixtures, setting tool and work coordinate offset positions, and loading programs. Learners will bore multi operation jaws in this class. Students will also use Feature CAM to write CNC Programs. Learners will also learn how to make job packets including process sheets, set up sheets, tool lists, work instructions and inspection reports. First piece inspections and sign off on first piece inspections will also be performed in this class.

**444-331  
CNC Machining Technology 3.00**

This course provides an introduction to CNC machining processes and the technology that supports them. Some of the processes covered are spot drilling, drilling, reaming, tapping, counterboring, countersinking, defining and calculating speed and feed rates, screw thread identification, and drill sharpening. Students will perform these processes on manual equipment prior to observing them on CNC equipment. Basic computer skills are also covered in this course. COREQUISITES: 444-337 - Fund of Blueprint and Shop Safety

**444-332  
CNC Production Applications 2.00**

This course is actual run time in the lab for hands-on machine operation. Students will work in groups and as individuals to gain experience in machine operation during a production run. They bring together all of the theories learned, in other classes, to the production process and apply them. PREREQUISITES: 420-342 - CNC Introduction and Support Equipment Basics COREQUISITES: 420-344 - CNC Offsets and Operations 444-331 - CNC Machining Technology

**444-333  
Fundamentals of CNC Turning Applications 3.00**

This course provides an introduction to CNC turning processes and their proper application. Some of the topics covered include lathe set-up and operation, lathe safety, types of lathes, lathe workholding devices, lathe cutting tools, grinding and sharpening of lathe cutters, and a review of lathe machining speeds and feeds. In this course, you will perform O.D. and I.D.

turning operations on engine lathes as well as facing, drilling, reaming, tapping, grooving, chamfering, boring, knurling, tapering, and thread cutting operations. PREREQUISITES: 444-331 - CNC Machining Technology COREQUISITES: 421-316 - Blueprint Reading/Advanced 804-371 - Mathematics II/Applied

**444-334  
Fundamentals of CNC Milling Applications 3.00**

This course provides an introduction to CNC milling processes and their proper application. Some of the topics covered include machine set-up and operation, machine safety, types of milling machines, use and care of various cutting tools, and a review of milling speeds and feeds. The student will perform face and end milling operations as well as drilling, reaming, tapping, and slotting operations on manual milling machines. The proper use and care of accessories, such as edge finders, digital readouts, dial indicators, and boring heads, and an introduction to a Computer Numerical Control milling machine is also covered. PREREQUISITES: 444-331 - CNC Machining Technology COREQUISITES: 421-316 - Blueprint Reading/Advanced 804-371 - Mathematics II/Applied

**444-335  
CNC Lathe Set-Up 3.00**

Students will produce and troubleshoot CNC lathe set-ups from job packets and machine partsto blueprint specifications. Students will learn simple G and M codes, download programs to machines, graphically verify programs, and prove out parts on 2-axis turning center utilizing various CNC controllers. Set-ups will include faceting, turning, drilling, grooving, and thread

operations. Students will also learn to produce some simple tooling necessary to complete various set-ups. COREQUISITES: 444-333 - Fundamentals of CNC Turning Applications

**444-336  
CNC Mill Set-Up 3.00**

Students will produce and troubleshoot CNC mill set-ups from job packets and machine parts to blueprint specifications. Students will learn simple G and M codes, download programs to machines, graphically verify programs, and prove out parts on 3-axis machining centers using various CNC controllers. Set-ups will include face, end, and profile milling and drilling, slotting, boring, and tapping operations. Students will also learn to produce some simple tooling necessary to complete various set-ups. COREQUISITES: 444-334 - Fundamentals of CNC Milling Applications

**444-337  
Fund of Blueprint and Shop Safety 3.00**

This course provides students with the skills to read and interpret information found on shop prints. Rectangular coordinate and inch/metric systems will be covered and will allow students to perform math calculations to obtain necessary dimensions and tolerances shown by symbols, notes and various views. Students will also study general shop safety for a machining environment, raising the awareness of workers to the hazards around them and identifying work and personal safety practices. Other safety topics will be covered, including MSDS sheets, personal protective equipment, and lockout tag out. Students who successfully complete this course will be eligible to complete an additional exam to receive MSSC certification.

# Course Descriptions

**444-338**  
**Fundamentals of CNC Machine Application** **4.00**

This course is designed to give students a familiarization with the necessary practices and techniques used to operate Computer Numerical Controlled (CNC) machines. Some of the topics covered include CNC machine introduction, safe practices and techniques used to remove burrs, basic CNC machine operator maintenance, and production support equipment use and operation. Topics such as machine homing, tooling used, an understanding of offsets, setting offsets, and the application of offsets in the CNC machine will also be covered. Actual run time in the lab will be provided for hands on machine operation. Students will work in groups and as individuals to gain experience in machine operation during a production run, applying theories learned to the production process. COREQUISITES: 444-337 - Fund of Blueprint and Shop Safety

**444-339**  
**Gauging and Quality Control** **3.00**

This course introduces the methods and applications of Statistical Process Control (SPC) used in manufacturing operations. Emphasis will be placed upon the concepts of central tendency, variation and normal distribution of data. The development, application, and interpretation of variable and attribute control charts will be the main focus of this course. Students will also learn to apply blueprint specifications, perform shop math calculations, understand geometric dimensions and tolerances, and correctly use different analog and digital measuring instruments, including various types of micrometers, calipers, scales, gauges (height, plug, thread, and surface roughness), and optical comparators.

**444-378**  
**CNC Lathe Programming (5A)** **3.00**

Students will learn the role of CNC (Computer Numerical Control) machines in machining parts. Students will produce CNC handwritten programs from blueprints, download programs to machines, graphically prove out programs, perform manual machining functions, set up jobs, and produce parts on 2-axis turning centers utilizing a Fanuccontrol. Students will learn tools, speeds and feeds, facing, and turning operations. PREREQUISITES: 420-374 - Turning Applications - Manual (2B) 804-371 - Mathematics II/Applied 103-109 - Windows Operating Systems and Concepts

**444-379**  
**CNC Lathe Operations (5B)** **3.00**

Students will produce CNC handwritten and conversational programs utilizing canned cycles to machine parts to blueprint specifications. Fanuc and Bridgeport controls will be covered. Manual and automatic machining functions will be performed on a Bridgeport Powerpath 2-axis turning center. Students will set up jobs and machine workpieces utilizing facing, turning, drilling, boring, grooving, and threading operations. PREREQUISITES: 444-378 - CNC Lathe Programming (5A)

**444-381**  
**CNC Mill Programming (6A)** **3.00**

Students will learn the role of CNC (Computer Numerical Control) machines in machining parts. Students will convert blueprint dimensions into X, Y, and Z coordinates. They will produce and troubleshoot CNC handwritten programs from blueprints, perform manual machining functions, set up jobs, and produce parts

on a 3-axis machining center utilizing G & M code programs. Also covered is tooling, speeds and feeds, face milling, drilling, slotting, tapping, and profile milling operations. PREREQUISITES: 420-376 - Milling Applications - Manual (3B)804-371 - Mathematics II/Applied 103-109 - Windows Operating Systems and Concepts COREQUISITES: 421-316 - Blueprint Reading/Advanced

**444-382**  
**CNC Mill Operations (6B)** **3.00**

Students will produce and troubleshoot CNC handwritten and HAAS Visual Quick Code programs from blueprints, perform manual machining functions, set up jobs, and produce parts on a 3-axis machining center utilizing Haas and Fadal controls. Canned cycles will also be covered. Students will cover tooling, speeds and feeds, face milling, drilling, slotting, tapping, and profile milling operations. PREREQUISITES: 444-381 - CNC Mill Programming (6A)

**444-383**  
**Computer Aided Manufacturing CAM (7)** **4.00**

Students use Feature CAM programming software to produce G&M code programs and set-up instructions for turning and machining centers. Students also read prints, create geometry, process tooling, and graphically prove out programs. This will include solids (3D) and imported files to be programmed with set-up packets. PREREQUISITES: 444-379 - CNC Lathe Operations (5B) 444-382 - CNC Mill Operations (6B)

**444-384**  
**CNC Wire EDM (8A)** **3.00**

This course is an introduction to the operation and set up of an EDM wire machine. Projects consist of programming, set up, and operation to produce parts to blueprint specifications, including 2-axis and 4-axis applications. PREREQUISITES: 444-381 - CNC Mill Programming (6A)

**444-385**  
**Advanced CNC Applications (8B)** **4.00**

Students perform advanced operations and setups on CNC machining centers and machine and inspect workpieces to print dimensions and tolerances. Projects consist of canned cycles, 3D machining techniques, designing a fixture, and machining parts on a fixture. Multiple part fixtures will also be used for machining parts to blueprint specifications. PREREQUISITES: 444-383 - Computer Aided Manufacturing CAM (7)

**444-500**  
**Numerical Control Fundamentals** **1.00**

**444-501**  
**CNC Lathe/Mill Advanced** **1.50**

Students will set up and operate CNC Lathe. Machine parts to specifications, machine parts to blueprints. Also will set up and operate a three axis vertical machining center.

**461-120**  
**Small Power Equipment** **3.00**

Structure and theory of the two and four cycle engines. Troubleshooting, storage, maintenance, and repair of the small gas engine are included. Safety of the operator is stressed along with the use and study of operator's manuals for small power equipment.

**462-101**  
**Maintenance Machining 3.00**

Students will learn the operation of machine tools necessary for industrial machine repair. The operation of a lathe, mill, drill press, and band saw will be incorporated in the manufacturing of repair parts and fabrications. Skills using precision measuring tools will also be advanced. PREREQUISITES: 834-110 - Elementary Algebra with Applications COREQUISITES: 606-121 - Blueprint/Schematic Interpretation

**462-102**  
**Preventative/Predictive Maintenance 3.00**

The concepts of preventative and predictive maintenance will be delivered during this course. Preventative maintenance procedures will be developed and performed on complex systems by the students. Predictive technologies as thermal imaging and vibration analysis will be studied and performed. The concepts of Reliability Centered Maintenance and Total Planned Maintenance will also be included. COREQUISITES: 462-103 - Mechanical Power Transmission

**462-103**  
**Mechanical Power Transmission 3.00**

Students will learn bearing design and application, bearing failure and analysis, properties of lubrication and correct lubrication procedures, gear drives, belt drives, gear reduction units, and chain and shaft drives. Troubleshooting and maintenance of these types of power transmissions will be emphasized.

PREREQUISITES: 628-109 - Mechanical Skills for Technicians

**462-104**  
**Machine and Equipment Installation 3.00**

Machine and Equipment Installation will cover the installation and setup of complex machinery and equipment. Precision machine leveling, alignment, laser alignment, and scraping fundamentals will be included in this course. PREREQUISITES: 606-121 - Blueprint/Schematic Interpretation

**462-105**  
**Robotics/Material Handling Systems 3.00**

Students will learn the intricacies of electromechanical material handling systems during this course. Conveyors and robots will be connected to a microprocessor and the appropriate feedback devices to make a complete operational material handling system. COREQUISITES: 620-104 - Electro Hydraulic/Mechanical Systems

**462-106**  
**Industrial Mechanic Capstone Project 5.00**

During this course, students working in a team environment will assemble and test a complex project from a print analysis stage to final testing. Once the system is operational, problems will be introduced to enhance the troubleshooting skills of the students. The concepts of project management will be included in this course. COREQUISITES: 462-102 - Preventative/Predictive Maintenance 462-105 - Robotics/Material Handling Systems

**462-106A**  
**Industrial Mechanic Capstone Project A 2.00**

This course will set the foundation for a complex project that will be completed during part II of this course (462-106B). Parts and equipment needed will be identified and fabricated or machined. The concepts of team dynamics and project management will also be delivered throughout the course.

**462-106B**  
**Industrial Mechanic Capstone Project B 3.00**

During this course, students working in a team environment will assemble and test a complex project from a print analysis stage to final testing. Once the system is operational, problems will be introduced to enhance the troubleshooting skills of the students.

**462-107**  
**Industrial Mechanics Machine Troubleshooting Introduction 2.00**

This course expands on the information presented in the hydraulics/pneumatics introduction course, focusing on the troubleshooting and repair of hydraulic/pneumatic circuits with an emphasis on the integration with mechanical systems. Troubleshooting techniques are introduced and applied in determining the cause of actual system faults that will be placed in lab equipment.

**462-108**  
**Industrial Machine & Equipment Troubleshooting Introduction 3.00**

This course focuses on the troubleshooting and repair of hydraulic/pneumatic circuits

with an emphasis on the integration with mechanical systems. Troubleshooting techniques are introduced and applied in determining the cause of actual systems faults that will be placed in lab equipment by the instructor.

**462-109**  
**Pumps: Operation, Maintenance, and Troubleshooting 3.00**

This course will use a combination of lecture and hands-on exercises to provide the student with information needed to repair and maintain the various types of pumps used in industry today. To help improve troubleshooting skills and to give students additional knowledge that can be used to improve pump reliability, the course will move beyond the pump itself and explore the entire pumping system as a whole. By applying the information contained in this course to manufacturing settings, students will be able to more effectively analyze pump failures, determine the appropriate repair action, select the correct repair action, select the correct repair parts, and be able to diagnose pump/system behavior, which will ultimately lead to more productive pump operation and lower maintenance costs.

**462-110**  
**Maintenance Machining Tech, Advanced 3.00**

Advanced Maintenance Machining Technology gives students an opportunity to expand their maintenance machining skills and learn new techniques. A combination of lecture and practical lab exercises will expose students to: taper turning and boring, sine plate application and use, advanced tooling selection and application, hard cutting, OD and ID grinding and CNC milling using conversational language

# Course Descriptions

programming. PREREQUISITES: 462-101 - Maintenance Machining

**462-343C  
Industrial Machine Repair/  
Basic-Theory 2.00**

Students will learn to identify and work with various types of bearings, gears, and mechanical drives used on industrial machinery. Preventative maintenance procedures will be developed and performed on industrial machinery. Skills required to use hand tools and machine tools necessary for successful machine repair will be developed.

**462-343D  
Industrial Machine Repair/Basic-  
Applications 3.00**

Students will learn the correct basic disassembly and assembly procedures, cleaning, inspection, and fundamental machine repair techniques through the use of experimental equipment and actual machinery. Skills required for the safe operation of an industrial fork-lift, rigging, hitching, and moving of machinery and heavy parts will be developed.

**462-345C  
Industrial Machine Repair/  
Advanced-Theory 2.00**

During this course, students will learn the various tests for machine accuracy, coupling application and alignment, maintenance of variable speed drives, and lubrication materials and their application. Troubleshooting techniques will be advanced through discussion and practical application.

**462-345D  
Industrial Machine Repair/  
Advanced-Applications 3.00**

This is a project-oriented, "hands-on" course in which the student will demonstrate machine tool operation skills, machine repair skills, and the ability to diagnose problems and make the necessary repairs.

**462-346  
Industrial Machine Repair/Basic 3.00**

Students will learn and apply knowledge about fundamental hand tools, blueprint reading, measurement devices, components, and machine moving. The student acquires and applies information about mechanical fasteners, drilling, reaming, and thread cutting using taps and dies.

**462-503  
Industrial Mechanic Fundamentals I 1.00**

The application and safe operation of hand and power tools will be explored in this course. The care and use of precision measuring tools and their application will also be covered.

**462-504  
Industrial Mechanic Fundamentals II 1.00**

Manual machine operation will be explored in this course. Practical tasks and assignments will be performed on the drill press, lathe, and milling machine.

**462-505  
Principles of Gibs, Scraping,  
and Machine Accuracy 1.00**

Learning is accomplished using a combination of lecture and practical lab

work. The basic principles of gibs, scraping, and machine accuracy will be explored.

**462-506  
Principles of Flexible Drives 1.00**

Flexible drives are utilized throughout industry. These drives come in a variety of styles and each of these styles requires proper installation, maintenance, and repair. This class will introduce the student to these drive types. Labs will focus on building up actual drive systems and correctly calculating speed and torque to develop the required output from a drive system. Students will also learn the advantages and disadvantages of one drive system over another.

**462-507  
Principles of Fasteners and  
Threading 1.00**

Fasteners are a key component to your job in the maintenance area. You will need to know what type of fastener to select and how to install it properly. This course focuses on the broad array of fasteners with major emphasis on threaded types. Hands-on labs are utilized to give you experience in selection and installation.

**462-508  
Machine Alignment 0.50**

This course will instruct the learner in machine and equipment alignment used for production and moving of products using conveyors, pumps, motors, and power drive units.

**462-510  
Principles of Bearings, Clutches,  
and Gears 1.00**

Learning is accomplished using a combination of lecture and practical lab work. The basic principles of bearings, clutches, and gears will be explored.

**462-515  
Basics of Machine Leveling  
& Geometry 1.00**

Learning is accomplished by using a combination of lecture and practical lab work. The basic principles of machine leveling and geometry will be explored.

**462-520  
Troubleshooting Techniques 1.00**

Learning is accomplished by using a combination of lecture and practical lab work. The basic principles of industrial troubleshooting will be explored.

**462-521  
Mechanical Drive Components 2.75**

This course will deliver the necessary information so the student will be able to select, install, adjust and inspect the following industrial drive components: belts/pulleys, couplings, bearings, chains/sprockets and gears. Furthermore this course will give the student the opportunity to incorporate the above listed industrial drive components into complex mechanical power transmission systems. The lecture portion of the course will be augmented with hands-on exercises.

**462-522**  
**Developing and Conducting PM/PDM** 1.25

This course provides the information needed by the learner to effectively develop and perform preventative and predictive maintenance procedures on industrial equipment. The predictive technologies of IR and Vibration analysis will be covered. The lecture portion will be augmented by hands-on exercises where the learner will write procedures for equipment and conduct the inspections.

**462-523**  
**Bolting Basics** 1.00

This course provides the information needed by the learner to effectively identify, apply and install fasteners used on industrial equipment. The fundamental principles that influence how threaded fasteners work will be explored. The proper installation and tightening will also be covered.

**462-524**  
**Fundamentals of Metallurgy** 0.50

This course provides an introduction to the principle alloy categories and their applications. It explains the properties of metals, how they are tested, how metal products are made and where they are used.

**472-550**  
**Diesel Engines - Industrial** 1.00

This course will cover the theory of diesel operations, discussing both mechanical and electronic injection systems. Maintenance and servicing procedures and basic troubleshooting will be covered.

**472-551**  
**Forklift Safety & Maintenance** 1.00

Forklift safety inspections will be covered. Students will discuss the procedure for removing a forklift from service for repair and post-repair inspections before a unit is returned to service.

**475-300**  
**Building Construction, Introduction to** 3.00

This course presents the varieties, identification, characteristics and uses of wood in the construction industry. Material measurement is introduced. Common fasteners, nails, screws and staples and their appropriate use are examined. Principles of construction safety are discussed and safe operation of power tools is demonstrated.

**475-301**  
**Building Construction, Fundamentals** 5.00

This course introduces the operation of power woodworking machines, portable power equipment, and hand tools. Safety is emphasized. Fasteners common to the construction industry are presented and studied. Site layout and the use of the builder's level, builder's transit, and the laser transit are explored. Building foundations, concrete and formwork are examined.

**475-302**  
**Residential Print Reading** 2.00

This course presents the symbols, notations, abbreviations, and conventions that are the architectural language, and acquaints the student with the basic concepts on which residential construction drawings are read and interpreted.

**475-303**  
**Framing Techniques I** 3.00

This course presents frame construction techniques related to floor systems and staircases.

**475-304**  
**Commercial Print Reading** 1.00

This course is designed to provide print reading experience in commercial construction. Students will review concepts regarding elements commonly found on prints of commercial structures. Included are types of construction, sitework, structural steel construction, reinforced concrete construction and finish construction. PREREQUISITES: 475-302 - Residential Print Reading

**475-305**  
**Framing Techniques II** 3.00

This course presents wall layout and framing, rough-opening calculations and layouts for windows and doors. The principles of roof framing including architectural drafting of plan and elevation views for roofs are examined. Principles of layout and cutting of all roof framing members for both equal and unequal pitch roofs are presented. The Wisconsin Uniform Dwelling Code is explored in relation to wall and roof construction. PREREQUISITES: 475-303 - Framing Techniques I

**475-306**  
**Exterior Trim** 3.00

This course presents the skills and theory related to roof cornice detail, roof coverings, windows, skylights, doors, and decks. Exterior finish methods are explored. PREREQUISITES: 475-301 - Building

Construction, Fundamentals 475-302 - Residential Print Reading

**475-307**  
**Interior Trim** 5.00

This course presents techniques for interior trim, mitering, coping and scribing. Door hangings is examined and performed. Newel post, balustrades and handrails are studied and installed. The Wisconsin Uniform Dwelling Code is explained and emphasized. Solid wood flooring is studied along with several ceiling tile applications. Installation of cabinets is examined and performed. PREREQUISITES: 475-301 - Building Construction, Fundamentals 475-302 - Residential Print Reading

**482-101**  
**Wind Systems, Intro to** 3.00

This course prepares the learner to assess the global energy picture; analyze the causes of wind and wind flow properties; explore small, medium, and large wind turbine designs; assess the environmental effects of wind turbines; perform business and site assessments for a wind turbine project, plan your wind turbine project, evaluate operation and maintenance of the turbine system, and analyze the future of wind energy.

**482-110**  
**Intro to Sustainable Energy** 2.00

Introduction to Sustainable Energy will describe force, work, energy, and power as related to alternative-energy systems. The fundamental operation of the electric power grid is described. The focus of this course is on small business and residential applications of distributed renewable-energy electrical-generation systems like small wind turbines, photovoltaic systems, and

# Course Descriptions

fuel cells. This course will be tied to the Alternative Energy Hybrid Systems Integrator Level I Certification examination offered by the Electronics Technicians Association, International.

**482-111**  
**Sustainable Energy-  
Generation of Elec** **2.00**

Sustainable Energy: The Generation of Electricity will describe the operation of photovoltaic (PV) systems comprised of solar modules, batteries, battery chargers, and inverters to produce power-grid-quality ac voltage. Wind turbines are also studied including generators, alternators, rectification, inverters, and resistive loading during periods of light loading. Fuel cell characteristics, control and monitoring are also explored. The integration of these three technologies is also investigated. This course will be tied to the Alternative Energy Hybrid Systems Integrator Level I Certification examination offered by the Electronics Technicians Association, International. PREREQUISITES: 482-110 - Intro to Sustainable Energy

**482-112**  
**Sustainable Energy-  
Capstone Design Proj** **3.00**

The Sustainable Energy: Capstone Design Project course will tie together the topics covered in the "Introduction to Sustainable Energy" course and the "Sustainable Energy: The Generation of Electricity" course through the development of the design and implementation of a sustainable energy project. PREREQUISITES: 482-110 - Intro to Sustainable Energy

**483-101**  
**Geothermal: Water to Water** **3.00**

This course introduces the HVAC technician to the components, heat exchange circuit, hydronic circuit and operation of the water to water GeoThermal heat pump. The operation of the unit as an intergral part of a hydronic system, coupling of the heat pump for domestic hot water production and the connection to the outside loop are covered in depth. PREREQUISITES: 601-116 - Mechanical Fundamentals 601-133 - Refrigeration Fundamentals

**483-102**  
**Geothermal: Commissioning** **3.00**

This advanced course is for the HVAC technician who wants to perform startup and commissioning of Geothermal heat pump systems. The student will learn about the design parameters, the pertinent startup data that needs to be collected and the basics of troubleshooting the unique problems associated with Geothermal heat pumps. PREREQUISITES: 483-101 - Geothermal: Water to Water 483-103 - Geothermal: Air to Water

**483-103**  
**Geothermal: Air to Water** **3.00**

This course will introduce the HVAC technician to the components, heat exchange circuit and operation of an air to water Geothermal heat pump. The operation of the unit, as an intergral part of a forced air system, coupling of the heat pump for domestic hot water production, and connection to the outside loop are covered in depth. PREREQUISITES: 601-110 - Air Conditioning Fundamentals 601-116 - Mechanical Fundamentals 601-133 - Refrigeration Fundamentals

**483-170**  
**Rotary: Rig Operation** **3.00**

This course introduces the student to the setup and operational controls associated with Geo industry rigs for vertical boreholes. Topics covered will include the different types of rigs, their associated pumps, power take-offs, rig capabilities, rig safety, rig set-up and transport, site hazards and environmental damage awareness. The students under instructor supervision will assist in the set-up and drilling of sample boreholes to various depths using selected bits. PREREQUISITES: 483-174 - Introduction to Ground Loop Methods 483-175 - GeoExchange Site Safety

**483-171**  
**Rotary: Mud Boring Applications** **3.00**

In this course the requirements for drilling/boring in loose/unconsolidated formations will be covered. The student will learn to drill using drag and tri-cone bits and the proper use of drilling mud and casing to ensure the stability of boreholes. Also covered will be the site management of drilling fluids, sampling of drill tailings and maintenance of drill logs. PREREQUISITES: 483-174 - Introduction to Ground Loop Methods 483-172 - Grouting and Sanitation 483-170 - Rotary: Rig Operation 483-175 - GeoExchange Site Safety

**483-172**  
**Grouting and Sanitation** **2.00**

This course will introduce the student to grouting and sanitation operations on a Geo boring site. Grouting materials, mixing methods and pumping applications will be discussed and applied. Site sanitation, record keeping, environmental logging including State and Federal regulatory compliance are topics covered.

**483-173**  
**Plastic Fusion Applications** **2.00**

This course will provide the student with the hands-on fusion applications of HDPE piping. The student will learn Butt and Socket fusion techniques according to IGSHPA certification requirements. Upon completion of course student will be able to test for IGSHPA Fusion Certification.

**483-174**  
**Introduction to Ground  
Loop Methods** **2.00**

This course introduces the student to GeoExchange technology. Common loop configurations and the various drilling techniques needed to install them will be covered. Types of equipment used to heat/cool residential and commercial buildings will also be discussed. The economics and the future of GeoExchange in a renewable energy economy are addressed.

**483-175**  
**GeoExchange Site Safety** **1.00**

This course introduces the student to the hazards associated with the typical active worksite at a GeoExchange installation project. Topics covered include recognizing and preventing motion hazards, fall prevention, lifting safety and open trench/hole precautions. General personal protection of head/limbs and hearing/sight will also be covered.

**483-176**  
**Trenching and Headering** **2.00**

This course teaches the student the fundamentals of calculating and constructing 2 pipe reverse return reducing headering. Calculating necessary flow rates for proper flushing and purging of loops and header

systems are demonstrated. Working in, around and proper construction and back filling of header trenches is also covered. PREREQUISITES: 483-175 - GeoExchange Site Safety 483-173 - Plastic Fusion Applications 483-174 - Introduction to Ground Loop Methods

**483-177  
Trenching/Header Fundamentals 2.00**

This course teaches the student the fundamentals of calculating and constructing 2 pipe reverse return reducing headering. Calculating necessary flow rates for proper flushing and purging of loops and header systems are demonstrated. Working in, around and proper construction and back filling of header trenches is also covered. PREREQUISITES: 483-173 - Plastic Fusion Applications 483-174 - Introduction to Ground Loop Methods 483-175 - GeoExchange Site Safety

**483-178  
Geological Formations for Drillers 3.00**

This course introduces the student to the complex field of geology as it relates to borehole construction. The types of consolidated and unconsolidated formations, the regional occurrence, the most efficient drilling process for each as well as basic rock identification and sample classification for logging purposes are covered. Sources of possible contamination and the protection of subsurface groundwater from the drilling process or surface contaminates are covered.

**483-179  
Flushing, Purging and Pressurizing 2.00**

This course is for the advanced student who already understands and can perform socket and butt fusion of HDPE piping. Course content includes the leak and pressure testing of the completed the associated headers and supply/return runs from inside the building. The techniques for flushing debris and trapped air from the completed piping circuits are practiced during lab activities. Troubleshooting and identifying restricted and collapsed loops are demonstrated and the introduction and testing of antifreeze levels in pressurized and non-pressurized flow centers is also covered. PREREQUISITES: 483-173 - Plastic Fusion Applications 483-177 - Trenching/Header Fundamentals

**483-180  
Rig Transport, Set-Up and Safety 2.00**

This course covers the safety and regulatory issues regarding the transportation and commissioning of standard industry drilling/boring rigs for GeoExchange borehole construction. DOT issues concerning weight, trailering, CDL licensure etc. are covered. Site safety to minimize environmental impact of rig, drilled spoils and personnel protection from overhead and underground hazards are also covered.

**483-181  
Geo Site & Record Management 2.00**

This course introduces the student to the types of records and data that must be collected, tabulated, maintained and reported to governmental bodies. The proper preparation of driller logs, equipment safety and maintenance logs, driver road logs

and collection of loopfield coordinates for warranty submission are covered.

**483-182  
Geo Safety Lead 2.00**

This course is for the Lead person who will be responsible for overall safety of the worksite and those subordinates working at the site with only limited knowledge of OSHA safety requirements. This course parallels much of the information covered by an OSHA 30 hr. training session but with specific emphasis on the knowledge needed by the crew leader at an active GeoExchange site. PREREQUISITES: 483-175 - GeoExchange Site Safety 483-177 - Trenching/Header Fundamentals 483-180 - Rig Transport, Set-Up and Safety

**483-183  
Rotary: Air Boring Applications 3.00**

This course is for the advanced student wishing to add rotary drilling with air to their skill set. Use of compressed air, water and foam injection to enhance particle size carrying ability of air are introduced. Tri-cone and downhole hammer bits and proper dust control are also covered. PREREQUISITES: 483-175 - GeoExchange Site Safety 483-170 - Rotary: Rig Operation 483-178 - Geological Formations for Drillers COREQUISITES: 483-172 - Grouting and Sanitation

**501-101  
Medical Terminology 3.00**

This course focuses on the component parts of medical terms: prefixes, suffixes, and word roots. Students practice formation, analysis, and reconstruction of terms, with an emphasis on spelling, definition, and pronunciation. They are introduced to operative, diagnostic, therapeutic,

and symptomatic terminology of all body systems, as well as systemic and surgical terminology. PREREQUISITES: 838-105 - Reading & Study Skills, Intro

**501-102  
Intro to Medical Language 1.00**

This course focuses on the component parts of medical terms: prefixes, suffixes, and word roots. Students practice formation, analysis, and reconstruction of terms, with an emphasis on spelling, definition, and pronunciation.

**501-103  
Health Occupations, Intro to 3.00**

This course provides an over-view of the health care industry. Students will identify characteristics of various health care services areas. The learner will acquire essential knowledge, skills and attributes necessary to be employed in the health care industry. There is a focus on ethics, confidentiality, legal issues, responsible behaviors and spoken and written communication. The learner will investigate roles and responsibilities of a variety of career options within the health care industry. Students will experience job shadowing in a variety careers in hospitals, clinics and long term care facilities.

**501-104  
Principles of Customer Service in Healthcare 2.00**

This course is designed as an introduction to customer service for learners interested in working in various healthcare settings. The learner investigates healthcare systems, safety standards, and the workforce. The learner examines professionalism, interpersonal and written communication

# Course Descriptions

skills, and confidentiality as they relate to customer service in healthcare.  
**PREREQUISITES:** 851-760 - Pre-Technical Writing  
**COREQUISITES:** 501-107 - Computing for Healthcare, Introduction

**501-107**  
**Computing for Healthcare, Introduction** **2.00**

This course provides an introduction to basic computer functions and applications utilized in contemporary healthcare settings. Students are introduced to the hardware and software components of modern computer systems and the application of computers in the workplace. The course emphasizes the use of common software packages, operating systems, file management, word processing, spreadsheet, database, internet, and electronic mail.

**502-301**  
**Shampoo Treatments** **1.00**

Theory and practical training in shampooing, scalp massage, scalp and hair analysis, and procedures for treating scalp and hair conditions. Students apply knowledge and skills on customers in patron laboratory to complete competencies in subject areas.

**502-308**  
**Salon Service 5** **1.00**

In this course, students will be required to perform all client service skills in the student salon, with the concentration and evaluation being on the performance of basic perming and texture skills. **PREREQUISITES:** 502-301 - Shampoo Treatments 502-345 - Basic Hair Color 502-320 - Basic Manicuring 502-347 - Bleaching 502-348 - Chemical Straightening 502-349 - Facials 502-350 - Hair Design 1 502-351 - Hair Design 2 502-352 - Men's

Haircutting 502-353 - Perm Techniques 502-366 - Women's Haircutting

**502-309**  
**Salon Service 6** **1.00**

In this course, students will be required to perform all client service skills in the student salon, with the concentration and evaluation being on the performance of men's haircutting skills. **PREREQUISITES:** 502-301 - Shampoo Treatments 502-345 - Basic Hair Color 502-320 - Basic Manicuring 502-347 - Bleaching 502-348 - Chemical Straightening 502-349 - Facials 502-350 - Hair Design 1 502-351 - Hair Design 2 502-352 - Men's Haircutting 502-353 - Perm Techniques 502-366 - Women's Haircutting

**502-310**  
**Salon Service 7** **1.00**

In this course, students will be required to perform all client service skills in the student salon, with the concentration and evaluation being on the performance of hair color skills. **PREREQUISITES:** 502-301 - Shampoo Treatments 502-345 - Basic Hair Color 502-320 - Basic Manicuring 502-347 - Bleaching 502-348 - Chemical Straightening 502-349 - Facials 502-350 - Hair Design 1 502-351 - Hair Design 2 502-352 - Men's Haircutting 502-353 - Perm Techniques 502-366 - Women's Haircutting

**502-311**  
**Salon Service 10** **1.00**

In this course, students will be required to perform all client service skills in the student salon, with the concentration and evaluation being on the performance of interpersonal skills. **PREREQUISITES:** 502-301 - Shampoo Treatments 502-345 - Basic Hair Color 502-320 - Basic Manicuring 502-347 - Bleaching

502-348 - Chemical Straightening 502-349 - Facials 502-350 - Hair Design 1 502-351 - Hair Design 2 502-352 - Men's Haircutting 502-353 - Perm Techniques 502-366 - Women's Haircutting

**502-312**  
**Barber/Cosmetology/ Introduction to** **1.00**

This course provides knowledge in the general subjects pertaining to barber/cosmetology, including: bacteriology, sanitation, anatomy and physiology, Wisconsin laws, basic chemistry, and electricity.

**502-320**  
**Basic Manicuring** **1.00**

Students will receive theory and practice training in basic and advanced manicuring, pedicuring, and nail art procedures and techniques.

**502-324**  
**Barber/Cosmetology Industry** **2.00**

This course is designed as a complete program of business instruction for the barber/cosmetology student. It supplements the usual technical training required in career development.

**502-325**  
**Manicure/Nail Technician Illinois** **1.00**

This course offers the specific content needed by an individual who wishes to become a licensed manicurist/nail technician in Illinois.

**502-327**  
**Manicure Nail Additional Hours** **2.00**

For students who meet manicuring/nail technician training in other states wishing to complete 300 hours for Wisconsin licensure. Students are evaluated per Wisconsin requirements. They complete training on patron lab floor and complete a mock state board exam.

**502-330**  
**Barber/Cosmetology Additional Hours - 2 Credits** **2.00**

For students who meet Barber/Cosmetology training requirements in other states who wish to complete additional hours for Wisconsin licensure. Students are evaluated per Wisconsin requirements, complete training on patron lab floor and complete a mock state board.

**502-337**  
**Manicure/Nail Technician I** **4.00**

Theory and practical training in basic and advanced manicuring, pedicuring and nail art procedures and techniques. Students apply knowledge and skills on clients in a simulated salon environment to complete the competencies in subject area. Students completing both Manicure/ Nail Technician courses are eligible to take a state board examination for a manicurist license.

**502-338**  
**Manicure/Nail Technician II** **5.00**

Theory and practical training in basic and advanced artificial nail procedures and techniques. Students apply knowledge and skills on clients in a simulated salon environment to complete competencies in subject area.

**502-341  
Barber/Cosmetology  
Additional Hours V 1.00**

For students who meet Barber/Cosmetology training requirements in other states who wish to complete additional hours for Wisconsin licensure. Students are evaluated per WI requirements, complete training on patron lab floor and complete a mock state board.

**502-345  
Basic Hair Color 2.00**

Theory and practical training in haircoloring techniques, procedures, and formulations.

**502-346  
Basic Manicuring 2.00**

Theory and practice training in basic and advanced manicuring, pedicuring, and nail art procedures and techniques

**502-347  
Bleaching 2.00**

Theory and practical training in bleaching techniques, procedures, and stages of lightening hair. PREREQUISITES: 502-345 - Basic Hair Color

**502-348  
Chemical Straightening 2.00**

Theory and practical training in chemical and related hair relaxing techniques and procedures. PREREQUISITES: 502-353 - Perm Techniques

**502-349  
Facials 2.00**

Theory and practice training in facial massage, skin care, basic and corrective makeup application, eyebrow arching, waxing, lash and brow tinting, and seasonal color analysis.

**502-350  
Hair Design 1 2.00**

Theory and practice training in artistic design, setting, and finishing techniques. Use of blow dryer, curling iron, and rollers.

**502-351  
Hair Design 2 2.00**

Theory and practical training in wigs and hair pieces, hair pressing, and long hair designs.

**502-352  
Men's Haircutting 2.00**

Theory and practice training in haircutting concept, basic form techniques, and mustache and beard trims. Use of clippers, scissors, and thinning shears is included. PREREQUISITES: 502-366 - Women's Haircutting

**502-353  
Perm Techniques 2.00**

Theory and practical training in basic and advanced permanent waving procedures.

**502-354  
Salon Service 1 1.00**

In this course, students will be required to perform all client service skills in the student salon, with the concentration and evaluation

being on the performance of facials and skin care. PREREQUISITES: 502-301 - Shampoo Treatments 502-345 - Basic Hair Color 502-320 - Basic Manicuring 502-347 - Bleaching 502-348 - Chemical Straightening 502-349 - Facials 502-350 - Hair Design 1 502-351 - Hair Design 2 502-352 - Men's Haircutting 502-353 - Perm Techniques 502-366 - Women's Haircutting

**502-355  
Salon Service 2 1.00**

In this course, students will be required to perform all client service skills in the student salon, with the concentration and evaluation being on the performance of basic nail service skills. PREREQUISITES: 502-301 - Shampoo Treatments 502-345 - Basic Hair Color 502-320 - Basic Manicuring 502-347 - Bleaching 502-348 - Chemical Straightening 502-349 - Facials 502-350 - Hair Design 1 502-351 - Hair Design 2 502-352 - Men's Haircutting 502-353 - Perm Techniques 502-366 - Women's Haircutting

**502-356  
Salon Service 3 1.00**

In this course, students will be required to perform all client service skills in the student salon, with the concentration and evaluation being on the performance of hairstyling and finishing techniques on long hair. PREREQUISITES: 502-301 - Shampoo Treatments 502-345 - Basic Hair Color 502-320 - Basic Manicuring 502-347 - Bleaching 502-348 - Chemical Straightening 502-349 - Facials 502-350 - Hair Design 1 502-351 - Hair Design 2 502-352 - Men's Haircutting 502-353 - Perm Techniques 502-366 - Women's Haircutting

**502-357  
Salon Service 4 2.00**

Haircutting course is designed to assist students in learning how face shapes, body structure, texture or the hair, color and curl configuration play a part in finding the perfect hair cut for each clients individual needs. Identify and perform each of the 4 different haircuts using a shears, razor. Identify safety procedures to protect the client and the student. PREREQUISITES: 502-301 - Shampoo Treatments 502-345 - Basic Hair Color 502-346 - Basic Manicuring 502-347 - Bleaching 502-348 - Chemical Straightening 502-349 - Facials 502-350 - Hair Design 1 502-351 - Hair Design 2 502-352 - Men's Haircutting 502-353 - Perm Techniques 502-366 - Women's Haircutting

**502-358  
Salon Service 5 2.00**

This course will provide the students with the knowledge and skills required to perform basic perming services in a licensed salon. Students apply knowledge and skills on customers in a simulated salon environment to complete competencies in perming techniques. PREREQUISITES: 502-301 - Shampoo Treatments 502-345 - Basic Hair Color 502-346 - Basic Manicuring 502-347 - Bleaching 502-348 - Chemical Straightening 502-349 - Facials 502-350 - Hair Design 1 502-351 - Hair Design 2 502-352 - Men's Haircutting 502-353 - Perm Techniques 502-366 - Women's Haircutting

**502-359  
Salon Service 6 2.00**

Haircutting course is designed to assist students in learning how face shapes, body structure, texture or the hair. Color and curl configuration play a part in finding the

# Course Descriptions

perfect hair cut for each client's individual needs. Identify and perform each of the 4 different haircuts using a shears, razor and clipper. Identify safety procedures to protect the client and the student. Perform beard and mustache trims. PREREQUISITES: 502-301 - Shampoo Treatments 502-345 - Basic Hair Color 502-346 - Basic Manicuring 502-347 - Bleaching 502-348 - Chemical Straightening 502-349 - Facials 502-350 - Hair Design 1 502-351 - Hair Design 2 502-352 - Men's Haircutting 502-353 - Perm Techniques 502-366 - Women's Haircutting

**502-360  
Salon Service 7 2.00**

This course explores theory and practice in hair coloring techniques. Students will apply knowledge and skills to create colors using their skills on customers in the client lab. PREREQUISITES: 502-301 - Shampoo Treatments 502-345 - Basic Hair Color 502-346 - Basic Manicuring 502-347 - Bleaching 502-348 - Chemical Straightening 502-349 - Facials 502-350 - Hair Design 1 502-351 - Hair Design 2 502-352 - Men's Haircutting 502-353 - Perm Techniques 502-366 - Women's Haircutting

**502-361  
Salon Service 8 1.00**

In this course, students will be required to perform all client service skills in the student salon, with the concentration and evaluation being on the performance of hairstyling and finishing techniques. PREREQUISITES: 502-301 - Shampoo Treatments 502-345 - Basic Hair Color 502-320 - Basic Manicuring 502-347 - Bleaching 502-348 - Chemical Straightening 502-349 - Facials 502-350 - Hair Design 1 502-351 - Hair Design 2 502-352 - Men's Haircutting 502-353 - Perm Techniques 502-366 - Women's Haircutting

**502-362  
Salon Service 9 1.00**

In this course, students will be required to perform all client service skills in the student salon, with the concentration and evaluation being on the performance of chemical straightening and texture skills. PREREQUISITES: 502-301 - Shampoo Treatments 502-345 - Basic Hair Color 502-346 - Basic Manicuring 502-347 - Bleaching 502-348 - Chemical Straightening 502-349 - Facials 502-350 - Hair Design 1 502-351 - Hair Design 2 502-352 - Men's Haircutting 502-353 - Perm Techniques 502-366 - Women's Haircutting

**502-363  
Salon Service 10 2.00**

This course explores theory and practice in salon services. Students will apply knowledge and skills to provide all salon services on customers in the patron lab. Students will complete the Wisconsin Mock State Board Written Exam. PREREQUISITES: 502-301 - Shampoo Treatments 502-345 - Basic Hair Color 502-346 - Basic Manicuring 502-347 - Bleaching 502-348 - Chemical Straightening 502-349 - Facials 502-350 - Hair Design 1 502-351 - Hair Design 2 502-352 - Men's Haircutting 502-353 - Perm Techniques 502-366 - Women's Haircutting

**502-364  
Salon Service 11 1.00**

In this course, students will be required to perform all client service skills in the student salon, with the concentration and evaluation being on the performance of bleaching and special effects skills. PREREQUISITES: 502-301 - Shampoo Treatments 502-345 - Basic Hair Color 502-320 - Basic Manicuring 502-347 - Bleaching 502-348 - Chemical

Straightening 502-349 - Facials 502-350 - Hair Design 1 502-351 - Hair Design 2 502-352 - Men's Haircutting 502-353 - Perm Techniques 502-366 - Women's Haircutting

**502-365  
Salon Service 12 1.00**

In this course, students will be required to perform all client service skills in the student salon, with the concentration and evaluation being on the performance of shampooing skills. PREREQUISITES: 502-301 - Shampoo Treatments 502-345 - Basic Hair Color 502-320 - Basic Manicuring 502-347 - Bleaching 502-348 - Chemical Straightening 502-349 - Facials 502-350 - Hair Design 1 502-351 - Hair Design 2 502-352 - Men's Haircutting 502-353 - Perm Techniques 502-366 - Women's Haircutting

**502-366  
Women's Haircutting 2.00**

Theory and practice training in hair cutting concepts and basic form techniques. Use of tools such as scissors, razors, and thinning shears.

**502-367  
Salon Service 4 1.00**

In this course, students will be required to perform all client service skills in the student salon, with the concentration and evaluation being on the performance of women's haircutting skills. PREREQUISITES: 502-301 - Shampoo Treatments 502-345 - Basic Hair Color 502-320 - Basic Manicuring 502-347 - Bleaching 502-348 - Chemical Straightening 502-349 - Facials 502-350 - Hair Design 1 502-351 - Hair Design 2 502-352 - Men's Haircutting 502-353 - Perm Techniques 502-366 - Women's Haircutting

**502-370  
Mock Board Skills 2.00**

The Mock Board skills course is designed to prepare the student for the practical portion of the Wisconsin Cosmetology State Board exam. Students will practice Practical skills on mannequins to gain accuracy and speed in each service area required to successfully pass the exam. Students will complete a final practical exam for the Cosmetology program.

**502-371  
Mock Board Theory 1.00**

The Mock Board Theory course is designed to prepare the student for the written portion of the Wisconsin Cosmetology state board exam. Students will acquire study skills and practice test taking skills on computers to retain information necessary to successfully pass the exam. Students will complete a final written exam for the Cosmetology program.

**502-504  
Barb/Cos Apprenticeship Haircutting 0.75**

This course is designed to enable the Apprentice students to acquire the theory requirements as mandated by the Wisconsin Statutes and Administrative Codes for the Barbering and Cosmetology Examining Board. Instruction will be mainly theoretical and will follow a lecture/ discussion format. Some demonstrations of practical skills will be included within the lectures. Both individual and group assignments will be required to reinforce interaction.

**502-505  
Barb/Cos Apprenticeship Hairstyling 0.75**

This course will provide the Apprenticeship student with knowledge of Hairstyling set

by the guidelines of the Wisconsin Statutes and Administrative Codes for the Barber/Cosmetology Examining Board. The class will be taught by the following methods: lecture, discussion, demonstration, and hands-on performance.

**502-506**  
**Barb/Cos Department Rules** **0.25**

This course is designed to enable students to acquire knowledge of the Wisconsin Rules of the Department of Regulations and Licensing.

**502-507**  
**Barb/Cos Administrative Codes** **0.25**

This course is designed to enable students to acquire knowledge of the Wisconsin Laws and Administrative Code that governs the state Barber and Cosmetologist. Instruction will be theoretical and will follow a lecture/discussion format.

**502-514**  
**Barb/Cos Professional Development/ Hygiene** **0.50**

This course is designed to provide fundamental guidelines for lifelong professional development and lay a foundation for the consultation process between client and stylist. Instruction will be mainly theoretical and will follow a lecture/discussion format.

**502-515**  
**Barb/Cos Salon Ecology** **0.50**

This course is designed to give the student a foundation for safe infection control practices and procedures that will be used in all aspects of the student's education

and future salon pursuits. Instruction will be mainly theoretical and will follow a lecture/discussion format.

**502-516**  
**Barb/Cos Tricology/ Related Disorders** **0.50**

This course provides fundamental knowledge regarding the phases of hairgrowth, common hair disorders, and causes and treatments of hair loss. Instruction will be mainly theoretical and will follow a lecture/discussion format.

**502-517**  
**Barb/Cos Shampoo/Hair Care** **0.50**

This course provides the student with fundamental knowledge of hair care and the skills needed during draping, shampooing, and scalp massage procedures.

**502-518**  
**Haircutting for Cosmetology Apprentice** **1.00**

This course is designed to enable the apprentice student with theory knowledge of haircutting as mandated by the Wisconsin Statutes and Administrative Codes for the Cosmetology Examining Board. Instruction will be mainly theoretical and follow a lecture/discussion format. Some demonstrations of practical skills will be included within lectures. Both individual and group assignments will be required to reinforce instruction.

**502-519**  
**Hairstyling for Cosmetology Apprentice** **1.00**

This course is designed to enable the apprentice student with theory knowledge

of hairstyling as mandated by the Wisconsin Statutes and Administrative Code for the Cosmetology Examining Board. Instruction will be mainly theoretical and follow a lecture/discussion format. Some demonstrations of practical skills will be included within lectures. Both individual and group assignments will be required to reinforce instruction.

**502-522**  
**COS Professional Development** **0.50**

This course is designed to provide fundamental guidelines for lifelong professional development. Instruction will be mainly theoretical and will follow a lecture/discussion format.

**502-523**  
**Salon Ecology for Cosmetology App** **0.50**

This course is designed to give the student a foundation for safe infection control practices and procedures that will be used in all aspects of the students' education and future salon pursuits as mandated by the Department of Safety and Professional Services. Instruction will be mainly theoretical and will follow a lecture/discussion format.

**502-524**  
**Trichology for Cosmetology App** **0.50**

This course provides fundamental knowledge regarding the phases of hair growth, common hair disorders, causes and treatments of hair loss as mandated by the Wisconsin Statutes and Administrative Codes for the Cosmetology Examining Board. Instruction will be mainly theoretical and will follow a lecture/discussion format.

**502-525**  
**Shampoo/Haircare for Cosmetology App** **0.50**

This course is designed to enable the apprentice student with theory knowledge of Shampoo/Hair Care, and the skills needed during draping, shampooing, and scalp massage procedures as mandated by the Wisconsin Statutes and Administrative Codes for the Cosmetology Examining board. Instruction will be mainly theoretical and follow a lecture/discussion format. Some demonstrations of practical skills will be included within lectures. Both individual and group assignments will be required to reinforce instruction.

**502-540**  
**Barber/Cosmetology Chemical Relaxing Apprentice** **0.25**

This course will provide the Apprentice Student with knowledge of chemical relaxing theory set by the Barber/Cosmetology Examining Board and the Wisconsin Statutes and Administrative Codes. This class will be taught by the following methods: lecture, discussion, demonstration, and hands-on performance.

**502-541**  
**Barber/Cosmetology Permanent Waving Apprentice** **0.75**

This course is designed to enable students to acquire knowledge of Permanent Waving. Instruction will be theoretical and will follow a lecture/discussion format, with demonstrations and hands-on performance.

# Course Descriptions

**502-542  
Barber/Cosmetology Haircoloring/  
Bleaching Apprenticeship 1.00**

This course is designed to enable the Apprentice Student to acquire the theory requirements for Haircoloring/Bleaching as mandated by the Wisconsin Statutes and Administrative Codes for the Barber/Cosmetologist Examining Board. Instruction will be mainly theoretical and will follow a lecture/discussion format. Some demonstrations of Practical Skills will be included within the lectures. Both individual and group assignments will be required.

**502-543  
Permanent Waving for  
Cosmetology App 0.75**

This course is designed to enable the apprentice student with theory knowledge of Permanent Waving as mandated by the Wisconsin Statutes and Administrative Codes for the Cosmetology Examining Board. Instruction will be mainly theoretical and follow a lecture/discussion format. Some demonstrations of practical skills will be included within lectures. Both individual and group assignments will be required to reinforce instruction.

**502-544  
Chemical Relaxing for  
Cosmetology App 0.50**

This course is designed to enable the apprentice student with theory knowledge of chemical relaxing as mandated by the Wisconsin Statutes and Administrative Codes for the Cosmetology Examining Board. Instruction will be mainly theoretical and follow a lecture/discussion and hands on performance format.

**502-545  
Haircolor/Hair Lightening  
for Cos App 1.00**

This course is designed to enable the apprentice student with theory knowledge of haircoloring/hair lightening as mandated by the Wisconsin Statutes and Administrative Codes for the Cosmetology Examining Board. Some demonstrations of practical skills will be included within lectures. Both individual and group assignments will be required to reinforce instruction.

**502-547  
Facial/Makeup/Skin  
Disorders for Cos 1.00**

This course is designed to enable the apprentice student with theory knowledge of facial, makeup, skin disorders and massage as mandated by the Wisconsin Statutes and Administrative Codes for the Cosmetology Examining Board. Instruction will be mainly theoretical and follow a lecture/discussion format. Some demonstrations of practical skills will be included within lectures. Both individual and group assignments will be required to reinforce instruction.

**502-548  
Manicure/Pedicure/Artif  
Nails for Cos 1.00**

This course will provide the Apprentice student with knowledge of Manicuring/Pedicuring and artificial nails as mandated by the Wisconsin Statutes and Administrative Codes for the Cosmetology Examining Board. The class will be taught by the following methods: lecture, discussion, demonstration and hands on performance.

**502-551  
Barber/Cosmetologist Facial/  
Makeup Massage Apprenticeship 1.00**

This course is designed to enable students to acquire knowledge of giving a facial and massage and applying makeup. Instruction will be theoretical and will follow a lecture/discussion format, with demonstrations and some hands-on performance.

**502-553  
Barber/Cosmetology Manicure/Pedicure/  
Artificial Nails Apprenticeship 1.00**

This course will provide the Apprentice Student with knowledge of manicuring, pedicuring, and artificial nails. The class will be taught by the following methods: lecture, discussion, demonstrations, and hands-on performance.

**502-560  
Barber/Cosmetology State Board  
Preparation 0.25**

This course is designed to prepare the Apprentice Student for taking the State Board Exam. A practical mock exam will be given to acquaint the student with the procedures for testing. There will be a hands-on and a written test.

**502-561  
Mock State Board Prep 0.25**

This class is designed to help Barbers and Cosmetologists successfully pack for their state board. It is designed to leave the guessing at the door so you know up front what is needed for each portion of the practical test, and how to label and assemble tools and materials.

COREQUISITES: 502-560 - Barber/  
Cosmetology State Board Preparation

**502-580  
Tricology for Barbering 0.50**

This course provides fundamental knowledge regarding the phases of hair growth, common hair disorders and causes and treatments for hair loss. Instruction will be mainly theoretical and will follow a lecture/discussion format.

**502-581  
Professional Development  
for Barbering 0.25**

This course is designed to provide fundamental guidelines for lifelong professional development and personal development. Instruction will be mainly theoretical and will follow a lecture/discussion format.

**502-582  
Hair Styling for Barbering 1.00**

This course will provide the Apprenticeship student with knowledge of Hairstylingset by the guideline of the Wisconsin Statutes and Administrative Codes for the Barbering Examining Board. The class will be taught by the following methods: lecture, discussion, demonstration, and hands-on performance.

**502-583  
Shampoo for Barbering 0.50**

This course provides the student with fundamental knowledge of hair care and the skills needed during draping, shampooing, and scalp massage procedures.

**502-584  
Skin Related Disorders  
for Barbering 0.25**

This course is designed to enable the Apprentice student to acquire the theory requirements for Skin/Related disorders as mandated by the Wisconsin Statutes and Administrative Codes for the Barbering Examining Board. Instruction will be mainly theoretical and will follow a lecture / discussion format. Both individual and group assignments will be required to reinforce instruction.

**502-585  
Shaving/Male Facials for Barbering 0.25**

This course is designed to enable apprentice students to acquire the theory requirements for shaving/male facial as mandated by the Wisconsin Statutes and Administrative Codes for the Barbering Examining board. Instruction will be mainly theoretical and will follow a lecture/discussion format. Some demonstrations of practical skill will be included with in the lectures.

**502-586  
Hair Cutting for Barbering 1.25**

This course is designed to enable the Apprentice student to acquire the theory requirements as mandated by the Wisconsin Statutes and Administrative Codes for the Barbering Examining Board. Instructional will be mainly theoretical and will follow a lecture/discussion format. Some demonstrations of practical skills will be included within the lectures. Both individual and group assignments will be required to reinforce interaction.

**502-587  
Barbering Codes 0.25**

This course is designed to enable students to acquire knowledge of the Wisconsin laws and Administrative Code that governs the state Barbers. Instruction will be theoretical and will follow a lecture/discussion format.

**502-588  
Barbering Laws 0.25**

This course is designed to enable students to acquire knowledge of the Wisconsin Rules of the Department of Regulations and Licensing.

**502-589  
Salon Ecology for Barbering 0.50**

This course is designed to give the student a foundation for safe and infection control practices and procedures that will be used in all aspects of the student's education and future salon pursuits. Instruction will be mainly theoretical and will follow a lecture/discussion format.

**502-590  
Chemical Relaxing for Barbering 0.25**

This course will provide the Apprentice student with knowledge of chemical relaxing theory set by barber examining Board and the Wisconsin Statutes and Administrative Codes. This class will be taught by the following methods: lecture, discussion, demonstration, and hands-on performance.

**502-592  
Perming for Barbering 1.00**

This course is designed to enable students to acquire knowledge of Permanent Waving. Instruction will be theoretical and will follow a lecture/discussion format, with demonstrations and hands-on performance.

**502-593  
Hair Color for Barbering 1.00**

This course is designed to enable the Apprentice Student to acquire the theory requirements for Hair Coloring as mandated by the Wisconsin Statutes and Administrative Codes for the Barbering Examining Board. Instruction will be mainly theoretical and will follow a lecture. Discussion format. Some demonstrations of Practical skills will be included with the lectures. Both individual and group assignments will be required.

**502-594  
Bleaching for Barbering 0.25**

This course is designed to enable the Apprentice Student to acquire the theory requirements for Bleaching as mandated by the Wisconsin Statutes and Administrative Codes for the Barbering Examining Board. Instruction will be mainly theoretical and will follow a lecture. Discussion format. Some demonstrations of Practical skills will be included with the lectures. Both individual and group assignments will be required.

**502-595  
People Skills for Barbering 0.50**

This course provides the students with fundamental skills needed to understand and communicate with people. Instruction will be mainly theoretical and will follow a lecture/discussion format.

**502-730  
Client Services 1 2.00**

This course introduces client services performed by the barber. Emphasis is on hair and scalp analysis, shampooing, haircutting techniques, shaving, and chemical services. Students will apply

knowledge and skills to provide all barber services on customers in the client lab. Skill development, increased speeds, and greater accuracy will be assessed in these lab courses. PREREQUISITES: 502-738 - Basic Haircutting 502-735 - Advanced Haircutting 502-741 - Hairstyling 502-740 - Hair Color 502-743 - Shaving 502-739 - Chemical Texturing 502-736 - Barber Industry 502-742 - Barbering, Intro to

**502-731  
Client Services 2 2.00**

In this course students explore client services performed by the barber. Emphasis is on hair and scalp analysis, shampooing, haircutting techniques, shaving, facial services, and chemical services. Students will apply knowledge and skills to provide all barber services on customers in the client lab. Skill development, increased speeds, and greater accuracy will be assessed in these lab courses. PREREQUISITES: 502-738 - Basic Haircutting 502-735 - Advanced Haircutting 502-741 - Hairstyling 502-740 - Hair Color 502-743 - Shaving 502-739 - Chemical Texturing 502-736 - Barber Industry 502-742 - Barbering, Intro to

**502-732  
Client Services 3 2.00**

In this course students practice building speed and accuracy in client services performed by the barber. Emphasis is on haircutting techniques, shaving, facial services, and chemical services. Students will apply knowledge and skills to provide all barber services on customers in the client lab. Skill development, increased speeds, and greater accuracy will be assessed in these lab courses. PREREQUISITES: 502-738 - Basic Haircutting 502-735 - Advanced Haircutting 502-741 - Hairstyling 502-740 - Hair Color 502-743 - Shaving 502-739

# Course Descriptions

- Chemical Texturing 502-736 - Barber Industry 502-742 - Barbering, Intro to

**502-733**  
**Client Services 4** **2.00**

In this course students enhance speed and accuracy in client services performed by the barber. Emphasis is on haircutting techniques, shaving, facial services, and chemical services. Students will apply knowledge and skills to provide all barber services on customers in the client lab and begin preparation for Wisconsin State Barber licensing exam. PREREQUISITES: 502-738 - Basic Haircutting 502-735 - Advanced Haircutting 502-741 - Hairstyling 502-740 - Hair Color 502-743 - Shaving 502-739 - Chemical Texturing 502-736 - Barber Industry 502-742 - Barbering, Intro to

**502-734**  
**Client Services 5** **2.00**

This course provides students with opportunities to acquire barbering skills in preparation for entry-level, licensed employment. Emphasis is on providing services with speed and accuracy including: hair and scalp analysis, shampooing, haircutting, shaving, facial services, and chemical services. Students will apply knowledge and skills to provide all barber services on customers in the client lab and complete preparation for Wisconsin State Barber licensing exam. PREREQUISITES: 502-738 - Basic Haircutting 502-735 - Advanced Haircutting 502-741 - Hairstyling 502-740 - Hair Color 502-743 - Shaving 502-739 - Chemical Texturing 502-736 - Barber Industry 502-742 - Barbering, Intro to

**502-735**  
**Advanced Haircutting** **2.00**

This course is designed to provide skills relating to men's haircutting. Course competencies include demonstrating draping; Afro haircuts; flat top and crew cut haircuts; fade haircuts; and head shaving. Learners perform four basic haircutting techniques using shears, razor and clippers. Learner will perform a variety of shorthair combination cuts using finger-and-shear, comb-over-shear, shear-over-comb and freehand techniques. Additional techniques include long-layered haircut techniques; uniform layer haircut techniques; combination cut techniques; short taper cut using finger and shear techniques; short taper cut using shear-over-comb techniques; taper cut using clipper-over-comb techniques; and haircutting for tightly curled hair. PREREQUISITES: 502-738 - Basic Haircutting

**502-736**  
**Barber Industry** **2.00**

This course guides the barber on a career path that includes skills related to career strategies and the job search, the basics of managing a successful establishment, developing a marketing plan, and the responsibilities of adhering to the Wisconsin Statutes and Administrative Code. This course also provides an overview of the profession of barbering, professional image, safety and decontamination in the barbershop. Course competencies include examining the importance of barbering organizations and the Department of Safety and Professional Services; comparing professional ethics and personal ethics; developing short term and long term goals; reviewing basic first aid, safety and decontamination principles for infection

control; introducing current state statutes and rules as they apply to barber safety and sanitation; and learning decontamination procedures for tools, equipment and surfaces.

**502-738**  
**Basic Haircutting** **2.00**

This course will provide students with knowledge of the art and science of haircutting. Students will identify principal tools and implements, apply haircutting terminology, recognize facial shapes and anatomical features, and learn techniques to create a variety of haircutting designs. Students will apply safety and sanitation procedures adhering to the Wisconsin Statutes and Administrative codes. This course also introduces a combination of haircutting techniques and tools. Learners perform four basic haircutting techniques using shears, razor and clippers. Learner will perform a variety of shorthair combination cuts using finger-and shear, comb-over-shear, shear-over-comb and freehand techniques.

**502-739**  
**Chemical Texturing** **2.00**

This course will provide students to acquire knowledge of permanent waving. Course competencies include performing hair and scalp analysis; follow safety and sanitation procedures; explaining the physical and chemical actions that take place during chemical texture services; perform the basic perm wrap, curvature wrap, spiral wrap, bricklay wrap, and double-tool/piggy back wrap; hair relaxing applications and procedures, and reformation curl/chemical blow-out services. This class includes the following instructional methods: lecture,

discussion, demonstration, and hands-on performance.

**502-740**  
**Hair Color** **2.00**

Students study the color wheel and the theory behind the "Law of Color." Students mix and apply temporary, semi-permanent, demi-permanent and permanent colors; Students identify the chemicals used in hair coloring services. Students practice client consultations, analysis and follow safety and sanitation procedures. Students learn procedures related to lightening techniques. They identify the products used to create and maintain these types of services. Students learn the chemistry to lightening products. They learn cap, foiling and corrective color procedures.

**502-741**  
**Hairstyling** **2.00**

This course emphasizes wet and dry hairstyling and includes hair analysis, shampooing, conditioning, reconditioning, scalp and hair treatments, and blow drying. Course competencies include analyzing the condition of a client's hair; personalizing scalp and hair treatments based on client needs; completing shampoo services; completing hair conditioning treatments; create blow-dry styles; and braid hair according to client needs. This course also emphasizes fingerwaves, pincurls, roller setting, thermal styling, and hair replacement techniques. Content also includes applying basic techniques and terminology used in hairstyling; creating fingerwaves; arranging hair using pincurls; performing roller sets; demonstrating thermal styling; and demonstrating hair replacement techniques.

**502-742**  
**Barbering, Intro to** **1.00**

Students will study microbiology, electricity, anatomy, physiology and chemistry, along with properties and disorders of the skin and scalp as these apply to barbering. Course competencies include reviewing the human systems important to barbering, diseases, and conditions; learning about bacteria; categorizing chemicals and their use in the barbering establishment; verifying diseases and disorders of the hair and scalp; and examining common electrical devices used in barbering establishments. This course also introduces current state statutes and rules as they apply to barber safety and sanitation; and learning decontamination procedures for tools, equipment and surfaces.

**502-743**  
**Shaving** **2.00**

Students will apply safety and sanitation, facial physiology, and techniques to create a variety of facial hair designs and complete facial hair removal. Course competencies include proper infection control procedures and client safety; draping clients for facial hair services; using facial hair service tools; analyzing skin types and conditions; adapting facial hair designs for individual facial features and physiology; completing facial hair designs; and completing facial hair removal. In this course the student will analyze the skin for diseases and disorders. The learner will identify facial muscles and nerves and explain the benefits of facial massage and treatments. Students will demonstrate a male facial using a variety of products and equipment based on skin analysis and complete male facials correctly.

**503-101**  
**Firefighting Concepts I, Advanced** **4.00**

This course introduces students to advanced firefighting principles covering fire behavior, risk management, teamwork, leadership, and a systems approach to initial firefighting tactics at fires. All of the practical portions of this course are conducted in a performance-based, training in context manner to assure that students develop and master a principled, response methodology for all four positions on an engine company. Building construction, forcible entry, and basic driver operator skills are also covered in this course. "Nothing showing" investigations, outside fire attack and transitional positive pressure attack tactics are covered along with problem-solving for each tactic. PREREQUISITES: 503-142 - Firefighting Principles I

**503-102**  
**Firefighting Concepts II, Advanced** **4.00**

This course introduces students to advanced firefighting principles. All of the practical portions of this course are conducted in a performance-based, training in context manner to assure that students develop and master a principled, response methodology for all four positions on an engine company. Building construction, forcible entry, and basic driver operator skills are also covered in this course. Transitional positive pressure attack above/below, vertical ventilation and 3 person staffed apparatus crew tactics are covered along with problem-solving for each tactic. PREREQUISITES: 503-101 - Firefighting Concepts I, Advanced

**503-103**  
**Fire Medic Health & Wellness I** **1.00**

This course introduces students to fire service health and wellness issues, firefighter

injury and death statistics along with risk management strategies. Students begin their study and application of life-long nutrition and fitness habits. Students begin preparations for the candidate Physical Ability Test (CPAT).

**503-104**  
**Fire Medic Health & Wellness II** **1.00**

Students continue to study fire service health and wellness issues and risk management strategies. Students build on their life-long nutrition and fitness habits. Students continue preparations for the Candidate Physical Ability Test (CPAT). PREREQUISITES: 503-103 - Fire Medic Health & Wellness I

**503-105**  
**Chemistry of Hazardous Materials** **3.00**

The identification of materials classified or potentially dangerous under abnormal conditions. Dealing with expected events, preplanning to minimize risks and initial actions to be taken under normal and abnormal conditions.

**503-106**  
**Firefighting Principles II** **3.00**

This course is structured for competency-based instruction meeting the requirements of Firefighter Level II. It includes classroom and practical training sessions and meets the objectives of the Wisconsin's Firefighter II certification course. Hazardous Materials Operations is included in this course. Upon completion, students are encouraged to take the certification exam for Firefighter II, State of Wisconsin. PREREQUISITES: 503-142 - Firefighting Principles I

**503-107**  
**Engine Operations** **3.00**

Students complete classroom and practical exercises with fire pump equipped fire apparatus with a focus on driving and operating fire pump equipped vehicles.

**503-110**  
**Fire Safety Communications** **3.00**

Students practice communication techniques needed to present fire safety messages to groups with special needs. How to identify and address unique concerns of communities and groups are outlined and practiced by the class as part of assignments and exercises.

**503-115**  
**Hazards and Causes of Fire** **3.00**

Outlines the causes, hazards and risks of fire from the physical, chemical, electrical, mechanical, social and psychological point of view. These elements are listed along with good management practice to access and limit or minimize the impact of fire incidence. Develops a positive plan of action to control, minimize or eliminate these elements in a given environment.

**503-117**  
**Health and Wellness for Firefighters** **3.00**

Students gain an overview of the physical, emotional, intellectual, and social dimensions of health and sustained wellness. They apply physical training techniques developed for the specific occupational demands of the Fire Service. Students will prepare for the Fire Service Candidate Physical Ability Test (CPAT), which is designed to help fire departments measure the physical ability of candidates to perform routine fire fighting tasks.

# Course Descriptions

**503-120**  
**Fire Science Student Internship** 2.00

This course allows students to actively participate as a "working" member of a fire department. Students work the 24-hour shift schedule at a local fire department (excluding class times) and perform the same duties as the firefighters. Evaluation is determined by fire department officials and the course instructor. Instructor approval required to establish class schedule. PREREQUISITES: 503-142 - Firefighting Principles I

**503-122**  
**Fire Prevention and Inspection** 3.00

Examines the need for fire prevention, the organization and function of fire prevention, both private and public. Inspection psychology, hazard recognition, recommendations and practical solutions for correction of fire hazards as well as reports and records are covered. The course outlines the process of code and standard development and adaptation. Emphasis is placed on the methodology of locating and applying codes and standards to typical everyday circumstances. Upon completion, students are encouraged to take the certification exam for Fire Inspector I, State of Wisconsin.

**503-123**  
**Fire Ground Tactics and Strategies** 3.00

The study of fire ground operations during emergency situations. Included are incident command procedures, communications, specialized logistics and relevant record/report-writing.

**503-124**  
**Fire Detection and Suppression Systems** 3.00

A survey of systems used in detecting, notifying, alarming and suppressing fires, pointing out advantages and weaknesses of various systems.

**503-125**  
**Fire Protection and System Hydraulics** 3.00

A basic knowledge of hydraulics both in theory and practice. The student will learn to calculate and compute waterflow problems for municipal, industrial and fire service situations. PREREQUISITES: 804-113 - College Technical Math 1A

**503-127**  
**Fire Service Changing Technologies** 2.00

This course concentrates on the identification and application of the ever-changing advancement in technology and its impact on the fire service. Students will investigate and use applications and equipment that are reflective of the most recent advancements in fire service technology including; computerized hardware, software, digital media and fire department equipment.

**503-128**  
**Fire Department Management** 3.00

Principles of management applied to the fire department. Records, reports and personnel management. Various theories of motivation and types of management are explored. PREREQUISITES: 503-139 - Principles of Emergency Services 503-142 - Firefighting Principles I

**503-135**  
**Fire and Arson Investigation** 3.00

Introduction to the problems and techniques of fire investigation. Emphasis on application and understanding of fire behavior and chemistry of fire in determining the origin and causes of fire.

**503-139**  
**Principles of Emergency Services** 3.00

This course provides an overview of: fire protection; career opportunities in fire protection and related fields; philosophy and history of fire protection/service; fire loss analysis; organization and function of public and private fire protection services; fire departments as part of local government; laws and regulations affecting the fire service; and fire service nomenclature. This course is equivalent to 503-139 at other WTCS schools.

**503-142**  
**Firefighting Principles I** 4.00

This course includes classroom and practical training sessions on the basic fundamentals needed by entry-level firefighters and meets the objectives of the Wisconsin's Firefighter I certification course. Practical training is a major part of the course. Upon completion, students are encouraged to take the certification exam for Firefighter I, State of Wisconsin. This course is equivalent to 503-142 at other WTCS schools.

**503-143**  
**Building Construction** 3.00

A survey of building classifications and types discussing structural elements and weaknesses of each type. Emphasizing the additional damage done by fire and how fire hastens ultimate building collapse. This

course is equivalent to 503-143 at other WTCS schools.

**503-147**  
**Fire Protection Systems** 4.00

This course provides information relating to the features of design and operation of fire detection and suppression systems.

**503-151**  
**Fire Prevention** 4.00

This course provides fundamental information regarding the history and philosophy of fire prevention, organization and operation of a fire prevention bureau, use of fire codes, and identification and correction of fire hazards. It meets all requirements for Fire Inspector I certification with the state of Wisconsin.

**503-152**  
**Hazardous Materials** 4.00

This course examines characteristics relating to hazardous materials, including problems of recognition and mitigation. It prepares students to the Hazardous Material Operations and Technician levels. PREREQUISITES: 503-142 - Firefighting Principles I

**503-155**  
**Fire Protection Hydraulics** 4.00

This course provides a foundation of knowledge in order to understand the principles of the use of water in fire protection. It meets all of the requirements for Driver Operator-Pumper certification with the state of Wisconsin. PREREQUISITES: 503-142 - Firefighting Principles I

**503-156**  
**Strategies, Tactics & Incident Mgmt 4.00**

This course provides an in-depth analysis of the principles of emergency response through utilization of an incident management system and prepares students to pursue current national ICS training requirements. PREREQUISITES: 503-139 - Principles of Emergency Services 503-142 - Firefighting Principles I 503-143 - Building Construction

**503-157**  
**Fire Investigation 3.00**

This course provides learners with the fundamentals and technical knowledge needed for proper fire scene investigations. PREREQUISITES: 503-142 - Firefighting Principles I 503-143 - Building Construction

**504-116**  
**Civil Law 3.00**

This course covers the fundamentals of substantive and procedural civil law. Topics include the civil law court system, injury law, civil rights liability, property ownership, contracts and consumer protection, administrative agencies, family law, mental health commitments, public labor law, landlord/tenant, and general employment law. PREREQUISITES: 504-121 or 504-900 - Criminal Justice, Intro to

**504-117**  
**Police Administration 3.00**

Provides an understanding of contemporary police principles and a detailed study of accepted administrative methods. Management problems acquaint the student with the why of methodology issues. PREREQUISITES: 504-121

**504-124**  
**Forensics Science 3.00**

This course exposes students to the forensic methods commonly employed in the examination of physical evidence by a forensic scientist used for identification or comparison in civil or criminal crime scene investigation and legal proceedings. The various techniques and procedures used in forensic science investigation and the admissibility standards established by state and federal courts are examined. This survey course is not designed to train individuals in the highly technical field of forensic science research, which requires extensive education in biology, chemistry, and physics. The course serves to familiarize those individuals majoring in criminal justice or related fields with the methods and techniques currently employed by forensic scientists so that students have a working knowledge and understanding of the technical world of forensic science. PREREQUISITES: 504-900 - Criminal Justice, Intro to

**504-126**  
**Firearms Training/Defense Tactics 2.00**

Teaches the fundamentals of firearms usage by police officers. Skills in safety, combat and defensive use of firearms are developed. Legal responsibilities and liabilities of a police officer with respect to firearms are addressed.

**504-141**  
**Interviews/ Interrogations/ Confessions 3.00**

Topics include purposes and objectives of a proper interview, mechanics of interviews, interrogations and confessions; importance of the fundamentals of report writing, methods and procedures for interviews and the securing

of confessions in accordance with the rights of a citizen under the U.S. Constitution.

**504-148**  
**Rules of Evidence 3.00**

Emphasizes rules of admissibility of evidence in court trials involving various kinds and degrees of evidence to assist the police officer in proper performance of investigative duties. PREREQUISITES: 504-900 - Criminal Justice, Intro to

**504-149**  
**Criminal Law 1 3.00**

Presents a detailed insight into the origins, nature and concept of various crimes. Philosophy of criminal law, historical sources and the common law, and present day practices employed by judicial processes in the United States -- with particular emphasis on the Wisconsin criminal code -- are addressed.

**504-152**  
**Police Science Internship 3.00**

The student will work in the environment of a police department or related agency. The student will experience the profession first-hand.

**504-173**  
**Cyber Crime 3.00**

Study various criminal investigation techniques related to computer and internet related crime (theft, sex crimes, white collar crime and others). Focus on data recovery and digital forensic techniques utilized by modern law enforcement agencies. Demonstrate courtroom testimony skills related to cyber crimes, and participate in evidence recovery.

**504-174**  
**Security, Intro to 3.00**

Discuss historical, philosophical, legal and future trends of security. Define roles of the security professional in modern society. Study public/private security operations, and management concepts focusing on career preparation and opportunities in the field. Examine security challenges of internal theft, embezzlement, drugs and violence in the workplace.

**504-175**  
**Terrorism/Homeland Security 3.00**

Examine the history and current trends of terrorism. Discuss governmental responses and the global effect of international terrorism. Define domestic terrorism, active insurgency, and discuss the phenomenon of politically inspired violence. Evaluate statistical and analytical data of individual and state level of terrorism. Study governmental agencies assigned to the Department of Homeland Security.

**504-176**  
**Spanish for Law Enforcement 3.00**

Spanish for Law Enforcement is designed to enable Students who know little or no Spanish to communicate effectively with the Spanish speaking individuals. This course has been tailored for Law Enforcement students and professionals, and will teach students basic conversational Spanish to apply in the field. This course covers basic Field Interviews, Traffic Investigations, Medical Emergencies, Identification of subjects and preliminary investigations.

# Course Descriptions

**504-300 Policing in America 1.00**

Students will learn the rules of the academy, how the various elements of the criminal justice system relate, the role of law enforcement officers in a democracy, explore belief systems, social pressures, moral problems, decision-making and the consequences of decisions, resources available in their communities to assist law enforcement in their contacts with the community, explore issues involved in policing in a diverse society, identify strategies for working effectively with the community, the requirements under Wisconsin law for law enforcement agency policies and procedures, and why written policies and procedures are important to them in performing their job tasks properly.

**504-301 Relational Skills 3.00**

Students will learn how to write a wide variety of law enforcement reports, the role of communication in law enforcement, to apply professional communication skills appropriately, proper law enforcement response to persons with possible mental disorders, alcohol or drug problems, dementia disorders, and/or developmental disabilities, the Wisconsin law for conducting emergency detentions and placements, legal requirements and guidelines for implementing these procedures, basics of effective court testimony, the role of problem solving, and evolving police strategies for effective law enforcement and community relationships, and the use of problem-oriented policing.

**504-302 Patrol Procedures 4.00**

Students will become familiar with Wisconsin traffic laws, including how to properly complete Wisconsin Uniform Traffic Citations and how to direct and control traffic effectively. They will learn to manage a complex scene, to investigate traffic accidents, take appropriate enforcement actions, the legal context for law enforcement driving, including basic patrol operation, emergency vehicle response, pursuit driving, the legal bases for making vehicle contacts, how to conduct a threat assessment to help determine the appropriate type of contact, how to conduct different types of vehicle contacts, recognize and interpret evidence of a and to OMVWI violation, and how to administer and interpret standardized field sobriety tests.

**504-303 Investigations 2.00**

Students will learn techniques and procedures necessary to interview or interrogate a variety of individuals, how to recognize, process, and preserve physical evidence; law enforcement's response to a victim of crime including the dynamics of victimization, victims' rights, and enforcement's professional responsibilities to victims. Students will also learn the statutory elements of "sensitive crimes" and the characteristics, effects, and investigative strategies unique to them.

**504-304 The Legal Context 2.00**

Students will learn the legal bases for law enforcement action such as arrest, use of force, and search and seizure, as well as the limits on law enforcement activity, the classifications of crimes and other

violations into felonies, misdemeanors, and ordinance violations, and the elements of crimes listed in the criminal code, and the laws and procedures that effect juveniles, including those related to taking a juvenile into custody.

**504-305 Tactical Skills 3.00**

Students will learn the basis for and limits to use of force by Wisconsin Officers, specific techniques for intervention included in the Wisconsin System of Defense and Arrest Tactics, and to care for and maintain their primary duty handguns. They will learn to shoot quickly and accurately, including under low-light conditions, while moving and from behind cover, and necessary weapon-handling skills, the basics of room clearing, tactical movement, use of cover and concealment, and their application to emergency situations.

**504-900 Criminal Justice, Intro to 3.00**

In this course learners will distinguish between the roles and functions of courts with jurisdiction in Wisconsin; differentiate between the roles and functions of federal, state and local law enforcement agencies; apply professional principles as a law enforcement officer; determine modern police functions and policies from an historical perspective; identify the role of law enforcement officers in American society; utilize a decision-making model; identify the characteristics of a good decision maker; describe how professionalism, ethics, and moral standards relate to a law enforcement career; practice a code of behavior; incorporate ethical decision-making strategies; identify required law enforcement policies; defend the importance of written

agency policies; and distinguish between "ministerial" and "discretionary" duties; describe how decisions are made; enhance an officer's critical thinking and police problem solving abilities; and apply principles of critical thinking, decision-making, and problem solving.

**504-901 Constitutional Law 3.00**

In this course, learners will diagram the structure of the criminal justice system, identify situations where constitutional rules are applicable, identify situations where an officer may use reasonable suspicion to contact a subject, identify the elements of a lawful arrest, identify search-related activities where the 4th amendment is not applicable, identify the requirements that pertain to search warrants, analyze situations where an officer may conduct a search without a warrant, compare the requirements for conducting routine searches with those for searching disabled persons and strip searches, identify the requirements of the laws governing confessions and statements, and analyze the various requirements that evidence must meet before it can be admitted in court. PREREQUISITES: 504-902 - Criminal Law COREQUISITES: 504-148 - Rules of Evidence

**504-902 Criminal Law 3.00**

In this course, learners will identify basic concepts of criminal law; analyze facts, circumstances, and situations and determine which crimes against persons have been committed; analyze facts, circumstances, and situations and determine which crimes against property have been committed; and analyze facts, circumstances, and situations and determine which crimes involving drugs,

alcohol or other criminal activity have been committed.

**504-903**  
**Professional Communications** **3.00**

In this course, the learner will apply knowledge of the communication process, apply communication techniques, integrate verbal and physical intervention skills, develop strategies to obtain information in a variety of situations, differentiate between interview and interrogation, and analyze information for consideration of corroborative evidence.

**504-904**  
**Juvenile Law** **3.00**

In this course, the learner will describe the juvenile justice system, describe the handling of cases of children in need of protection or services, describe the handling of cases of juveniles in need of protection or services or alleged to be delinquent, identify constitutional law issues that are relevant to juveniles, analyze the role of law enforcement in responding to child maltreatment, explain the issues involved in investigating incidents of child victimization, intervene and apply appropriate investigative strategies, describe the roles of other agencies in child maltreatment cases, and recognize the unique investigative issues for missing children.

**504-905**  
**Report Writing** **3.00**

In this course, the learner will explain the context of report writing, take effective field notes, organize information in reports, write narratives, describe what information should be included in certain types of reports, complete various uniform citations and

the paperwork accompanying arrests and other detentions, prepare for court, describe how to be an effective witness, and testify as a witness in court. PREREQUISITES: 504-902 - Criminal Law 801-136 - English Composition 1

**504-906**  
**Criminal Investigation Theory** **3.00**

In this course, the learner will describe the role evidence plays in criminal investigations and prosecutions; apply the steps for processing crime scenes; apply appropriate strategies to locate, handle, and package evidentiary items; document the crime scene; recognize the unique investigative issues for crimes against life; apply appropriate strategies to secure the scene, collect and preserve evidence, and investigate a death; recognize the dynamics of victimization; apply knowledge of the definitions and responsibilities for law enforcement; apply appropriate interview techniques with adult or child victims; analyze the role of law enforcement in responding to domestic abuse; intervene and apply appropriate investigative strategies; respond to an officer-involved domestic violence incident; analyze the role of law enforcement in responding to sexual abuse; demonstrate investigative techniques in a simulated sexual assault case; and identify other resources that can assist in sexual assault cases. PREREQUISITES: 504-902 - Criminal Law 504-900 - Criminal Justice, Intro to COREQUISITES: 504-148 - Rules of Evidence

**504-907**  
**Community Policing Strategies** **3.00**

In this course, the learner will identify community resources available in your area, describe the role of an advocacy group in

the criminal justice community, demonstrate cultural self-awareness, interpret state and federal laws related to discrimination and diversity, utilize appropriate skills for interacting effectively and professionally with persons from culturally diverse backgrounds and lifestyles, identify and implement personal strategies that take into account cultural differences, identify the types of situations and the characteristics of individuals that are likely to be encountered in crisis management situations, apply Wisconsin statutory requirements and general guidelines regarding emergency detentions and emergency protective placements of persons, identify key concepts and elements associated with law enforcement response to people in crisis, apply crisis intervention principles and techniques, articulate the decision-making process taken to manage persons in crisis, incorporate community policing strategies into the community, illustrate problem-oriented policing strategies, evaluate other policing strategies, and apply principles of crime analysis and prevention. PREREQUISITES: 504-900 - Criminal Justice, Intro to

**504-908**  
**Traffic Theory** **3.00**

In this course, the learner will enforce Wisconsin traffic laws, detect traffic violations, issue traffic citations, direct traffic, identify responsibilities of a first responding officer, manage the response to a scene, take necessary steps to enable effective follow-up as needed, conduct an initial investigation at a crash scene, identify the mechanics of measuring and documenting traffic crash scenes, complete the Wisconsin Motor Vehicle Accident Report, record the crash scene using photography, take appropriate enforcement action based on

information gathered, and recognize and interpret indicators of impaired driving.

**508-101**  
**Dental Health Safety** **1.00**

This course prepares dental auxiliary students to respond proactively to dental emergencies, control infection, prevent disease, adhere to OSHA standards, and safely manage hazardous materials. Students also take patient vital signs and collect patient medical/dental histories. Students will be required to show proof of certification before beginning this course.

**508-103**  
**Dental Radiography** **2.00**

This course prepares Dental Assistant students to operate x-ray units and expose bitewing, periapical, extra oral, and occusal radiographs. Emphasis is placed on protection against x-ray hazards. Students also process, mount, and evaluate radiographs for diagnostic value. In this course, students demonstrate competency on a manikin. In addition, students expose bitewing radiographs on a peer, role-play patient.

**508-113**  
**Dental Materials** **2.00**

This course prepares Dental Assistant students to handle and prepare dental materials such as liners, bases, cements, amalgam, resin restorative materials, gypsum products, and impression materials. They also learn to take alginate impressions on manikins and clean removable appliances.

# Course Descriptions

**508-120**  
**Dental Office Management** 2.00

This course prepares Dental Assistant students to manage telephones, appointments, recall systems, and inventory. Students also develop the skills needed to process accounts receivable and payable, collections, and third party reimbursements. PREREQUISITES: 508-357 - Dental Assistant Professionalism

**508-302**  
**Dental Chairside** 5.00

This course prepares dental assistant students to chart oral cavity structures, dental pathology, and restorations to and to assist a dentist with basic dental procedures including examinations, pain control, amalgam restoration, and cosmetic restoration. Students will also develop the ability to educate patients about preventative dentistry, brushing and flossing techniques, and dental procedures, using lay terminology. Throughout the course, students will apply decoding strategies to the correct use and interpretation of dental terminology. This course is equivalent to 508-302 at other WTCS schools. COREQUISITES: 508-101 - Dental Health Safety 508-113 - Dental Materials 508-304 - Dental and General Anatomy

**508-304**  
**Dental and General Anatomy** 2.00

This course prepares dental assistant students to apply fundamentals of general and dental anatomy to informed decision making and to professional communication with colleagues and patients. This course is equivalent to 508-304 at other WTCS schools.

**508-306**  
**Dental Assistant Clinicals** 3.00

Students apply skills learned in Dental and General Anatomy, Dental Health Safety, Dental Chairside, Dental Materials, Dental Radiography, and Professionalism in a clinical setting with patients. This course emphasizes integration of core abilities and basic occupational skills.

**508-307**  
**Dental Assistant Professionalism** 1.00

This course prepares Dental Assistant students for professional success in a dental practice or other dental health care environment. Students develop professional appearance and image. More importantly, they learn to work within ethical guidelines and legal frameworks. In preparation for entering the workforce, students customize or develop their portfolios and lay out an ongoing professional development plan. This course is equivalent to 508-307 at other WTCS schools.

**508-308**  
**Dental Chairside - Advanced** 5.00

This course prepares Dental Assistant students to adapt chairside skills to assisting with dental specialties as they are performed in general practice. It focuses on pediatric dentistry, orthodontics, oral maxillofacial surgery, endodontics, periodontics, and prosthodontics. Students will also develop the ability to assist with sealants, perform coronal polishing, and apply topical fluoride and topical anesthetics. This course is the equivalent to 508-308 at other WTCS schools. PREREQUISITES: 508-302 - Dental Chairside

**508-309**  
**Dental Laboratory Procedure** 4.00

This course prepares Dental Assistant students to produce alginate impressions and fabricate diagnostic models, oral appliances, temporary restorations, and custom trays. Students also polish oral appliances. This course is equivalent to 508-309 in other WTCS schools. PREREQUISITES: 508-113 - Dental Materials

**508-310**  
**Dental Radiography - Advanced** 1.00

This course builds on principles and skills developed in Dental Radiography. Dental Assistant students expose full mouth series, extra-oral, and specialized radiographs on adult and child patients. Emphasis is placed on protection against x-ray hazards. Students will also process, mount, and evaluate radiographs for diagnostic value. In addition, they will use radiographs to explain dental health and treatment plans to patients. This course is the equivalent of 508-310 at other WTCS schools. PREREQUISITES: 508-103 - Dental Radiography

**508-311**  
**Dental Assistant Clinical - Adv** 2.00

Dental Assistant students apply skills developed in Dental Chairside - Advanced, Dental Lab Procedures, Dental Radiography - Advanced, and Dental Office Procedures in a clinical setting with patients that emphasizes integration of core abilities and basic and advanced occupational skills. This course is equivalent to 508-311 at other WTCS schools. PREREQUISITES: 508-356 - Dental Assistant Clinicals or 508-306 - Dental Assistant Clinicals

**508-356**  
**Dental Assistant Clinicals** 3.00

Students apply skills learned in Dental and General Anatomy, Dental Health Safety, Dental Chairside, Dental Materials, Dental Radiography, and Professionalism in a clinical setting with patients. This course emphasizes integration of core abilities and basic occupational skills.

**508-357**  
**Dental Assistant Professionalism** 1.00

This course prepares Dental Assistant students for professional success in a dental practice or other dental health care environment. Students develop professional appearance and image. More importantly, they learn to work within ethical guidelines and legal frameworks. In preparation for entering the workforce, students customize or develop their portfolios and lay out an ongoing professional development plan. This course is equivalent to 508-307 at other WTCS schools.

**508-359**  
**Dental Laboratory Procedure** 4.00

This course prepares Dental Assistant students to produce alginate impressions and fabricate diagnostic models, oral appliances, temporary restorations, and custom trays. Students also polish oral appliances. This course is equivalent to 508-309 in other WTCS schools. PREREQUISITES: 508-113 - Dental Materials

**508-360**  
**Dental Radiography - Advanced** 1.00

This course builds on principles and skills developed in Dental Radiography. Dental Assistant students expose full mouth series, extra-oral, and specialized

radiographs on adult and child patients. Emphasis is placed on protection against x-ray hazards. Students will also process, mount, and evaluate radiographs for diagnostic value. In addition, they will use radiographs to explain dental health and treatment plans to patients. This course is the equivalent of 508-310 at other WTCS schools. PREREQUISITES: 508-103 - Dental Radiography

**508-361  
Dental Assistant Clinical - Advanced 2.00**

Dental Assistant students apply skills developed in Dental Chairside - Advanced, Dental Lab Procedures, Dental Radiography - Advanced, and Dental Office Procedures in a clinical setting with patients that emphasizes integration of core abilities and basic and advanced occupational skills. This course is equivalent to 508-311 at other WTCS schools. PREREQUISITES: 508-356 - Dental Assistant Clinicals

**509-301  
Medical Assistant Administrative Procedures 2.00**

This course introduces medical assistant students to office management and business administration in the medical office. Students learn to schedule appointments, perform filing, record keeping, telephone and reception duties, communicate effectively with patients and other medical care staff, and keep an inventory of supplies. Students apply introductory medical coding skills and managed care terminology. COREQUISITES: 501-107 - Computing for Healthcare, Introduction

**509-302  
Human Body in Health & Disease 3.00**

This course focuses on diseases that are frequently first diagnosed and treated in the medical office setting. Students learn to recognize the causes, signs, and symptoms of diseases of the major body systems as well as the diagnostic procedures, usual treatment, prognosis, and prevention of common diseases. COREQUISITES: 501-101 - Medical Terminology

**509-303  
Medical Assistant Lab Procedures 1 2.00**

This course introduces Medical Assistant students to laboratory procedures commonly performed by medical assistants in a medical office setting. Students perform routine laboratory procedures commonly performed in the ambulatory care setting under the supervision of a physician. Students follow laboratory safety requirements and federal regulations while performing specimen collection and processing, microbiology, and urinalysis testing. This course is equivalent to 509-303 at other WTCS schools. COREQUISITES: 509-304 - Medical Assistant Clinical Procedures 1

**509-304  
Medical Assistant Clinical Procedures 1 4.00**

This course introduces Medical Assistant students to the clinical procedures performed in the medical office setting. Students perform basic examining room skills, including screening, vital signs, patient history, minor surgery, and patient preparation for routine and specialty exams in the ambulatory care setting. This course is equivalent to 509-304 at other WTCS schools.

**509-305  
Medical Assistant Lab Procedures 2 2.00**

This course prepares students to perform laboratory procedures commonly performed by medical assistants in the ambulatory care setting under the supervision of a physician. Students perform phlebotomy, immunology, hematology, and chemistry laboratory procedures. PREREQUISITES: 509-303 - Medical Assistant Lab Procedures 1

**509-306  
Medical Assistant Clinical Procedures 2 3.00**

This course prepares students to perform patient care skills in a medical office setting. Students perform clinical procedures, including administering medications, assisting with minor surgery, performing an electrocardiogram, assisting with respiratory testing, educating patients/community, and maintaining clinical equipment in an ambulatory care setting. PREREQUISITES: 509-303 - Medical Assistant Lab Procedures 1 509-304 - Medical Assistant Clinical Procedures 1 COREQUISITES: 509-308 - Pharmacology for Allied Health Pharm for Allied Health

**509-307  
Medical Office Insurance and Finance 2.00**

This course introduces students to health insurance and finance in the medical office. Students perform bookkeeping procedures, apply managed care guidelines, and complete insurance claim forms. Students use medical coding and managed care terminology to perform insurance related duties. PREREQUISITES: 501-107 - Computing for Healthcare, Introduction 509-302 - Human Body in Health & Disease

**509-308  
Pharmacology for Allied Health Pharm for Allied Health 2.00**

This course introduces students to classifying indications into correct drug categories and applying basic pharmacology principles. Students apply basic pharmacodynamics to identifying common medications, medication preparation, and administration of medications used by the major body systems. PREREQUISITES: 509-302 - Human Body in Health & Disease

**509-309  
Medical Law, Ethics, & Professionalism 2.00**

This course prepares students to display professionalism and perform within ethical and legal boundaries in the health care setting. Students maintain confidentiality, examine legal aspects of the medical record, perform risk management procedures, and examine legal and bioethical issues.

**509-310  
Medical Assistant Practicum 3.00**

This course requires students to integrate and apply knowledge and skills from all previous medical assistant courses in actual patient care settings. Learners perform medical assistant administrative, clinical, and laboratory duties under the supervision of trained mentors to effectively transition to the role of a medical assistant. This AAMA required externship lasts between 160 hours (AAMA minimum) and 216 hours.

**509-314  
Medical Assistant Clinical Procedures 1 4.00**

This course introduces Medical Assistant students to the clinical procedures

# Course Descriptions

performed in the medical office setting. Students perform basic examining room skills, including screening, vital signs, patient history, minor surgery, and patient preparation for routine and specialty exams in the ambulatory care setting. This course is equivalent to 509-304 at other WTCS schools. COREQUISITES: 509-314 - Medical Assistant Clinical Procedures 1

**509-320  
Medical Assistant  
Alternate Externship 3.00**

This course requires students to integrate and apply knowledge and skills from all previous medical assistant courses in actual patient care settings. Learners perform medical assistant administrative, clinical, and laboratory duties under the supervision of trained mentors to effectively transition to the role of a medical assistant. This AAMA required externship lasts between 160 hours (AAMA minimum) and 216 hours.

**509-350  
Ophthalmic Pre-Testing 1 3.00**

This course will teach clinical testing that is associated with eye examinations of all types. The student should be able to assist any eye doctor with the care of patients at the completion of this course. PREREQUISITES: 509-304 - Medical Assistant Clinical Procedures 1 COREQUISITES: 509-352 - Ocular Anatomy and Optics

**509-351  
Ophthalmic Testing 2 3.00**

This course will teach clinical testing that is associated with eye examinations of all types. The student should be able to assist any eye doctor with the care of patients at the completion of this course. PREREQUISITES:

509-350 - Ophthalmic Pre-Testing 1 509-352 - Ocular Anatomy and Optics

**509-352  
Ocular Anatomy and Optics 3.00**

This course explores the form and function of the human eye, Basic ophthalmic optics and vision correction are presented. Students will learn about the physiology of the eye, vision correction, diagnostic pharmaceutical agents, and pathological conditions. COREQUISITES: 509-351 - Ophthalmic Testing 2

**510-101  
Emergency Room Nursing Theory 5.00**

This five credit (90 hour) theoretical course provides RNs with an appropriate entry level knowledge base that prepares them for the emergency room setting. This lecture/discussion format will take a systems approach, based upon the core curriculum of the ENA (Emergency Nurses Association) for Emergency Nursing. This course may be taken for professional enrichment or used toward completion of the ER Nursing ATC.

**510-102  
Emergency Room Nursing Lab 2.00**

This two credit course focuses on advanced nursing skills used in emergency room care. Demonstration of these advanced skills and equipment will be provided. Scenario based simulations will be performed and return demonstrations for skill attainment will be completed. This lab course will include such skills as EMS equipment, chest tubes, arterial lines, surgical instrumentation, ventilators, orthopedic appliances, Zoll pacers, IV drips, and other assessment skills.

**510-103  
Emergency Room Nursing Clinical 2.00**

This two credit (108 hour) course provides clinical experiences in an emergency room. A preceptor will be provided for this experience. Experience hours will be mutually determined by the student and the preceptor. A clinical journal and skill documentation will be completed. This preceptor component will provide a 1:1 student/ preceptor ratio for learning in this course.

**510-104  
Nursing Curriculum Transition 5.00**

This course meets the needs of students in the "old" curriculum as they transition from the second semester to the third semester of the state aligned curriculum. The course addresses competencies from health promotion, health alterations, and the community content from third semester. Students who have completed second semester take this course to prepare for entry into the state curriculum.

**510-105  
LPN Refresher I - Theory/Lab 3.00**

This course is designed to meet Wisconsin State Board of Nursing requirements to be licensed as an LPN and re-enter the work force. The student will learn current theoretical nursing practices. Topics included in the course are: trends, responsibilities and scope of practice, the nursing process, documentation, medication and pharmacy updates, infection control, supervision/ delegation, nursing care specific to the aging population, and communication skills.

**510-106  
LPN Refresher II - Clinical 1.00**

The clinical experience builds upon the theory and practicum reviewed in LPN Refresher I - Theory/Lab. This experience is determined by the student's preference and site availability and may be performed in a hospital or long term/sub-acute facility. It is highly recommended that the majority of the hours be spent in a long-term care facility. The course consists of 70 or more hours of directly supervised or precepted clinical experience. As the experience progresses, so does the independence of the student.

**510-107  
RN Refresher I - Theory/Lab 3.00**

This course is designed to update the RN on theoretical components of nursing practice and to meet Wisconsin State Board of Nursing requirements as an RN ready to enter the work force. Topics included in the course are: ethics, legal issues, trends, professional issues, the nursing process, documentation, physical and nutritional assessment, medication and intravenous fluid therapy, leadership, and communication skills.

**510-108  
RN Refresher II - Clinical 2.00**

This clinical experience builds upon the theory and practicum reviewed in RN Refresher I - Theory/Lab. This experience is determined by the student's preference and site availability and may be performed in a hospital, clinic, or long term/ sub-acute facility. The course consists of 100 or more hours of directly supervised or precepted clinical experience. As the experience progresses, so does the independence of the student.

**510-126**  
**OB Technician 4.00**

This course is designed for CNAs working in the obstetrical department, to prepare them to help with all types of deliveries, postpartum tubals, emergency procedures, and circumcisions performed in the OB department.

**510-134**  
**High Risk Post Partum 2.00**

This course is designed to prepare the nurse to care for high risk and complicated post partum women. Content includes hemorrhage, thrombosis, infection medical and psychological alterations. Theoretical concepts will be applied in the laboratory setting with the use case scenarios and the human patient simulator. There will be a strong emphasis on physiology and evidence based practice. Application of theory and promotion of critical thinking will be supported through the use of realistic case scenarios in the lab. Human patient simulators will provide real-life experiences.

**510-135**  
**High Risk Neonatal 2.00**

This course is designed to prepare the nurse to care for high risk neonate. Content includes caring for the neonate who is experiencing complications of prematurity, postmaturity, meconium aspiration, persistent pulmonary hypertension, intrauterine growth restriction, large for gestational age, infant of the diabetic mother and infection. Theoretical concepts will be applied in the laboratory setting with the use case scenarios and the human patient simulator.

**510-136**  
**High Risk Antepartum 2.00**

This course is designed to prepare the nurse to care for high risk and complicated antepartum women and the unborn child. Content includes caring for the client with antenatal complications including placental and hemorrhagic alterations, hyperemesis, incompetent cervix, premature labor, premature rupture of membranes, intrauterine growth restriction, multiple gestations, diabetes infection and hypertensive disorders. Theoretical concepts will be applied in the laboratory setting with the use case scenarios and the human patient simulator.

**510-137**  
**High Risk Intrapartum 2.00**

This course is designed to prepare the nurse to care for high risk and complicated intra partum women and the unborn child. Content includes interpreting signs of fetal distress and interventions to improve fetal and newborn outcomes. There is a focus on caring for the client experiencing dystocia, obstetrical emergencies such as prolapsed of cord, uterine rupture and amniotic fluid embolism. Content includes caring for the client with labor interventions such as induction and amniotomy. Theoretical concepts will be applied in the laboratory setting with the use case scenarios and the human patient simulator.

**510-151**  
**Nsg: Endocrine & Electrolytes Disorders 1.00**

This course is designed to enhance the learning of nursing students in planning care for the client with disorders of the endocrine system, fluids, electrolytes, and acid-base balance. PREREQUISITES: 543-105 -

Nursing Health Alterations 543-106 - Nursing Health Promotion 543-107 - Nursing: Clinical Care Across the Lifespan 543-108 - Nursing: Introduction to Clinical Care Management

**510-152**  
**NSG: Applied Pediatric Concepts 1.00**

This one credit seminar format course prepares the learner to expand knowledge from previous courses to the nursing care of children. Students will actively apply nursing concepts while focusing on issues of communication, intervention, development and current thematic issues in the care of children. PREREQUISITES: 809-188 - Psychology, Developmental 543-106 - Nursing Health Promotion

**510-153**  
**Nsg: Pharmacology Applications 1.00**

This course reviews the principles of pharmacology with emphasis on major drug classifications used to treat diseases. The pathophysiology approach will help the learner connect pharmacology and the nursing process to the medical/ nursing treatment of a variety of clients. PREREQUISITES: 543-103 - Nursing Pharmacology

**510-154**  
**Pathophysiology for Health Professions 3.00**

This course prepares the learner to expand and reinforce knowledge as it relates to pathology across the lifespan. The course is designed to support the health care provider in understanding from a cellular level how functional and physiologic changes occur as a result of a disease. A comprehensive understanding of anatomy and physiology is addressed and promoted. Physiological

alterations of focus will include: . Neoplasms . Congenital and genetic disorders . Diseases related to the child, adult and elderly . Neurologic, cardiovascular, respiratory, digestive, genitourinary, endocrine, musculoskeletal, skin and reproductive disorders Special emphasis is placed on promoting a climate where the learner is expected to synthesize and apply previous learned concepts to physiologic adaptations because of a defined pathology. PREREQUISITES: 806-177 - General Anatomy and Physiology

**510-155**  
**Principles of Gerontological Nursing 3.00**

This course is designed to prepare the nurse to care for the complexity of caring for the aged client and family. Content includes physiologic changes in aging, theories of aging, medications and laboratory values specific to the aging client, management of illnesses, diseases and conditions commonly seen in the aging population, and ethical and legal considerations.

**510-156**  
**Assessment of the Older Adult 3.00**

This course is designed to prepare the nurse to develop key assessment skills, improve assessment insight, and utilize evidenced based tools to ensure best outcomes for the older adult. Theoretical concepts will be applied in the laboratory setting with the use case scenarios and the human patient simulator. PREREQUISITES: 510-155 - Principles of Gerontological Nursing

# Course Descriptions

**510-157  
Rehab Care and Chronic  
Disease Mgmt 3.00**

This course is designed to prepare the nurse to care for the patient who needs rehabilitation to return to home. Content includes common events/illnesses that necessitate rehabilitation, orthopedic conditions, cardiovascular conditions, neuro/trauma conditions. Theoretical concepts will be applied in the laboratory setting with the use case scenarios and the human patient simulator. PREREQUISITES: 510-155 - Principles of Gerontological Nursing

**510-158  
Gerontological Capstone Clinical 1.00**

This course is a capstone experience in which the student is assigned to practice theoretical concepts in caring for the aged client. Nurses will have the opportunity to perform nursing interventions under the supervision of an experienced gerontological nurse in a setting that provides specialty care for the aged client. PREREQUISITES: 510-155 - Principles of Gerontological Nursing 510-156 - Assessment of the Older Adult

**510-301  
Health Unit Coordinator  
Procedures I 3.00**

Health Unit Coordinator Procedures I is an introductory course to the HUC profession. The course will introduce the student to the environment, communication, and managing client information in healthcare. PREREQUISITES: 501-101 - Medical Terminology 501-104 - Principles of Customer Service in Healthcare 501-107 - Computing for Healthcare, Introduction

**510-302  
Health Unit Coordinator  
Procedures II 3.00**

Health Unit Coordinator Procedures II is a more advanced course that introduces the student to the order process, transcription of medication and infusion orders, laboratory and diagnostic orders, interdisciplinary treatment orders, and specialty unit orders. PREREQUISITES: 510-301 - Health Unit Coordinator Procedures I

**510-303  
Health Unit Coordinator Clinical 3.00**

This course provides opportunities for learners to apply the concepts and skills of a Health Unit Coordinator in a clinical setting. COREQUISITES: 510-302 - Health Unit Coordinator Procedures II

**510-325  
Medication Assistant for Nursing  
Assistant 3.00**

A 108 hour course: 54 hours of class and 54 hours of lab. Designed for the nursing assistant able to meet occupational prerequisites. On completion, nursing assistants will be involved with the administration and distribution of medication in a skilled long term care facility.

**510-331  
Mental Health Nursing/Basic 2.00**

Designed to include therapeutic, personalized, comprehensive, preventive, and rehabilitative principles in caring for the mentally ill. Effort is aimed at helping the student relate to all people effectively to relieve suffering, increase security, and promote emotional health in the care of patients. A clinical component is included. COREQUISITES: 510-324;

**510-332  
Mother and Infant Care 2.00**

An introduction to the family as a social unit. It is designed to present pregnancy as a normal process. Concepts in care of the neonate and the mother aimed at attaining optimum health, comfort, and safety in various situations are stressed. Clinical observation is provided. PREREQUISITES: 510-324(1318) 510-331 - Mental Health Nursing/Basic 510-352 - Nursing Issues I 510-354 - Foundations of Health Promotion

**510-335  
Nursing Through the Lifespan I 5.00**

Using the nursing process, students will apply knowledge and skills with clients in various health care settings. Concepts are presented related to nursing care of clients of all ages. Topics include health promotion and perioperative care. Care of clients with alterations in the respiratory, cardiovascular, endocrine, gastrointestinal and genitourinary systems is included. PREREQUISITES: 510-324(1318) 510-331 - Mental Health Nursing/Basic 510-352 - Nursing Issues I 510-354 - Foundations of Health Promotion

**510-335A  
Nursing/Lifespan I-Lecture 2.00**

Concepts are presented related to nursing care of clients of all ages. Topics include health promotion and perioperative care. Care of clients with alterations in the respiratory, cardiovascular, endocrine, gastrointestinal and genitourinary systems is included.

**510-336  
Nursing Through the Lifespan II 5.00**

Using the nursing process, students will apply knowledge and skills with clients in

various health care settings. Concepts are presented related to nursing care of clients of all ages. Topics include the role of the practical nurse in leadership and child/family health care. Also included is care of clients with alterations in the immune, musculoskeletal, neurological, sensory and integumentary systems. Care of clients with communicable disease and cancer is included. PREREQUISITES: 510-335 - Nursing Through the Lifespan I

**510-336A  
Nursing/Lifespan II - Lecture 2.00**

Concepts are presented related to nursing care of clients of all ages. Topics include the role of the practical nurse in leadership and child/family health care. Also included is care of clients with alterations in the immune, musculoskeletal, neurological, sensory and integumentary systems. Care of clients with communicable disease and cancer is included.

**510-336B  
Nursing Through the  
Lifespan II Lab and Clinical 3.00**

Using the nursing process, students will apply knowledge and skills with clients in various health care settings. Concepts are presented related to nursing care of clients of all ages. Topics include the role of the practical nurse in leadership and child/family health care. Also included is care of clients with alterations in the immune, musculoskeletal, neurological, sensory and integumentary systems. Care of clients with communicable disease and cancer is included.

**510-342**  
**Nursing Assistant/Supportive 5.00**

Prepares students to perform Basic Nursing Assistant skills under the supervision of a Licensed nurse caring for patients in various health care settings. This course provides tutorial/classroom/laboratory experience and clinical experience in a nursing home. A certificate is awarded and graduates are placed on the Wisconsin NA/HHA Registry.

**510-347**  
**ESL Nursing Assistant 5.00**

Prepares students to perform Basic Nursing Assistant skills under the supervision of a Licensed nurse caring for patients in various health care settings. This course provides tutorial/classroom/laboratory experience and clinical experience in a nursing home. A certificate is awarded and graduates are placed on the Wisconsin NA/HHA Registry.

**510-348**  
**Current Trends in Health Careers 3.00**

This course introduces students to a variety of health occupations that are in demand in today's health market. The course will include theory, presentations, guest speakers, labs, and occupational experience in a health care facility. This is an exploratory course focusing on careers in health care which will expand student knowledge of career choices. PREREQUISITES: 510-346;

**510-352**  
**Nursing Issues I 1.00**

Places importance on historical development, legal aspects, and personal responsibilities and commitment of the nurse to nursing patients, colleagues, community

and self. COREQUISITES: 510-331 - Mental Health Nursing/Basic

**510-353**  
**Nursing Issues II 1.00**

Places importance on developing qualities of effective leadership. Covers issues of job seeking skills and successful employment. Current trends in health care are addressed. PREREQUISITES: 510-324(1318) 510-331 - Mental Health Nursing/Basic 510-352 - Nursing Issues I 510-354 - Foundations of Health Promotion

**510-354**  
**Foundations of Health Promotion 1.00**

Addresses mental, emotional and physical changes of individuals throughout the lifespan. Health risks promotion and health needs are covered. Theories of growth and development are introduced.

**512-100**  
**Surgical Technology/Introduction 3.00**

Surgical Technology/Introduction covers information about the different health care facilities, agencies, and the organizational structure that describes the functions of each. Additionally, the beginning course discusses the duties of the different team members including communication techniques, documentation of patient care, medical/legal responsibilities, and safe patient care. Also discussed are the needs and rights of the surgical patient. COREQUISITES: 512-101 - Surgical Applications I 806-177 - General Anatomy and Physiology

**512-101**  
**Surgical Applications I 4.00**

Surgical Applications I is a beginning laboratory course that covers basic principles which apply to aseptic technique, sterilization and disinfection, instrumentation, sutures, needles, and preparing surgical supplies. Students tour a clinical facility as part of the course orientation. COREQUISITES: 512-100 - Surgical Technology/Introduction

**512-102**  
**Surgical Technology II 3.00**

Surgical Technology builds upon competencies and skills learned in Surgical Technology/Introduction and Surgical Applications I. Specific competencies introduce the student to circulating duties such as assisting the patient, response to surgical procedures, and the needs demonstrated from that response. Other areas of content include: preoperative routines, thermoregulatory devices, anesthesia types and delivery systems, taking and recording of vital signs, methods of hemostasis, transporting and positioning patients, and safe handling of specimens. PREREQUISITES: 512-100 - Surgical Technology/Introduction 512-101 - Surgical Applications I 806-177 - General Anatomy and Physiology COREQUISITES: 512-103 - Surgical Applications II 806-179 - Anatomy and Physiology, Advanced

**512-103**  
**Surgical Applications II 4.00**

Surgical Applications II is a laboratory and clinical experience course that builds upon information learned in semester I courses. This course will include the beginning scrub duties of the surgical technologist: creating a sterile field, caring for and using surgical

instruments, selecting and handling sutures, selecting and handling varieties of needles, preparing and using standard equipment, preparing and using special equipment, and draping the surgical patient and the sterile field. PREREQUISITES: 512-100 - Surgical Technology/Introduction 512-101 - Surgical Applications I

**512-108**  
**Surgical Pharmacology 1.00**

Surgical Pharmacology is a basic study of drug classifications, care and handling of drugs and solutions, application of arithmetic principles in dosage calculations, terminology related to pharmacology, anesthesia, and drugs used in surgery. PREREQUISITES: 512-102 - Surgical Technology II 512-103 - Surgical Applications II

**512-110**  
**Update in Surgical Technology 2.00**

Update in Surgical Technology builds upon previously learned skills. Clinically, the surgical technologist requesting this update will be assigned to a clinical facility with an instructor to oversee experiences, evaluate progress, and help build the self confidence needed to re-enter the profession of surgical technology. The student will work during scheduled times as assigned and will complete all required assignments, including a care study, during this clinical. Additionally, the student will assist with the experience by requesting those procedures most needed to complete his/her case experiences.

**512-125**  
**Surgical Technology, Intro to 4.00**

Provides the foundational knowledge of the occupational environment. Principles

# Course Descriptions

of sterilization and disinfection are learned. Surgical instruments are introduced. Preoperative patient care concepts are simulated. Lab practice is included. PREREQUISITES: 806-177 - General Anatomy and Physiology COREQUISITES: 501-101 - Medical Terminology

**512-126**  
**Surgical Tech Fundamentals 1** **4.00**

Focuses on preparing the patient and operating room for surgery. Principles of sterile technique are emphasized as the student moves into the scrub role. Lab practice is included. PREREQUISITES: 806-177 - General Anatomy and Physiology COREQUISITES: 501-101 - Medical Terminology 512-125 - Surgical Technology, Intro to

**512-127**  
**Exploring Surgical Issues** **2.00**

Explores a variety of issues related to surgical technology. Emphasis is placed on becoming a professional member of the surgical team. COREQUISITES: 512-125 - Surgical Technology, Intro to 512-126 - Surgical Tech Fundamentals 1

**512-128**  
**Surgical Tech Fundamentals 2** **4.00**

Focuses on enhancing surgical technology skills while functioning as a sterile team member. Lab and/or clinical practice is included. PREREQUISITES: 512-125 - Surgical Technology, Intro to 512-126 - Surgical Tech Fundamentals 1 512-127 - Exploring Surgical Issues 501-101 - Medical Terminology COREQUISITES: 806-179 - Anatomy and Physiology, Advanced 806-197 - Microbiology 512-129 - Surgical Pharmacology

**512-129**  
**Surgical Pharmacology** **2.00**

Basic study of drug classifications, care, and handling of drugs and solutions, application of mathematical principles in dosage calculations, terminology related to pharmacology, anesthesia, and drugs used in surgery. PREREQUISITES: 512-125 - Surgical Technology, Intro to 512-126 - Surgical Tech Fundamentals 1

**512-130**  
**Surgical Skills Application** **2.00**

Provides a transition from the academic to the clinical setting. Learners integrate the surgical technologist skills as they apply to various surgical procedures. PREREQUISITES: 512-125 - Surgical Technology, Intro to 512-126 - Surgical Tech Fundamentals 1 512-128 - Surgical Tech Fundamentals 2 512-127 - Exploring Surgical Issues COREQUISITES: 512-129 - Surgical Pharmacology

**512-131**  
**Surgical Interventions 1** **4.00**

Provides the foundational knowledge of surgical core and specialty procedures. Examines the pathophysiology, diagnostic interventions, health sciences, and surgical techniques for a variety of procedures. PREREQUISITES: 512-128 - Surgical Tech Fundamentals 2 512-130 - Surgical Skills Application

**512-132**  
**Surgical Technology Clinical 1** **3.00**

Apply basic surgical theories, principles, and procedural techniques in the operating room. Students begin to function as

team members under the guidance of the instructor and authorized clinical personnel. PREREQUISITES: 512-129 - Surgical Pharmacology 512-128 - Surgical Tech Fundamentals 2 512-130 - Surgical Skills Application COREQUISITES: 512-131 - Surgical Interventions 1

**512-133**  
**Surgical Technology Clinical 2** **3.00**

Further experience in a clinical setting allows the student to continue to improve technical skills while accepting more responsibilities during surgical procedures. PREREQUISITES: 512-129 - Surgical Pharmacology 512-132 - Surgical Technology Clinical 1 512-130 - Surgical Skills Application COREQUISITES: 512-131 - Surgical Interventions 1

**512-134**  
**Surgical Interventions 2** **3.00**

Expands knowledge of core and specialty surgical procedures by incorporating pathophysiology, diagnostic interventions, health sciences, and surgical techniques. PREREQUISITES: 512-131 - Surgical Interventions 1 512-133 - Surgical Technology Clinical 2

**512-135**  
**Surgical Technology Clinical 3** **3.00**

Further experience in a clinical setting allows the student to continue to improve technical skills while accepting more responsibilities during surgical procedures. PREREQUISITES: 512-131 - Surgical Interventions 1 512-133 - Surgical Technology Clinical 2 COREQUISITES: 512-142 - Surgical Interventions II

**512-136**  
**Surgical Technology Clinical 4** **3.00**

During this clinical course the student will function relatively independently. Serves as a transition from a student perspective to an employee by utilizing advanced skills for an entry level Surgical Technologist. PREREQUISITES: 512-135 - Surgical Technology Clinical 3 COREQUISITES: 512-142 - Surgical Interventions II

**512-142**  
**Surgical Interventions II** **4.00**

Expands knowledge of core and specialty surgical procedures by incorporating pathophysiology, diagnostic interventions, health sciences, and surgical techniques. PREREQUISITES: 512-131 - Surgical Interventions 1 512-133 - Surgical Technology Clinical 2 COREQUISITES: 512-135 - Surgical Technology Clinical 3 512-136 - Surgical Technology Clinical 4

**513-110**  
**Lab Skills, Basic** **1.00**

This course explores health career options and the fundamental principles and procedures performed in the clinical laboratory. You will utilize medical terminology and basic laboratory equipment. You will follow required safety and infection control procedures and perform simple laboratory tests. COREQUISITES: 513-111 - Phlebotomy

**513-111**  
**Phlebotomy** **2.00**

This course provides opportunities for learners to perform routine venipuncture, routine capillary puncture, and special collection procedures. COREQUISITES: 513-110 - Lab Skills, Basic

**513-166  
Phlebotomy Clinical Experience 2.00**

This clinical course provides 120 hours of practical application of principles and techniques of phlebotomy. The student observes and performs routine phlebotomy and processing tasks in affiliating phlebotomy facilities.

**519-301  
Custodial Services Math 1.00**

Emphasis is on addition, subtraction, multiplication and division of whole numbers and addition and subtraction of fractions; linear and area measurement, volume; and gauge and graph interpretation.

**519-320  
Custodial Services Related 2.00**

Focus is on preparing students for the custodial services lab experience. Students are introduced to terminology, supplies, materials and equipment used in the field and techniques of floor, carpet, wall and window care.

**519-324  
Facilities Service OSHA 1.00**

Prepares students for custodial service employment. Introduces students to safety in the work place, hazard communication and bloodborne pathogen protection. Students will gain knowledge of chemical fundamentals and safe handling of cleaning chemicals.

**519-325  
Cleaning Fundamentals 3.00**

Prepares students for custodial services employment. Develops knowledge and

experience in general cleaning techniques, chemical usage, tools and equipment usage and identification of maintenance issues encountered by custodial staff. Includes common area, office/classroom, general kitchen, and restroom cleaning.

**519-326  
Floor Care 2.00**

Prepares students for custodial services employment. Introduces floor types, floor care chemicals and equipment. Develops knowledge and experience in assessment of current floor care needs and performance of floor care maintenance techniques (including routine, interim and restorative).

**519-327  
Carpet Care 2.00**

Prepares students for custodial services employment. Introduces carpet types, carpet care chemicals and equipment. Student will gain knowledge and experience in assessment of current carpet care needs and performance of carpet care maintenance techniques (routine, interim and restorative).

**519-328  
Green Cleaning 1.00**

Prepares students for custodial service employment. Introduces students to effective cleaning techniques and chemicals used to protect the public health without harming the environment.

**520-101  
Human Services/Introduction 3.00**

An overview of human services, types of agencies and delivery systems and human service as a career field. Emphasis will be on developing the generalist concept and the

role of the associate degree human service worker.

**520-105  
Interviewing Principles & Recordkeeping 3.00**

Introduction to interviewing and recordkeeping skills as practiced in human services agencies, including social history, summary recording, case assessment and planning.

**520-106  
Counseling the Criminal Offender 1.00**

This course will expose you to a theoretical model underlying criminal personalities and practice in counseling. Through lectures, demonstrations, small-group discussions, experiential activities, readings, and writing papers, you are assisted to critically evaluate the practical applications of contemporary counseling perspectives related to the criminal tactics and errors in thinking.

**520-107  
Mindfulness 1.00**

Students will learn mindfulness, a state of active open attention on the present that research has shown can reduce stress and emotional reactivity, improve ability to concentrate, boost working memory, increase cognitive flexibility, improve immune system, and much more. This course can show you how to change your life and your relationships by cultivating skills that lead to experiencing a better quality of life, both personally and professionally.

**520-108  
Trauma Sensitive Services 1.00**

This course identifies the various models of trauma sensitive services and how trauma sensitive services can benefit clients and behavioral health organizations. Students will learn the concepts behind trauma informed care and how state and federal mandates expect trauma informed care to be implemented.

**520-110  
Community Resources and Services 3.00**

This course seeks to expose the student to a wide variety of community agencies, resources, and programs through the use of guest speakers and site visits. The functions, funding, clients served, eligibility requirements, and referral procedures of the agency will be emphasized.

**520-115  
Counseling/Introduction to 3.00**

This course is designed to provide the student with an overview of the major counseling theories, their techniques and the applications of these to various situations. The student will be able to practice the use of these counseling techniques in initiating, structuring and terminating a counseling session. **PREREQUISITES:** 520-105 - Interviewing Principles & Recordkeeping

**520-121  
Human Service Field Experience II 3.00**

The student is given the opportunity to demonstrate understanding of more advanced social work skills and techniques used in the field. This course will meet in a weekly seminar to monitor progress and

# Course Descriptions

address concerns. PREREQUISITES: 520-124 - Human Service Field Experience

**520-124  
Human Service Field Experience 3.00**

The student is given an opportunity to demonstrate an understanding of socialwork skills and techniques under supervision in a working situation. The class will meet in a weekly seminar to monitor progress and address concerns. PREREQUISITES: 520-127 - Professional Practices in Human Services COREQUISITES: 520-140 - Group Counseling

**520-127  
Professional Practices in Human Services 3.00**

This course prepares students to enter the human services profession and maintain effectiveness as a human service practitioner. Emphasis will be placed on gaining a working knowledge of professional codes of ethics. Students will explore social/ethical issues that impact the profession. Professional credentialing, continuing education, and maintaining vitality within the field will be stressed.

**520-128  
Child Welfare Policy and Practice 3.00**

This class helps the student examine the economic, social, and political aspects of children's issues. It also addresses the U.S. welfare system, including proprietary, private, voluntary, and governmental agencies.

**520-140  
Group Counseling 3.00**

The focus of this course is on the group dynamics and group process. Various

counseling approaches and their application to group work will be explored along with the developmental stages of groups. Individual behaviors and motivations in both task and counseling groups will be identified. Emphasis will be placed on extensive role-play situations for knowledge and skill integration. PREREQUISITES: 520-115 - Counseling/Introduction to

**520-141  
Survey Public Service Organizations 3.00**

This course will explore various programs provided through public services and go over eligibility requirements for each program. It is designed to survey the skills needed to serve as a financial assistant worker for Racine Workforce Development.

**520-142  
Motivational Interviewing for Human Srv 1.00**

This course will examine the theory and application of motivational interviewing as an intervention in human services. The course will examine the role of motivation, strategies to help clients resolve ambivalence about change, methods to assess readiness to change and traits in the human service worker which increases motivation to change.

**520-143  
Neuroscience in Human Services 1.00**

This course will examine the theory and application of neurosciences in humanservices, to increase understanding of how the brain impacts, and is impacted by human behavior. Student's will: 1. Demonstrate a basic understanding of how the brain and nervous system works, 2. Recognize how the healthy brain organizes experiences into narratives, 3. Understand

the concept of the social brain and its role in attachment, 4. Understand the link between neurobiological disorganization and psychopathology and 5. Understand how the human services relationship has the potentialto re-organize brain functioning.

**520-150  
Gerontology/Introduction to 3.00**

Identifies basic theories and facts about the aging process leading toward application of methods and techniques of serving the aged. Student will be encouraged to develop an understanding of the psychological and sociological experience of the older adult population.

**520-151  
Family Theory and Practice 3.00**

Provides the student with a broad understanding of family systems theory. The student will apply knowledge of structural family theory and brief strategic family theory in case studies. The student will also analyze case situations involving violence within the family system.

**520-152  
Aspects of Disabilities 3.00**

This course is an introduction to the history of services and legislative processes involved in provision of services to people with disabilities. It is a review of medical diseases and disabilities, including etiology, physiology, prognosis, and impact on disabled individuals and their environment.

**520-160  
Correctional Processes 3.00**

A study of present correctional policies and processes in the criminal justice field as it affects today's society in terms of deterrents and rehabilitation and a look at future trends.

**520-161  
Child and Adolescent Mental Health 3.00**

This course will examine the psychological, social/environmental, cultural and diagnostic aspects of children?s mental health and mental illness. It will also address areas of intervention and resilience. Focus will be on identifying symptoms, treatment approaches and current trends affecting practice in this area.

**522-101  
IA: Teamwork in School Settings 3.00**

This course introduces the learner to group dynamics, school and class policies, liability, confidentiality, and safety issues as they relate to the role of the instructional assistant as a member of a team.

**522-102  
IA:Techniques for Reading and Language Arts 3.00**

This course focuses on the instructional assistant's role in reading and language arts. The learner gains an understanding of how to work with all children individually and in groups through questioning, listening, and guiding techniques. This course also addresses the use of current classroom materials plus enrichment and support activities. PREREQUISITES: 838-105 - Reading & Study Skills, Intro

**522-103**  
**IA: Introduction to Educational Practices** **3.00**

This course addresses the fundamentals of teaching methodologies, learning styles, factors influencing teaching effectiveness, strategies to meet the needs of all learners, questioning techniques, and basic assessment practices.

**522-104**  
**IA: Technology and Media Resources** **3.00**

This course provides the opportunity for the learner to develop the knowledge and skills in the area of media and computer resources as it relates to the instructional assistant. Students in this course will gain hands-on computer and media experience and will learn how to operate a variety of equipment. A variety of school related documents will be prepared while using selected software. Students incorporate images into documents from a variety of sources, including digital cameras and scanners.

**522-105**  
**IA: Practicum 1** **2.00**

Field Experience I will introduce the student to the pre-kindergarten, kindergarten, elementary, middle, or high school classroom. The student will observe children and practice techniques under the direction of the classroom teacher.

**522-106**  
**IA: Child and Adolescent Development** **3.00**

This course provides an overview of growth and development from birth through adolescence. It acquaints the learner with the fundamental tasks of physical, motor,

perceptual, cognitive, social/emotional, and language development.

**522-107**  
**IA: Overview of Special Education** **3.00**

This course provides training in the classifications of special education, pre-K to grade 12. Studies include causes of special needs and intervention strategies. The course examines key development milestones and how they relate to physical, mental, emotional, or social development of children.

**522-111**  
**IA: Guiding and Managing Behavior** **3.00**

This course focuses on guiding children's behavior to keep them safe and healthy. It includes strategies for improving behavior and problems of all levels in the inclusive classroom, on the bus, on the playground, and on field trips.

**522-113**  
**Media and Computer Resources** **2.00**

This course provides training in the operation of VCRs, Elmos, video equipment, overhead projectors, tape recorders, and computers as it relates to the instructional assistant. It also includes hands on experience with instructional resources such as learning centers, software, and other instructional aids that enhance student learning.

**522-115**  
**IA: Practicum 2** **2.00**

The second field experience will provide the student with further responsibilities in a classroom setting in pre-kindergarten, elementary, middle, or high school. The

student will work with children or youth under the direction of the classroom teacher.

**522-118**  
**IA: Techniques for Math** **3.00**

This course will address techniques for the instructional assistant in assisting the classroom teacher in group and individual tutoring activities in math. Current practice, including manipulatives, problem solving, and assessment, will be covered within the framework of state and national standards. PREREQUISITES: 804-107 - College Mathematics

**522-120**  
**IA: Techniques for Science** **3.00**

This course is an introduction to the content and processes of science. Strategies of teaching science will be studied and practiced and will prepare you in assisting the classroom teacher in group and individual activities in science. Current science processes, strategies, procedures, assessment options, and factors affecting science learning will be explored.

**522-122**  
**IA: Advanced Reading and Language Arts** **3.00**

Students will gain the knowledge and skills needed to support and encourage children as independent, strategic readers as well as techniques to support children through the writing process. Children's literature will be integrated throughout the course. PREREQUISITES: 522-102 - IA: Techniques for Reading and Language Arts

**522-123**  
**IA: Positive Classroom Mgmt Tech Techniques** **2.00**

This course examines the impact of issues such as divorce, alcoholism, child abuse, youth suicide, stress, violence, and gangs on behavior in the classroom. It also examines conflict resolution techniques with an emphasis on de-escalation strategies and prevention. PREREQUISITES: 522-111 - IA: Guiding and Managing Behavior

**522-124**  
**IA: Supporting Students with Disabilities** **3.00**

This course includes strategies to manage the learning environment proactively to prevent behavior problems and promote learning for students with disabilities.

**522-125**  
**IA: Practicum 3** **2.00**

Practicum 3 allows students to put into practice the knowledge and skills learned from program courses under the direction and supervision of a certified teacher or other qualified school personnel. Job search skills will also be addressed. PREREQUISITES: 522-115 - IA: Practicum 2

**522-126**  
**Technology for Instructional Assistants** **3.00**

Students prepare a variety of school related documents such as worksheets, tests, letters, posters, brochures, and presentations, while learning selected software. Students incorporate images into these documents from a variety of sources, including digital cameras and scanners.

# Course Descriptions

<p><b>522-129</b> <b>IA: Practicum 1</b> <b>3.00</b></p> <p>Practicum I will introduce the student to a diverse classroom setting at an elementary, middle school and/or high school level. The student will observe children and practice techniques under the guidance of a DPI certified teacher.</p>	<p>therapy services to a variety of patients in the host country. PREREQUISITES: 524-120</p>	<p>PREREQUISITES: 806-177 - General Anatomy and Physiology</p>	<p>professional communication skills. This course is equivalent to 524-140 at other WTCS schools.</p>
<p><b>522-131</b> <b>IA: Practicum 2</b> <b>3.00</b></p> <p>Apply the skills learned in previous program courses in a school setting while under the supervision of a DPI certified teacher. Students support children with special education needs and programming. Job search skills will be addressed and a professional portfolio will be completed. PREREQUISITES: 522-129 - IA: Practicum 1</p>	<p><b>524-106</b> <b>Pediatrics for Physical Therapy Assistants</b> <b>1.00</b></p> <p>The course begins a brief overview of the principles of normal development, followed by extensive coverage of atypical development. Assessment and treatment of cerebral palsy, spina bifida, developmental delay, coordination and balance deficits, juvenile arthritis, and other selected pathologies are discussed and demonstrated. PREREQUISITES: 524-120</p>	<p><b>524-111</b> <b>Physical Therapy Assistant/ Introduction</b> <b>2.00</b></p> <p>The role of physical therapy in various health care settings is presented. Students are acquainted with medical terminology, abbreviations and principles of documentation. Health care delivery models, team members, legal and ethical issues, history of physical therapy and its professional organization are explored. Basic patient care skills including vital signs, positioning, transfers, transporting patients, aseptic techniques, and slings are covered. PREREQUISITES: 999-110</p>	<p><b>524-141</b> <b>PTA Kinesiology 2</b> <b>4.00</b></p> <p>This course applies basic principles from PTA Kinesiology 1 to the axial skeleton and upper quadrant, including location and identification of muscles, joints, and other landmarks. Students assess range of motion and strength of the axial skeleton and upper quadrant and integrate analysis of posture and gait. This course is equivalent to 524-141 at other WTCS schools. PREREQUISITES: 524-138 - PTA Kinesiology 1</p>
<p><b>522-132</b> <b>IA: Positive Classroom Mgmt Tech</b> <b>3.00</b></p> <p>This course examines the impact of issues such as divorce, alcoholism, child abuse, youth suicide, stress, violence and gangs on behavior in the classroom. Conflict resolution techniques and de-escalation strategies and with an emphasis on prevention will also be examined. PREREQUISITES: 522-111 - IA: Guiding and Managing Behavior</p>	<p><b>524-107</b> <b>PTA/Proprioceptive Neuromuscular/ Advanced Facilitation Concepts for the Physical Therapist Assistant/ Advanced</b> <b>1.00</b></p> <p>Advanced Proprioceptive Neuromuscular Facilitation for the PTA will enhance the student's knowledge of activities, patterns, and techniques initially addressed in previous coursework. The treatment of neurologic and orthopedic dysfunction and functional outcomes will be addressed. The course will consist of simulated patient practice in lab/lecture setting.</p>	<p><b>524-138</b> <b>PTA Kinesiology 1</b> <b>3.00</b></p> <p>This course introduces basic principles of musculoskeletal anatomy, kinematics, and clinical assessment. Students locate and identify muscles, joints, and other landmarks of the lower quadrant, in addition to assessing range of motion and strength.</p>	<p><b>524-142</b> <b>PTA Therapeutic Exercise</b> <b>3.00</b></p> <p>This course provides instruction on the implementation of a variety of therapeutic exercise principles. Learners implement, educate, adapt, and assess responses to therapeutic exercises. PREREQUISITES: 806-177 - General Anatomy and Physiology COREQUISITES: 524-138 - PTA Kinesiology 1</p>
<p><b>524-105</b> <b>Physical Therapy International Field Experience</b> <b>2.00</b></p> <p>This course provides learners with an immersion experience in the culture and health care system in a developing country. Students study culture, health systems, and basics of the local language prior to traveling. The course culminates in a two week clinical experience, providing physical</p>	<p><b>524-108</b> <b>PTA Musculoskeletal Anatomy &amp; Function</b> <b>2.00</b></p> <p>This course is a preparatory and enrichment elective for students who are about to enter first semester PTA program core courses. It provides an in-depth look at musculoskeletal anatomy, including anatomical terms, bony anatomy, cardinal planes and motions, and joint and muscle structure and function.</p>	<p><b>524-139</b> <b>PTA Patient Interventions</b> <b>4.00</b></p> <p>This course is an introduction to basic skills and physical therapy interventions performed by the physical therapist assistant.</p> <p><b>524-140</b> <b>PTA Professional Issues 1</b> <b>2.00</b></p> <p>This course introduces the history and development of the physical therapy program, legal and ethical issues, the interdisciplinary health care team, and</p>	<p><b>524-143</b> <b>PTA Therapeutic Modalities</b> <b>4.00</b></p> <p>This course develops the knowledge and technical skills necessary to perform numerous therapeutic modalities likely to be utilized as a PTA. COREQUISITES: 524-139 - PTA Patient Interventions</p> <p><b>524-144</b> <b>PTA Principles of Neuromuscular Rehabilitation</b> <b>4.00</b></p> <p>This course integrates concepts of neuromuscular pathologies, physical therapy</p>

interventions, and data collection in patient treatment. It is equivalent to 524-144 at other WTCS schools. PREREQUISITES: 524-141 - PTA Kinesiology 2 524-139 - PTA Patient Interventions 524-142 - PTA Therapeutic Exercise

**524-145  
PTA Musculoskeletal  
Rehabilitation 4.00**

This course integrates concepts of musculoskeletal pathologies, physical therapy interventions, and data collection in patient treatment. It is equivalent to 524-145 at other WTCS schools. PREREQUISITES: 524-139 - PTA Patient Interventions COREQUISITES: 524-141 - PTA Kinesiology 2 524-142 - PTA Therapeutic Exercise

**524-146  
PTA Management of Cardiopulmonary  
and Integumentary Conditions 3.00**

This course integrates concepts of cardiopulmonary and integumentary pathologies, physical therapy interventions, and data collection in patient treatment. It is equivalent to 524-146 at other WTCS schools. PREREQUISITES: 524-141 - PTA Kinesiology 2 524-139 - PTA Patient Interventions 524-142 - PTA Therapeutic Exercise

**524-147  
PTA Clinical Practice 1 2.00**

This course provides a part-time clinical experience to apply foundational elements, knowledge, and technical skills pertinent to physical therapy practice. It is the equivalent of 524-147 at other WTCS schools. COREQUISITES: 524-141 - PTA Kinesiology 2 524-143 - PTA Therapeutic Modalities

**524-148  
PTA Clinical Practice 2 3.00**

This course provides another part-time clinical experience to apply foundational elements, knowledge, and technical skills required of the entry level physical therapist assistant in various practice settings. It is equivalent to 524-148 at other WTCS schools. PREREQUISITES: 524-147 - PTA Clinical Practice 1

**524-149  
PTA Rehabilitation Across the  
Lifespan 2.00**

This capstone course integrates concepts of pathology, physical therapy interventions, and data collection across the lifespan. In addition, the PTA's role in health, wellness and prevention, reintegration, and physical therapy interventions for special patient populations will be addressed. This course is equivalent to 524-149 at other WTCS schools. PREREQUISITES: 524-144 - PTA Principles of Neuromuscular Rehabilitation 524-145 - PTA Musculoskeletal Rehabilitation 524-148 - PTA Clinical Practice 2 COREQUISITES: 524-146 - PTA Management of Cardiopulmonary and Integumentary Conditions

**524-150  
PTA Professional Issues 2 2.00**

This course incorporates professional development, advanced legal and ethical issues, healthcare management and administration, and further development of professional communication strategies. PREREQUISITES: 524-140 - PTA Professional Issues 1 COREQUISITES: 524-148 - PTA Clinical Practice 2

**524-151  
PTA Clinical Practice 3 5.00**

This course provides a full-time clinical experience to apply foundational elements, knowledge, and technical skills required of the entry level physical therapist assistant in various practice settings. PREREQUISITES: 524-144 - PTA Principles of Neuromuscular Rehabilitation 524-145 - PTA Musculoskeletal Rehabilitation 524-146 - PTA Management of Cardiopulmonary and Integumentary Conditions 524-148 - PTA Clinical Practice 2

**526-149  
Radiographic Procedures 1 5.00**

This course prepares radiography students to perform routine radiologic procedures on various parts of the body, including the upper body, hip, pelvis, and ankle. Students apply knowledge of human anatomy to position the patient correctly to achieve the desired result. PREREQUISITES: 806-177 - General Anatomy and Physiology COREQUISITES: 526-158 - Introduction to Radiography 526-159 - Radiographic Imaging 1 526-168 - Radiography Clinical 1

**526-158  
Introduction to Radiography 3.00**

This course introduces students to the role of radiography in health care. Students apply legal and ethical considerations to patient care and pharmacology in the radiologic sciences. PREREQUISITES: 806-177 - General Anatomy and Physiology COREQUISITES: 526-149 - Radiographic Procedures 1 526-159 - Radiographic Imaging 1 526-168 - Radiography Clinical 1

**526-159  
Radiographic Imaging 1 3.00**

This course introduces radiography students to the process of creating radiographic images. Students determine the factors that affect image quality, including contrast, density, and distortion. Students apply OSHA standards for health and safety in the darkroom. PREREQUISITES: 806-177 - General Anatomy and Physiology COREQUISITES: 526-149 - Radiographic Procedures 1 526-158 - Introduction to Radiography 526-168 - Radiography Clinical 1

**526-168  
Radiography Clinical 1 2.00**

This beginning level clinical course prepares radiography students to perform radiologic procedures on patients with extensive supervision and direction. Students apply radiation protection and standard precautions in the production of radiographs in a health care setting while adhering to legal and ethical guidelines. An emphasis of the course is the development of communication and critical thinking skills appropriate to the clinical setting. PREREQUISITES: 806-177 - General Anatomy and Physiology COREQUISITES: 526-149 - Radiographic Procedures 1 526-158 - Introduction to Radiography 526-159 - Radiographic Imaging 1

**526-170  
Radiographic Imaging 2 3.00**

This course prepares radiography students to apply advanced radiographic principles to the production of radiographic images. Students analyze exposure factor considerations, differentiate between film and exposure latitude, and use beam restricting devices. PREREQUISITES:

# Course Descriptions

526-149 - Radiographic Procedures 1  
 526-158 - Introduction to Radiography  
 526-159 - Radiographic Imaging 1 526-168  
 - Radiography Clinical 1 COREQUISITES:  
 526-191 - Radiographic Procedures 2 526-  
 192 - Radiography Clinical 2

**526-174**  
**ARRT Certification Seminar 2.00**

Provides preparation for the for the national certification examination prepared by the American Registry of Radiologic Technologists. Emphasis is placed on the weak areas of the individual students. Simulated registry examinations are utilized. PREREQUISITES: 526-199 - Radiography Clinical 4 COREQUISITES: 526-189 - Radiographic Pathology 526-190 - Radiography Clinical 5 526-195 - Radiographic Quality Analysis

**526-189**  
**Radiographic Pathology 1.00**

This course prepares radiography students to determine the basic radiographic manifestations of pathological conditions. Students classify trauma related to site, complications, and prognosis and locate the radiographic appearance of pathologies. PREREQUISITES: 526-199 - Radiography Clinical 4 COREQUISITES: 526-174 - ARRT Certification Seminar 526-190 - Radiography Clinical 5 526-195 - Radiographic Quality Analysis 526-197 - Radiation Protection and Biology

**526-190**  
**Radiography Clinical 5 2.00**

This fifth level clinical course prepares radiography students to perform radiologic procedures on patients with some supervision. Students apply radiation

protection and standard precautions in the production of radiographs in a health care setting while adhering to legal and ethical guidelines. Students are encouraged to demonstrate independent judgment in the performance of clinical competencies. PREREQUISITES: 526-199 - Radiography Clinical 4 COREQUISITES: 526-174 - ARRT Certification Seminar 526-189 - Radiographic Pathology 526-195 - Radiographic Quality Analysis 526-197 - Radiation Protection and Biology

**526-191**  
**Radiographic Procedures 2 5.00**

This course prepares radiography students to perform routine radiologic procedures on various parts of the body, including the skull and spine. Students apply knowledge of human anatomy to position the patient correctly to achieve the desired result. PREREQUISITES: 526-149 - Radiographic Procedures 1 526-158 - Introduction to Radiography 526-159 - Radiographic Imaging 1 526-168 - Radiography Clinical 1 COREQUISITES: 526-170 - Radiographic Imaging 2 526-192 - Radiography Clinical 2

**526-192**  
**Radiography Clinical 2 3.00**

This second level clinical prepares radiography students to perform radiologic procedures on patients with extensive supervision and direction. Students apply radiation protection and standard precautions in the production of radiographs in a health care setting while adhering to legal and ethical guidelines. An emphasis of the course is the development of communication and critical thinking skills appropriate to the clinical setting. PREREQUISITES: 526-149 - Radiographic

Procedures 1 526-158 - Introduction to Radiography 526-159 - Radiographic Imaging 1 526-168 - Radiography Clinical 1 COREQUISITES: 526-170 - Radiographic Imaging 2 526-191 - Radiographic Procedures 2

**526-193**  
**Radiography Clinical 3 3.00**

This third level clinical course prepares radiography students to perform radiologic procedures on patients with supervision and direction. Students apply radiation protection and standard precautions in the production of radiographs in a health care setting while adhering to legal and ethical guidelines. An emphasis of the course is the demonstration of communication and critical thinking skills appropriate to the clinical setting. PREREQUISITES: 526-170 - Radiographic Imaging 2 526-191 - Radiographic Procedures 2 526-192 - Radiography Clinical 2

**526-194**  
**Imaging Equipment Operation 3.00**

This course introduces radiography to the principles and application of x-ray technology. Students analyze how x-rays are produced and determine the corrective actions necessary for common equipment malfunctions. PREREQUISITES: 526-193 - Radiography Clinical 3 COREQUISITES: 526-196 - Modalities 526-199 - Radiography Clinical 4

**526-195**  
**Radiographic Quality Analysis 2.00**

This course prepares radiography students to analyze radiographic images for quality. Students apply quality control tests to determine the causes of

image problems, including equipment malfunctions and procedural errors. PREREQUISITES: 526-199 - Radiography Clinical 4 COREQUISITES: 526-174 - ARRT Certification Seminar 526-189 - Radiographic Pathology 526-190 - Radiography Clinical 5 526-197 - Radiation Protection and Biology

**526-196**  
**Modalities 3.00**

This course introduces radiography students to other types of imaging, including ultrasound, MRI, mammography, and bone density scans. Students analyze the role of various imaging technologies in health care. PREREQUISITES: 526-193 - Radiography Clinical 3 COREQUISITES: 526-194 - Imaging Equipment Operation 526-199 - Radiography Clinical 4

**526-197**  
**Radiation Protection and Biology 3.00**

This course prepares radiography students to protect themselves and others from exposure to radioactivity. Students examine the characteristics of radiation and how radiation affects cell biology. Students apply standards and guidelines for radiation exposure. PREREQUISITES: 526-199 - Radiography Clinical 4 COREQUISITES: 526-174 - ARRT Certification Seminar 526-189 - Radiographic Pathology 526-190 - Radiography Clinical 5 526-195 - Radiographic Quality Analysis

**526-198**  
**Radiography Clinical 6 2.00**

This final clinical course requires students to integrate and apply all knowledge learned in previous courses to the production of high quality radiographs in the clinical setting.

Students apply radiation protection and standard precautions in the production of radiographs in a health care setting while adhering to legal and ethical guidelines. Students are encouraged to demonstrate independent judgment in the performance of clinical competencies. **PREREQUISITES:** 526-190 - Radiography Clinical 5

**526-199  
Radiography Clinical 4 3.00**

This fourth level clinical course prepares radiography students to perform radiologic procedures on patients with supervision and direction. Students apply radiation protection and standard precautions in the production of radiographs in a health care setting while adhering to legal and ethical guidelines. Students are encouraged to demonstrate independent judgment in the performance of clinical competencies. **PREREQUISITES:** 526-193 - Radiography Clinical 3 **COREQUISITES:** 526-194 - Imaging Equipment Operation 526-196 - Modalities

**527-100  
Wastewater Treatment/Introduction 3.00**

This introductory course covers subjects common to all wastewater treatment processes. The information in this course provides students with an understanding of how the aquatic environment is affected by untreated wastewater, how treatment plants function to prevent water pollution, and what an operator's role is in operating a wastewater treatment plant.

**527-107  
Basic Activated Sludge 1.00**

Properly operated, the activated sludge process can treat more sewage in less

space than other processes and can meet strict final effluent BOD and TSS limits on a consistent basis. This course covers the basic skills necessary to properly operate an activated sludge plant. The skills include an understanding of process design, functions, and the controls required to make the process changes necessary to achieve high BOD removal rates. Calculations to determine sludge wasting rates, sludge volume rates, sludge volume index, and food to microorganism ratio are used to show the parameters operational changes are based on. Also, the importance of maintaining adequate dissolved oxygen levels, wasting rates, and food to microorganism ratios are discussed. Emphasis will be on understanding the activated sludge theory so operational changes and troubleshooting can be accomplished in an effective and efficient manner.

**527-109  
Disinfection of Wastewater 1.00**

This course covers two of the most common methods for disinfecting wastewater: chlorine and ultraviolet radiation. Included in the discussion of chlorine usage is the chemistry of chlorination, calculation to determine dosage, equipment, dechlorination, and safety. The discussion on ultraviolet radiation covers system design, the theory of how ultraviolet radiation disinfects, and the factors that affect the efficiency of the process. This course helps operators prepare for the Introductory and Advanced Disinfection Wastewater Certification Exam. **PREREQUISITES:** 527-100 - Wastewater Treatment/Introduction

**527-116  
Phosphorus Removal 1.00**

More and more treatment plants are required to remove phosphorus in addition to conventional pollutants. This course covers chemical phosphorus removal, including equipment, chemicals used, laboratory analysis, and dosage calculations. Biological phosphorus removal is also covered. The negative effect that excessive phosphorus has on the environment and operator safety considerations are also covered.

**527-126  
Industrial Waste, Metal Finishing 1.00**

This course will cover skills necessary for the operation of a metal finishing plants wastewater treatment system. Topics covered include laws and regulations, compliance strategies, treatment processes (hexavalent chrome reduction, cyanide destruction, precipitation, and sedimentation of heavy processes), sludge handling, sampling and analysis, calculations, and safety.

**527-132  
Surface Water Certification 1.00**

Surface Water is a three day course designed for new to intermediate water supply personnel. This course provides background information, operation, and maintenance tips, while preparing operators for the State of Wisconsin Class S (surface water) examination.

**527-500  
Wastewater Treatment Introduction to 1.50**

Provides an overview of the different processes used in wastewater treatment plants, as well as the collection system

and sludge disposal procedures. Covers calculations used to determine plant loadings, detention times and percent removal efficiencies. Environmental regulations, preventive maintenance practices and basic safety precautions are covered.

**527-503  
Conventional Wastewater Treatment 1.50**

Covers the basic biology, chemistry and operational controls of wastewater treatment processes: pre-and primary treatment of wastewater, activated sludge, trickling filters and RBCs (Rotating Biological Contactors). The structure and function of major equipment is explained. Various lab tests and the calculations associated with them are presented.

**527-505  
Advanced Wastewater Treatment 2.00**

Develops competence in management of wastewater treatment processes including disinfection treatment of wastewater, basic and advanced phosphorus removal, tertiary filtration, mechanical sludge handling, sludge dewatering, and sludge disposal. Students use the Internet to locate resources useful in managing wastewater treatment processes.

**527-511  
Water Chemistry 2.00**

Explores basic chemical concepts and principles such as elements, compounds, states of matter, and reactions that are applicable to evaluating and regulating water quality and applies them to water and wastewater treatment. Learners also examine laboratory techniques, equipment, quality assurance, and record keeping and reporting.

# Course Descriptions

**527-520  
Hydraulics of Water & Wastewater 1.50**

Provides information and procedures necessary to predict and manipulate the hydraulics of water transmission and collection. The primary work assignments involve the reading and use of hydraulic principles and then applying them in a real-life case analysis as a laboratory project.

**527-525  
Industrial Wastes 1.50**

Focuses on the control of wastewater resulting from the processing of a variety of industrial materials. Methods of waste initiation, impact, minimization, and the treatment of waste process streams of metal, pulp and paper, and food and beverage industry operations are emphasized and analyzed.

**527-530  
Groundwater Supply & Distribution 1.50**

Provides environmental and treatment information necessary to operate a potable groundwater well system. Basic distribution system design and component use will also be detailed. Students examine a groundwater treatment plant and make operational assessments based on established industry criteria.

**527-536  
Equipment Maintenance & Instrumentation 2.00**

Develops skills in the identification and application of tools, correcting facility and system mechanical problems, and understanding the complete concept of preventative and predictive maintenance. Students will research preventative and predictive maintenance systems. Skills will

be developed using instrumentation for process control. Supervisory Control and Data Acquisition including control diagrams, designs and applications will be studied.

**530-160  
Healthcare Informatics 4.00**

Emphasizes the role of information technology in healthcare through an investigation of the electronic health record (EHR), business, and health information software applications. Learner will develop skills to assist in information systems design and implementation. PREREQUISITES: 103-143 - Computers for Professionals 530-176 - Health Data Management

**530-161  
Health Quality Management 3.00**

Explores the programs and processes used to manage and improve healthcare quality. Addresses regulatory requirements as related to performance measurement, assessment, and improvement, required monitoring activities, risk management and patient safety, utilization management, and medical staff credentialing. Emphasizes the use of critical thinking and data analysis skills in the management and reporting of data. PREREQUISITES: 530-177 - Healthcare Statistics and Research

**530-172  
Healthcare Delivery Systems 2.00**

This course examines the organization, financing, and delivery of health care services, including the study of healthcare professionals.

**530-176  
Health Data Management 2.00**

This course introduces the use and structure of health care data elements, data sets, data standards, their relationship to primary and secondary record systems, and health information processing. PREREQUISITES: 530-172 - Healthcare Delivery Systems 530-181 - The Health Record, Introduction to

**530-177  
Healthcare Statistics and Research 2.00**

This course explores the management of medical data for statistical purposes. It focuses on descriptive statistics, including definitions, collection, calculation, compilation, and display of numerical data. Vital statistics, registries, and research are examined. PREREQUISITES: 530-176 - Health Data Management

**530-178  
Healthcare Legal and Ethical Issues  
Healthcare Law & Ethics 2.00**

This course examines regulations for the content, use, confidentiality, disclosure, and retention of health information. An overview of the legal system and ethical issues are addressed. PREREQUISITES: 530-176 - Health Data Management

**530-181  
The Health Record, Introduction to 1.00**

This course prepares students to illustrate the flow of health information and to locate and analyze health record documentation. Learners will be introduced to types of data found in a medical record and how that information flows in the health care facility from the point of entry to the point of discharge. Confidentiality and security of health information is emphasized.

**530-182  
Human Disease for Health Professions 3.00**

This course focuses on the common diseases of each body system as encountered in all types of health care settings by health information professionals. Emphasis is placed on understanding the etiology (cause), signs and symptoms, diagnostic tests, and treatment (including pharmacologic) of each disease. PREREQUISITES: 501-101 - Medical Terminology 806-189 - Anatomy, Basic or 806-177 - General Anatomy and Physiology

**530-183  
ICD-9-CM Coding 3.00**

This course explains the basic principles of coding diseases and operations, emphasizing this current classification system. Students are also introduced to miscellaneous coding systems that preceded the current system. A demonstration of encoder and impact of sequencing is included. COREQUISITES: 530-181 - The Health Record, Introduction to 530-182 - Human Disease for Health Professions

**530-184  
CPT Coding 3.00**

This course teaches coding of physicians' procedures and services using the HCPCS/CPT system, including basic coding principles and guidelines and coding from operative reports and other medical record documentation. PREREQUISITES: 530-181 - The Health Record, Introduction to 530-182 - Human Disease for Health Professions

**530-185  
Healthcare Reimbursement 2.00**

This course prepares students to compare and contrast health care payers and to comply with regulations related to fraud and abuse. Specific topics include inpatient and outpatient payment systems, fraud and abuse issues regarding coding of health care services, and an illustration of the reimbursement cycle. Students assign Diagnosis Related Groups (DRGs), Ambulatory Payment Classifications (APCs), and Resource Utilization Groups (RUGs) with entry-level proficiency, using computerized encoding and grouping software. PREREQUISITES: 530-182 - Human Disease for Health Professions 530-197 - ICD Diagnosis Coding 530-199 - ICD Procedure Coding COREQUISITES: 530-184 - CPT Coding

**530-190  
Healthcare Information Systems 3.00**

This course emphasizes the role of information technology in healthcare through an investigation of the electronic health record (EHR), business, and health information software applications. Learners will develop skills to assist in information systems design and implementation. PREREQUISITES: 154-100(10442) 530-176 - Health Data Management

**530-193  
Healthcare Quality Management 2.00**

This course explores the programs and processes used to maintain quality in healthcare, addressing regulatory requirements as related to quality improvement, utilization (case) management, risk management, and medical staff credentialing through the use of quality improvement methodologies and tools.

PREREQUISITES: 530-177 - Healthcare Statistics and Research

**530-194  
HIM Organizational Resources 2.00**

This course is a study of the principles of management, including planning, organizing, human resource management, directing, and controlling as related to the health information department. COREQUISITES: 530-193 - Healthcare Quality Management

**530-195  
Applied Coding 2.00**

This course prepares students to assign ICD and CPT/HCPCS codes supported by medical documentation with an intermediate level of proficiency. Students will prepare appropriate physician queries in accordance with compliance guidelines and will assign codes to optimize appropriate reimbursement. COREQUISITES: 530-185 - Healthcare Reimbursement

**530-196  
Professional Practice 1 3.00**

The first of a two-semester sequence of supervised clinical experiences in health care facilities, this course provides application of previously acquired skills and knowledge with clinical experiences in the technical procedures of health record systems and discussion of clinical situations. PREREQUISITES: 530-177 - Healthcare Statistics and Research 530-178 - Healthcare Legal and Ethical Issues Healthcare Law & Ethics 530-197 - ICD Diagnosis Coding 530-199 - ICD Procedure Coding COREQUISITES: 530-184 - CPT Coding

**530-197  
ICD Diagnosis Coding 3.00**

Prepares students to assign ICD diagnosis codes supported by medical documentation with entry level proficiency. Students apply instructional notations, conventions, rules, and official coding guidelines when assigning ICD diagnosis codes to case studies and actual medical record documentation. PREREQUISITES: 501-101 - Medical Terminology 530-182 - Human Disease for Health Professions 530-181 - The Health Record, Introduction to 806-177 - General Anatomy and Physiology

**530-198  
Professional Practice 2 3.00**

The second of a two semester sequence of supervised technical and managerial clinical experiences in health care facilities, this course provides application of previously acquired skills and knowledge and discussion of clinical situations, preparation for the certification examination, and pre-graduation activities. PREREQUISITES: 530-196 - Professional Practice 1 530-190 - Healthcare Information Systems COREQUISITES: 530-193 - Healthcare Quality Management 530-194 - HIM Organizational Resources 530-195 - Applied Coding

**530-199  
ICD Procedure Coding 2.00**

Prepares students to assign ICD procedure codes supported by medical documentation with entry level proficiency. Students apply instructional notations, conventions, rules, and official coding guidelines when assigning ICD procedure codes to case studies and actual medical record documentation. PREREQUISITES: 501-101

- Medical Terminology 530-182 - Human Disease for Health Professions 530-181 - The Health Record, Introduction to 806-177 - General Anatomy and Physiology

**531-103  
EMT Intermediate/  
Paramedic Theory I 2.00**

This first semester course will provide the lecture component and theory transitioning the certified EMT Intermediate to the EMT Paramedic level, with a focus on pharmacology and respiratory management.

**531-104  
EMT Intermediate/  
Paramedic Clinical I 3.00**

This 1st semester course will provide the lab and clinical components transitioning the certified EMT Intermediate to the EMT Paramedic level, with focus areas including fundamentals, pharmacology, shock, and respiratory and cardiac management.

**531-105  
EMT Intermediate/  
Paramedic Theory II Part A 5.00**

This 2nd semester course will provide the lecture component and theory transitioning the certified EMT-Intermediate to the EMT-Paramedic level, with a focus on medical emergencies and trauma emergencies.

**531-106  
EMT Intermediate/  
Paramedic Theory II Part B 5.00**

This 2nd semester course will provide the lecture component and theory transitioning the certified EMT-Intermediate to the EMT-Paramedic level, with a focus on emergency care for specialists.

# Course Descriptions

**531-107  
EMT Intermediate/  
Paramedic Theory II Part C 2.00**

This 2nd semester course will provide the lecture component and theory transitioning the certified EMT-Intermediate to the EMT-Paramedic level, with a focus on EMS operations.

**531-108  
EMT Intermediate/  
Paramedic Clinical II 3.00**

This 2nd semester course will provide the lab and clinical component transitioning the certified EMT-Intermediate to the EMT-Paramedic level, with focus areas including hospital clinical experience and ALS field clinical experience.

**531-109  
Emergency Medical Technician 5.00**

Emergency Medical Technician is a 180 hour entry-level training in emergency medicine. This program provides students the skills and knowledge needed to assess and manage all types of injuries and acute illnesses while providing safe and rapid patient transport to an appropriate medical facility. Components of the course include lecture, practical lab, and hospital clinical experience. Upon program completion, students are prepared to take the National Registry of Emergency Medical Technicians® examination to be licensed as an Emergency Medical Technician in Wisconsin. Students wishing to pursue other levels of EMS licensure, such as Advanced EMT or Paramedic, must first be licensed as an Emergency Medical Technician before being eligible to register in subsequent EMS licensure programs.

**531-111  
Paramedic Fundamentals 4.00**

This four credit preparatory course includes: EMS systems, roles and responsibilities, well being of the paramedic, illness and injury prevention, medical/legal aspects, ethics, general principles, pathophysiology, therapeutic communications, history taking, physical exam techniques, patient assessment, clinical decision making, verbal communication, and documentation.

**531-112  
Prehospital Pharmacology 2.00**

This course provides the opportunity for the student to develop the knowledge and understanding of basic pharmacodynamics, medication preparation, administration of medication, and selected medications used in the treatment of disorders of the major body systems. COREQUISITES: 531-111 - Paramedic Fundamentals

**531-113  
Pathophysiology of Shock 1.00**

This course provides the student with the knowledge and skills to integrate pathophysiology principles and assessment findings to formulate a field impression and implement a treatment plan for a patient in shock. COREQUISITES: 531-112 - Prehospital Pharmacology

**531-114  
Pharmacology - Applied 2.00**

This course provides the student with the knowledge and skills to safely and precisely access the venous circulation and administer medication. This course also provides the student with knowledge of fluid and electrolytes as it relates to management of patients in the pre-hospital setting.

PREREQUISITES: 531-111 - Paramedic Fundamentals 531-112 - Prehospital Pharmacology 531-113 - Pathophysiology of Shock

**531-115  
Respiratory Management 2.00**

This course provides the student with the knowledge and skills to establish and/or maintain a patient airway and oxygenate and ventilate a patient. COREQUISITES: 531-114 - Pharmacology - Applied

**531-116  
Cardiology 3.00**

This course will provide the student with the basic knowledge and skills to integrate pathophysiological principles and assessment findings in order to formulate a field impression and implement the treatment for the patient with cardiovascular disease. This course includes Advanced Cardiac Life Support (ACLS) certification. COREQUISITES: 531-115 - Respiratory Management

**531-117  
EMT-Paramedic Clinical I 4.00**

The student is required to complete 288 hours of documented practical skills application and observation at the beginning EMT-Paramedic level. The student will perform required skill competencies at a variety of clinical and field internship sites under the direct supervision of an approved preceptor. PREREQUISITES: 531-114 - Pharmacology - Applied 531-115 - Respiratory Management COREQUISITES: 531-116 - Cardiology

**531-118  
Cardiology - Advanced 3.00**

This course will provide the student with the basic knowledge of 12 lead ECG interpretation. It provides the student with the knowledge and skills to integrate a field impression and implement a treatment plan for a patient with Acute Coronary Syndrome. PREREQUISITES: 531-116 - Cardiology 531-117 - EMT-Paramedic Clinical I

**531-119  
Medical Emergencies 3.00**

This course will provide the student with the knowledge and skills to integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for patients experiencing neurology, endocrine, allergic or anaphylactic emergency, gastroenterology, renal/ urology, toxicology, hematology, environmental emergency, infectious and communicable disease, and behavior and psychiatric disorders. COREQUISITES: 531-118 - Cardiology - Advanced

**531-120  
Trauma 3.00**

This course will provide the student with the knowledge and skills to integrate the principles of kinematics to enhance the patient assessment and predict the likelihood of injuries based on the patient's mechanism of injury. This course includes soft tissue trauma, burns, head and facial trauma, spinal trauma, abdominal trauma, thoracic trauma, and mechanism of injury trauma systems. This course includes PHTLS certification. PREREQUISITES: 531-118 - Cardiology - Advanced 531-119 - Medical Emergencies

**531-121**  
**Emergency Care for Specialists 3.00**

This course will provide the student with the knowledge and skills to formulate a field impression and implement a treatment management plan for the patient experiencing a gynecological, obstetrical, neonatal, pediatric, or geriatric emergency. This course also covers the victim of abuse or assault, patients with special challenges, acute interventions in the home care patient, and life span development. COREQUISITES: 531-120 - Trauma

**531-123**  
**EMT-Paramedic Clinical II 3.00**

The student is required to complete 216 hours of documented practical skills application and observation at the beginning EMT-Paramedic level. The student will perform required skill competencies at a variety of clinical and field internship sites under the direct supervision of an approved preceptor. PREREQUISITES: 531-118 - Cardiology - Advanced 531-119 - Medical Emergencies

**531-151**  
**Paramedic Fundamentals 5.00**

This course provides the students with the basic knowledge of the EMS System, Roles and Responsibilities, Well-Being of the Paramedic, Illness and Injury Prevention, Medical-Legal Aspects, Ethics, General Principles, Pathophysiology, Therapeutic Communications, History Taking, Physical Exam Techniques, Patient Assessment, Clinical Decision Making, Verbal Communication, and Documentation. The student will gain and understanding of the basic principles of shock management.

**531-152**  
**Paramedic Pharmacology 4.00**

This course provides the opportunity for the student to develop the knowledge of basic pharmacodynamics. The student will gain the knowledge and skills required to safely and precisely access the venous circulation, and to select, prepare, and administer appropriate medications used in the treatment of disorders of the major body systems. PREREQUISITES: 531-151 - Paramedic Fundamentals

**531-155**  
**Respiratory Management 2.00**

This course provides the student with the knowledge and skills to establish and/or maintain a patient airway and oxygenate and ventilate a patient. PREREQUISITES: 531-152 - Paramedic Pharmacology

**531-156**  
**Cardiology I 3.00**

This course will provide the student with the basic knowledge and skills to integrate pathophysiological principles and assessment findings in order to formulate a field impression and implement the treatment for the patient with cardiovascular disease. This course includes Advanced Cardiac Life Support (ACLS) certification. PREREQUISITES: 531-155 - Respiratory Management

**531-157**  
**Clinical I 4.00**

The student is required to complete 288 hours of documented practical skills application and observation at the beginning EMT-Paramedic level. The student will perform required skill competencies at a variety of clinical and field internship sites

under the direct supervision of an approved preceptor. PREREQUISITES: 531-155 - Respiratory Management

**531-158**  
**Cardiology II 3.00**

This course will provide the student with the basic knowledge of 12 lead ECG interpretation. It provides the student with the knowledge and skills to integrate a field impression and implement a treatment plan for a patient with Acute Coronary Syndrome. PREREQUISITES: 531-156 - Cardiology I

**531-159**  
**Medical Emergencies 3.00**

This course will provide the student with the knowledge and skills to integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for patients experiencing neurology, endocrine, allergic or anaphylactic emergency, gastroenterology, renal/ urology, toxicology, hematology, environmental emergency, infectious and communicable disease, and behavior and psychiatric disorders. PREREQUISITES: 531-158 - Cardiology II

**531-164**  
**Trauma Emergencies 3.00**

This course will provide the student with the knowledge and skills to integrate the principles of kinematics to enhance the patient assessment and predict the likelihood of injuries based on the patient's mechanism of injury. This course includes soft tissue trauma, burns, head and facial trauma, spinal trauma, abdominal trauma, thoracic trauma, and mechanism of injury trauma systems. This course includes

PHTLS certification. PREREQUISITES: 531-159 - Medical Emergencies

**531-165**  
**Emergency Care for Specialties 3.00**

This course will provide the student with the knowledge and skills to formulate a field impression and implement a treatment management plan for the patient experiencing a gynecological, obstetrical, neonatal, pediatric, or geriatric emergency. This course also covers the victim of abuse or assault, patients with special challenges, acute interventions in the home care patient, and life span development. PREREQUISITES: 531-164 - Trauma Emergencies

**531-166**  
**EMS Operations 3.00**

This course includes ambulance operations, medical incident command, rescue awareness, weapons of mass destruction, assessment based management, and NREMT-P prep. PREREQUISITES: 531-165 - Emergency Care for Specialties

**531-167**  
**Clinical II 3.00**

The student is required to complete 216 hours of documented practical skills application and observation at the beginning EMT-Paramedic level. The student will perform required skill competencies at a variety of clinical and field internship sites under the direct supervision of an approved preceptor. PREREQUISITES: 531-158 - Cardiology II

# Course Descriptions

**531-300**  
**EMT-Basic 4.00**

Emergency Medical Technician is a training course based on the DOT EMT Ambulance National Standard curriculum. It covers all emergency medical techniques currently considered to be within the responsibility of the EMT-A providing emergency care with an ambulance service. The course consists of 140 hours lecture and practical, plus 10 hours of hospital observation and training. Upon successful completion, the participant will qualify for certification and the NREMT Exam.

**531-311**  
**EMT-Intermediate Technician 2.00**

The IV Tech course will consist of 72 hours of training that will compliment the EMT-Basic curriculum. This course will allow the student to develop skills in the areas of IV therapy, drug administration, and advanced patient assessment.

**531-323**  
**Law Enforcement**  
**Emergency Response 1.00**

This course is designed to prepare the primary responder to an accident or sudden severe illness in the appropriate lifesaving techniques to be carried out at the scene until regular emergency care and transportation can be obtained.

**531-324**  
**EMT - Intermediate Lecture 4.00**

This course will cover the didactic portion of the EMT-I program. Students will study components of advanced patient assessment, evaluation, treatment and protocols. COREQUISITES: 531-325 - EMT - Intermediate Lab

**531-325**  
**EMT - Intermediate Lab 3.00**

This course will cover the didactic portion of the EMT-I program. Students will study components of advanced patient assessment, evaluation, treatment and protocols. COREQUISITES: 531-324 - EMT - Intermediate Lecture

**531-326**  
**Emergency Medical Technician 5.00**

Emergency Medical Technician is a 180 hour entry-level training in emergency medicine. This program provides students the skills and knowledge needed to assess and manage all types of injuries and acute illnesses while providing safe and rapid patient transport to an appropriate medical facility. Components of the course include lecture, practical lab, and hospital clinical experience. Upon program completion, students are prepared to take the National Registry of Emergency Medical Technicians® examination to be licensed as an Emergency Medical Technician in Wisconsin. Students wishing to pursue other levels of EMS licensure, such as Advanced EMT or Paramedic, must first be licensed as an Emergency Medical Technician before being eligible to register in subsequent EMS licensure programs.

**531-327**  
**Advanced EMT 4.00**

If you currently hold a State of Wisconsin licensure as an Emergency Medical Technician (EMT), you can pursue additional training in intravenous access, fluid and medication administration, clinical decision making skills, and patient assessment at this advanced level. Upon completion of the didactic, lab, and clinical components of this program, the participant will be eligible

for testing and credentialing through the National Registry of Emergency Medical Technicians®. PREREQUISITES: 531-326 - Emergency Medical Technician

**531-911**  
**EMS Fundamental 2.00**

This course provides the paramedic student with comprehensive knowledge of EMS systems, safety, wellbeing, legal issues, and ethical issues, with the intended outcome of improving the health of EMS personnel, patients, and the community. The students will obtain fundamental knowledge of public health principles and epidemiology as related to public health emergencies, health promotion, and illness/injury prevention. Introducing students to comprehensive anatomical and medical terminology and abbreviations will foster the development of effective written and oral communications with colleagues and other health care professionals. PREREQUISITES: 838-105 - Reading & Study Skills, Intro

**531-912**  
**Paramedic Medical Principles 4.00**

This course address the complex depth of anatomy, physiology, and pathophysiology of major human systems while also introducing the paramedic students to the topics of shock, immunology, and bleeding. PREREQUISITES: 531-911 - EMS Fundamental

**531-913**  
**Adv. Patient Asses. Principles 3.00**

This course teaches the paramedic student to integrate scene and patient assessment findings with knowledge of epidemiology and pathophysiology to form a field impression. By utilizing a structured and organized

assessment process with knowledge of anatomy, physiology, pathophysiology, life span development, and changes that occur to the human body with time, the students will learn to develop a list of differential diagnoses through clinical reasoning, along with the ability to modify the assessment as necessary to formulate a treatment plan for their patient. PREREQUISITES: 531-911 - EMS Fundamental

**531-914**  
**Adv. Pre-Hospital Pharmacology 3.00**

This course provides the paramedic student with the comprehensive knowledge of pharmacology required to formulate and administer a pharmacological treatment plan intended to mitigate emergencies and improve the overall health of the patient. PREREQUISITES: 531-911 - EMS Fundamental

**531-915**  
**Paramedic Respiratory Mgt. 2.00**

This course teaches the paramedic student to integrate complex knowledge of anatomy, physiology, and pathophysiology into the assessment to develop and implement a treatment plan with the goal of assuring a patent airway, adequate mechanical ventilation, and respiration for patients of all ages. Specific knowledge pertaining to the respiratory system is also provided to ensure the student is prepared to formulate a field impression and implement a comprehensive treatment plan for a patient with a respiratory complaint. PREREQUISITES: 531-914 - Adv. Pre-Hospital Pharmacology

**531-916**  
**Paramedic Cardiology** **4.00**

This course teaches the paramedic student to integrate assessment findings with principles of cardiovascular anatomy, physiology, epidemiology, and pathophysiology to formulate a field impression and implement a comprehensive treatment plan for a patient with a cardiovascular complaint. PREREQUISITES: 531-915 - Paramedic Respiratory Mgt.

**531-917**  
**Paramedic Clinical Field I** **3.00**

This course provides the student with the opportunity to enhance his or her learning through the practice of paramedicine in field and health care environment experiences with actual patients under the supervision of approved preceptors. Students may also have the opportunity to participate in formal high-fidelity human patient simulator experiences as a part of this course. PREREQUISITES: 531-912 - Paramedic Medical Principles

**531-918**  
**Adv. Emergency Resuscitation** **1.00**

By teaching Advanced Cardiac Life Support ("ACLS") and Pediatric Advanced Life Support ("PALS") methodologies and protocols, this course prepares the paramedic student in the integration of comprehensive knowledge of causes and pathophysiology into the management of shock, respiratory failure, respiratory arrest, cardiac arrest, and peri-arrest states with an emphasis on early intervention to prevent respiratory and/or cardiac arrest if possible. PREREQUISITES: 531-916 - Paramedic Cardiology or 531-956 - Paramedic Cardiology 2

**531-919**  
**Paramedic Medical Emergencies** **4.00**

This course teaches the paramedic student to integrate assessment findings with principles of anatomy, physiology, epidemiology, and pathophysiology to formulate a field impression and implement a comprehensive treatment plan for a patient with a medical complaint. PREREQUISITES: 531-918 - Adv. Emergency Resuscitation

**531-920**  
**Paramedic Trauma** **3.00**

This course teaches the paramedic student to integrate assessment findings with principles of anatomy, physiology, epidemiology, and pathophysiology to formulate a field impression and implement a comprehensive treatment plan for an acutely injured patient. PREREQUISITES: 531-919 - Paramedic Medical Emergencies

**531-921**  
**Special Patient Populations** **3.00**

This course teaches the paramedic student to integrate assessment findings with principles of anatomy, physiology, epidemiology, and pathophysiology to formulate a field impression and implement a comprehensive treatment plan for patients with special needs. Gynecological emergencies, along with special considerations in trauma are also included within this course. PREREQUISITES: 531-920 - Paramedic Trauma

**531-922**  
**EMS Operations** **1.00**

This course provides the paramedic student with the knowledge of operational roles and responsibilities to ensure patient, public, and EMS personnel safety.

PREREQUISITES: 531-921 - Special Patient Populations

**531-923**  
**Paramedic Capstone** **1.00**

This course provides the student with a final opportunity to incorporate their cognitive knowledge and psychomotor skills through labs and scenario-based practice and evaluations prior to taking the National Registry written and practical examinations. Technical skills attainment for each student will be compiled and/or documented within this course as required by the DHS-approved paramedic curriculum. PREREQUISITES: 531-921 - Special Patient Populations

**531-924**  
**Paramedic Clinical/Field 2** **4.00**

This course provides the student with the opportunity to enhance his or her learning through the practice of paramedicine in field and health care environment experiences with actual patients under the supervision of approved preceptors. Students may also have the opportunity to participate in formal high-fidelity human patient simulator experiences as a part of this course. Successful completion of this course requires the student to meet all clinical and field competency requirements at the paramedic level as defined by DHS. PREREQUISITES: 531-956 - Paramedic Cardiology 2

**531-955**  
**Paramedic Cardiology 1** **2.00**

This course will provide the student with the basic knowledge to integrate pathophysiological principles and assessment findings to formulate a field

impression and implement the treatment for the patient with cardiovascular disease. PREREQUISITES: 531-915 - Paramedic Respiratory Mgt.

**531-956**  
**Paramedic Cardiology 2** **2.00**

This course teaches the paramedic student knowledge and skills to integrate assessment findings with principles of cardiovascular anatomy, physiology, epidemiology, and pathophysiology to formulate a field impression and implement a comprehensive treatment plan for a patient with a variety of cardiovascular complaints. PREREQUISITES: 531-955 - Paramedic Cardiology 1

**533-100**  
**Deafness/Intro to** **2.00**

This course is an overview of topics impacting the Deaf/Hard of Hearing communities. It is designed to assist those interested in learning about this diverse population of people.

**533-102**  
**ASL 1** **4.00**

This course will focus on intensive vocabulary development and basic American Sign Language sentence structure. The students will begin to develop both expressive and receptive ASL skills.

**533-103**  
**Practicum I** **3.00**

This course will give the student an opportunity to observe a variety of ASL users in educational and/or social settings. COREQUISITES: 533-102 - ASL 1

# Course Descriptions

<p><b>533-104 ASL 2</b> <b>4.00</b></p> <p>This is a continuation in the development from phrases and simple sentences to complex structures. It will focus on the development of conversational American Sign Language skills. PREREQUISITES: 533-102 - ASL 1 533-103 - Practicum I</p>	<p><b>533-109 Deaf Culture in America</b> <b>3.00</b></p> <p>This course will expose the students to Deaf culture since its beginnings in the United States. It will discuss famous Deaf Americans and how they have impacted the lives of Deaf and hearing people in America.</p>	<p><b>533-113 ASL Skillbuilding 1</b> <b>1.00</b></p> <p>Students will practice ASL communication skills learned in ASL I with an emphasis on improving vocabulary and technique.</p>	<p>533-113 - ASL Skillbuilding 1 533-114 - ASL Skillbuilding 2 533-115 - ASL Skillbuilding 3 533-116 - ASL Skillbuilding 4</p>
<p><b>533-105 Cultural Sensitivity in Interpreting</b> <b>2.00</b></p> <p>This course will focus on the importance of understanding the cultural norms and values involved in any interpreting assignments. Students will learn how culture impacts the communication process and the importance of producing a culturally accurate interpreted message. PREREQUISITES: 533-103 - Practicum I</p>	<p><b>533-110 ASL 4/Interpreting</b> <b>4.00</b></p> <p>This course will expand the student's ability to interpret from American Sign Language to English and from English to ASL. The full spectrum of simple sentences to complex ASL sentences and idioms will be developed. PREREQUISITES: 533-107 - ASL 3/Introduction to Interpreting</p>	<p><b>533-114 ASL Skillbuilding 2</b> <b>1.00</b></p> <p>Students will practice ASL communication skills learned in ASL II with an emphasis on improving vocabulary and technique.</p> <p><b>533-115 ASL Skillbuilding 3</b> <b>1.00</b></p> <p>Students will practice ASL communication skills learned in ASL III/Introduction to Interpreting with an emphasis on improving vocabulary and technique.</p>	<p><b>533-119 Interpreting: Oral</b> <b>3.00</b></p> <p>Students will develop paraphrasing and equivalent word substitution techniques to make a message visible on the lips. The course will also focus on simple gesturing and the importance of facial expression and mouth movements to enhance the clarity of the message. Students will practice techniques learned and how to apply a code of ethics to oral interpreting situations.</p>
<p><b>533-106 ASL Structure and Function</b> <b>3.00</b></p> <p>This course is designed to expose the student to a comparison of the linguistic structure and function of American Sign Language. It will cover the study and use of phonemes and morphemes in ALS. PREREQUISITES: 533-104 - ASL 2</p>	<p><b>533-111 Practicum II</b> <b>3.00</b></p> <p>In this course the students will observe and participate in activities with Deaf children and/or adults. PREREQUISITES: 533-105 - Cultural Sensitivity in Interpreting</p>	<p><b>533-116 ASL Skillbuilding 4</b> <b>1.00</b></p> <p>Students will practice ASL communication skills learned in ASL IV/Interpreting with an emphasis on improving vocabulary and technique.</p>	<p><b>533-120 Interpreting: Sign to Voice</b> <b>3.00</b></p> <p>Students will develop the skills necessary to voice signed messages. Students will learn techniques for team interpreting, interrupting speakers, and deciphering fingerspelling. They will develop and hone skills in understanding and matching signer intent of message, affect, and register. COREQUISITES: 533-110 - ASL 4/ Interpreting</p>
<p><b>533-107 ASL 3/Introduction to Interpreting</b> <b>4.00</b></p> <p>This course will move from conversational American Sign Language to beginning interpretation. Students will advance from complex structures to the appropriate use of ASL and English idioms. PREREQUISITES: 533-104 - ASL 2</p>	<p><b>533-112 Professional Development for Interpreter</b> <b>2.00</b></p> <p>Emphasis is placed on the importance of following the Code of Ethics for Interpreters; the development of poise and communication techniques for personal and professional success; and the importance of personal appearance and attitudes. COREQUISITES: 533-110 - ASL 4/ Interpreting</p>	<p><b>533-117 ASL Skillbuilding 5</b> <b>1.00</b></p> <p>Students will practice ASL communication skills with an emphasis on expressive storytelling techniques. PREREQUISITES: 533-113 - ASL Skillbuilding 1 533-114 - ASL Skillbuilding 2 533-115 - ASL Skillbuilding 3 533-116 - ASL Skillbuilding 4</p>	<p><b>533-121 Transliterating 1</b> <b>3.00</b></p> <p>This course will provide an introduction to the transliterating process, using the various manually coded English systems. Students will work on intensive vocabulary development in the expressive transliterating process using signed English. PREREQUISITES: 533-119 - Interpreting: Oral</p>
		<p><b>533-118 ASL Skillbuilding 6</b> <b>1.00</b></p> <p>Students will practice ASL communication skills with an emphasis on receptive storytelling techniques. PREREQUISITES:</p>	

**533-122**  
**Transliterating 2** **3.00**

This course will move from simple to complex structure in English translations. Students will further their transliterating skills to meet a variety of communication needs. PREREQUISITES: 533-121 - Transliterating 1

**533-123**  
**Transliterating: Sign to Voice** **3.00**

Students will work on accurate translations of signed English to spoken English. They will learn to incorporate appropriate idioms into spoken messages. PREREQUISITES: 533-122 - Transliterating 2

**533-124**  
**Educational Practicum** **3.00**

Students will participate in a 150 hour practicum in a PK-12 educational setting. They will observe working interpreters in a variety of content areas. Students will generally take on an active interpreting role.

**533-125**  
**Special Education And, Introduction to Deafness** **3.00**

This course is an introduction to the educational process involving a deaf/hard of hearing child and a focus on deafness and how it impacts other aspects of disability.

**533-126**  
**American Sign Language 1** **2.00**

An introductory course in American Sign Language (ASL) used by the Deaf Community in North America including basic vocabulary, grammar/syntax, finger spelling, and Non-manual signals. Includes practice in vocabulary, sentence structure and elementary conversations. Introduces basic

cultural knowledge and history of the Deaf Community.

**533-127**  
**American Sign Language 2** **2.00**

A continuation of the basic study of American Sign Language and Deaf culture; an opportunity to increase receptive and expressive vocabulary, ASL grammar skills including non-manual aspects such as facial expressions and body language/postures, use of signing space and introduction of conversation regulators. Discussions about sign variations and the socio-political aspects of the Deaf Community. PREREQUISITES: 533-126 - American Sign Language 1

**533-128**  
**American Sign Language 3** **2.00**

Focuses on extensive development of receptive and expressive communication skills in ASL. Introduces a variety of language forms and aspects of culture as displayed in literature, art and theater. Discusses translations of idiomatic phrases and global perspectives of deafness. PREREQUISITES: 533-127 - American Sign Language 2

**533-129**  
**American Sign Language 4** **2.00**

Implements an advanced study of the linguistic aspects of ASL. Use of advanced comprehension and production skills in a variety of discourse and narrative settings. Consider the significance of cross-cultural issues/controversies with Hearing Cultures and further analyze the culture and history of the Deaf Community and how it continues to impact the language, socio-political issues, and education of the Deaf in the world.

Introduce other signed languages of the world. PREREQUISITES: 533-128 - American Sign Language 3

**536-101**  
**Sterile Techniques for Pharmacy Tech** **3.00**

This course provides an introduction to intravenous admixture preparation, and other sterile products, including total parenteral nutrition and chemotherapy. Topics include aseptic facilities, equipment, supplies, hand washing techniques, garbing, safety techniques, medication incompatibility, laminar flow hoods, irrigation solutions, and quality assurance. Students will demonstrate their ability to perform pharmacy calculations while preparing of sterile products in the laboratory component of this course. Upon completion of this course students should be able to describe and demonstrate steps involved aseptic medication preparation and intermittent and continuous infusions while following USP Chapter 797 guidelines. PREREQUISITES: 536-112 - Pharmaceutical Business Applications 536-115 - Pharmacy Law 536-121 - Fundamentals of Reading Prescriptions 536-110 - Pharmacy Calculations 536-134 - Managing Pharmacy Benefits

**536-110**  
**Pharmacy Calculations** **3.00**

Prepares the learner to convert weights and volumes between the avoirdupois, the apothecary, and the metric systems of measurement; unitize ratios & proportions; reduce and enlarge pharmaceutical formulas; calculate medication quantities from percent w/w, w/v, v/v, ppm, and ratio concentrations; perform dilution calculations; utilize the "alligation" method; solve problems related to electrolyte

solutions; convert temperatures between the Fahrenheit and Celsius scales; convert military and standard time; and calculate individualized patient doses based on body surface area, age, and/or weight of the patient. PREREQUISITES: 501-101 - Medical Terminology 536-121 - Fundamentals of Reading Prescriptions 804-107 - College Mathematics COREQUISITES: 536-122 - Pharmacology for Pharmacy Technicians 536-134 - Managing Pharmacy Benefits

**536-112**  
**Pharmaceutical Business Applications** **3.00**

The course prepares the learner to summarize pharmacy policies dealing with the Health Insurance Privacy and Portability Act (HIPPA), analyze criminal activities in the pharmacy, assess the operation and location of pharmacy equipment, utilize information posted in the pharmacy, analyze the work culture of the pharmacy, analyze the steps in processing a prescription, analyze patient profile information, analyze issues affecting the practice of pharmacy, market employment skills, analyze patient safety issues, analyze pharmacy front of store operations, analyze methods used to prepare extemporaneous compounds, and analyze customer service issues. PREREQUISITES: 834-109 - Pre-Algebra COREQUISITES: 536-115 - Pharmacy Law 536-121 - Fundamentals of Reading Prescriptions

**536-115**  
**Pharmacy Law** **2.00**

This course prepares the learner to apply Federal laws to the practice of pharmacy; apply Wisconsin State laws to the practice of pharmacy; select appropriate drug products for substitution in accordance with the law; explain the Investigational

# Course Descriptions

New Drug (IND) process; explain pharmacy equipment, license, and floor plan legal requirement; apply controlled substance laws to the procurement, processing, and record keeping of controlled substances; analyze the history of pharmacy law; and summarize drug law enforcement agencies. PREREQUISITES: 834-109 - Pre-Algebra COREQUISITES: 536-112 - Pharmaceutical Business Applications 536-121 - Fundamentals of Reading Prescriptions

**536-120**  
**Fundamentals of Reading Prescriptions** **1.00**

This course prepares the learner to match the brand name and generic name of commonly prescribed medications, determine the pharmacologic classes of commonly prescribed medication, determine the appropriate auxiliary labels to be placed on prescription bottles for commonly prescribed medications, determine if a prescribed medication is a controlled substance and to which schedule it belongs, analyze prescriptions for appropriateness of drug and dosing schedule, and interpret Latin abbreviations used in the practice of Pharmacology. COREQUISITES: 536-112 - Pharmaceutical Business Applications 536-115 - Pharmacy Law

**536-121**  
**Fundamentals of Reading Prescriptions** **2.00**

This course prepares the learner to match the brand name and generic name of commonly prescribed medications, determine the pharmacologic classes of commonly prescribed medication, determine the appropriate auxiliary labels to be placed on prescription bottles for commonly prescribed medications, determine if a

prescribed medication is a controlled substance and to which schedule it belongs, analyze prescriptions for appropriateness of drug and dosing schedule, and interpret Latin abbreviations used in the practice of Pharmacology. PREREQUISITES: 834-109 - Pre-Algebra COREQUISITES: 536-112 - Pharmaceutical Business Applications 536-115 - Pharmacy Law

**536-122**  
**Pharmacology for Pharmacy Technicians** **3.00**

The purpose of this course is to provide a comprehensive overview of the principles of pharmacology and pharmacokinetics including the understanding of disease states within each body system and the effects of the medications in treating the conditions. Students will learn the cautions involved in adverse drug effects, food and drug interactions, and drug-disease contraindications. Students are expected to learn the brand and generic drug names from the TOP 200 Drugs List as well as their therapeutic classifications, indications, common strengths, and essential terminology needed to become a successful Pharmacy Technician. PREREQUISITES: 501-101 - Medical Terminology 536-121 - Fundamentals of Reading Prescriptions 103-143 - Computers for Professionals 536-112 - Pharmaceutical Business Applications 536-115 - Pharmacy Law 801-301 - Writing Principles COREQUISITES: 536-134 - Managing Pharmacy Benefits 536-110 - Pharmacy Calculations

**536-134**  
**Managing Pharmacy Benefits** **3.00**

This course prepares the learner to utilize terminology pertinent to third party reimbursements in the field of pharmacy,

analyze the various popular formulary systems, calculate the selling price for a prescription based on the Average Wholesale Price (AWP) and the formula required by the Pharmacy Benefit Manger, analyze the role of the Pharmacy Benefits Manger in the health care system, and summarize medical coverage provided by government agencies. PREREQUISITES: 536-112 - Pharmaceutical Business Applications 536-121 - Fundamentals of Reading Prescriptions 801-301 - Writing Principles 536-115 - Pharmacy Law COREQUISITES: 536-122 - Pharmacology for Pharmacy Technicians 536-110 - Pharmacy Calculations

**536-138**  
**Community Pharmacy Clinical** **2.00**

This course prepares the learner to apply policies and procedures in the pharmacy, complete the ordering process to meet inventory goals, bill third parties for patient prescriptions, process prescriptions, identify medical and surgical supplies for customers, process controlled substance prescriptions, compound extemporaneous products, maintain patient medical histories, and fulfill duties in unique service areas. PREREQUISITES: 536-112 - Pharmaceutical Business Applications 536-115 - Pharmacy Law 536-120 - Fundamentals of Reading Prescriptions 536-110 - Pharmacy Calculations 536-134 - Managing Pharmacy Benefits

**536-139**  
**Community Pharmacy Clinical** **3.00**

This course prepares the learner to apply policies and procedures in the pharmacy, complete the ordering process to meet inventory goals, bill third parties for patient prescriptions, process prescriptions,

identify medical and surgical supplies for customers, process controlled substance prescriptions, compound extemporaneous products, maintain patient medical histories, and fulfill duties in unique service areas. PREREQUISITES: 536-112 - Pharmaceutical Business Applications 536-115 - Pharmacy Law 536-121 - Fundamentals of Reading Prescriptions 536-110 - Pharmacy Calculations 536-134 - Managing Pharmacy Benefits

**543-001**  
**Specialty Practice in Psychosocial Nursing** **3.00**

This three credit theory course will have three modules. The first will evaluate complex psychiatric problems in the context of psychobiological mental health nursing. The second examines political and social issues in psychiatric care. The third will study psychiatric consultation-liaison work in Emergency Rooms. Learning activities will help the generalist nurse to become more proficient in dealing with psychosocial problems. This will include content on helping clients develop a Wellness Recovery Toolbox. PREREQUISITES: 543-110 - Nursing Mental Health Community Concepts

**543-002**  
**Mastering Psychiatry in Long Term Care** **3.00**

This three credit theory course will have three modules. The first will examine the psychosocial aspects of chronic illness/disability among the elderly, including compassionate geropsychiatric care. In the second, students will learn about psychosocial care for incarcerated adults and how to foster their adaptation within the pain of imprisonment. The third module will focus on grief/loss and promoting the

patient's adaptive coping. Homicide and suicide survivors, grieving mental illness, and loss from death will be discussed. Learning activities will enhance learners' professional use of self as they help patients cope with life changing grief. These activities will include cultural perspectives of death, grief, and bereavement. PREREQUISITES: 543-110 - Nursing Mental Health Community Concepts

**543-003**  
**Expert Care in Community Mental Health** **3.00**

This three credit theory course will have three modules. The first module will provide opportunities to learn about principles related to normalization, self advocacy, and contextualization for community based mental health care. Studying transcultural mental health practices will be included in this module. The second module will address community screening programs, psychiatric home care, social network interventions, supportive housing, outpatient services, crisis response services, and homelessness. The final modules will study the role of spirituality and/or religion in healing mental illness. Learning activities will call learners to review stories of service and care while learning practical nursing actions. PREREQUISITES: 543-110 - Nursing Mental Health Community Concepts

**543-004**  
**Clinical Practice in Psychosocial/Mental Health** **2.00**

In this two credit clinical course, the generalist GN/RN will develop increased competency in psychosocial nursing care. The nurse will partner with the instructor to locate an effective site(s) for enhancing psychosocial nursing skills. The selected

clinical may be one or more locations covering any level in the continuum of care (i.e., hospital, ER, inpatient, or community based). Once identified, the student will be precepted by another staff employed by the agency. The instructor will serve as an internship coordinator for the involved parties (if there are a minimum of six students interested in taking the practicum together with the same start/end date, a psychiatric nursing facility can provide direct precepting).

**543-101**  
**Nursing Fundamentals** **2.00**

This course focuses on basic nursing concepts that the beginning nurse will need to provide care to diverse patient populations. Current and historical issues impacting nursing will be explored within the scope of nursing practice. The nursing process will be introduced as a framework for organizing the care of patients with alterations in cognition, elimination, comfort, grief/loss, mobility, integument, and fluid/electrolyte balance. PREREQUISITES: 806-179 - Anatomy and Physiology, Advanced 806-177 - General Anatomy and Physiology

**543-102**  
**Nursing Skills** **3.00**

This course focuses on development of clinical skills and physical assessment across the lifespan. Content includes mathematic calculations and conversions related to clinical skills, blood pressure assessment, aseptic technique, wound care, oxygen administration, tracheostomy care, suctioning, management of enteral tubes, basic medication administration, glucose testing, enemas, ostomy care, and catheterization. In addition, the course includes techniques related to obtaining

a health history and basic physical assessment skills using a body systems approach. PREREQUISITES: 806-179 - Anatomy and Physiology, Advanced 806-177 - General Anatomy and Physiology

**543-103**  
**Nursing Pharmacology** **2.00**

This course introduces the principles of pharmacology, including drug classification and their effects on the body. Emphasis is on the use of the components of the nursing process when administering medication. PREREQUISITES: 806-179 - Anatomy and Physiology, Advanced 806-177 - General Anatomy and Physiology -;

**543-104**  
**Nsg: Intro Clinical Practice** **2.00**

This introductory clinical course emphasizes basic nursing skills and application of the nursing process in meeting the needs of diverse clients. Emphasis is placed on performing basic nursing skills, the formulation of nurse-client relationships, communication, data collection, documentation, and medication administration. PREREQUISITES: 806-179 - Anatomy and Physiology, Advanced 806-177 - General Anatomy and Physiology -; COREQUISITES: 543-101 - Nursing Fundamentals 543-102 - Nursing Skills 543-103 - Nursing Pharmacology

**543-105**  
**Nursing Health Alterations** **3.00**

This course elaborates upon the basic concepts of health and illness as presented in Nursing Fundamentals. It applies theories of nursing in the care of clients through the lifespan, utilizing problem solving and critical thinking. This course will

provide an opportunity to study conditions affecting different body systems and apply therapeutic nursing interventions. It will also introduce concepts of leadership, team building, and scope of practice. PREREQUISITES: 543-101 - Nursing Fundamentals 543-102 - Nursing Skills 543-103 - Nursing Pharmacology 543-104 - Nsg: Intro Clinical Practice

**543-106**  
**Nursing Health Promotion** **3.00**

This course will cover topics related to health promotion in the context of the family. We will cover nursing care of the developing family, which includes reproductive issues, pregnancy, labor and delivery, post-partum, the newborn, and the child. Recognizing the spectrum of healthy families, we will discern patterns associated with adaptive and maladaptive behaviors, applying mental health principles. An emphasis is placed on teaching and supporting healthy lifestyle choices. Nutrition, exercise, stress management, empowerment, and risk reduction practices are highlighted. Study of the family will cover dynamics, functions, discipline styles, and stages of development. PREREQUISITES: 543-101 - Nursing Fundamentals 543-102 - Nursing Skills 543-103 - Nursing Pharmacology 543-104 - Nsg: Intro Clinical Practice 809-188 - Psychology, Developmental

**543-107**  
**Nursing: Clinical Care Across the Lifespan** **2.00**

This clinical experience applies nursing concepts and therapeutic interventions to clients across the lifespan. It also provides an introduction to concepts of teaching and learning. Extending care to include the family is emphasized. PREREQUISITES: 543-101 - Nursing Fundamentals 543-102 - Nursing

# Course Descriptions

Skills 543-103 - Nursing Pharmacology  
543-104 - Nsg: Intro Clinical Practice  
COREQUISITES: 543-106 - Nursing Health Promotion

**543-108  
Nursing: Introduction to  
Clinical Care Management 2.00**

This clinical experience applies nursing concepts and therapeutic nursing interventions to groups of clients. It also provides an introduction to leadership, management, and team building.  
PREREQUISITES: 543-101 - Nursing Fundamentals 543-102 - Nursing Skills 543-103 - Nursing Pharmacology 543-104 - Nsg: Intro Clinical Practice COREQUISITES: 543-105 - Nursing Health Alterations

**543-109  
Nursing Complex  
Health Alterations I 3.00**

Complex Health Alterations I prepares the learner to expand knowledge from previous courses in caring for clients with alterations in musculoskeletal, cardiovascular, respiratory, endocrine, and hematologic systems, as well as clients with fluid/electrolyte and acid-base imbalances and alterations in comfort.  
PREREQUISITES: 806-179 - Anatomy and Physiology, Advanced 543-105 - Nursing Health Alterations 543-106 - Nursing Health Promotion 543-107 - Nursing: Clinical Care Across the Lifespan 543-108 - Nursing: Introduction to Clinical Care Management COREQUISITES: 806-197 - Microbiology

**543-110  
Nursing Mental Health Community  
Concepts 2.00**

This course will cover topics related to the delivery of community and mental health care. Specific health needs of individuals, families, and groups will be addressed. Attention will be given to diverse and at-risk populations. Mental health concepts will concentrate on adaptive/maladaptive behaviors and specific mental health disorders. Community resources will be examined in relation to specific types of support offered to racial, ethnic, economically diverse individuals and groups.  
PREREQUISITES: 806-179 - Anatomy and Physiology, Advanced 543-105 - Nursing Health Alterations 543-106 - Nursing Health Promotion 543-107 - Nursing: Clinical Care Across the Lifespan 543-108 - Nursing: Introduction to Clinical Care Management COREQUISITES: 806-179 - Anatomy and Physiology, Advanced 809-198 - Psychology, Introduction to

**543-111  
Nursing Intermediate Clinical  
Practice 3.00**

This intermediate level clinical course develops the RN role when working with clients with complex health care needs. A focus of the course is developing skills needed for managing multiple clients and priorities. Using the nursing process, students will gain experience in adapting nursing practice to meet the needs of clients with diverse needs and backgrounds.  
PREREQUISITES: 543-105 - Nursing Health Alterations 543-106 - Nursing Health Promotion 543-107 - Nursing: Clinical Care Across the Lifespan 543-108 - Nursing: Introduction to Clinical Care Management COREQUISITES: 543-109 - Nursing Complex Health Alterations I 543-110 -

Nursing Mental Health Community Concepts  
543-112 - Nursing Advanced Skills

**543-111A  
Nursing Intermediate Clinical  
Practice A 2.00**

This intermediate level clinical course develops the RN role when working with clients with complex medical surgical health care needs. A focus of the course is developing skills needed for managing multiple clients and priorities. Using the nursing process, students will gain experience in adapting nursing practice to meet the needs of clients with diverse needs and backgrounds.  
PREREQUISITES: 543-105 - Nursing Health Alterations 543-106 - Nursing Health Promotion 543-107 - Nursing: Clinical Care Across the Lifespan 543-108 - Nursing: Introduction to Clinical Care Management COREQUISITES: 543-109 - Nursing Complex Health Alterations I 543-110 - Nursing Mental Health Community Concepts

**543-111B  
Nursing Intermediate Clinical  
Practice B 1.00**

This intermediate level clinical course develops the RN role when working with clients with complex mental health care needs. A focus of the course is developing skills needed for managing multiple clients and priorities. Using the nursing process, students will gain experience in adapting nursing practice to meet the needs of clients with diverse needs and backgrounds.  
PREREQUISITES: 543-105 - Nursing Health Alterations 543-106 - Nursing Health Promotion 543-107 - Nursing: Clinical Care Across the Lifespan 543-108 - Nursing: Introduction to Clinical Care Management COREQUISITES: 543-110 -

- Nursing Complex Health Alterations I  
543-110 - Nursing Mental Health Community Concepts

**543-112  
Nursing Advanced Skills 1.00**

This course focuses on the development of advanced clinical skills. Content includes advanced IV skills, blood product administration, chest tube systems, basic EKG interpretation, and nasogastric/feeding tube insertion.  
PREREQUISITES: 543-105 - Nursing Health Alterations 543-106 - Nursing Health Promotion 543-107 - Nursing: Clinical Care Across the Lifespan 543-108 - Nursing: Introduction to Clinical Care Management COREQUISITES: 806-179 - Anatomy and Physiology, Advanced

**543-113  
Nursing Complex Health  
Alterations II 3.00**

Complex Health Alterations II prepares the learner to expand knowledge and skills from previous courses in caring for clients with alterations in the immune, neuro-sensory, musculoskeletal, gastrointestinal, hepatobiliary, renal/urinary, and reproductive systems. The learner will also focus on management of care for clients with high risk perinatal conditions, high risk newborns, and the ill child. Synthesis and application of previously learned concepts will be evident in the management of clients with critical/life threatening situations.  
PREREQUISITES: 543-109 - Nursing Complex Health Alterations I 543-110 - Nursing Mental Health Community Concepts 543-111 - Nursing Intermediate Clinical Practice 543-112 - Nursing Advanced Skills 806-197 - Microbiology

**543-114**  
**Nursing Management and Professional Concepts** 2.00

This course covers nursing management and professional issues related to the role of the RN. Emphasis is placed on preparing for the RN practice. PREREQUISITES: 543-109 - Nursing Complex Health Alterations I 543-110 - Nursing Mental Health Community Concepts 543-111 - Nursing Intermediate Clinical Practice 543-112 - Nursing Advanced Skills

**543-115**  
**Nursing Advanced Clinical Practice** 3.00

This advanced clinical course requires the student to integrate concepts from all previous courses in the management of groups of clients facing complex health alterations. Students will have the opportunity to further develop critical thinking skills using the nursing process in making clinical decisions. Continuity of care through interdisciplinary collaboration is emphasized. PREREQUISITES: 543-109 - Nursing Complex Health Alterations I 543-110 - Nursing Mental Health Community Concepts 543-111 - Nursing Intermediate Clinical Practice 543-112 - Nursing Advanced Skills COREQUISITES: 543-113 - Nursing Complex Health Alterations II 543-114 - Nursing Management and Professional Concepts

**543-116**  
**Nursing Clinical Transition** 2.00

This clinical experience prepares the student to assume the role of graduate nurse. The course promotes clinical decision-making, delegation, and collaboration to achieve client and organizational outcomes. Continued professional development

is fostered. PREREQUISITES: 543-109 - Nursing Complex Health Alterations I 543-110 - Nursing Mental Health Community Concepts 543-111 - Nursing Intermediate Clinical Practice 543-112 - Nursing Advanced Skills COREQUISITES: 543-113 - Nursing Complex Health Alterations II 543-114 - Nursing Management and Professional Concepts 543-115 - Nursing Advanced Clinical Practice

**543-117**  
**Contemporary Diabetes Care** 4.00

This course provides an overview of contemporary diabetes care. It is designed to increase the competency of care provided to individuals and groups affected by diabetes at multiple points of access in the health care system. The target audience is Registered Nurses, Advanced Practice Nurses, other interested health care providers, advanced health career students or other professionals that have frequent interaction with individuals and groups affected by diabetes. The course presents basic elements that are essential to diabetes care as well as the evolving research necessary to meet best practice standards. Learners will explore the epidemiology, pathophysiology, pharmacology, and lifestyle behavior changes related to diabetes care. Concepts of theory and research will be examined by the learner to develop a culturally competent plan of care for individuals and groups in a variety of settings. The learner must have the ability to access and navigate the Internet as well as knowledge of common office software. Before the course begins the learner is to be responsible for and capable of using the college's online learning system by completing the tutorials available on the college website.

**543-118**  
**Periop Nursing Prof Role and Legal Cons** 2.00

In this course, the student will be introduced to the roles and responsibilities of the peri-operative nurse. Standards of patient care in the operating room are explored and identified. Assessment of patient needs and implementation of nursing interventions are emphasized. Theory includes patient admission, identification of risk factors, nursing process, asepsis, patient safety, documentation and legal considerations. Management and professional concepts will be explored.

**543-119**  
**Periop Nursing Surgical Environment** 3.00

Students will learn nursing care of the perioperative patient experiencing routine surgeries including general, ophthalmologic, ears/nose/throat, neurological, cardiovascular, gastrointestinal, gynecological, and orthopedic interventions. Students will explore care of patients receiving fluids, electrolytes, blood products, drugs and anesthesia. Specific surgeries will be reviewed including general, laparoscopic and endoscopic procedures. Disinfection and sterilization will be covered. The learner will demonstrate critical thinking and technical skills in the classroom and simulated laboratory experiences. PREREQUISITES: 543-118 - Periop Nursing Prof Role and Legal Cons

**543-120**  
**Periop Nursing Complications and Care** 2.00

In this course, the learner will acquire knowledge in caring for the patient with risk factors and health alterations that have

the potential of significantly impacting the health and safety of the patient experiencing surgical procedures. Medical factors include cardio-respiratory, renal, hepatic diseases and alterations in fluids, electrolytes and/ or the auto-immune system. Common complications of surgical procedures will be presented, such as, hypoventilation, oral trauma, cardiac dysrhythmia, peripheral nerve damage, and malignant hyperthermia as well as complications occurring during the recovery period including venous thrombosis, pulmonary embolism, hiccoughs, paralytic ileus, urinary retention and urinary tract infection. Upon completion of the course, the learner will be able to identify risk factors and potential complications and implement nursing measures to prevent or mitigate long term effects of these occurrences. PREREQUISITES: 543-119 - Periop Nursing Surgical Environment

**543-121**  
**Periop Nursing Practicum** 3.00

In this course, the student will be introduced to the roles and responsibilities of the peri-operative nurse. Standards of patient care in the operating room are explored and identified. Assessment of patient needs and implementation of nursing interventions are emphasized. Theory includes patient admission, identification of risk factors, nursing process, asepsis, patient safety, documentation and legal considerations. Management and professional concepts will be explored. PREREQUISITES: 543-120 - Periop Nursing Complications and Care

**543-199**  
**Clinical Reasoning in Nursing** 3.00

This course introduces basic concepts of critical thinking to the nursing student.

# Course Descriptions

Identification of critical thinking skills and common characteristics related to these skills will be applied to the the nursing process. The goal of this course is to enhance clinical reasoning skills through application and practice in human patient simulation. Students will gain skills in critical thinking to use in everyday life as well as their academic and nursing career. PREREQUISITES: 543-101 - Nursing Fundamentals

**543-300  
Nursing Assistant 3.00**

The Nursing Assistant course is 120 hours in total and is offered numerous times throughout the district. The course prepares students to perform basic nursing skills in caring for clients in various health care settings. A certificate is awarded upon successful completion of this course and graduates are eligible to competency test for placement on the Wisconsin Nursing Assistant/Home Health Aide Registry.

**543-302  
Acute Care Nursing Assistant 2.00**

Provides theory and occupational experience in intermediate level nursing assistant skills for employment in hospital and other acute care settings. PREREQUISITES: 543-300 - Nursing Assistant

**550-130  
Alcohol/Drug Abuse Rehabilitation 3.00**

This course is designed to offer the fundamental knowledge base for the drug and alcoholic field. Emphasis is on pharmacology, dual diagnosis counseling, self-help groups, levels of care, symptom identification and assessments. Through the use of case studies, worksheets

and role-play, the student will integrate knowledge and skills in these areas.

**550-131  
Disabilities and Substance Abuse 1.00**

Three-part workshop to cover addictions and people with physical disabilities, addictions and people with cognitive disabilities, and people with disabilities: ethics and the law.

**550-132  
Assessment in AODA 1.00**

Three-part workshop to cover assessment screening with AODA clients, understanding the AODA assessment process, and assessment for your AODA practice.

**550-133  
Treatment and Planning in AODA 1.00**

Three-part workshop to cover adjusting to managed care treatment planning, documentation with a jury in mind, and treatment knowledge.

**550-134  
Substance Abuse/Ethical Dilemmas 1.00**

This course will focus on learning professional ethics for substance abuse counselors and incorporating these ethics into one's professional behavior. Continuing education and growth of substance abuse counselors will also be stressed.

**550-135  
AODA Client/Counseling 1.00**

This class will stress basic counseling skills such as relationship building, goal setting, and intervention to change client behaviors.

**550-136  
Substance Abuse Population Group Counseling 1.00**

This course will focus on group leadership skills. There will be emphasis on effectively leading groups that address a variety of substance abuse issues.

**550-137  
AODA/Professional Issues 1.00**

This course will address current professional issues in the practice of substance abuse counseling. Topics will include working with mandated clients, working with substance abuse clients in corrections, and working with diverse populations.

**550-138  
Treating the Teenage Substance User 1.00**

This course will examine the unique challenges of effectively intervening with teenage substance users. This course will examine risky teen substance use, with strategies to prevent and treat teen clients with AODA issues from a developmental, family and cultural perspective.

**550-150  
Psychopharmacology 3.00**

This course is designed to provide an overview of the psychopharmacology of therapeutic drugs, over-the-counter drugs, illicit drugs, alcohol, nicotine and caffeine. Emphasis will be on the nervous system structure, brain function, site of action theory and on comprehending the effects of substances on these systems. Interactions, withdrawal, maternal and fetal effects will be addressed, as well as terminology and drug regulations.

**550-154  
Family and Chemical Abuse 3.00**

A comprehensive study of the problems associated with chemical abuse within the family. Course focus is on the psychological and physiological trauma as well as methods of motivation toward recovery.

**550-156  
Mental Health/Substance Abuse 3.00**

Diagnose dual disabilities of substance abuse and mental illness disorders. The impact of dual disability on assessment and treatment.

**555-101  
Emergency Dispatch 3.00**

This course covers topics found in the Public Safety Telecommunicator course materials from APCO. It is designed to train students in the following subject areas; interpersonal communications, telephone communication techniques, computer aided dispatch and related technologies, radio communications, call classification, NIMS, liability issues, and career preparation. The course includes dispatch simulation exercises and dispatch center observation opportunities. PREREQUISITES: 503-110 - Fire Safety Communications or 801-196 - Oral/Interpersonal Communication

**601-110  
Air Conditioning Fundamentals 3.00**

Topics covered include air conditioning principles and terms, physical principles of air movement and humidity, methods of conditioning air for comfort and health, the proper use of psychrometers, dry bulb thermometers, hygrometers, pilot tubes, recorders, manometers and barometers and the reading and interpretation of psychometric charts and scales.

**601-111  
Workplace Fundamentals 1.00**

This course will introduce the student to the diverse mechanical skills required in today's workplace environment. The student will demonstrate, through practical hands-on lab exercises, skills in complying with Lock-out/Tag-out procedures and the proper care and use of common hand and power tools. General drilling, tapping, threading, and aligning will all be covered. The student will also be required to use test instruments to gather data on length, volume, area, depth, and dimensions and use electrical meters on power circuits.

**601-112  
Environmental Systems 2.00**

This course will introduce the student to the maintenance and repair of HVAC/R equipment encountered in the workplace. Basic theory of heating, air conditioning, and refrigeration will be covered; emphasis will be placed on preventative maintenance. The student will apply theory in lab exercises demonstrating competency with general repair and the use of temperature and electrical meters, recording data, and performing adjustments to keep equipment at peak efficiency. COREQUISITES: 601-111 - Workplace Fundamentals

**601-113  
Facility Operating Engineer LP 5.00**

This lecture format course will introduce the student to the fundamentals of obtaining the Facility Operating Engineer 3rd Class certification. Principles of thermodynamics, boiler classification, construction, fuels, rating and efficiency, and firing methods will be covered.

**601-114  
Power Plant Operating Engineer 4.00**

This lecture/lab format course will introduce the student to the fundamentals of obtaining the Power Plant Operating Engineer 3rd Class certification. Topics will include heat energy transfer, steam generators, boiler construction, and codes and fuel firing. PREREQUISITES: 601-117 - Facility Operating Engineer HP

**601-116  
Mechanical Fundamentals 3.00**

Topics covered include learning the various types of piping and tubing used in air conditioning and refrigeration, types of fittings, bending, brazing and soft soldering tubing, black iron pipe work, sheet metal fundamentals, using hand tools, and the recognition and practice of safety procedures while working on air conditioning and refrigeration systems.

**601-117  
Facility Operating Engineer HP 3.00**

In this course, advanced boiler operation and maintenance of mechanical heating and cooling systems will be discussed. Students will learn to understand the operations of ventilation system equipment, controls, heat exchangers, air compressors, AC & DC motors, and turbines. PREREQUISITES: 601-113 - Facility Operating Engineer LP

**601-121  
Heating Systems 3.00**

Topics in this course include introduction to heat principles, temperature measurement, fuels and other sources of heat, combustion, basic heating systems, basic furnace design, gas furnace design and operation, venting of furnaces, chimney or exhaust gases and

system controls. PREREQUISITES: 601-110 - Air Conditioning Fundamentals

**601-122  
Building Performance  
Instrument Cert 3.00**

This course will focus on certification based activities utilizing BPI equipment will provide the participant with the skills needed to correctly analyze HVAC & R equipment, assess indoor air quality and perform correct combustion set up and analysis. PREREQUISITES: 601-121 - Heating Systems

**601-128  
Electrical Controls and Systems 3.00**

Topics in this course include basic electricity review, control circuits, three phase motors, single phase motors, solid state devices, control components and troubleshooting using control schematics and solid state controls. PREREQUISITES: 605-107 - Fundamentals of Electricity/Electronics

**601-129  
HVAC Systems 3.00**

Topics include the installation and proper startup procedures of residential HVAC systems. Areas covered will be the installation of forced air heating equipment with a focus on the sheet metal, gas piping, venting and electrical hookups necessary to meet all code requirements. Also covered will be the installation of refrigerant lines, evaporator coils, and placement of the condensing unit. Students will leak check, evacuate and perform startup checks verifying superheat, subcooling, airflow and other vital parameters. PREREQUISITES: 601-110 - Air Conditioning Fundamentals 601-116 - Mechanical Fundamentals

**601-130  
HVAC Blueprint Reading 2.00**

Topics include blueprint reading, locating, interpreting and utilizing state building codes; understanding, interpreting and utilizing architectural working drawings.

**601-131  
Heating Systems Applications 3.00**

Topics include installation and service of heating and humidifying systems, including steam and hydronic heat distribution systems, heat pumps and complete air conditioning systems and heat recovery systems. PREREQUISITES: 601-121 - Heating Systems

**601-133  
Refrigeration Fundamentals 3.00**

Topics include refrigeration principles and terms, thermodynamic processes, refrigerants, vapor compression cycles, mechanical refrigeration system components, use of electrical controls, refrigeration applications and refrigeration tools and materials.

**601-143  
Refrigeration Applications 3.00**

Topics include commercial refrigeration systems, applications, installation, servicing, troubleshooting, heat loads and piping, absorption systems and special refrigeration systems. PREREQUISITES: 601-110 - Air Conditioning Fundamentals 601-116 - Mechanical Fundamentals 601-133 - Refrigeration Fundamentals

# Course Descriptions

**601-145**  
**Electronic Energy Management 3.00**

Topics include an introduction to the role of computers in the heating, ventilation and air conditioning industry, microcomputer systems and applications, programming and direct digital control (DDC).  
PREREQUISITES: 601-147 - Control Circuit Applications 103-143 - Computers for Professionals

**601-147**  
**Control Circuit Applications 3.00**

Topics include an introduction to control circuit terminology, measuring devices and control systems. The principles of self-contained, pneumatic and electronic-electric controls are examined and applied to control systems operation and design.  
PREREQUISITES: 601-128 - Electrical Controls and Systems

**601-148**  
**HVAC Electrical Troubleshooting and Repair 3.00**

This course is designed for the advanced student who has already completed the theoretical and basic hands-on classes. In this class the student will be responsible for troubleshooting and repairing a variety of HVAC/R equipment in both lab exercises and computer simulated activities. The student will be required to diagnose the faulty equipment, select the proper replacement parts, return the equipment to a working condition and for preparing a detailed work order listing all work performed.  
PREREQUISITES: 601-147 - Control Circuit Applications 103-143 - Computers for Professionals

**601-149**  
**Heat Load Estimation 2.00**

This course will teach how to use Manual J from ACCA. Students will develop the skills to do residential heating and cooling heat loads. Students will calculate not only heat loss but also losses or gains due to infiltration, sun loads, etc. Students will do calculations on actual buildings in both long hand and using Right J, the computer software for Manual J. Students will also be responsible for developing recommendations for lowering heat loss by pricing energy upgrades such as insulation, window improvement, etc., and calculating payback and fuel savings.

**601-155**  
**Regulatory Compliance 2.00**

This lecture course will introduce the student to the Federal, State, and local regulations as they relate to the installation, operation, and repair of HVAC systems.

**601-156**  
**Manual D Duct Design 2.00**

The student will use Manual D from ACCA to design ductwork to meet static and velocity requirements. The student will learn to calculate run lengths, pressure drop through fittings, and system components for supply and return ductwork.

**601-157**  
**Radiant Floor Heating 2.00**

The students will learn to design radiant floor systems for residential construction. They will select components, lay out hardware, and estimate piping lengths to meet load requirements.

**601-160**  
**Blueprint/Pipefitter Applications 1.00**

This course will teach the student how to read, find key information in, and interpret basic commercial blueprints. Instruction will include a review of print views and common symbols used in the fitting trade. Students will practice on actual blueprints, gathering data and specifications for simulated exercises and practice in producing basic workable drawings for field use.

**601-171**  
**Heating III 2.00**

This advanced course is for students who want to add residential/light commercial hot water boiler service and installation to their HVAC skills. This course covers cast iron sectional and copper finned boiler configuration, operation, and maintenance. The course will also cover common control schemes, boiler safety devices, and near boiler piping concerns. PREREQUISITES: 601-121 - Heating Systems

**601-176**  
**Codes I 2.00**

This advanced level course will assist workers in understanding and following the National Fuel Gas Code.

**601-501**  
**Refrigeration Fundamentals Apprentice 1.00**

Topics include refrigeration principles and terms, thermodynamic processes, refrigerants, vapor compression cycles, mechanical refrigeration system components, use of electrical controls, refrigeration applications, and refrigeration tools and materials.

**601-502**  
**Refrigeration Commercial/Industrial 1.00**

Topics include commercial refrigeration systems, applications, installation servicing, troubleshooting, heat loads and piping, absorption systems, and special refrigeration systems.

**601-503**  
**Steam & Water Boilers 1.00**

Students will learn to recognize how various types of boilers are constructed and what operating and safety controls are required for operation.

**601-504**  
**HVAC Lab 1.00**

This course is designed to provide students with hands on skills when they work with common refrigerant, refrigeration equipment, and refrigeration tools and practices.

**602-103**  
**Engine Repair 1 2.00**

This automotive course focuses on developing the skills needed to diagnose, service and repair internal combustion engines. Emphasis is placed on in-vehicle repairs including engine cooling and lubrication systems. PREREQUISITES: 602-107 - Auto Service Fundamentals 602-122 - Auto IT for Transportation

**602-104**  
**Brake Systems 3.00**

This automotive course focuses on developing the skills needed to diagnose, service and repair vehicle braking systems with an introduction to ABS. (ABS diagnosis, service and repair will be addressed in the Advanced Chassis

course.) PREREQUISITES: 602-107 - Auto Service Fundamentals 602-122 - Auto IT for Transportation

**602-105  
Automotive Electrical and Electronic Fundamentals 3.00**

An introductory automotive electrical course that introduces fundamental electrical theory and practices. Basic application of troubleshooting principles, electrical diagrams and equipment will be stressed.

**602-106  
Fleet Maintenance 2.00**

This course will cover the basics of preventative fleet maintenance. Equipment scheduling, maintenance, and repair will be covered in both lecture and lab experiences. Safety and chemical handling will be emphasized.

**602-107  
Auto Service Fundamentals 2.00**

This automotive course focuses on developing skills in professionalism, safety and the use of basic hand and power tools in accordance with industry standards. Students are introduced to the automotive service industry and learn to use both comprehensive and manufacturer's service information to perform basic under-hood and under-car services. PREREQUISITES: 602-122 - Auto IT for Transportation

**602-109  
Auto Transmission/Transaxle 4.00**

This automotive course focuses on developing the skills needed to diagnose, service and repair automatic transmission/

transaxles including overhaul procedures. PREREQUISITES: 602-127 - Electrical & Electronic Systems 2

**602-113  
Automotive Diagnostics & Troubleshooting 2.00**

This course will introduce the student to the technical advancement of automotive industry. Hybrid vehicle and alternate fuel theory, design, operation and repair will be discussed. Application for the high school curriculum will be integrated in the content.

**602-120  
Auto Service Simulation 2.00**

This course will allow the student to perform acquired skills in the areas of engine repair, brakes, steering and suspension, electrical/electronic systems, heating, ventilation and air conditioning, and engine performance. The affected repairs are to be done on customer vehicles, simulating a shop environment. A strong emphasis will be placed on customer relations and communications. Preparedness for the ASE (Automotive Service Excellence) exam is emphasized. PREREQUISITES: 602-104 - Brake Systems 602-121 - Auto Instrumentation and Testing 602-123 - Engine Repair 2 602-124 - Steering & Suspension Systems 602-128 - Electrical & Electronic Systems 3 602-196 - Climate Control Systems 602-198 - Engine Performance 2

**602-121  
Auto Instrumentation and Testing 4.00**

This course will develop the individual and technical skills required to perform advanced automotive diagnostics. Analytical skills

will be developed and practiced to enable the technician to develop troubleshooting techniques. The basic theory and operation of diagnostic test equipment such as lab scopes and scan tools, will be covered including their application in the performance of field diagnostics. PREREQUISITES: 602-197 - Engine Performance 1

**602-122  
Auto IT for Transportation 2.00**

Modern vehicles use on-board computers to control just about every function from accident avoidance to video navigation. Communication between computers is handled over sophisticated networks. The modern toolbox is not only filled with computer-based tools it is likely to have a PC on it or in it and is likely to be networked to the rest of the shop and the internet. Today's automotive technician needs a thorough understanding of PC's, networks, synchronizing PDAs and operating systems. This course covers IT topics the modern technician is likely to encounter such as hardware and software installations, implementing a peer-to-peer network, and troubleshooting hardware, software, and network failures.

**602-123  
Engine Repair 2 3.00**

This automotive course focuses on developing the skills needed to diagnose, service and repair internal combustion engines. Emphasis is placed on out-of-vehicle engine repair including overhaul procedures. PREREQUISITES: 602-103 - Engine Repair 1 COREQUISITES: 801-197 - Technical Reporting

**602-124  
Steering & Suspension Systems 3.00**

This automotive course focuses on developing the skills needed to diagnose, service and repair steering and suspension systems including wheel alignment procedures. PREREQUISITES: 602-107 - Auto Service Fundamentals 602-122 - Auto IT for Transportation

**602-125  
Electrical & Electronic Systems 1 2.00**

This automotive course focuses on developing the skills needed to diagnose, service and repair electrical and electronic systems. Learners apply Ohm's Law to basic electrical circuit diagnosis. PREREQUISITES: 602-107 - Auto Service Fundamentals 602-122 - Auto IT for Transportation COREQUISITES: 804-107 - College Mathematics

**602-126  
Automotive Technology Implementation 2.00**

This course will prepare the participant to certify a secondary auto program for the National Automotive Technicians education foundation (NATEF) certification. Additionally, the participant will receive instruction on the development of lesson plans and teaching methods utilizing electronic project boards that focus on the fundamentals of electrical troubleshooting.

**602-127  
Electrical & Electronic Systems 2 3.00**

This automotive course focuses on developing the skills needed to diagnose, service and repair electrical and electronic systems, including

# Course Descriptions

batteries, starting, charging, and lighting systems, and computer control systems. PREREQUISITES: 602-125 - Electrical & Electronic Systems 1 COREQUISITES: 801-136 - English Composition 1

**602-128**  
**Electrical & Electronic Systems 3** 3.00

This automotive course focuses on developing the skills needed to diagnose, service and repair electrical and electronic systems including driver information, horn, wiper/washer, power accessories, cruise control, air bag, anti-theft and radio systems. PREREQUISITES: 602-127 - Electrical & Electronic Systems 2

**602-142**  
**Auto Electrical Systems** 4.00

This course covers basic auto electrical circuit diagnosis, batteries, starting and charging systems, ignition systems (including conventional & electronic), and an introduction to computerized ignition systems. Preparedness for the ASE (Automotive Service Excellence) exam is emphasized. PREREQUISITES: 602-148 - Auto Mechanic Fundamentals and Service References COREQUISITES: 804-107 - College Mathematics

**602-144**  
**Auto Brakes** 4.00

This course covers automotive braking systems. Diagnosis, adjustment, and repair of related systems will be emphasized. Preparedness for the ASE (Automotive Service Excellence) exam is emphasized. PREREQUISITES: 602-148 - Auto Mechanic Fundamentals and Service References

**602-146**  
**Auto Steering & Suspension** 3.00

This course covers vehicle wheels, tires, alignment, steering, and chassis systems. Diagnosis, adjustment, and repair of related systems will be emphasized. Preparedness for the ASE (Automotive Service Excellence) exam is emphasized. PREREQUISITES: 602-148 - Auto Mechanic Fundamentals and Service References

**602-148**  
**Auto Mechanic Fundamentals and Service References** 3.00

In this course, the student will learn the basic skills of an Automotive Technician. Those skills include automotive shop safety, hazardous material handling, hand tool identification, hand tool safety, use of precision measuring instruments, thread repair, wiring repair, introductory welding, and proper lifting techniques. Additionally, the course will include instruction on using electronic information services, hard copy shop manuals, and Wisconsin automotive trade practice regulations (ATCP 132).

**602-149**  
**Manual Drive Train and Axles** 4.00

This automotive course focuses on developing the skills needed to diagnose, service and repair clutches, manual transmissions/transaxle, differentials, four wheel drive/all wheel drive, and drive axles. PREREQUISITES: 602-107 - Auto Service Fundamentals 602-122 - Auto IT for Transportation

**602-150**  
**Auto HVAC** 2.00

This course covers the operating principles of the modern automobile heating, cooling,

and air conditioning (HVAC) systems. Diagnosis and servicing of vehicle cooling and HVAC systems will be emphasized. Successful students will also receive their certification for Wisconsin ATCP 136 and Federal Clean Air Act Section 609 mobile air conditioning recovery. Preparedness for the ASE (Automotive Service Excellence) exam is emphasized. PREREQUISITES: 602-148 - Auto Mechanic Fundamentals and Service References

**602-151**  
**Auto Engine Minor & HVAC** 3.00

This course covers the operating principles of the modern automobile engine and its mechanical, cooling, heating, and air conditioning (HVAC) systems. Disassembly, inspection, and reassembly of upper engine components will be accomplished. Diagnosis and servicing of vehicle cooling and HVAC systems will be emphasized. Preparedness for the ASE (Automotive Service Excellence) exam is emphasized. PREREQUISITES: 602-148 - Auto Mechanic Fundamentals and Service References

**602-152**  
**Auto Engine Minor** 2.00

This course covers the operating principles of the modern automobile engine, along with its mechanical and cooling systems. Disassembly, inspection, and reassembly of upper engine components will be accomplished. Preparedness for the ASE (Automotive Service Excellence) exam is emphasized. PREREQUISITES: 602-148 - Auto Mechanic Fundamentals and Service References

**602-153**  
**Auto Brakes & Suspension** 3.00

This course covers vehicle wheels, tires, alignment, and braking systems. Diagnosis, adjustment, and repair of related systems will be emphasized. Preparedness for the ASE (Automotive Service Excellence) exam is emphasized. PREREQUISITES: 602-148 - Auto Mechanic Fundamentals and Service References

**602-155**  
**Auto Simulation I** 3.00

This course will allow the student to perform acquired skills in the areas of upper engine repair, vehicle cooling, heating and air conditioning systems, vehicle wheels, tire alignment, and braking systems. The affected repairs are to be done on customer vehicles, simulating a shop environment. A strong emphasis will be placed on customer relations and communications. Preparedness for the ASE (Automotive Service Excellence) exam is emphasized. PREREQUISITES: 602-151 - Auto Engine Minor & HVAC 602-153 - Auto Brakes & Suspension

**602-156**  
**Auto Instrumentation and Testing** 3.00

This course covers the operation of diagnostic test equipment, including lab scope, scan tool, and dynamometer, and utilizes skills learned in Auto Engine Performance 1 and 2. Preparedness for the ASE (Automotive Service Excellence) exam is emphasized. PREREQUISITES: 602-159 - Auto Engine Performance

**602-158**  
**Brakes and Suspension Systems 4.00**

The brakes, suspension and steering systems of automobiles and light trucks are studied. The design and operation of late model systems including electronic controls and computerized 4-wheel alignment are emphasized. Technical lecture and laboratory work provide skill development in the repair and diagnosis of components and systems.

**602-159**  
**Auto Engine Performance 3.00**

This course covers the ignition system theory, diagnosis, and repair. It also gives an introduction to computerized engine control systems. The student will learn about input and output devices and computer self-diagnosis. Preparedness for the ASE (Automotive Service Excellence) exam is emphasized. PREREQUISITES: 602-142 - Auto Electrical Systems COREQUISITES: 602-188 - Auto Service Simulation II

**602-160**  
**Auto Advanced Emissions 2.00**

This course will focus on diagnosis and repair of vehicle emission systems. Emphasis will be placed on common problems associate with vehicles that fail the Wisconsin Emission Program tests. PREREQUISITES: 602-156 - Auto Instrumentation and Testing

**602-163**  
**Auto Chassis Electrical 2.00**

This course covers the electrical safety and accessory systems used on automobiles and light trucks. Emphasis is placed on circuit operation, testing, and diagnosis. Students

will demonstrate skill by performing the related ASE tasks on a vehicle. PREREQUISITES: 602-142 - Auto Electrical Systems

**602-165**  
**Auto Engine Performance III 2.00**

This course covers the diagnosis and repair of computerized electronic systems as they are integrated into the engine controls. The content will cover the single wire, signal, and multi-plex wire pulse systems. PREREQUISITES: 602-159 - Auto Engine Performance

**602-167**  
**Auto Engine Performance IV 3.00**

This course will cover computerized fuel delivery and mixing systems, including both pressurized fuel injection and carbureted types. Vehicle emissions and air pollution regulations will be reviewed. Emission system diagnosis and troubleshooting, using a five gas analyzer, will be studied. Preparedness for the ASE (Automotive Service Excellence) exam is emphasized. PREREQUISITES: 602-165 - Auto Engine Performance III

**602-169A**  
**Auto Simulation IIIA 1.50**

This course will allow the student to perform vehicle service and repair on customer cars in a simulated shop environment. Services will include basic engine performance, maintenance, and repair, including engine mechanical, ignition, and fuel systems. A strong emphasis will be placed on customer relations, communications, and ASE required tasks.

**602-169B**  
**Auto Simulation IIIB 1.50**

This course will allow the student to perform vehicle service and repair on customer cars in a simulated shop environment. Services will include basic engine performance, maintenance, and repair of emissions control systems. On-board diagnostic and engine performance diagnostics will be covered. A strong emphasis will be placed on customer relations, communications, and ASE related tasks.

**602-171**  
**Auto Manual Transaxles 3.00**

This course will emphasize operational theory, failure analysis, techniques and diagnosis, construction, testing, and repair of manual drive train components. PREREQUISITES: 602-148 - Auto Mechanic Fundamentals and Service References 804-113 - College Technical Math 1A

**602-172**  
**Auto Chassis Dynamics 2.00**

This course covers theory and operation of computerized vehicle controls systems, including powertrain management, braking systems, and active suspension controls. PREREQUISITES: 602-189 - Auto Brakes 602-146 - Auto Steering & Suspension 602-156 - Auto Instrumentation and Testing

**602-173**  
**Auto Automatic Transmissions 3.00**

This course provides instruction in the construction, operation, and problem diagnosis of current model automatic transmissions used in passenger cars and light trucks. Students are prepared in this area for practical experiences they will

typically encounter. Preparedness for the ASE (Automotive Service Excellence) exam is emphasized. PREREQUISITES: 602-148 - Auto Mechanic Fundamentals and Service References 804-113 - College Technical Math 1A

**602-174**  
**Auto Advanced Powertrain Controls 2.00**

This course covers theory & operation of computerized vehicle controls systems, including powertrain management, braking systems, and active suspension controls. PREREQUISITES: 602-156 - Auto Instrumentation and Testing

**602-175**  
**Auto Simulation IV 2.00**

This course will allow the student to perform acquired skills in the areas of manual and automatic transmission repair. The affected repairs are to be done on customer vehicles, simulating a shop environment. A strong emphasis will be placed on customer relations and communications. Preparedness for the ASE (Automotive Service Excellence) exam is emphasized. PREREQUISITES: 602-171 - Auto Manual Transaxles 602-173 - Auto Automatic Transmissions

**602-177**  
**Auto Engine Major 3.00**

This course covers the operation, construction, testing, and overhaul of automotive gasoline internal combustion engines. The areas that will be covered are engine design, diagnosis, disassembly, inspection, machining, and reassembly. Preparedness for the ASE (Automotive Service Excellence) exam is emphasized. PREREQUISITES: 602-152 - Auto Engine Minor

# Course Descriptions

**602-178**  
**Auto Service Simulation IV** **3.00**

This course will allow the student to perform acquired skills in the areas of engine repair, brakes, steering and suspension, electrical/electronic systems, heating, ventilation and air conditioning, and engine performance. The affected repairs are to be done on customer vehicles, simulating a shop environment. A strong emphasis will be placed on customer relations and communications. Preparedness for the ASE (Automotive Service Excellence) exam is emphasized. PREREQUISITES: 602-172 - Auto Chassis Dynamics 602-174 - Auto Advanced Powertrain Controls COREQUISITES: 801-197 - Technical Reporting

**602-179**  
**Auto Simulation V** **3.00**

This course will allow the student to perform acquired skills in the areas of major engine repair. The affected repairs are to be done on customer vehicles, simulating a shop environment. A strong emphasis will be placed on customer relations and communications. Preparedness for the ASE (Automotive Service Excellence) exam is emphasized. PREREQUISITES: 602-177 - Auto Engine Major

**602-187**  
**Auto Service Simulation III** **2.00**

This course will allow the student to perform acquired skills in the areas of electrical systems, computerized electronic systems, computerized fuel delivery and mixing systems, and emissions systems. The affected repairs are to be done on customer vehicles, simulating a shop environment. A strong emphasis will be placed on customer relations and communications.

Preparedness for the ASE (Automotive Service Excellence) exam is emphasized. PREREQUISITES: 602-156 - Auto Instrumentation and Testing 602-159 - Auto Engine Performance COREQUISITES: 801-136 - English Composition 1

**602-188**  
**Auto Service Simulation II** **2.00**

This course will allow the student to perform acquired skills in the areas of auto electrical systems, starting and charging systems, ignition systems, and basic computerized engine control systems. The affected repairs are to be done on customer vehicles, simulating a shop environment. A strong emphasis will be placed on customer relations and communications. Preparedness for the ASE (Automotive Service Excellence) exam is emphasized. PREREQUISITES: 602-142 - Auto Electrical Systems 602-152 - Auto Engine Minor 602-150 - Auto HVAC COREQUISITES: 801-196 - Oral/Interpersonal Communication

**602-189**  
**Auto Brakes** **3.00**

This course covers automotive braking systems. Diagnosis, adjustment, and repair of related systems will be emphasized. Preparedness for the ASE (Automotive Service Excellence) exam is emphasized. PREREQUISITES: 602-148 - Auto Mechanic Fundamentals and Service References

**602-190**  
**Auto Service Simulation I** **3.00**

This course will allow the student to perform acquired skills in the areas of vehicle wheels, tire alignment, and braking systems. The affected repairs will be done on customer vehicles, simulating a shop environment.

A strong emphasis will be placed on customer relations and communications. Preparedness for the ASE (Automotive Service Excellence) exam is emphasized. PREREQUISITES: 602-189 - Auto Brakes 602-146 - Auto Steering & Suspension

**602-195**  
**Advanced Chassis Systems** **2.00**

This automotive course focuses on developing the skills needed to diagnose, service and repair antilock brake, vehicle stability enhancement, and electronic steering and suspension systems. PREREQUISITES: 602-104 - Brake Systems 602-124 - Steering & Suspension Systems 602-127 - Electrical & Electronic Systems 2 COREQUISITES: 801-136 - English Composition 1

**602-196**  
**Climate Control Systems** **3.00**

This automotive course focuses on developing the skills needed to diagnose, service and repair climate control systems including heating, cooling, and air distribution. Upon successful completion of the Mobile Refrigerant Handling unit (ATCP-136), a state certificate will be issued. PREREQUISITES: 602-127 - Electrical & Electronic Systems 2

**602-197**  
**Engine Performance 1** **3.00**

This automotive course focuses on developing the skills needed to diagnose, service and repair powertrain control and ignition systems. Emphasis is placed on diagnostic procedures and the problem-solving techniques associated with automotive engine performance and drivability. PREREQUISITES: 602-103 -

Engine Repair 1 602-127 - Electrical & Electronic Systems 2 COREQUISITES: 801-136 - English Composition 1

**602-198**  
**Engine Performance 2** **4.00**

This automotive course focuses on developing the skills needed to diagnose, service and repair fuel and emission control systems. Emphasis is placed on diagnostic procedures and the problem-solving techniques associated with automotive engine performance and drivability. PREREQUISITES: 602-197 - Engine Performance 1

**605-107**  
**Fundamentals of Electricity/ Electronics** **3.00**

This course studies the behavior of electricity in terms of voltage, amperage, resistance, and impedance in various circuits. Lab instruction will include the application and usage of measuring and troubleshooting equipment.

**605-109**  
**Fabrication Techniques** **1.00**

Emphasis is on the use of hand tools, soldering, shearing, forming, punching, chassis construction. Students construct a project in a hands-on situation.

**605-113**  
**DC/AC I** **3.00**

This introductory course presents the scientific foundation used throughout electronics technology. Topics include DC/AC forms of current, voltage, resistance, capacitance, inductance, and power. Troubleshooting practices will be

emphasized and computer technologies will be used to enhance abstract theory. Students perform laboratory experiments and prepare technical reports.

**605-114  
DC/AC II 3.00**

An extension of and enhancement to DC/AC I. More advanced topics, such as complex networks, applicable theorems, polyphase systems, and passive filters, will be discussed. Computer simulation software will be used to reinforce theoretical analyses. PREREQUISITES: 605-113 - DC/AC I 804-115 - College Technical Math1

**605-115  
Fire Alarm Signaling Systems 2.00**

This course provides a comprehensive treatment of the electrical circuitry involved in selected fire detection and alarm systems. The fundamental principles, design criteria and installation requirements for fire detection and alarm systems are considered in accordance with NFPA standards and manufacturer's guidelines. This course is for someone who already has a good understanding of electrical circuits and wants to understand the basics of fire alarm systems. PREREQUISITES: 699-113 - Information Design 699-114 - Professional and Technical Writing 699-117 - Research Fundamentals

**605-118  
Digital Electronics - Project Lead the Way 4.00**

This course in applied logic encompasses the application of electronic circuits and devices. Computer simulation software is used to design and test digital circuitry prior

to the actual construction of circuits and devices.

**605-119  
Grounding and Bonding 2.00**

This course is for the electrician who wants to understand the concepts of grounding and bonding. We will investigate the proper way to do grounding and bonding as well as look at the results of improper grounding and bonding. You will learn about proper grounding requirements as stated in Article 250 of the National Electric Code. Proper grounding of sensitive electronic equipment will also be discussed.

**605-120  
Electronic Devices I 4.00**

The basic operating principles of diodes, transistors, and linear ICs are presented as they are used in rectifier, amplifier, and oscillator circuits. Lecture theory is reinforced with laboratory assembly, measurements, troubleshooting, and technical report writing. PREREQUISITES: 605-113 - DC/AC I

**605-121  
Electronic Devices II 4.00**

Introduction to unipolar transistors, JFETs, and MOSFETs being used in linear and nonlinear circuits. Students will use high frequency analysis with both bipolar and unipolar transistors. Operational amplifiers are used as linear amplifiers and in nonlinear circuits. Some circuits covered include voltage amplifiers, summing amplifiers, instrumentation amplifiers, active filters and oscillators. PREREQUISITES: 605-120 - Electronic Devices I

**605-130  
Digital Electronics 4.00**

Analysis of digital electronic circuits. Realization of logic gates, using TTL and CMOS devices. Verification of theory is accomplished through laboratory experiments with small and medium scale integrated circuits.

**605-131  
PLTW Digital Electronics Part 1 2.00**

Digital Electronics TM is the study of electronic circuits that are used to process and control digital signals. The major focus of the DE course is to expose students to the design process of combinational and sequential logic design, teamwork, communication methods, engineering standards, and technical documentation. Utilizing the activity-project-problem-based (APPB) teaching and learning pedagogy, students will analyze, design and build digital electronic circuits incorporating the use of computer simulation programs and the physical construction of live circuits. While implementing these designs students will continually hone their interpersonal skills, creative abilities and understanding of the design process.

**605-132  
PLTW Digital Electronics Part 2 4.00**

Digital Electronics TM is the study of electronic circuits that are used to process and control digital signals. The major focus of the DE course is to expose students to the design process of combinational and sequential logic design, teamwork, communication methods, engineering standards, and technical documentation. Utilizing the activity-project-problem-based (APPB) teaching and learning pedagogy,

students will analyze, design and build digital electronic circuits incorporating the use of computer simulation programs and the physical construction of live circuits. While implementing these designs students will continually hone their interpersonal skills, creative abilities and understanding of the design process. PREREQUISITES: 605-131 - PLTW Digital Electronics Part 1

**605-133  
Industrial Data Communications 3.00**

This course introduces students to the latest technologies in industrial datacommunications with a focus on digital and analog signaling. Topics include topology, the principles of signaling on physical links, transmission media, data formatting, A-to-D conversion, multiplexing, modulation using digital data, error control, flow control and protocols. Special attention will be given to practical troubleshooting and problem solving of industrial data communications. PREREQUISITES: 605-113 - DC/AC I or 605-107 - Fundamentals of Electricity/Electronics minimum grade C

**605-134  
Telecommunications Installer Operation 4.00**

This course is actual run time in the lab and field for hands-on telecommunication installation work. Students will work in groups and as individuals to gain experience in real and simulated telecommunications installations. Students bring together all of the theories and skills learned in the other classes and apply them to the installation process. COREQUISITES: 605-166 - Telecom Safety & Installation 605-197 - Telecom Fire Stopping

# Course Descriptions

**605-136**  
**Programmable Controller**  
**System Design** **3.00**

This course introduces the student to the design and implementation of an automated process controlled by a Programmable Logic Controller. PREREQUISITES: 605-130 - Digital Electronics

**605-138**  
**Circuit Construction and Repair** **3.00**

Students will learn and apply the skills for the safe use of hand tools, soldering, desoldering, copper and fiber termination. These skills will be demonstrated in the construction of electronics based projects.

**605-150**  
**Industrial Electronics** **3.00**

Covers industrial electrical control using motor starters, relays, pushbuttons, as well as variable speed control of DC motors and power distribution for industry. PREREQUISITES: 605-114 - DC/AC II 605-120 - Electronic Devices I

**605-151**  
**Electronic Communications** **3.00**

An introduction course in analog communication systems. Topics covered are AM/FM/SSBX microwave and laser transmission and reception. Theory is covered in block diagram level with additional theory and labs on representative circuits from the major blocks of a communication system. PREREQUISITES: 605-114 - DC/AC II 605-120 - Electronic Devices I

**605-153**  
**Analog Telephony** **1.00**

The Analog Telephony class teaches in-depth concepts of telephony theory

and operation. These skills, abilities, and knowledge are beneficial for a student seeking employment in the telecommunications field. This class meets some of the requirements for the proposed ETA-1 Telecommunications CET certification test.

**605-154**  
**Public Switched Telephone**  
**Network Hierar** **1.00**

This course will define the different office classes, including 1 through 4 and class 5 end office functions. Interoffice signaling, including CCIS and SS7, along with trunking, will be covered.

**605-155**  
**Analog/Digital Conversions** **1.00**

The Analog/Digital Conversions class teaches basic concepts of converting signals from A/D or D/A. Pulse Amplitude Modulation (PAM) will be defined, including sampling techniques and quantization, along with Pulse Code Modulation (PCM) and how it is utilized for both voice and video. An overview of Voice over IP (VoIP) will also be presented. These skills, abilities, and knowledge are beneficial for a student seeking employment in the telecommunications field.

**605-156**  
**Distribution Equipment &**  
**Cabling Systems** **1.00**

The Distribution Equipment and Cabling Systems class teaches basic concepts of telecommunications equipment and cabling installation. These skills, abilities, and knowledge are beneficial for a student seeking employment in the telecommunications cabling field. This class

meets some of the requirements for the proposed ETA-1 Telecommunications CET certification test.

**605-157**  
**Copper Digital Signal Rates**  
**and Framing** **1.00**

This course will include time division multiplexing and demultiplexing theory, DS0 through DS3, synchronous versus asynchronous communication protocols, and ISO synchronous systems.

**605-158**  
**ISDN Telephony** **1.00**

This course will introduce the student to PRI and BRI rates. Payload and overhead will be defined. Interface node identification and DSL will also be covered.

**605-159**  
**Fiber Optics Theory & Testing** **1.00**

The Fiber Optics Theory and Testing class teaches basic concepts of fiber optics installation and service. These skills, abilities, and knowledge are beneficial for a student seeking employment in the telecommunications cabling field. This class meets some of the hands-on requirement for the ETA-1 Certified Fiber Optic Installer (CFOI) test.

**605-160**  
**Optical Carrier Transmission**  
**Rates and Protocols** **1.00**

This class teaches basic concepts of fiber optics installation and service. These skills, abilities, and knowledge are beneficial for a student seeking employment in the telecommunications cabling field. Telecommunications is the broad field

of providing communications through electronic means, using various mediums. We will specifically focus on fiber as the medium. This class meets some of the hands-on requirement for the Electronic Technicians Association, International (ETA-I) Certified Fiber Optic Installer (CFOI) test.

**605-161**  
**Network Operations - CPE** **1.00**

This course will include: KSU, PBX, routers, multiplexers and demultiplexers, Unix job control and administration, TL1 language and common commands, documentation control, and problem tracking and escalation.

**605-162**  
**Installation, Maintenance,**  
**and Testing** **1.00**

The Installation, Maintenance, and Testing class teaches basic concepts of telecommunications wiring installation, maintenance, and testing. These skills, abilities, and knowledge are beneficial for a student seeking employment in the telecommunications cabling field.

**605-163**  
**ISP and OSP Safety in a**  
**Telecom Environ** **1.00**

The Safety in the Telecomm Environment class teaches the importance of safety and safe practices and procedures. These skills, abilities, and knowledge, are beneficial for a student seeking employment in the telecommunications cabling field. This class meets some of the requirements for the ETA-I Residential Electronics Systems Installer (RESI) certification.

**605-164**  
**Wireless Telephony** **1.00**

This course explains the world of central office switches and signaling protocols, exploring every phase of telephony, from billing to caller ID to voice routing protocols. It also covers the Internet and the IP protocol stack to explain the world of routers and connectionless IP. The course examines how local, national, and global organizations can employ Internet telephony both to save money and to provide services, ranging from Internet faxing to solving a multitude of business problems.

**605-165**  
**Telephony** **3.00**

The Telephony class teaches in-depth concepts of telephony theory and operation. This course will introduce the student to PRI and BRI rates. Payload and Overhead will be defined. Interface Node Identification and DSL will also be covered. This course explains the world of central office switches and signaling protocols, exploring every phase of telephony, from billing to caller ID to voice routing protocols. It also covers the Internet and the IP protocol stack to explain the world of routers and connectionless IP. The course examines how local, national, and global organizations can employ Internet telephony both to save money and to provide services, ranging from Internet faxing to solving a multitude of business problems. Students will have the opportunity to earn an industry recognized Certification. This class meets some of the requirements for the purposed ETA-I Telecommunications CET certification test. These skills, abilities and knowledge, are beneficial for a student seeking employment in the telecommunications field.

**605-166**  
**Telecom Safety & Installation** **3.00**

The Safety and Installation class teaches the importance of safety, and safe practices and procedures. The course teaches basic concepts of telecommunications equipment and cabling installation and other skills needed in the telecommunication field. Students will have the opportunity to earn a Fire Stopping and a Copper Certification. This class meets some of the requirements for the ETA-I Residential Electronics Systems Installer (RESI) and Certified Data Cabling Installer Certification (DCIC). It also prepares students for BICSI Installer Level 1 Certification exam. These skills, abilities and knowledge, are beneficial for a student seeking employment in the telecommunications cabling field.

**605-167**  
**Fiber Optics** **3.00**

The Fiber Optics class teaches basic concepts of fiber optics installation and service. Students will explore basic concepts of fiber optic data transmission. This course will include; Time Division Multiplexing and Demultiplexing theory, DSO through DS3, Synchronous versus Asynchronous communication protocols, and Iso synchronous systems. Students will have the opportunity to earn a Fiber Certification. This class meets some of the Hands-On requirements for the ETA-I Certified Fiber Optic Installer (CFOI) test. These skills, abilities, and knowledge are beneficial for a student seeking employment in the telecommunications cabling field.

**605-169**  
**Network Data Transmissions** **3.00**

The Analog/Digital Conversion class teaches basic concepts of converting signals from

A/D or D/A. Pulse Amplitude Modulation (PAM) will be defined, including sampling techniques and quantization, along with Pulse Code Modulation (PCM) and how it is utilized for both voice and video. An overview of Voice over IP (VoIP) will be also presented. This course will define the different Office Classes, including 1 through 4 and Class 5 End Office functions. Interoffice signaling, including CCIS and SS7, along with Trunking will be covered. It will also include: KSU, PBX, Routers, Multiplexers and Demultiplexers, Unix Job Control and Administration, TL1 language and common commands, Documentation Control, and Problem tracking and escalation. Students will have the opportunity to earn an industry recognized Certification. These skills, abilities, and knowledge are beneficial for a student seeking employment in the telecommunications field.

**605-174**  
**Digital Circuits II** **3.00**

A study of the TTL logic family characteristics, CMOS series characteristics, MSI logic circuits, interfacing with the analog world and memory devices. PREREQUISITES: 605-130 - Digital Electronics

**605-176**  
**Optoelectronics** **2.00**

The study of the integration of electronics, optics and light to control electromechanical or electronics operations. Topics include optical concepts, light sources, laser, fiber optics, photometry, radiometry and optoelectronic applications. PREREQUISITES: 605-114 - DC/AC II 605-120 - Electronic Devices I

**605-177**  
**Electrical Print Interpretation** **2.00**

After completing this course, students will be able to: identify the various styles of electrical schematics and drawings; identify the component symbols and their application in the circuit; acquire the ability to assemble basic electrical circuits from schematics; and draw circuits which meet given criteria.

**605-178**  
**Electrical Code Interpretation** **2.00**

The course covers the basic layout of the National Electrical Code and interprets some of the basic articles within the code. Emphasis will be placed on the articles associated with an industrial environment. The course will prepare the student for further in-depth study of various articles, within the code, specific to their work environment.

**605-179**  
**Computer Applications** **4.00**

An introduction to computer graphics, microprocessor architectures, microcompressor controllers. Phototype design and interfacing. Study of new hardware available in the computer field.

**605-180**  
**Computer Systems** **4.00**

A current popular computer operating system is studied, with emphasis on the 16-bit and 32-bit machines. Laboratories include customized installation, diagnostic analysis, hardware and software troubleshooting.

# Course Descriptions

**605-181**  
**Computer Hardware Architectures 3.00**

This course will introduce the hardware architecture of the personal computer platform. Topics covered are motherboard, BIOS system, extension buses, serial ports, parallel ports, and Universal Serial Bus, ports, hardware upgrade procedures, and troubleshooting hardware using electronic test equipment.

**605-182**  
**Computer Interfacing Techniques 3.00**

This course will examine different hardware interfacing techniques used in the personal computer. Topics covered are programmable, plug-and-play, strobe, infrared, local-bus to Industry Standard Association, local-bus to serial devices, local-bus to parallel devices, and local-bus to universal serial bus.

**605-183**  
**Electronics/Future Trends in 3.00**

This course will study the future trends in the electronics field. Topics covered are communications, controls, manufacturing, and newly developed technologies. Students will complete a project.

**605-184**  
**Data Acquisition 3.00**

This course is a study of computer based data acquisition, utilizing both LabVIEW and Visual Basic as the method of control. Students are introduced to data analysis, utilizing computer based methods. A project will be developed by the student upon completion of the course.

**605-186**  
**Changes to the NEC 2.00**

This course covers the changes that have been made to the National Electric Code. The student should be familiar with the 2005 National Electric Code.

**605-187**  
**NEC Interpretation Part 2 2.00**

The course covers the basic layout of the second half of the National Electric Code and interpreting some of the basic articles within the code. Emphasis will be placed on the articles associated with an industrial environment. The course will prepare the student for further in-depth study of various articles within the code specific to their work environment.

**605-188**  
**Electrical Code Interpretation 2 2.00**

This course covers the basic layout of the second half of the National Electric Code and interpretation of some of the basic articles within the code. Emphasis will be placed on the articles associated with an industrial environment. The course will prepare the student for further in-depth study of various articles within the code specific to their work environment.

**605-190**  
**Microprocessors 4.00**

An introduction to microcomputer programming. Digital codes, registers, and register instruction, logic gates and truth tables are covered. The 7400 series of integrated circuit chips are studied. COREQUISITES: 605-114 - DC/AC II 605-121 - Electronic Devices II

**605-193**  
**Computer Operating Environment 3.00**

This course will provide students with various techniques to evaluate operating architecture of single, multiple and network environment. Students develop critical evaluation skills using available hardware and software tools. Emphasis will be on preventive maintenance, troubleshooting, and fine tuning an operating environment to achieve optimum performance. Students will materialize a project.

**605-194**  
**Computer Communications 3.00**

This course will provide students various techniques to evaluate software and hardware architectures of computer network communications. Students will perform changes as per engineering change orders or recommend changes to improve performance of a network. Design an inter-network as per described specifications and troubleshoot hardware and software of computer network communications. Students will materialize a project. PREREQUISITES: 605-193 - Computer Operating Environment COREQUISITES: 605-193 - Computer Operating Environment

**605-195**  
**C Programming for Technician 3.00**

This course will examine the architecture of the C language. Students will write programs applying various techniques used in engineering a publication. Students will use different programming debugging techniques. Students will learn to write customized programs to achieve optimum performance. Students will materialize a project. PREREQUISITES: 605-194 - Computer Communications

**605-196**  
**Computer Controls 3.00**

This course will provide students with the computerized control techniques used in industry. Students will experiment with various computer hardware and software interfacing techniques. Students will use current technology in the classroom and laboratory. Hardware and software troubleshooting of various microprocessor controllers will be discussed. Students will materialize a project. PREREQUISITES: 605-195 - C Programming for Technician

**605-197**  
**Telecom Fire Stopping 2.00**

The Fire Stopping class teaches the importance of fire stopping and fire safety procedures. This course teaches basic concepts of fire stopping and cabling installation.

**606-100**  
**Technical Drafting, Basic 3.00**

Use of instruments, use of drafting machines, blueprinting, geometric constructions with emphasis on appropriate line weights and general drafting skill, multiview drawing, sketching, dimensioning, layout, introduction to vector construction and proceeding to simple working drawings.

**606-102**  
**Mechanical Systems Design 3.00**

Students will create mechanical designs and CAD models to develop an efficient and effective manufacturing process. After developing the manufacturing process, students will utilize skills such as statics, strength of materials, and mechanisms to determine loads to evaluate the design and determine if it will function as planned. Using

elements of machine design, students will then specify specific machine components to be used to build the manufacturing process system. These components will be incorporated into the design and the students will then mockup and test the manufacturing process system. The students will evaluate the viability of the manufacturing process after buildings and testing of the manufacturing process system. PREREQUISITES: 605-136 - Programmable Controller System Design

**606-103**  
**Material Properties** **2.00**

Students in this course learn and apply the mechanical strength, chemistry, and material basic characteristic properties, for materials including; metals, plastics, composites, nano-technologies, powered metals, and non-metals. Students will have a basic understanding of how to select materials that fit the engineering product design requirements.

**606-107**  
**Drafting Seminar/CAD** **2.00**

Emphasis on latest developments in drafting methods, materials and applications. Projects are undertaken utilizing a variety of CAD systems other than those taught in 606-126 Computer Aided Drafting.

**606-109**  
**Geometric Dimensioning for Design** **1.00**

A study of geometric tolerancing based on the latest ANSI Y14.5 Standards. Items covered include datums, positional, form, and runout tolerances. Also covered are modifier symbols and terms associated with GDT.

**606-110**  
**Geometry/Descriptive** **2.00**

Spatial relationships of points, lines, surfaces and solids. Auxiliary views, true-size constructions, revolution, developments, cutting planes, graphical treatments of vectors and classification of surfaces are included. PREREQUISITES: 606-132 - Technical Drawing 1

**606-111**  
**Blueprint Reading** **2.00**

Blueprint reading covers the interpretation of engineering drawings from a basic level to more complex topics. Topics covered include third-angle orthographic projection, sections, dimensioning, types of lines, auxiliary views, the title block and symbols. Lecture will be supplemented by individual class exercises to provide actual practice for participants.

**606-112**  
**CAD Applications** **2.00**

Directed to non-drafting/design student to familiarize one with basic CAD applications of drafting, dimensioning and graphics in business.

**606-115**  
**Computer Assisted Design** **3.00**

Develops computer software for the purpose of analyzing typical problems in this discipline. Flow charting, de-bugging programs, verifying and presenting results in a professional format are stressed. Fortran Language is used.

**606-116**  
**Machine Design/Elements of** **3.00**

Procedures and consideration in design of simple machine elements such as shafts, bearings, couplings, keys, pins, springs, clutches, brakes, and pressure cylinders. Emphasis on neat, orderly procedure and a thorough consideration of design specifications. PREREQUISITES: 606-152 - Engineering Graphics w/CAD 1

**606-117**  
**Electromechanical Draft/CAD** **3.00**

Basic electrical and electronics will be covered in this course. Motors, generators and controls will be introduced. Electrical and electronic symbols will be developed and schematics drawings made on the board as well as on the CAD system.

**606-118**  
**Mechanisms** **2.00**

Kinematics of machinery, displacement, velocity and acceleration, analysis of linkages, cams and gears, geometry of involute gears, properties of standard spur, helical, bevel, and planetary gears. Practical problems develop an understanding of principles. PREREQUISITES: 606-151 - Statics 606-152 - Engineering Graphics w/ CAD 1

**606-119**  
**Motor Controls** **3.00**

This course provides a practical approach to motor control of various machines for non-electrical or electronic technicians. It discusses electrical and mechanical components and how they are connected together to control different types of motors. Many different types of control circuits are discussed.

**606-121**  
**Blueprint/Schematic Interpretation** **2.00**

This course will focus on providing the knowledge needed by maintenance professionals to extract information from blueprints and schematics. Sketching parts and drawing schematic circuits will also be explored. PREREQUISITES: 834-110 - Elementary Algebra with Applications

**606-122**  
**Geometric Dimensioning and Tolerancing** **2.00**

Stresses the interpretation of geometric tolerances applying the five categories of feature control: form, orientation, runout, profile and position. Various inspection techniques, datum construction, feature control frames and material condition modifiers; least material condition, maximum material condition and regardless of feature size will be studied.

**606-126**  
**AutoCAD, Introduction** **2.00**

This course is an introductory course in the latest version of AutoCAD. No prior CAD or drafting experience is necessary. While it would be helpful to have some knowledge of computers, geometry, and design problems, this too is not necessary. This course is designed for students that have had no or very little exposure to CAD. Upon the successful completion of all assigned work in this course, a student should have an understanding of how to create basic geometric shapes and drawings as well as applying dimensions using AutoCAD software. While drawings will be created in this class, drafting is not taught. This course deals strictly with the basic use of AutoCAD software.

# Course Descriptions

<p><b>606-126A</b> <b>Computer Aided Drafting A</b>                    <b>1.00</b></p> <p>This course is a study of basic interactive computer graphic commands used in the creation of lines, circles, arcs, fillet, etc. All work is done on the computer.</p>	<p><b>606-128</b> <b>CAD - Solidworks</b>                                <b>2.00</b></p> <p>Students use Solidworks software to create solid models of various machine components. They also convert solid parts into conventional 2-D orthographic drawings which include sections, auxiliary views, and dimensions. Students create assembly drawings and configurations of various parts.</p>	<p><b>606-132</b> <b>Technical Drawing 1</b>                                <b>2.00</b></p> <p>This course is an introduction to mechanical drawing: equipment, lettering, sketching, orthographic projection, and basic dimensioning. Drawing may be done using the drafting board, although use of the CAD system is recommended.</p>	<p><b>606-133B</b> <b>Technical Drawing 2B</b>                                <b>1.00</b></p> <p>Students learn to create advanced orthographic drawings, which involve threads, tolerancing, keys and keyways, and the use of finish symbols. PREREQUISITES: 606-133A - Technical Drawing 2A</p>
<p><b>606-126B</b> <b>Computer Aided Drafting B</b>                    <b>1.00</b></p> <p>Students further study interactive computer graphics commands. Students also learn dimensioning, cartesian and polar coordinates, erase and zoom commands, and modify commands. All work is done on the computer. PREREQUISITES: 606-126A - Computer Aided Drafting A</p>	<p><b>606-129</b> <b>CAD/Solids Advanced</b>                                <b>2.00</b></p> <p>A continuation of the basic solids class that includes assembly drawings, exploded isometric drawings, customization, sheet metal drawings, import/export functions, thin features, and the use of Microsoft Office features to increase productivity. PREREQUISITES: 606-128 - CAD - Solidworks</p>	<p><b>606-132A</b> <b>Technical Drawing 1A</b>                                <b>1.00</b></p> <p>This course is an introduction to mechanical drawing. Equipment, lettering, sketching, and orthographic projection are covered.</p>	<p><b>606-134</b> <b>Technical Drawing III</b>                                <b>3.00</b></p> <p>Study of advanced dimensioning practices, tolerancing, uses of standard parts and material sizes, gears, sprockets, pulleys, and cams are also covered as well as assemblies, weldments, welded assemblies, and parts lists. PREREQUISITES: 606-133 - Technical Drawing 2</p>
<p><b>606-127</b> <b>CAD Intermediate</b>                                <b>2.00</b></p> <p>In this course, students will use advanced CAD dimensioning concepts and edit and modify various types of entities, such as dimensions, hatch patterns, and text. Use of grips, attributes, and Xrefs, menu customization, and profiles are covered. PREREQUISITES: 606-126 - AutoCAD, Introduction</p>	<p><b>606-130</b> <b>SolidEdge, Introduction</b>                                <b>2.00</b></p> <p>In this course, students learn to use SolidEdge software to create solid models of various machine components, convert solid parts into conventional 2-D orthographic drawings, create section and auxiliary views with applied dimensions of various components, and create assembly drawings of various parts.</p>	<p><b>606-132B</b> <b>Technical Drawing 1B</b>                                <b>1.00</b></p> <p>This course is an introduction to orthographic projection, basic dimensioning, and applied geometry. This may be done using the drafting board or the CAD system. PREREQUISITES: 606-132A - Technical Drawing 1A</p>	<p><b>606-136</b> <b>Manufacturing Materials</b>                                <b>1.00</b></p> <p>The study of the properties of engineering materials in regards to strength, chemistry, and basic characteristics of both metals and non-metals.</p>
<p><b>606-127A</b> <b>CAD Intermediate A</b>                                <b>1.00</b></p> <p>In this course, students learn advanced dimensioning concepts. They also edit and modify various types of entities, such as dimensions, hatch patterns, and text.</p>	<p><b>606-131</b> <b>Strength of Materials</b>                                <b>3.00</b></p> <p>Internal stresses and deformation of elastic bodies resulting from external forces. Tables of properties of engineering materials are used. Analysis of simple and combined stresses relative to the properties of the materials to meet functional requirements. PREREQUISITES: 606-151 - Statics 806-154 - General Physics 1</p>	<p><b>606-133</b> <b>Technical Drawing 2</b>                                <b>2.00</b></p> <p>This course covers advanced orthographic drawings, sections, machine callouts, threads, tolerancing, keys and keyways, and use of finish symbols. PREREQUISITES: 606-132 - Technical Drawing 1</p>	<p><b>606-137</b> <b>Manufacturing Process Applications</b> <b>2.00</b></p> <p>Students spend part of the course in the Machine Shop learning basic lathe, mill, drill press, and grinder operations as well as layout. Part of the course is taught in the welding lab where students learn the operations of gas and arc welding.</p>
<p><b>606-127B</b> <b>CAD Intermediate B</b>                                <b>1.00</b></p> <p>Students use advanced CAD concepts, including use of grips, attributes, external references, W Blocks, and menu customization and profiles. PREREQUISITES: 606-127A - CAD Intermediate A</p>		<p><b>606-133A</b> <b>Technical Drawing 2A</b>                                <b>1.00</b></p> <p>Students learn advanced orthographic showings, sections, and machine callouts.</p>	

**606-138**  
**Design Problems 2.00**

Analyze problems, gather data, sketch ideas, do necessary mathematical calculations, and make working drawings of a design project. Judgment and initiative are developed.

**606-139**  
**AutoCAD Inventor, Introduction 2.00**

In this course, students use AutoCAD Inventor software to create solid models of various machine components, convert solid parts into conventional 2-D orthographic drawings, create section and auxiliary views with applied dimensions of various components, and create assembly drawings of various parts.

**606-141**  
**Autocad Mech Design Technician 3.00**

This course is an introductory course in the latest version of AutoCAD. No prior CAD or drafting experience is necessary. While it would be helpful to have some knowledge of computers, geometry, and design problems, this too is not necessary. This course is designed for students that have had no or very little exposure to CAD. Upon the successful completion of all assigned work in this course, a student should have an understanding of how to create basic geometric shapes and drawings as well as applying dimensions using AutoCAD software. Students will use advanced CAD dimensioning concepts and edit and modify various types of entities, such as dimensions, hatch patterns, and text and output to paper views and drawings. Use of grips, attributes, and Xrefs, menu customization, and profiles are covered.

While drawing will be created in this class, drafting is not taught. This course deals strictly with the basic use of AutoCAD software.

**606-142**  
**Creo-Pro/Engineering 2.00**

In this course, students use Pro-E software to create solid models of various machine components, convert solid parts into conventional 2-D orthographic drawings, create section and auxiliary views with applied dimensions of various components, and create assembly drawings of various parts.

**606-143**  
**Technical Drawing 3 2.00**

Students will create basic primary and secondary auxiliary views and determine the true shapes and sizes of inclined features and angles of intersection between intersecting and non-intersecting surfaces. PREREQUISITES: 606-133 - Technical Drawing 2

**606-143A**  
**Technical Drawing 3A 1.00**

Students will draw basic primary and secondary auxiliary views.

**606-143B**  
**Technical Drawing 3B 1.00**

Students will determine the true shapes and sizes of inclined features and angles of intersecting and non-intersecting surfaces. PREREQUISITES: 606-143A - Technical Drawing 3A

**606-144**  
**Technical Drawing 4 2.00**

An introduction to basic and advanced assembly drawings. Students determine fits and limits and create weldments and welded assemblies using proper weld symbols. Use of standards parts, such as fasteners and retaining ring bearings, is also covered. PREREQUISITES: 606-143 - Technical Drawing 3

**606-144A**  
**Technical Drawing 4A 1.00**

This course is an introduction to basic assembly drawings. Students determine what standard parts to use in a typical basic assembly drawing.

**606-144B**  
**Technical Drawing 4B 1.00**

This course is an introduction to advanced assembly drawing. Students determine fits and limits and create weldments and weld assemblies using proper weld symbols. PREREQUISITES: 606-144A - Technical Drawing 4A

**606-145**  
**Technical Drawing 5 2.00**

The design and application of power transmission components are covered, including orthographic drawing and nomenclature of gears, cams, sprockets, and pulleys. Students also learn to create sheet metal drawings, find intersections, and create developments of various sheet metal shapes (e.g., prisms, cylinders, and transition pieces). PREREQUISITES: 606-144 - Technical Drawing 4

**606-145A**  
**Technical Drawing 5A 1.00**

The design and application of power transmission components are covered, including orthographic drawing and nomenclature of gears, cams, sprockets, and pulleys.

**606-145B**  
**Technical Drawing 5B 1.00**

Creating sheet metal drawings, finding intersections, and creating developments of various sheet metal shapes (e.g., prism, cylinder, transition pieces), are taught in this course. PREREQUISITES: 606-145A - Technical Drawing 5A

**606-146**  
**Technical Drawing 6 2.00**

Students create and dimension selected pictorial drawings, including isometric perspective and oblique. Also covered is the application of schematic and block diagrams of electronic and fluid power devices and double line pipe drawings. PREREQUISITES: 606-145 - Technical Drawing 5

**606-146A**  
**Technical Drawing 6A 1.00**

Students create and dimension selected pictorial drawings, including isometric, oblique, and perspective projections.

**606-146B**  
**Technical Drawing 6B 1.00**

Students in this course learn the application of schematic and block diagrams of electronic and fluid power devices and double line pipe drawings. PREREQUISITES: 606-146A - Technical Drawing 6A

# Course Descriptions

<p><b>606-147</b> <b>Technical Drawing 7</b> <b>2.00</b></p> <p>Students select a design project (with instructor approval) and create the necessary working drawings that would allow the design to be manufactured. In so doing, the student will use basic measuring equipment, create a bill-of-materials, and select parts from vendor catalogs. PREREQUISITES: 606-145 - Technical Drawing 5</p>	<p><b>606-151</b> <b>Statics</b> <b>3.00</b></p> <p>Study of forces in equilibrium; types of forces, couples, vector and scalar quantities, force systems, friction, centroids, centers of gravity, moments of inertia of areas. PREREQUISITES: 804-114 - College Technical Math 1B or 804-115 - College Technical Math 1</p>	<p>the nomenclature associated with gear, sprocket, and pulley drawings, locating information about standard parts from tables and charts, creating cam displacement diagrams and profiles, and using vendor catalogs to select parts. PREREQUISITES: 606-153 - Engineering Graphics w/CAD 2</p>	<p>student an opportunity to work through a project that is practical and meaningful to the occupation for which they are preparing. Is also used for co-op learning.</p>
<p><b>606-147A</b> <b>Technical Drawing 7A</b> <b>1.00</b></p> <p>Students select a design project and create detailed drawings using basic measuring equipment.</p>	<p><b>606-152</b> <b>Engineering Graphics w/CAD 1</b> <b>2.00</b></p> <p>Advanced concepts of topics from Intro to MET are covered as well as several new topics. Lab assignments are done on a CAD workstation. Topics covered include drawing primary and secondary auxillary views, sections, threads and fasteners, and creating drawings of weldments. PREREQUISITES: 606-149 - Mechanical Engineering, Introduction to Tech</p>	<p><b>606-158</b> <b>Materials of Industry</b> <b>3.00</b></p> <p>Properties of engineering materials in relation to cost fabrications, design and durability. Strength, density, elasticity, corrosion resistance, conduction and fabrication characteristics of metals, plastics and ceramics.</p>	<p><b>606-199</b> <b>Internship, Mechanical Tech</b> <b>1.00</b></p> <p>A mechanical tech internship is an opportunity for students to get hands-on experience in the mechanical or electrical field. Students will apply to participating industries for an opportunity to work with their engineers and technicians. If accepted, they will have the opportunity to earn credit (note: some companies may only accept you if you are earning credit).</p>
<p><b>606-147B</b> <b>Technical Drawing 7B</b> <b>1.00</b></p> <p>Students further develop their design project by drawing the assembly views, creating a bill of materials, and selecting from vendor catalogs. PREREQUISITES: 606-147A - Technical Drawing 7A</p>	<p><b>606-153</b> <b>Engineering Graphics w/CAD 2</b> <b>2.00</b></p> <p>Advanced concepts from Engineering Graphics 1 are covered as well as several new topics. Lab assignments are done on a CAD workstation. Topics covered include creating working drawings of simple and complex assemblies, redesigning existing parts and assemblies, and creating welded assemblies. PREREQUISITES: 606-152 - Engineering Graphics w/CAD 1</p>	<p><b>606-159</b> <b>Manufacturing Processes</b> <b>2.00</b></p> <p>Basic methods of fabrication used in modern manufacturing, welding, electroforming, casting, metallic coating, anodizing, plating and chip removal, using numerical control, and hydraulic systems. PREREQUISITES: 606-103 - Material Properties</p>	<p><b>606-500</b> <b>CAD Introduction/Apprentices</b> <b>1.00</b></p> <p>Introductory level course in CAD. Topics to include creating lines, circles, text and polygons as well as editing commands such as trim, extend, erase and offset using latest CAD software.</p>
<p><b>606-149</b> <b>Mechanical Engineering, Introduction to Tech</b> <b>2.00</b></p> <p>This course will instruct the student in manual drafting techniques; however, most of the material may be completed using CAD. It is designed to develop knowledge and basic mechanical drafting skills. Upon completion of this course, the student will have developed skills in the use of drafting tools, lettering, geometric construction, orthographic projection, sketching, visualization, dimensioning, and basic tolerancing.</p>	<p><b>606-154</b> <b>Engineering Graphics w/CAD 3</b> <b>2.00</b></p> <p>Advanced concepts of topics from Engineering Graphics 1 are covered as well as several new topics. Lab assignments are done on a CAD workstation. Topics covered include creating gear, sprocket, and pulley drawings and cutting data, understanding</p>	<p><b>606-160</b> <b>Fluid Power and Design</b> <b>3.00</b></p> <p>This course is designed to give the student a foundation in hydraulics and pneumatics. The units of instruction will cover components, general operating characteristics and principles, fluid power systems, and problem solving techniques required to put these systems together.</p>	<p><b>606-501</b> <b>AutoCAD for the Trades</b> <b>1.25</b></p> <p>This course has been added to enhance our existing apprenticeship program. It will also serve to familiarize our apprentices with some of the technological advancements that have already been implemented into the sheet metal field. AutoCAD has all but replaced the hand drafting methods that have been practiced for years. This course will teach the basic functions of the AutoCAD program and allow the students to apply these skills in practical field related applications. Work sheets, drawings and quarterly tests will be used to assess the student's progress.</p>
		<p><b>606-186</b> <b>Mechanical Design, Directed Study I</b> <b>1.00</b></p> <p>Individualized instruction and project is assigned to the student in the appropriate subject as assigned by the instructor. Gives</p>	

**607-101  
Construction Sciences  
Group Orientation 1.00**

This course is an introduction to the various programs with the Construction Sciences Group (CSG). The various software and media used to teach the courses are introduced, and CSG students will develop a program plan to complete their classes over the next few years.

**607-102  
Conflict Resolution in Engineering/  
Construction 2.00**

This course is designed to help students learn how to recognize, approach and defuse various confrontational situations on the construction job site and in the workplace.

**607-103  
Civil Engineering And,  
Introduction to Architecture 2.00**

This course is designed to introduce students to the wide variety of career opportunities within the fields of Civil Engineering Architecture, Land Survey, Fresh Water Resources and Construction Management.

**607-104  
Building Material &  
Construction Method 3.00**

This course is an introduction to common building materials and construction methods including soils, aggregates, pipes, cement, concrete, asphalt, steel, wood masonry and residential and commercial building materials.

**607-105  
Future Trends-CAD in Civil  
Engineering 1.00**

This one credit seminar is designed to expose and teach new technology within the areas of Computer Aided Design (CAD) in the areas of Civil Engineering and Architecture. Since the topic may vary depending on what the "new technology" is each semester, please consult with the instructor for the exact topic.

**607-106  
Building Materials 2.00**

This course covers an introduction into common building materials within construction, including soils, aggregates, pipes, cement, concrete, asphalt, steel, wood, masonry, residential and commercial building materials. covered. COREQUISITES: 607-107 - Construction Methods

**607-107  
Construction Methods 2.00**

This course covers an introduction into common methods of construction within Civil Engineering, including methods of construction regarding soils, aggregates, pipes, concrete, asphalt, steel, wood, masonry, residential and commercial building materials. COREQUISITES: 607-106 - Building Materials

**607-108  
Boundary Location and Research 3.00**

The principles and practices for boundary location and research are presented in this course. The public land system will be covered in detail along with the principles for performing surveys. PREREQUISITES: 607-173 - Land Surveying Fundamentals

**607-117  
Geographical Information Systems I 2.00**

This is an introductory course into GIS (Geographical Information Systems), GIS terminology, data structure, and data analysis based on spatial parameters. Students learn how to manipulate, parse, combine, and even build basic geographical databases. Applications ranging from land record management to marketing to political science are addressed.

**607-118  
Geographical Information  
Systems II 2.00**

This is the second course in the Geographical Information System series (GIS). Students explore the conceptual framework of geographic information systems and spatial modeling and develop GIS database abilities through group and self-selected projects. Emphasis is on independent learning and synthesis of GIS into the student's studies. PREREQUISITES: 607-117 - Geographical Information Systems I

**607-119  
Civil Technology Internship 1.00**

Satisfactory completion of at least 80 hours of relevant work experience in the field approved by the head instructor and documented by the employer.

**607-127  
Civil Engineering Drafting 3.00**

Using MicroStation, the student will prepare standard drawings typically used in the field of Civil Engineering...including Title Pages, Typical Sections, Plan & Profiles, Cross Sections, Sewer Profiles, Alignment Tie Sheets, etc.

**607-128  
Construction Estimating 3.00**

This course is designed to develop the skills for preparation of cost estimates using materials, labor, and equipment in construction. Time and cost components are also addressed in a unit production and a project scheduling evaluation using the critical path method. PREREQUISITES: 607-104 - Building Material & Construction Method

**607-129  
Future Trends in Civil Engineering/  
Architectural Technology 2.00**

This two credit course is designed to expose and teach new technology within the areas of Civil Engineering and Architecture. Since the topic may vary depending on what the "new technology" is each semester, please consult with the instructor for the exact topic.

**607-132  
Structural Mechanics -  
Civil Engineering 3.00**

This course introduces students to basic principles of structural mechanics (statics and strength of materials), with special emphasis placed upon application of these principles in the design of simple beams used in commercial buildings. PREREQUISITES: 804-114 - College Technical Math 1B or 804-115 - College Technical Math 1

**607-135  
Reinforced Concrete -  
Design & Detailing 2.00**

This course is designed so that students will understand the design and detail of structures using reinforced concrete,

# Course Descriptions

including simple beams, cantilevers, retaining walls, and axially loaded columns. PREREQUISITES: 607-132 - Structural Mechanics - Civil Engineering

**607-136  
Construction Project Management 2.00**

This course is designed to introduce the concepts of overall construction project management including scheduling, resource allocation, cost and technical constraints.

**607-137  
Global Positioning Systems 2.00**

This course is designed to introduce students to the concepts of GPS in surveying and the equipment used in acquiring/processing survey grade information. PREREQUISITES: 607-169 - Land Surveying Basics

**607-143  
Structural Design Concrete and Steel 3.00**

This course is designed so that students will understand the design and detail of structures using LRFD methods for steel and reinforced concrete. Simple beams, cantilevers, and axially loaded columns will be covered along with the design of structural connections. PREREQUISITES: 607-132 - Structural Mechanics - Civil Engineering

**607-150  
Survey Construction, Rte and Hwy 4.00**

Using Wisconsin Department of Transportation's Facility Design Manuals, students will learn the principles and designs of roadways...including horizontal/vertical curves, superelevations, pavement design, construction considerations, etc. Students

will field survey an existing site and develop a preliminary plan set for a proposed roadway. The students will then stake out this proposed roadway. PREREQUISITES: 607-173 - Land Surveying Fundamentals

**607-152  
Elements of Inspections, Contracts, and Specifications 3.00**

Using Wisconsin Department of Transportation's Construction Specification Manual and various other project specific specifications, students will learn the principles and basic techniques of highway and municipal inspection.

**607-154  
Sewer and Water Systems 2.00**

Using the latest hydraulic software, students will learn the basic applications of hydrology and hydraulics for various applications including runoff calculations and design of culverts, storm sewers, detention basins, etc. Students will also be acquainted with the principles and software applications in designing water and sewer lines.

**607-161  
Legal Aspects of Land Surveying 2.00**

This course covers the legal concepts and doctrines related to land, land ownership, duties and responsibilities of surveyors, and Wisconsin statutes and local codes. COREQUISITES: 607-108 - Boundary Location and Research

**607-162  
Materials Testing 2.00**

This course introduces students to various material testing methods used in road construction based on Wisconsin Department of Transportation's Highway

Technician Certification Program. PREREQUISITES: 607-104 - Building Material & Construction Method

**607-166  
Capstone: CET Highway Technology 1.00**

The Civil Engineering Technician Highway capstone course is designed to guide students in resolving related problems by applying skills and techniques acquired throughout the program. The capstone course will provide an overall program assessment opportunity aimed at showcasing a student's technical skills developed from the Civil Engineering Technology Highway program courses. COREQUISITES: 607-154 - Sewer and Water Systems

**607-167  
Capstone: CET Freshwater Resources 1.00**

The Civil Engineering Technician - Fresh Water Resources capstone course is designed to guide students in resolving related problems by applying skills and techniques acquired throughout the program. The capstone course will provide an overall program assessment opportunity aimed at showcasing a student's technical skills developed from the Civil Engineering Technology Fresh Water Resources program courses.

**607-169  
Land Surveying Basics 2.00**

This course is an introduction to the basics of land surveying ranging from pacing/taping and level loops thru the use of a total station to accomplish basic traverses. This course also includes an introduction to drawing deed descriptions, basic surveying terms,

and units of measure. PREREQUISITES: 834-110 - Elementary Algebra with Applications

**607-170  
AutoCAD for Construction Sciences 2.00**

This course teaches the participant the basics of Computer Aided Drafting (CAD) using AutoCAD and other design software within the various fields of construction sciences and interior design. Students develop their CAD skills while working on various real world construction type projects.

**607-173  
Land Surveying Fundamentals 3.00**

This course includes instruction in the use of instruments used in the field of construction surveying, such as the transit, level, and chains, and their application in the solving of typical field problems. The student does the field work and office computations required in the solution of these problems. PREREQUISITES: 607-169 - Land Surveying Basics

**607-174  
Land Surveying - Data Processing 2.00**

This course is designed to supplement the regular land surveying class with the advanced data processing skills required by full time surveyors. COREQUISITES: 607-173 - Land Surveying Fundamentals

**607-180  
AutoCAD for Architecture 2.00**

This course teaches the participant the basics of Computer Aided Drafting using AutoCAD. Upon successful completion, the participants will be able to create drawings using various commands and apply text to their work. They will be able to open, modify, print, and save their drawings.

**607-181  
Watershed Hydrology  
and Conservation 2.00**

Distribution and properties of waters on the earth. concept of the hydrologic cycle, and basic principles of meteorology, precipitation, streamflow, and groundwater flow. Introduction to erosion and urban stormwater pollution controls and conservation

**607-182  
Water Sampling and Testing 2.00**

Review and application of technology and techniques for gathering data from water resources and water treatment processes. PREREQUISITES: 806-102 - Environmental Chemistry

**607-183  
Fresh Water Treatment 3.00**

Review of water characteristics, drinking water, receiving water and effluent standards. Basic design methodology and operational features of common physical, chemical and biological processes for the treatment of water. PREREQUISITES: 806-102 - Environmental Chemistry

**607-184  
Environmental Impact Assessments 2.00**

Review of process and content of environmental impact assessments including evaluation of environmental impacts and alternatives

**607-185  
Waste Water Treatment 3.00**

Review of wastewater characteristics, receiving water and effluent standards. Basic design methodology and operational

features of common physical, chemical and biological processes for the treatment of wastewater. Introduction to the processing and disposal of sludges and other treatment plant residuals.

**607-186  
Erosion Control in Construction 2.00**

Review of techniques for design, installation, inspection and maintenance of erosion and sediment control practices for construction sites. PREREQUISITES: 806-102 - Environmental Chemistry

**607-187  
3D Cad: Digital Terrain Modeling 2.00**

This is an introductory course on the use and functions of 3D CAD digital terrain modeling within the various fields of the construction sciences. This course teaches the participant digital terrain modeling (DTM) using AutoCAD: Civil 3D and other design software. Students develop their 3D CAD modeling skills while working on various projects that relate to the construction sciences. They will be able to open, create, modify, print, and save their DTM files.

**607-188  
Capstone: Geospatial  
Surveying Tech 1.00**

The Geospatial Surveying Technician capstone course is designed to guide students in resolving related problems by applying skills and techniques acquired throughout the program. The capstone course will provide an overall program assessment opportunity aimed at showcasing a student's technical skills developed from the Geospatial Surveying Tech program courses.

**607-189  
Geospatial Data Processing 2.00**

This course is designed to develop advanced data processing skills required by full time surveyors including data sets from remote sensing technologies. PREREQUISITES: 607-169 - Land Surveying Basics

**607-190  
Legal Research and Boundary 4.00**

This course is an introduction to the legal concepts and doctrines related to land, land ownership, duties and responsibilities of surveyors, Wisconsin statutes and local codes. This includes the principles and practices for boundary location and research. The public land system will be covered in detail along with the principles for performing surveys. PREREQUISITES: 607-169 - Land Surveying Basics

**612-100  
Fluid Power Basic 3.00**

The language of fluid power, its engineering and technical importance and its field of application. The pertinent laws of mechanics and principles of physics are illustrated through the use of standard fluid power components and laboratory experiments.

**612-101  
Fluid Power Circuitry 3.00**

Hydraulic pneumatic and electrical circuits are assembled and tested to provide a good understanding of the symbols and language used. Some of the circuits are: hydrostatic drives, constant speed drive, electrically controlled hydraulic circuits including air over oil and fluidically controlled hydraulic circuits.

**612-102  
Pneumatics/Hydraulics -  
Introduction 3.00**

The fundamental principles and physical laws governing fluid power and pneumatics are studied. The operation of the various control valves and actuators will be explored through a combination of theory and practical lab exercises.

**612-103  
Introduction to Fluid Power/  
Pneumatics 2.00**

This course defines and describes the basic physical laws that apply to fluid power. Fluid power/pneumatic symbols, terminology, and system hardware will be covered. Learning is accomplished in classroom and hands-on laboratory projects.

**612-106  
Fluid Mechanics/Applied 3.00**

Assembly and testing of common hydraulic circuits and components under laboratory conditions. Industrial pressures and circuitry are used wherever practical. PREREQUISITES: 612-100 - Fluid Power Basic

**612-108  
Pneumatics 2.00**

Fundamental principles governing pneumatics are studied. The physical laws of compression, and various types of compressors and auxiliary equipment. The operation of pneumatic control valves, actuators and the distribution of air is covered. Typical industrial pneumatic circuits are built and operated in the lab.

# Course Descriptions

**612-110  
Hydraulic Circuits and Systems/  
Advanced 3.00**

This combined lecture/laboratory course will provide advanced training in mobile and industrial hydraulic systems. Specific training will include open and closed center systems, hydrostatic transmission systems, heat generation and transfer and sound measurement.

**612-111  
Servo and Proportional Controls/  
Advanced 2.00**

This combined lecture/laboratory course will provide advanced training in hydraulic servo valve and pump control systems. Emphasis will be placed on design, assembly and troubleshooting of these systems.

**612-112  
Fluid Power Certification Refresher 2.00**

This lecture course is designed to assist the student in preparation for the Fluid Power Society Specialist Exam. Emphasis will be placed on instruction concerning the knowledge requirements for the current Specialist Exam.

**612-115  
Hydraulics/Advanced 3.00**

Analysis of the various selection factors for hydraulic components. Design of various components to determine how they meet specific duty requirements. Physical laws will be applied to determine how hydraulics can best be applied for maximum efficiency. Make component selections based on a given set of criteria. PREREQUISITES: 612-100 - Fluid Power Basic

**612-117  
Fluid Power Systems/Applied 3.00**

Various areas of fluid power application will be studied including mobile hydraulics, hydrostatic drives, servo controlled systems and special circuit problems.

**612-154  
Component Testing and Analysis 3.00**

Various methods used in analyzing the physical parameters of a hydraulic system. The various parameters and means of measuring them will be developed. Set up hydraulic systems, obtain operational data. Analyze the data and prepare technical reports on the test and test significance. PREREQUISITES: 612-106 - Fluid Mechanics/Applied

**614-107  
Residential and Commercial  
Inspection 3.00**

This course is designed to teach students the skills needed to become a residential and commercial inspector including a focus on Energy Audits.

**614-108  
Residential Code 1.00**

This course is a study of the Wisconsin Uniform Dwelling Code and its application to residential design.

**614-110  
Architectural Drafting/Residential 3.00**

This course is the capstone application class regarding residential design, including a full design of a residential building using BIM. Students develop set of working drawings and specifications for a residential building using Autodesk Revit. PREREQUISITES: 614-150 - 3D CAD:Building information

Model COREQUISITES: 614-108 - Residential Code

**614-114  
Commercial Code 2.00**

This course is a study of the Wisconsin Commercial Building Code (including the International Building Code) and its application to commercial design.

**614-115  
Architectural Drafting/Commercial 3.00**

This course is the capstone application class regarding commercial design, including a full design of a commercial building using BIM. Students develop a set of drawings and specifications for a commercial building using Autodesk Revit. PREREQUISITES: 614-110 - Architectural Drafting/Residential COREQUISITES: 614-114 - Commercial Code

**614-123  
Capstone: Architectural  
Structural Tech 1.00**

The Architectural-Structural Engineering Technician capstone course is designed to guide students in resolving related problems by applying skills and techniques acquired throughout the program. The course will provide an overall program assessment opportunity aimed at showcasing a student's technical skills developed from the Architectural-Structural Engineering Tech program courses. COREQUISITES: 614-115 - Architectural Drafting/Commercial

**614-140  
Mechanical Systems for Buildings 3.00**

This course is an introduction to the broad field of mechanical systems and their implications on architectural form and

design. It will provide students with the information and tools required to assess the need for an application of various building systems including mechanical, electrical, plumbing, vertical transportation, fire protection, etc. PREREQUISITES: 607-104 - Building Material & Construction Method

**614-150  
3D CAD:Building information Model 2.00**

This course is an introduction to the concepts and creation of Building Information Modeling (BIM) projects including the extrapolation of schedules, plans, sections and elevations from the BIM using Autodesk Revit software.

**619-101  
Plastics/Introduction to 3.00**

Introduction to the main plastics processing industries, techniques and commonly used polymers. The student will be provided with relevant information that will enable them to investigate the career possibilities in the plastics industry and determine whether plastics is the choice for them to pursue. This course will provide a foundation on plastics materials, processes, properties and applications.

**619-110  
Plastics Injection Molding 3.00**

Provides the student with knowledge of the injection molding process, equipment, components and industry. Lab work includes set up, start up, operation, changeover, safety and optimization of an injection molding machine, mold and all associated support equipment. Process troubleshooting through simulation software and actual machine operation will be performed with several common molding materials.

**619-120**  
**Plastics Molding Problems and Solutions** 2.00

Concentrates on troubleshooting problems that may arise in the injection molding process. Students will utilize the lab equipment to process through processing problems and practice various remedies. This hands-on approach will be supplemented by simulation software and a thorough discussion of the theory and proven methods behind the science of injection molding. Efficient production of quality parts is emphasized. All possible contributing variables are examined to include primary equipment, molds, auxiliary equipment, environment and materials. Students will be encouraged to present "real" problems for analysis in the lab. PREREQUISITES: 619-110 - Plastics Injection Molding

**619-130**  
**Plastics Advanced Troubleshooting** 2.00

Investigate current methods of diagnosis and adjustments available with advance control systems and software. Utilize software/hardware to monitor, analyze and correct processes. PREREQUISITES: 619-110 - Plastics Injection Molding

**619-140**  
**Plastics Extrusion** 2.00

Students will learn to set up, operate, and troubleshoot extrusion and blowmolding equipment. Screw design and extrusion downstream equipment will be investigated.

**619-150**  
**Plastics Secondary Operations** 2.00

This course takes an in-depth look at the most common secondary operations

currently utilized in plastics manufacturing including assembly, finishing, decorating and packaging. The course will also investigate new and innovative plastics operations that may have great potential for cost savings and quality improvement. Lab work will include ultrasonic welding, mechanical fastening, adhesives, decorating, bonding methods, surface preparation and coating.

**619-155**  
**Plastics Quality Systems** 3.00

This course will provide training in the fundamentals of quality control, measurement techniques and instruments, QC systems commonly used in the plastics industry, SPC, transducer technology, PLC systems, software and control systems. Participants will be required to demonstrate skills needed to plan, implement, maintain and improve quality assurance.

**619-175**  
**Plastics Manufacturing Internship** 1.00

The internship will be performed by working at a local plastics manufacturing company and satisfactorily accomplishing the competencies. This is a hands-on requirement that provides on-the-job training to participants in their plastics career environment. Interns will be exposed to many aspects of the Plastics Set-up Technician's duties, tasks and responsibilities. PREREQUISITES: 619-110 - Plastics Injection Molding

**619-180**  
**Plastics Process Control Systems** 2.00

The study of PLC's, PC's and associated software commonly used in plastics manufacturing. Examine switches, sensors, conveyors, assembly systems, auxiliary

systems, sprue pickers, robotics, and their applications.

**619-185**  
**Plastics Materials Testing and Properties** 3.00

This course covers physical, chemical and mechanical testing of plastics materials with respect to ASTM and ISO. Utilization of computer software will be emphasized for data acquisition, materials selection, and evaluation of properties.

**619-190**  
**Plastics Engineering** 3.00

Combine knowledge from various areas to work through an engineering project, conduct an engineering study or analyze/ solve production problems. Examine various cost savings opportunities found in plastics manufacturing plants to include automation. PREREQUISITES: 619-101 - Plastics/ Introduction to

**619-300**  
**Plastics/Introduction To** 3.00

Introduction to the main plastics processing industries, techniques and commonly used polymers. The student will be provided with relevant information that will enable them to investigate the career possibilities in the plastics industry and determine whether plastics is the choice for them to pursue. This course will provide a foundation of information on plastics materials, processes, properties and applications.

**619-310**  
**Injection Molding I** 3.00

Provides the student with knowledge of the injection molding process, equipment,

components and industry. Lab work includes set-up, start-up, operation, changeover, safety and optimization of an injection molding machine, mold and all associated support equipment. Process troubleshooting through simulation software and actual machine operation will be performed with several common molding materials.

**619-311**  
**Molding Problems and Solutions** 2.00

Concentrates on troubleshooting problems that may arise in the injection molding process. Students will utilize the lab equipment to process through processing problems and practice various remedies. This hands-on approach will be supplemented by simulation software and a thorough discussion of the theory and proven methods behind the science of injection molding. Efficient production of quality parts is emphasized. All possible contributing variables are examined to include primary equipment, molds, auxiliary equipment, environment and materials. Students will be encouraged to present real problems for analysis in the lab. PREREQUISITES: 619-310 - Injection Molding I

**619-350**  
**Plastics Manufacturing/Secondary Operations** 3.00

This course takes an in-depth look at the most common secondary operations currently utilized in plastics manufacturing including assembly, finishing, decorating and packaging. The course will also investigate new and innovative plastics operations that may have great potential for cost savings and quality improvement, lab work will include ultrasonic welding, mechanical fastening, adhesives, decorating, bonding methods, surface preparation and coating.

# Course Descriptions

COREQUISITES: 619-300 - Plastics/Introduction To

**619-355**  
**Plastic Quality Systems** 3.00

The course will provide training in the fundamentals of quality control, measurement techniques and instruments, QC systems commonly used in the plastics industry, SPC, transducer technology, PLC systems, software and control systems. Participants will be required to demonstrate the skills needed to plan, implement, maintain and improve quality assurance.

**619-375**  
**Plastics Manufacturing Internship** 1.00

The internship will be performed by working at a local plastics manufacturing company and satisfactorily accomplishing the competencies. This is a hands-on requirement that provides on-the-job training to participants in their plastics career environment. Interns will be exposed to many aspects of the Plastics Set-up Technician's duties, tasks and responsibilities. PREREQUISITES: 619-300 - Plastics/Introduction To

**620-100**  
**Electro/Hydraulic Systems** 2.00

Electro/Hydraulic Systems introduces the students to the control of hydraulic systems through the use of electrical controls. The student becomes familiar with the electrical elements used in the control system. The student learns to read and design electrical and hydraulic circuits using schematics, wiring diagrams, ladder diagrams, sequence charts. The course studies the use and design of hydraulic servo systems. The student will be required to design and build the hydraulic systems. This includes the

design and troubleshooting of the circuits. PREREQUISITES: 605-113 - DC/AC I

**620-101**  
**Variable Speed Drives** 3.00

This course covers the theory and operation of DC and AC variable speed drives that run electrical motors. Content will include servos, stepping motors, and control of general purpose motors. Feedback sensing devices in position and velocity control will be covered. Laboratory experiments will be used to help the student in understanding the complex nature of those systems. PREREQUISITES: 620-150 - Electromechanical Dr Systems

**620-102**  
**Process Controls** 3.00

This course covers the equipment necessary for open and closed loop control of fluids in both flow and level environments. It describes the various production methods used in process industries and provides a background of basic regulating control strategies and controller tuning to accommodate the dynamics of various systems. Strategies include feedback (proportional, integral, derivative), feed forward, ratio, cascade, and adaptive control. Process plan trainers, which are immature versions of real industrial processes, are used to reinforce the theory portion of the course. COREQUISITES: 620-111 - Solid State Circuits, Introduction to

**620-103**  
**Industrial Controls, Introduction to** 4.00

Industrial electrical hardware such as motors and controls are studied. Industrial electrical control circuits are developed and wired. Troubleshooting techniques are used

to correct problems in wiring or controls. Motor starters, industrial control relays, timers, proximity switches, and electric eyes are studied, including proper selection and wiring techniques. Ladder logic and wiring diagrams are examined and drawn. This course is for an individual that already has a basic understanding of electricity. COREQUISITES: 605-113 - DC/AC I

**620-103A**  
**Intro to Industrial Controls 80 Hrs** 3.00

Industrial electrical hardware such as motors and controls are studied. Industrial electrical control circuits are developed and wired. Troubleshooting techniques are used to correct problems in wiring or controls.

**620-103B**  
**Intro to Industrial Controls 28 Hrs** 1.00

Industrial electrical hardware such as motors and controls are studied. Application of Ohm's law, calculating wattage, choosing and using proper sensors.

**620-104**  
**Electro Hydraulic/ Mechanical Systems** 3.00

This course brings together the information learned in the previous electrical, mechanical, and hydraulic/pneumatic courses. Circuits containing electrical, mechanical, and hydraulic/ pneumatic devices will be constructed and tested for proper operation. The topic of feedback devices and troubleshooting these complex units will also be explored. PREREQUISITES: 462-103 - Mechanical Power Transmission 620-103 - Industrial Controls, Introduction to

**620-105**  
**Wiring Fundamentals** 1.00

Students learn how to safely wire basic electrical equipment in this course. This includes switches, receptacles, light fixtures, circuit breakers, and fuse panels. Students will gain working knowledge of basic electricity and basic wiring techniques. The course will include homework and hands on wiring of equipment. National and state codes will be discussed.

**620-106**  
**Introduction to Control Logix** 2.00

The operation of the ControlLogix Programmable Logic Controller (PLC) is studied for the purpose of various applications. The hardware, including various I/O modules, is studied for applications and capabilities. Electrical ladder logic provides the documentation and programming means. The student will be able to write programs, load them into the PLC, troubleshoot any errors, and document the function and input and output of the control.

**620-107**  
**Industrial Communication Systems** 3.00

This course provides comprehensive coverage of Data Communications and Computer/Device networking in an industrial environment. Topics range from simple serial communications to complex networks. This includes systems that are wired, wireless, and fiber optic based. Practical examples of networks will include Ethernet, WiFi, Data Highway, DH-485, Remote I/O, Device Net, Control Net, EtherNET/IP, and the SERCOS fiber optic link. Devices discussed will include computers (PC's), Programmable Logic Controllers (SLC-500, ControlLogix, MicroLogix), and Panel View.

Lecture theory is reinforced with laboratory exercises including assembly, monitoring, programming, and troubleshooting.

**620-110  
Robotics Mechanics I 3.00**

In this course, the basic control elements of electromechanical machines will be studied. The application and simple control of power using pneumatics and electrical methods will be covered. Electrical control includes the use of simple push buttons, solid state power transistors, and thyristors to control electrical power. The use of air as a power transfer medium will be implemented along with the use of electro-pneumatic devices to control a pick and place robot. The operational amplifier will be studied as a control device in proportional, integral, and differential control circuits. PREREQUISITES: 605-113 - DC/AC I

**620-111  
Solid State Circuits, Introduction to 4.00**

This course is an introduction to diode circuits, bipolar transistor circuits, and electronic testing equipment. Topics are semiconductor physics, biasing techniques, lead-line analysis of amplifiers, frequency response, and realization of logic gates using TTL and CMOS devices. Verification of theory is accomplished through laboratory experiments with small and medium scale integrated circuits. PREREQUISITES: 605-113 - DC/AC I

**620-112  
Robotics Mechanics II 3.00**

The student will study applications of electromechanical machines. The elements of microprocessor interfacing will be covered. The student will interface an

electromechanical machine to the computer, interface the necessary feedback devices and write software to program the control of the machine. A special project related to microprocessor control will be completed by the student. PREREQUISITES: 620-110 - Robotics Mechanics I 620-140 - Programmable Controllers 605-130 - Digital Electronics 605-190 - Microprocessors

**620-113  
Troubleshooting Electrical/Electronic Systems 3.00**

This course will teach the student proper troubleshooting techniques in the industrial setting. The student will be required to use electrical schematics and wiring diagrams along with proper troubleshooting equipment, such as meters and oscilloscopes, to locate problems with electrical/electronic systems. Areas of troubleshooting will include motor starters, relays, AC and DC motors, motor drives, lighting circuits, solid state equipment, and programmable controllers. PREREQUISITES: 620-102 - Process Controls COREQUISITES: 620-145 - Programmable Logic Controllers/Advanced

**620-114  
Programming for Technicians/  
Applied 2.00**

A study of the C language and its applications to engineering programming is conducted in this course. The course book describes the C programming language, by example, to non-programmers. Students are introduced to computer hardware, structured programming techniques, C language structure and syntax, editing techniques, and program coding. Applications are directed to solving problems related to the numerical and data handling problems faced by the

engineering technician. The student will be able to write structured programs, compile them in the computer, troubleshoot any errors, and document the function and input/output of the program.

**620-115  
Programming Systems/EM 2.00**

Programming Systems teaches the student to interface computers to electromechanical systems for real-time control applications. Various computer interfaces and programming languages are combined to control electromechanical systems. C language applications are combined with assembly language routines to control systems. The course book describes the C programming language for non-programmers. Students continue the study of C and assembly language begun in other courses. Applications are directed to solving problems related to the numerical and data handling problems faced by the engineering technician. The student will be able to apply computer control to real-time system control. PREREQUISITES: 620-140 - Programmable Controllers 620-110 - Robotics Mechanics I 605-130 - Digital Electronics 605-190 - Microprocessors

**620-116  
Introduction to Robotics 3.00**

This course is designed for the maintenance person who has no robotic experience. Basic control elements of robots will be studied. Basic robot programming will be studied and applied. Safeguards of working in the vicinity of robots will be discussed. PREREQUISITES: 620-111 - Solid State Circuits, Introduction to

**620-120  
Feedback and Control Systems/  
Electromechanical 2.00**

The course in Feedback and Control Systems investigates devices and circuits used in the control of electromechanical systems. The student studies control diagrams and simple control systems and their applications. The student will become familiar with sensors and devices used in feedback circuits as well as accuracy and application of those sensors in control circuits. The course will help the student understand closed loop control systems. This knowledge will help the student to troubleshoot and repair these systems when encountered on the job. PREREQUISITES: 605-113 - DC/AC I

**620-140  
Programmable Controllers 2.00**

The operation of the Programmable Logic Controller (PLC) is studied for the purpose of various applications. The hardware, including various I/O modules, is studied for applications and capabilities. Electrical ladder logic provides the documentation and programming means. The student will be able to write programs, load them into the PLC, troubleshoot any errors, and document the function and input/output of the control. PREREQUISITES: 620-103 - Industrial Controls, Introduction to

**620-145  
Programmable Logic Controllers/  
Advanced 3.00**

The advanced course in programmable logic controllers continues with the study of the programmable logic controller. The student studies the advanced instruction set of commands. The sequencer, file-to-file moves, data arrays, remote I/O, displays,

# Course Descriptions

and messages are part of the advanced instruction set. The student applies the old and new commands to an application in the lab. The student becomes familiar with diagnostics and troubleshooting through the lab applications. The student will learn to interface the PLC to other controls, networks, and devices. PREREQUISITES: 620-140 - Programmable Controllers

**620-150  
Electromechanical Dr Systems 3.00**

Electromechanical Drive Systems introduces the student to motor drive systems. This includes three phase, single phase, DC, stepper, and servo motors. The student will acquire a thorough understanding of the electrical principles involved with motor analysis. The student will apply this knowledge to hands-on work with motors and controls in the lab. The lab introduces the student to motor set-up, troubleshooting, and parameter measurements. PREREQUISITES: 605-113 - DC/AC I

**620-501  
Programmable Logic Controllers 0.50**

The operation of the programmable logic controller (PLC) is studied for the purpose of various applications. The hardware, including various I/O modules, is studied for applications and capabilities. Electrical ladder logic provides the documentation and programming means.

**621-101  
Welding/Oxyacetylene and Fabrication Technical Study 4.00**

This course instructs in safety, equipment usage, and procedures with steel and braze filler rods in four basic welding positions and

cutting. Provides considerable hands-on experience as well as technical information. Fabrication is also required.

**621-102  
Welding/SMAW Technical Study 4.00**

This course instructs in safety, equipment usage, and procedures with various electrodes in four basic welding positions. Provides considerable hands-on experience as well as technical information.

**621-103  
Welding/GTAW-Technical Study 4.00**

This course instructs in safety, equipment usages, and procedures with various filler metal in four basic welding positions. Provides considerable hands-on experience as well as technical information. Plasma arc cutting instruction is also included.

**621-104  
Welding/GMAW-Technical Study 4.00**

This course instructs in safety, equipment usage, and procedures with various wires in four basic welding positions. Provides considerable hands-on experience as well as technical information.

**623-104  
Manufacturing Issues Seminar 2.00**

This course covers the application of the principles and techniques for analyzing and solving industrial situations learned in prior course work. Projects are undertaken utilizing a Microsoft Project format. A project focusing on a quality control situation is highly recommended.

**623-115  
Statistics for Manufacturing 2.00**

This introductory course in statistics covers the applications encountered by a technician in industry. Topics include: descriptive statistics, including charts, plots, and frequency distributions; common measures of central tendency and dispersion; probability distributions, with emphasis on the normal distribution; and published sampling plans. Calculators and computer software are used. This course covers statistical topics on ASQ technician certification exams.

**623-124  
Advanced Engineering Design Concepts I 2.00**

This course introduces the student to the first stage of design: problem definition. Students will use brainstorming techniques to find many possible solutions. Through analysis, the solutions are narrowed to one and a report is developed.

**623-125  
Advanced Engineering Design Concepts II 2.00**

This course introduces the student to modeling. Both the problem and solution are modeled using various techniques. Various forms of modeling will be introduced: computer, mathematical, and physical. PREREQUISITES: 623-124 - Advanced Engineering Design Concepts I

**623-126  
Advanced Engineering Design Concepts III 2.00**

In this course, the student will develop criteria for testing their solution and analyze how well their solution solved the problem.

A presentation of their findings is given to the class. PREREQUISITES: 623-125 - Advanced Engineering Design Concepts II

**623-127  
Advanced Engineering Design Concepts IV 2.00**

This course introduces the student to problem/ solution documentation, life cycle costing, and technical report writing. PREREQUISITES: 623-126 - Advanced Engineering Design Concepts III

**623-138  
Auditing Quality Systems 3.00**

This course is designed to provide a broad overview of the auditing function with intensive attention to the ISO 9000 system(s). Students will learn all phases of a quality audit, from the outset in the planning phase through the final report and follow-up operations. The course will also cover the twenty elements of ISO 9001. PREREQUISITES: 623-195 - Quality Systems

**623-146  
Introduction to Lean/Six Sigma 2.00**

This introductory course will make students aware of all aspects of the manufacturing environment. The class will include overviews in the key aspects of Lean and Six Sigma. Various types of manufacturing and assembly processes will also be covered.

**623-147  
Manufacturing Shop Safety 1.00**

This class will cover general shop safety for a machining environment. The course will raise the awareness of workers to the hazards around them and explain work

safety and how best to protect themselves. Other safety topics will be covered, including MSDS sheets, personal protective equipment, and lockout tag out.

**623-153  
Metrology-Applied Measurement 1.00**

This course is a study of the application of dimensional measuring tools, which stresses the hands-on use of common measurement instruments used in manufacturing, including gage blocks, micrometers, calipers, indicators, height gages, and optical comparators. Students utilize surface plate set-ups and accessories. This course covers the application of fixed gages, including plug, ring, thread, and radius. Students review specialized instruments and gages, such as snap gages, bore gages, electronic and pneumatic comparators, and profilometers. PREREQUISITES: 623-185 - Precision Measuring 606-111 - Blueprint Reading

**623-154  
Metrology - Geometric Dimensioning and Tolerancing 1.00**

This course is a study of geometric dimensioning and tolerancing based on ANSI Y14.5. It stresses the interpretation of geometric tolerances, applying the five categories of feature control: position, form, orientation, runout, and profile. It also covers applying datums, interpreting material condition modifiers, and concepts of fixed and floating fasteners. Measurement procedures and gaging are discussed. PREREQUISITES: 623-153 - Metrology-Applied Measurement

**623-155  
Metrology - Coordinate Measurement Machines 1 1.00**

This course is a study of the application of coordinate measurement machines that stresses the hands-on use of the CMM. It utilizes a manually operated, computer based machine equipped with a manual rotation touch-probe. It provides background in the theory of operation and concepts of geometric measurements. It covers probe calibration, part alignment systems, effective measurement techniques, and computing part geometries. It also reviews programming repetitive functions and discusses operator machine maintenance. PREREQUISITES: 623-154 - Metrology - Geometric Dimensioning and Tolerancing

**623-156  
Metrology - Coordinate Measurement Machines 2 1.00**

This course is a study of the application of programmable coordinate measurement machines. It utilizes a motorized, computer based machine equipped with a joystick and a motorized touch probe to cover probe calibration, part alignment, measurement techniques, and creation of programs. The software is PCDMIS. PREREQUISITES: 623-155 - Metrology - Coordinate Measurement Machines 1

**623-161  
Ergonomics and Workplace Safety 2.00**

Students will be able to identify, analyze, and recommend improvements to work areas to minimize the opportunity for work place injuries. They will become familiar with the ergonomic guidelines, analyze the costs and benefits of ergonomic improvements, and investigate accidents to identify possible causes or problem areas.

**623-162  
Equipment Justification 2.00**

Students will develop the skills to: collect data and prepare justification; assist in new equipment selection, installation, support, and monitoring; and monitor equipment's preventative maintenance program.

**623-163  
Introduction to Lean Manufacturing 2.00**

This course is an introduction to Lean Manufacturing principles and practices. Topics covered include: principles of lean manufacturing, value-stream mapping, 5S workplace organization, set-up reduction (SMED), cellular manufacturing, lean culture, value chain management, kanban systems, and total productive maintenance.

**623-164  
Process Planning 3.00**

Instruction provides the student with the skills to take a new product from the design stage to production, while meeting the product and quality specifications, and cost target requirements by determining production sequence, specifying required tools and equipment, and scheduling manpower and machinery in order to meet production dates.

**623-165  
Facility Planning and Material Handling 3.00**

This course will provide the student a practical means to use data to develop and improve plant and facility layouts and improve material handling methods that will yield higher production, lower costs, and/or improve quality and customer service.

**623-166  
Work Measurement 3.00**

The learner will develop skills in designing work stations, developing better work methods, establishing work standards, balancing assembly lines, and estimating labor costs. The time study techniques the learner will use include predetermined time standard systems, stopwatch, and work sampling.

**623-171  
Inspection and Testing 3.00**

This course provides the learner with the basic concepts of inspection and testing. The learner will develop a vocabulary of quality terminology as it relates to inspection and testing. This course will cover: the development of basic calibration systems and techniques, classification of characteristics, inspection planning and points, sampling techniques, inspection techniques and processes, and classification of defects. PREREQUISITES: 623-185 - Precision Measuring COREQUISITES: 623-194 - Continuous Improvement

**623-183  
Statistical Process Control/CT 1.00**

A 20 hour course which introduces the methods and applications of Statistical Process Control (SPC) used in manufacturing operations. The history and objectives of SPC will be discussed to give students an appreciation for quality improvement through the application of statistical techniques. Emphasis will be placed upon the concepts of central tendency, variation and the normal distribution of data. The development/application/interpretation of variable and attribute control charts will be the main focus of this course.

# Course Descriptions

**623-185**  
**Precision Measuring** 1.00

This course is an introduction to precision measurement tools and their uses. Included are the micrometer, vernier calipers, gage blocks, and fixed gages.

**623-186**  
**Quality Tools and Processes** 3.00

Students learn to use quality planning and problem-solving tools and processes. Data collection and analysis tools are utilized. Planning procedures covered include: advanced quality planning, FMEA, and product approval. Preventative and corrective action procedures, disposition of nonconforming material, and quality improvement activities are addressed. Quality procedures are developed. COREQUISITES: 623-194 - Continuous Improvement

**623-187**  
**Industrial Problem Solving** 2.00

The student will examine a variety of manufacturing scenarios posed as problems. Use of the scientific method of identifying root causes, data analysis, and solution tools is emphasized.

**623-188**  
**Manufacturing Practices** 3.00

This course examines practices that manufacturing operations use to be competitive and efficient. The course covers the principles and techniques of lean manufacturing, computer numerical control, robotics, group technology, and flexible manufacturing.

**623-189**  
**Metrology** 3.00

This course contains three units of instruction: measuring and gaging, geometric dimensioning and tolerancing, and an introduction to coordinate measuring machine setup and operation. The student may enroll in all three or in individual units. The course is conducted in a lab format and stresses development of hands-on skills.

**623-191**  
**Production Planning and Controlling** 2.00

This course is an examination of the tools and techniques that manufacturers use to plan effectively. Learners will explore how manufacturers determine their need for resources, how the availability of resources affects capacity, and how resources are allocated through the use of Gantt charts and CPM/PERT diagrams.

**623-194**  
**Continuous Improvement** 1.00

Students will examine the meaning of quality in a manufacturing environment, the cost of quality, the handling of non-conformance, the process of continuous improvement, and the identification of customer needs.

**623-195**  
**Quality Systems** 2.00

ISO 9000 is an international quality standard that helps businesses define and document their own quality procedures for production and/or services. These standards can be used in any type of business and are accepted around the world as proof that a business can provide assured quality. In this course you will explore the concepts of quality systems, study the requirements of the ISO 9000 standard, learn how to

apply it to actual organizations, and develop skills at documenting quality procedures. COREQUISITES: 623-194 - Continuous Improvement

**623-196**  
**Standards and Regulations** 1.00

The course provides an overview of state and federal standards that govern workplace safety. Emphasis is placed on locating standards in the Code of Regulations, applying safety and environmental standards to an actual worksite, and interpreting material safety data sheets.

**623-197**  
**Statistical Process Control** 2.00

The course introduces the basic concepts and tasks of collecting data, calculating values, constructing values, constructing control charts, and interpreting variation. PREREQUISITES: 623-115 - Statistics for Manufacturing

**625-120**  
**Human Side of Quality** 3.00

Habits and behaviors related to human aspects of continuous improvement provide the focus of this course. Activities allow participants the opportunity to demonstrate personal, team, and organizational practices which foster interdependence among workplace colleagues. Specific themes include self-mastery, team development, and organizational leadership for quality. PREREQUISITES: 623-187 - Industrial Problem Solving 623-194 - Continuous Improvement

**625-121**  
**MSSC Certification Preparation and Assessment** 2.00

This class prepares students to earn MSSC production certification. It will emphasize areas required in the certification that are not covered in other AMST coursework. The students will take the four MSSC certification modules as part of the class. Students may retake modules if needed. The Manufacturing Skill Standards Council (MSSC) certification system assesses worker skills and knowledge based on industry-validated skill standards for all manufacturing sectors. Leading to nationally recognized certification as a "Manufacturing Production Technician", the program includes assessments in four areas: manufacturing processes and production; quality assurance; maintenance awareness; and health, safety, and environmental assurance. Once students pass all four modules, they will receive their "MSSC Production Technician" certificate.

**625-122**  
**Safety in the Workplace MSSC** 3.00

Introduces you to safety and loss prevention in the workplace with an emphasis on the supervisor's responsibility for maintaining a safe, productive environment. Studies safety concepts, hazard controls, developing safety and health programs and federal & state mandated regulations.

**625-123**  
**Workplace Safety-MSSC** 2.00

This course introduces the student to safety and loss prevention in the workplace with emphasis on the workers awareness for maintaining a safe, productive environment. The student will study safety concepts, hazards controls, developing safety and

health programs and Federal and State mandated regulations. This course will also focus on specific content in the MSSC Safety module.

**625-124  
Managing for Quality Mssc 3.00**

This course is designed to examine the role of the supervisor in assisting an organization to produce a quality product or service. The meaning and benefits of quality, the cost of quality, how to interact with customers, and problem solving tools for continuous improvement will be covered. The class will concentrate on the specific content covered in the Manufacturing Skill Standards Council (MSSC) Quality Assurance Module and students that successfully complete the module will be awarded the nationally recognized MSSC production Technician credential.

**625-125  
Workplace Safety A - MSSC 1.00**

Introduces you to safety and team building skills with an emphasis on the workers awareness for maintaining a safe, productive environment. Studies safety concepts, hazard controls, developing safety and health programs, and federal and state mandated regulations. The class will also concentrate on the specific content covered in the MSSC Safety module to prepare students for taking the Manufacturing Skill Standards Council (MSSC) Safety Online assessment.

**626-100  
E-Business Fundamentals 1.00**

Upon completion of this course, students will have a broad awareness of current

trends in the use of internet technology as a tool for business technology.

**628-100  
Automated Manufacturing Concepts/Intro 2.00**

An introduction to manufacturing processes with emphasis on manual machining to prepare students for further study in the Automated Manufacturing fields. Covers shop safety practices in a machine shop, the use of manual milling machines, lathes and drill presses to manufacture parts to print, and the use of basic metrology instruments to determine if the parts are to print. Calculation and application of correct cutting parameters of selected materials and tools is practiced.

**628-102  
Automated Manufacturing Programming 3.00**

Function and operation of a two dimensional CAM system. Types of coding, speeds and feeds, tool selection and other applications will be studied. Typical CNC machine tool functions will be covered and programs will be created using the computer system. Students will also edit programs and download to machine tools. PREREQUISITES: 628-100 - Automated Manufacturing Concepts/Intro

**628-103  
Manufacturing Processes/CNC Application 3.00**

Processes and principles related to today's manufacturing to include: milling, drilling, tapping, reaming, boring, standard machine tools as well as CNC lathes and mills. The proper use of inspection tools and CMM equipment will be studied.

**628-104  
Computer Aided Design and Manufacturing 3.00**

Function and operation of CAD/CAM equipment to include: computers, plotters, printers, and DNC system. Overview of CAM applications and software for computer numerical control machine tools. Pocket and profile milling, drilling, tapping, threading, and boring procedures are studied as they relate to a CAM system. PREREQUISITES: 628-102 - Automated Manufacturing Programming

**628-105  
Computer Integrated Manufacturing Applications 4.00**

CIM techniques are used to analyze and implement actual or simulated manufacturing applications. Student teams will select, plan, and develop a project proposal which will incorporate application and integration of CIM subsystems to manufacture or process a part or product. Application solutions will require gathering and developing of data, planning and scheduling a process, a quality and process control plan, hardware and software engineering, actual or simulated application, and a project report. PREREQUISITES: 628-103 - Manufacturing Processes/CNC Application 628-104 - Computer Aided Design and Manufacturing 606-126 - AutoCAD, Introduction

**628-106  
Robotic Application 3.00**

This course is used to teach students how to use and program robots. Students will work hands-on creating their own projects.

**628-107  
Manufacturing Computer Systems 3.00**

Teaches students the MAPICS system for routings, bill of materials, shop floor control, and inventory control.

**628-108  
Auto Manufacturing Systems Technology Field Experience 2.00**

Provides the student with an opportunity to apply the technologies learned in earlier class work while experiencing actual work assignments. PREREQUISITES: 620-110 - Robotics Mechanics I

**628-109  
Mechanical Skills for Technicians 3.00**

This course covers the basic mechanical skills needed by a technician. Skills covered include the use and care of hand tools and small power tools, drilling, tapping, removal of broken bolts, studs, and helicoil insertion. Basic measuring tools and techniques are also covered. Other topics include type and use of fasteners, lubricants and adhesives used in repair, and assembly of automated machines.

**628-109F  
Mechanical Skills 4 Tech 56 Hr 2.00**

This course covers the basic mechanical skills needed by a technician. Skills covered include the use and care of hand tools and small power tools, drilling, tapping, removal of broken bolts, studs, and helicoil insertion. Other topics include lubricants, bearings, seals, and gaskets.

# Course Descriptions

**628-109G**  
**Mechanical Skills 4 Tech 34 Hr**      **3.00**

This course covers the basic mechanical skills needed by a technician. The student will be able to demonstrate knowledge of chain drives, belt drives, gears, couplings, clutches and brakes.

**628-110**  
**CNC/CAM Programming**      **3.00**

This course is a study of computer assisted programming for computer numerical control (CNC) machine tools. The student will use a microcomputer CAD/CAM system for program creation, editing, and verification. It is recommended that students have basic computer skills before enrolling in this course.

**628-111**  
**Computer Assisted Programming/  
Robotics and FMS**      **3.00**

This course is a study of computer assisted programming for robotics and Flexible Manufacturing Systems (FMS). Students will use microcomputers to program robots and a CAD/CAM system for program creation, editing, verification, and interfacing. The student will interface the CNC program with the program.

**628-112**  
**Computer Aided Manufacturing,  
Advanced**      **3.00**

This course is an introduction to computer integrated manufacturing (CIM). The students will use microcomputers to write, edit, and verify programs for conversational controls and a CIM system. PREREQUISITES: 628-111 - Computer Assisted Programming/Robotics and

FMS TR COREQUISITES: 620-145 - Programmable Logic Controllers/Advanced

**628-113**  
**Introduction to Automation  
and Industry**      **1.00**

This course is an introduction to the high tech skills needed in the manufacturing field. The course will introduce 11th and 12th grade students to computer aided drafting (CAD), physics, robots, programming, and information technology through contextual "hands on" project based learning. The learning activities will include 36 hours of lab, guest speakers, two field trips, and developing a career plan and integrating 2 year technical programs offered by Gateway Technical College.

**628-114**  
**MSSC Certification Preparation  
and Assessment**      **2.00**

This class prepares students to earn MSSC production certification. It will emphasize areas required in the certification that are not covered in other AMST coursework. The students will take the four MSSC certification modules as part of the class. Students may retake modules if needed. The Manufacturing Skill Standards Council (MSSC) certification system assesses worker skills and knowledge based on industry-validated skill standards for all manufacturing sectors. Leading to nationally recognized certification as a "Manufacturing Production Technician", the program includes assessments in four areas: manufacturing processes and production; quality assurance; maintenance awareness; and health, safety, and environmental assurance. Once students pass all four modules, they will receive their "MSSC Production Technician" certificate.

**628-121**  
**Computer Integrated  
Manufacturing-PLTW**      **4.00**

The purpose of the computer integrated manufacturing course is to expose students to the fundamentals of computerized manufacturing technology. The course is built around several key concepts, including computer modeling, CNC equipment, CAM software, robotics, and flexible manufacturing systems.

**628-122**  
**Engineering Design and  
Development**      **4.00**

Engineering Design and Development is an engineering research course in which students work in teams to research, design, and construct a solution to an open-ended engineering problem. Students apply engineering principles and are guided by a community mentor. They must present progress reports, submit a final written report, and defend their solution to a panel of outside reviewers at the end of the school year.

**628-123**  
**Computer Integrated Mfg  
Part 1 PLTW**      **2.00**

The purpose of the Computer Integrated Manufacturing course is to expose students to the fundamentals of computerized manufacturing technology. The course is built around several key concepts: Principles of Manufacturing Manufacturing Processes Elements of Automation Integration of Manufacturing Elements

**628-124**  
**Computer Integrated Mfg  
Part 2 PLTW**      **4.00**

The purpose of the Computer Integrated Manufacturing course is to expose students to the fundamentals of computerized manufacturing technology. The course is built around several key concepts: Principles of Manufacturing Manufacturing Processes Elements of Automation Integration of Manufacturing Elements PREREQUISITES: 628-123 - Computer Integrated Mfg Part 1 PLTW

**628-125**  
**Quality for Automated  
Manufacturing**      **3.00**

This course will be heavy hands-on lab work using different measuring tools such as scales, calipers, micrometers, bore gauges, gauge blocks and height gauges. Automated gauging concepts will be covered with hands on experience along with theory based information. The major areas of Statistical Process Control will be covered. The symbols and basic understanding of Geometric Dimensioning and Tolerancing will also be covered.

**628-500**  
**Computer Aided Manufacturing/  
Apprentice**      **1.00**

Students will study the function and operation of CAM systems. Types of coding, speeds and feeds, tool selection and other applications will be studied.

**662-101**  
**Safety in Healthcare**      **1.00**

Safety in the Health Care environment is explored. Safety issues include; electrical, chemical, radiological, biological and fire.

National codes and standards set forth by JCAHO, NFPA 99, FDA, and OSHA are examined.

**662-102  
Medical Devices; Function  
and Use 1 3.00**

Medical instrumentation utilized in both monitoring and diagnostic capacities for the respiratory and circulatory systems are examined. The medical terminology associated with these two systems is also covered. The instrumentation for monitoring individual organs is also explored.

**662-103  
Medical Devices; Function  
and Use 2 3.00**

Medical instrumentation utilized in both monitoring and diagnostic capacities for the Gastrointestinal, Nervous, Musculoskeletal, and Endocrine systems are examined. The medical terminology associated with these systems is also covered.

**662-104  
PLTW Digital Electronics I 2.00**

This course will introduce basic DC and AC circuit analysis, bread boarding techniques for circuit construction, circuit simulation using Multisim, and proper use of digital multimeters, function generators, and oscilloscopes. In addition, both Camtasia and Excel will be introduced for use in the classroom.

**662-105  
PLTW Digital Electronics II 2.00**

This course will introduce the applied logic that encompasses the application of electronic circuits and devices. Computer

simulation software is used to design and test digital circuitry prior to the actual construction of circuits and devices.

**662-112  
DC/AC III 3.00**

This course introduces the student to the fundamental laws in electrical engineering technology and their application in advanced circuit analysis concepts and techniques. Topics include a brief review of Kirchoff's law, induction, capacitance, series-parallel circuits, power factor, impedance, and phasors. Then, superposition, Thevenin's theorem, Norton's theorem, mesh and nodal analysis, sinusoidal steady-state analysis, ideal transformers, and complex power are covered. The student will utilize both the "hands-on" approach and computer simulation, including swept AC frequency circuit analysis, in the laboratory, as the laboratory experiments are designed to support the topics presented. PREREQUISITES: 605-114 - DC/AC II

**662-124  
Electronic Circuit Analysis 3.00**

This course introduces the student to the fundamental laws in electrical engineering technology and their application in advanced circuit analysis concepts and techniques. Topics include frequency as a variable in the analysis of circuits with a sinusoidal excitation, Bode plots, and detailed analysis of resonant circuits. The student is introduced to small signal analysis of transistor amplifier circuits and examination of gain and frequency response of the circuit. The student will utilize both the "hands-on" approach and computer simulation, including swept AC frequency circuit analysis, in the laboratory, as the laboratory experiments are

designed to support the topics presented. PREREQUISITES: 605-120 - Electronic Devices I

**699-101  
Writing for Digital Media 3.00**

This course explores techniques for effective and innovative writing in digital media. Elements of design, interactivity, and usability will be examined. Students will investigate a broad range of electronic communication and engage in interactive, nonlinear writing.

**699-110  
Communication Document Design 3.00**

This course gives students skills and practice needed to design and lay out communication products using Adobe InDesign software. Students explore and apply graphic design, technical communication, and usability theories to produce print and electronic communication products. COREQUISITES: 103-143 - Computers for Professionals

**699-111  
Communication Project  
Management 3.00**

This course gives students skills and practice needed to analyze, design, develop, implement, and evaluate communication products. Students use strategies for researching requirements, planning projects, tracking progress, testing usability, and revising communication products. In addition, they review methods to collaborate effectively with clients, coworkers, and vendors. The ethical practices of professional communications are also reviewed.

**699-112  
Editing 3.00**

This course gives students skills and practice needed to conduct various levels of edits, including comprehensive edits, copyedits, and proofs. Students edit communication products for correct usage in capitalization, grammar, punctuation, spelling and style. They apply theories and strategies to ensure communication products conform to style guides, to develop editor-writer relationships and to provide audiences with clear ethical content. PREREQUISITES: 831-103 - College Writing, Intro

**699-113  
Information Design 3.00**

This course gives students skills and practice needed to design and manage communication products using professional communications strategies. Students explore and apply strategies to structure communication products so that users can access information easily, understand it, and feel comfortable with its presentation. XML is also introduced. PREREQUISITES: 831-103 - College Writing, Intro

**699-114  
Professional and Technical Writing 3.00**

This course gives students skills and practice needed to develop communication products for business, government, and not-for-profit organizations. Students are introduced to the professional communications field and career options. They use a professional process to develop and publish a variety of communication products. PREREQUISITES: 831-103;

# Course Descriptions

**699-115  
Professional Communications  
Internship 3.00**

This course provides students an opportunity to apply professional communications skills and training in a professional setting. Students spend a minimum of 144 hours performing professional communications tasks and up to one hour per week in consultation with the instructor. Students work with a sponsor at an employer and the instructor to set up and complete the internship. PREREQUISITES: 699-113 - Information Design 699-114 - Professional and Technical Writing 699-117 - Research Fundamentals

**699-116  
Professional Communications  
Portfolio 1.00**

This course provides students skills and practice needed to enter the professional communications profession or advanced education. Students review their progress throughout the program and prepare for careers. They develop portfolios of their work and explore career preparation, job hunting strategies, potential employers, and professional expectations in the workplace. They also review future education opportunities. PREREQUISITES: 699-113 - Information Design 699-114 - Professional and Technical Writing 699-117 - Research Fundamentals

**699-117  
Research Fundamentals 3.00**

This course gives students skills and practice needed to conduct user and product research for a variety of professional communications projects. Students interview sources and perform usability tests as well as use traditional and Internet sources

to locate information. They interpret and incorporate research findings into plans and communication products.

**699-130  
Writing and Publishing 3.00**

This course gives students skills and practice needed to publish communication products through print and electronic media. Students learn their responsibilities, publishing techniques, and publishing software, such as Adobe Acrobat software, for preparing communication products for distribution using epublications, print, PDF, and the web.

**699-131  
Writing Copy for Sales 3.00**

This course gives students skills and practice needed to develop sales promotion materials for print media, audiovisual media, the Internet, and the specialty media. Students plan a marketing strategy and create communication products for sales and marketing. They incorporate persuasive strategies in communication products for long and short-term. PREREQUISITES: 831-103 - College Writing, Intro

**699-132  
Writing for Orgs. 3.00**

This course gives students skills and practice needed to develop various types of communication products for new or existing organizations. Students develop internal documentation to articulate an organization's strategies, define the organization's workings, recruit employees, attract customers, and address common issues. PREREQUISITES: 831-103 - College Writing, Intro

**699-133  
Writing for Social Media 3.00**

This course gives students skills and practice needed to use social media for organizational purposes. Students explore techniques for effective writing in social media, including the elements of design, interaction, and usability. They investigate an array of social media options, including Facebook, LinkedIn, Tumblr, and Twitter. PREREQUISITES: 831-103 - College Writing, Intro

**699-134  
Writing for the Media 3.00**

This course gives students skills and practice needed to develop various types of communication products for media outlets. Students use journalism strategies to create various types of communication products, including advertisements, articles, audiovisual scripts, newsletters, and press releases. PREREQUISITES: 831-103 - College Writing, Intro

**699-135  
Writing for the Web 3.00**

This course provides students skills and practice needed to develop websites using Adobe Dreamweaver software. Students plan, write, develop graphics for, revise, and publish websites. They apply theories and strategies to design and create accessible, ethical, and usable websites. PREREQUISITES: 831-103 - College Writing, Intro

**699-136  
Writing Grant Proposals 3.00**

This course gives students skills and practice needed to write grant proposals and related documents. Students explore

government, corporate, and private funding sources and locate Requests for Proposals (RFPs). They use audience analysis, research methods, rhetorical strategies, and revision techniques to write competitive grant proposals. PREREQUISITES: 831-103 - College Writing, Intro

**699-137  
Writing Product Documentation 3.00**

This course gives students skills and practice needed to develop various types of manuals and related communication products for a variety of products. Students plan, write, illustrate, revise, and publish manuals. They apply theories and strategies to design and create accessible, ethical, and usable communication products. PREREQUISITES: 831-103 - College Writing, Intro

**699-138  
Writing Software User Assistance 3.00**

This course gives students skills and practice needed to develop user assistance and related documentation for software products using MadCap Flare software. Students plan, write, illustrate, revise, and publish user assistance and print documentation. They apply theories and strategies to design and create accessible, ethical, and usable communication products. PREREQUISITES: 699-112 - Editing

**701-101  
Broadcasting/Introduction to 3.00**

Provides a historical look at radio, tracing its development from the earliest public broadcast services through future trends. An examination of broadcasting equipment and the theory behind its operation and use is provided.

**701-105**  
**Radio News** **3.00**

The course is devoted to advanced news reporting, writing, editing and exploring various news formats used in today's radio stations. Covers news, commercials, documentaries, commentaries and editorials for both script and on-the-spot content. Attention is given to local news and public affairs. PREREQUISITES: 701-160 - Radio Copywriting Production

**701-110**  
**Broadcasting and Public Policy** **3.00**

Emphasizes communication ethics and law, licensing and regulation, trade unions and employment practices, freedom of the broadcast press, and invasion of privacy. PREREQUISITES: 701-101 - Broadcasting/ Introduction to

**701-115**  
**Radio Workshop I** **2.00**

A basic radio course designed to acquaint students with the fundamentals of program production, analog 2 track recording, editing and microphone techniques. Students are introduced to multitrack recording equipment. Students are assigned air shifts on student radio station KBLE. COREQUISITES: 701-101 - Broadcasting/ Introduction to

**701-120**  
**Radio Workshop II** **2.00**

Introduction to analog multitrack recording techniques. Students are introduced to digital recording and editing. Concentration on dynamic oral communication skills for acceptable and effective broadcast delivery. Students continue to develop broadcast

skills by working on KBLE. PREREQUISITES: 701-115 -Radio Workshop I

**701-125**  
**Radio Workshop III** **3.00**

Advanced production techniques on digital production system and use of audio processing devices for level control and special effects. Concentration on voice-over techniques for AV production. PREREQUISITES: 701-120 - Radio Workshop II

**701-130**  
**Radio Workshop IV** **4.00**

Students will intern at area radio stations in areas of interest such as programming, promotion, sales, production and announcing. PREREQUISITES: 701-125 - Radio Workshop III

**701-131**  
**Radio Programming** **3.00**

A course designed to introduce and familiarize the student with all aspects of the position of radio program director.

**701-132**  
**Radio Management** **3.00**

In this course, you will study the electronic media's impact on today's society. You will examine the types of strategic alliances and partnerships found across the electronic media. Students will examine types of ethics in electronic media management. You will study three schools of management thought, personnel management, programming strategies, news and newsroom management, and the regulatory process and government's impact.

**701-133**  
**Radio Sales and Marketing** **3.00**

This course is a comprehensive study of sales, strategies, and techniques used to sell radio time to businesses. Local and national sales, use of rate cards, and ratings are discussed. Students create sales presentations for class. Each student will represent a radio station from any of the following markets: Milwaukee, Chicago, Racine, or Kenosha. Each student will also represent a business buying radio advertising.

**701-160**  
**Radio Copywriting Production** **3.00**

This is a course in writing and producing materials relevant to today's broadcasting needs including commercials, promos, features and program scripting. Logical thoughts, imagination, creativity and good taste are discussed. PREREQUISITES: 851-769 - Writing/Pre-College

**701-180**  
**Business of Broadcasting** **3.00**

Emphasizes the administrative area of radio broadcasting. Advanced production and direction are addressed. Provides students with detailed experience in programming, sales, management, and station policy.

**701-190**  
**Video Techniques** **3.00**

Introduces every phase of TV production including lighting, visual and aural effects, directing, camera operation, and set design. Involvement in basic program production and cable transmission is included.

**701-192**  
**Video Techniques II** **3.00**

This course will continue the basics learned in Video Techniques. Students will produce a number of broadcast quality programs, that will include a mix of studio and remote production, on non-linear editing equipment. PREREQUISITES: 701-190 - Video Techniques

**801-102**  
**Technical Writing: Online Help** **1.00**

Students are provided the skills and practice to integrate the conceptual, artistic, and psychological skills of designing and developing online help using MadCap Flare. Emphasis is placed on the production of help systems, including designing, creating, and testing the help system.

**801-103**  
**Technical Presentations** **1.00**

This course prepares the student to deliver a technical presentation to both a technical and a non-technical audience. Various forms of media will be utilized in the presentations.

**801-106**  
**Technical Writing/Layout and Design** **2.00**

Students are provided the skills and practice to develop electronic layouts. Emphasis is placed on the use of layout skills, such as white space, graphics, type fonts and sizes, color, screens, and grids.

**801-107**  
**Technical Writing/Audio Visual** **2.00**

Students are provided the skills and practice to write for audio visual production. Emphasis is on the preparation of the time, audio, and video sections of storyboards

# Course Descriptions

for the production of industrial, commercial, and educational film, videotape, and CD programming.

**801-108  
Technical Writing/Sales Promotion 2.00**

Students are provided the skills and practice in preparing and writing sales promotion materials for the print media, audiovisual media and the specialty media. Emphasis will be on the diversity of the sales promotion production and the need for long-range, multi-level programs, as well as the quick, attention getting programs.

**801-111  
Technical Writing/ Electronic Publishing For Windows 2.00**

Students are provided the skills and practice in the conceptual, artistic, and psychological techniques of layout and design with the flexibility offered by Adobe InDesign on the Windows platform. Emphasis is on the creation of production-ready page layout.

**801-113  
Technical Writing/Online Documentation 2.00**

Analysis and application of the technical writing skills needed to write and publish online documents. Emphasizes the different types of online documentation, the design and syntax requirements of online documentation, and the programming considerations of online documentation.

**801-114  
Technical Writing/ Safety Information And Product Liability 1.00**

Students are provided the skills and practice to produce effective safety

information and hazard warnings for use in technical publications. Emphasis is on the identification of hazards associated with product usage and development of hazard statements in accordance with ANSI standard Z535 and other applicable standards. The course provides skills required to implement a uniform safety information system in publications that will improve product liability loss prevention efforts.

**801-117  
Technical Writing/Technical Application 1.00**

Apply the skills of interpretation and application of blueprints, schematics, circuit diagrams, and product data for technical publication.

**801-120  
Technical Writing/Grant and Proposal Writing 2.00**

Familiarization and practice in writing program and funding proposals for grants. Emphasis will be on following the Request for Proposals (RFP) guidelines that enhance successful funding and program initiation from federal, state and local government, as well as private foundations.

**801-121  
Technical Writing/Print Production 2.00**

Students are provided the skills and practice needed to develop an understanding of the non-writing steps required in the production of technical publications. Emphasis will be on using type and graphics, using color, using ink and paper, controlling photographs, using offset printing, and understanding finishing and binding.

**801-122  
Technical Writing/Manual Production 3.00**

Practice in developing and revising technical manuals to complex commercial, industrial, or commercial specifications. Emphasis will be on the production of technical manuals from conception through research, writing, illustrating, layout, approval, and production. PREREQUISITES: 801-106- Technical Writing/Layout and Design 801-111 - Technical Writing/ Electronic Publishing For Windows 801-114 - Technical Writing/ Safety Information And Product Liability 801-133 - Technical Writing/Introduction 801-197 - Technical Reporting

**801-123  
Technical Writing/ Procedural Writing 2.00**

Analyze and apply the skills required to prepare the various internal operational writings such as mission statements, job descriptions, job ads, standard operating procedures, employee evaluations, department reports, and marketing plans.

**801-124  
Technical Writing/ Edit and Proofreading 2.00**

Students are provided the skills and practice to edit and proof technical publications. Emphasis is on the skills needed for self-editing as well as peer-editing. Principles of spelling, punctuation, and sentence structure are reviewed.

**801-125  
Technical Writing/ Vendor Management/ Ethics 1.00**

Understand the technical communicator's management responsibilities towards

the various vendors that are used in the production of audiovisual, online, printed, and specialty products. It emphasizes the creation of documents Emphasis will be on bidding, controlling costs, monitoring project progress, monitoring legal obligations of purchase order, and maintaining public relations with vendors. In addition, the ethics of the technical communication profession will be reviewed.

**801-126  
Technical Writing/ Externship/ Internship 3.00**

Provides an opportunity to apply technical communication skills and training to an actual work situation. The student will spend a minimum of 8 hours per week at the work station performing technical communications tasks and up to one hour per week in consultation with the assigned instructor. Student contracts with the employer and the instructor regarding the work agreement. PREREQUISITES: 801-106 - Technical Writing/Layout and Design 801-111 - Technical Writing/ Electronic Publishing For Windows 801-114 - Technical Writing/ Safety Information And Product Liability 801-133 - Technical Writing/Introduction 801-197 - Technical Reporting

**801-128  
Technical Writing/ Forms Design 1.00**

Students are provided the skills and practice to create effective and user-friendly forms. Emphasis is on identifying and meeting the needs for the form by all users. Using computer software, students produce both paper and electronic forms.

**801-129**  
**Technical Writing/  
 Technical Photography** **2.00**

Analyze and apply technical photography skills needed to communicate information visually. Emphasizes the strengths and weaknesses of the various photographic formats, the effects of photographic technique on photo quality, and the planning requirements for a photo shoot.

**801-131**  
**Technical Writing/  
 Newsletter Writing** **1.00**

Students are provided the skills and practice in publishing newsletters to publication specifications. Emphasis will be on the production of newsletters from conception through research, writing, illustrating, layout, editing, approval, and production.

**801-133**  
**Technical Writing/Introduction** **2.00**

Analysis and application of the technical writing skills needed by technical communicators. Emphasizes the research, writing, and electronic publishing of technical manuals, promotional publications, and technical journalism. PREREQUISITES: 801-136 - English Composition 1

**801-134**  
**Technical Writing: Project  
 Management** **1.00**

Students are provided the skills and practice of planning, organizing, and monitoring all technical communication project related activities. This includes monitoring project status, providing project leadership, resolving project issues and conflicts,

establishing project expectations, and building successful project teamwork.

**801-135**  
**Technical Writing: Portable  
 Document Format** **1.00**

Students are provided the skills and practice to create portable document files (PDF), optimize program settings, use the editing and annotation features, and prepare files for both commercial printing and the Web. Emphasis is on the use of PDF files in the technical communication workplace and for the employment search.

**801-136**  
**English Composition 1** **3.00**

This course is designed for learners to develop knowledge and skills in all aspects of the writing process. Planning, organizing, writing, editing and revising are applied through a variety of activities. Students will analyze audience and purpose, use elements of research, and format documents using standard guidelines. Individuals will develop critical reading skills through analysis of various written documents. PREREQUISITES: 831-103 - College Writing, Intro

**801-141**  
**Mass Communications, Intro to** **3.00**

This course explores communication in media and media literacy by providing insight into the important issues that confront students as consumers and purveyors of mass media within the workforce and in society. The mass media revolution, including media technologies, the evolution of media content and platforms, including new media, the impact of media communications on business and society as a whole, media bias, and media law

and ethics form the basis of the course. PREREQUISITES: 838-105 - Reading & Study Skills, Intro

**801-150**  
**English Composition II** **3.00**

In this advanced writing course, students develop critical reading and writing skills and produce original compositions demonstrating critical thinking ability. Students also produce a documented research project using primary and secondary sources. PREREQUISITES: 801-136 - English Composition 1

**801-176**  
**Games and Culture** **3.00**

Games & Culture is an introduction to the study of video games, video game culture, and the relationship of each within broader contemporary social, media, and cultural practices. This course is a digital humanities-based inquiry into video games, as opposed to a computer science-or programming-based approach. This course will involve playing, examining, and analyzing games as rhetorical and narrative texts and as rule-based systems. PREREQUISITES: 801-136 - English Composition 1

**801-177**  
**Creative Writing** **3.00**

This course focuses on the study and production of written work in three genres: fiction, nonfiction, and poetry. Through the workshop method of instruction, students will complete writing exercises and other projects designed to enhance creativity. Students will also develop an awareness of their audience, build collaborative discussion skills, offer and use constructive feedback, analyze others writers' creative

and critical thinking processes, and learn other skills transferable to their academic and professional lives. PREREQUISITES: 831-103 - College Writing, Intro

**801-180**  
**Communications/  
 Newspaper Writing** **3.00**

Emphasizes basic skills of news writing including production procedures, journalistic standards, types of articles and story research. Students get practical experience by preparing article publication in the student newspaper.

**801-180A**  
**Communications/  
 Newspaper Writing I** **1.00**

Emphasizes basic skills of news writing including production procedures, journalistic standards, types of articles and story research. Students get practical experience by preparing an article for publication in the student newspaper.

**801-180B**  
**Communications/  
 Newspaper Writing II** **1.00**

This course is a continuation of basic news writing skills with increased responsibility for publication of the student newspaper. PREREQUISITES: 801-180A - Communications/Newspaper Writing I

**801-180C**  
**Communications/  
 Newspaper Writing III** **1.00**

This course teaches advanced news writing skills, emphasizing the complete production process. PREREQUISITES: 801-180B - Communications/Newspaper Writing II

# Course Descriptions

**801-196**  
**Oral/Interpersonal Communication 3.00**

This course focuses upon developing speaking, verbal and nonverbal communication, and listening skills through individual presentations, group activities, and other projects. PREREQUISITES: 838-105 - Reading & Study Skills, Intro

**801-197**  
**Technical Reporting 3.00**

The student will prepare and present oral and written technical reports. Types of reports may include lab and field reports, proposals, technical letters and memos, technical research reports, and case studies. This course is designed as an advanced communication course for students who have completed at least the prerequisite introductory writing course. PREREQUISITES: 801-136 - English Composition 1

**801-198**  
**Speech 3.00**

This course explores the fundamentals of effective oral presentation to small and large groups. Topicselection, audience analysis, methods of organization, research, structuring evidence and support, delivery techniques, and other essential elements of speaking successfully, including the listening process, form the basis of the course. PREREQUISITES: 838-105 - Reading & Study Skills, Intro

**801-199**  
**Written Communication II 3.00**

An advanced writing course which emphasizes the use of the writing process to explore various themes related to the world

of work, ethics and life in a multi-cultural, global community. Students develop critical reading and writing skills and produce original compositions demonstrating critical thinking ability. Students will also learn the process for producing a documented research project using primary and secondary sources. PREREQUISITES: 801-136 - English Composition 1

**801-301**  
**Writing Principles 1.00**

Reviews the fundamentals of grammar. Emphasizes practical application of English in business correspondence. PREREQUISITES: 851-760 - Pre-Technical Writing

**801-302**  
**Speaking Principles 1.00**

Covers techniques of verbal and non-verbal communication. Presentation techniques in informative, demonstrative, persuasive and impromptu situations are stressed.

**801-500**  
**Apprentice Communications 1.00**

Discusses basic communications concepts relating to the workplace. Skills covered are giving instructions explaining technical processes.

**801-991**  
**Communication General Education Credit 3.00**

Credit is given to students who completed their general education requirements, but did not complete a particular 801 course, through being granted up to six credits in 801-991. Students must have either a transfer designation or a "life experience"

designation for any credit given. This credit is then substituted for general education coursework in the 801 area.

**802-104**  
**German I 3.00**

Fundamentals of German grammar; drill in structure and pronunciation; development of vocabulary. Aural-oral and reading skills are introduced in the classroom.

**802-111**  
**Spanish I 3.00**

For beginning students of Spanish who wish to use Spanish as a means of oral and written communication. Students will learn the basic skills of listening, speaking, reading and writing in the language. The information gained should be helpful to various industries and service providers in communicating with Spanish-speaking Americans as in translating, speaking and writing in the ever-expanding export market and human services fields.

**802-112**  
**Spanish II 3.00**

This course continues the study of the Spanish language, using four components: listening, speaking, reading and writing. It is a progressive study, using knowledge gained at the first-semester level as a base. Survival skills in the Spanish culture will be targeted. PREREQUISITES: 802-111 - Spanish I

**802-113**  
**Chinese, Mandarin Elementary 3.00**

Elementary Mandarin is a beginning level Chinese language course, which includes pronunciation, fundamentals of

grammar and syntax, reading, writing and conversation.

**802-114**  
**Chinese 1 (elementary level 1) 3.00**

Chinese 1 presents listening, speaking, reading, and writing activities associated with everyday communication. Conversation skills are enhanced through in-class discussion. Students develop Chinese character formation and interpretation. Chinese culture is explored.

**802-115**  
**Chinese 2 (elementary level 2) 3.00**

Chinese 2 presents listening, speaking, reading, and writing activities associated with everyday communication. Students build on the skills developed in Chinese 1. Conversation skills are enhanced through in-class discussion. Students continue development of Chinese character formation and interpretation. Chinese culture is explored. PREREQUISITES: 802-114 - Chinese 1 (elementary level 1) or 802-113 - Chinese, Mandarin Elementary

**802-116**  
**Chinese 3 3.00**

Chinese 3 presents listening, speaking, reading, and writing activities associated with everyday communication. Students build on the skills developed in Chinese 2. Conversation skills are further enhanced through in-class discussion. Students continue development of Chinese character formation and interpretation. Chinese culture is explored. PREREQUISITES: 802-115 - Chinese 2 (elementary level 2)

**802-117**  
**Chinese 4** **3.00**

Chinese 4 will help students build on the skills developed in Chinese 3. Their vocabulary and knowledge of grammar of the Chinese language will grow by learning more new words, expressions and sentence patterns needed for everyday communication and by consolidating their knowledge through oral and written practice in and out of class. In this course, students will participate in classroom discussions in Mandarin. Aspects of Chinese Culture will be further explored. PREREQUISITES: 802-116 - Chinese 3

**802-118**  
**SPA IV: Fourth Semester Spanish** **4.00**

Spanish IV is a continuation of Spanish III and further develops all basic language skills: listening comprehension, speaking, reading, and writing. Spanish IV is the fourth semester Spanish course at Gateway Technical College and is designed for those students who have completed Spanish III at Gateway or another college/university and for native Spanish speakers who would like to improve their grammar, reading, and writing. Classes will include an extensive study of intermediate vocabulary and grammatical structures as well as cultural studies of both Spain and Latin America. All Spanish classes taught at Gateway are immersion classes. PREREQUISITES: 802-119 - SPA III: Third Semester Spanish

**802-119**  
**SPA III: Third Semester Spanish** **4.00**

Spanish III reviews the material taught in Spanish I and Spanish II and further develops all basic language skills: listening comprehension, speaking, reading, and

writing. Spanish III is the third semester Spanish course at Gateway Technical College and is designed for those students who have completed Spanish II at Gateway or another college/university and for native Spanish speakers who would like to improve their grammar, reading, and writing. Classes will include an extensive study of intermediate vocabulary and grammatical structures as well as cultural studies of both Spain and Latin America. All Spanish classes taught at Gateway are immersion classes. PREREQUISITES: 802-112 - Spanish II or 802-125 - SPA II: Second Semester Spanish

**802-120**  
**Conversational Spanish for Business** **3.00**

This course is designed for business professionals, at a beginning Spanish level, who have the need for better communication with Spanish-speakers. Oral practice encourages active communication in Spanish. Students will learn to communicate effectively and comfortably at a basic level in Spanish.

**802-121**  
**Conversational Spanish for Business/ Intermediate** **3.00**

This course is designed for business professionals at an intermediate Spanish level who have the need for better communication with Spanish-speakers. Oral practice encourages actual communication in Spanish. Students will build vocabulary and verbs while gaining confidence in speaking in Spanish.

**802-122**  
**Conversational Spanish for Business - Advanced** **3.00**

This course is designed for business professionals at an advanced Spanish level who have the need for better communications with Spanish speakers. Oral practice encourages actual communication in Spanish. Students will learn to communicate effectively and comfortably at an advanced level in Spanish. PREREQUISITES: 802-120 - Conversational Spanish for Business 802-121 - Conversational Spanish for Business/ Intermediate

**802-123**  
**Spanish III** **3.00**

Spanish III will continue the study of the Spanish language using four components: listening, speaking, reading, and writing. It is a progressive study, using the knowledge gained through Spanish I and Spanish II. PREREQUISITES: 802-112 - Spanish II

**802-124**  
**SPA I: First Semester Spanish** **4.00**

Spanish I will develop and emphasize all basic language skills: listening comprehension, speaking, reading, and writing. Spanish I is the first semester Spanish course at Gateway Technical College and is designed for those students with little or no previous knowledge of the Spanish language and for native Spanish speakers who would like to improve their grammar, reading, and writing. Classes will include an extensive study of basic vocabulary and grammatical structures as well as cultural studies of both Spain and Latin America. All Spanish classes taught at Gateway are immersion classes. PREREQUISITES: 838-105 - Reading & Study Skills, Intro

**802-125**  
**SPA II: Second Semester Spanish** **4.00**

Spanish II is a continuation of Spanish I and will continue to emphasize the development of all basic language skills: listening comprehension, speaking, reading, and writing. Spanish II is the second semester Spanish course at Gateway Technical College and is designed for those students who have completed Spanish I at Gateway or another college/university and for native Spanish speakers who would like to improve their grammar, reading, and writing. Classes will include an extensive study of basic vocabulary and grammatical structures as well as cultural studies of both Spain and Latin America. All Spanish classes taught at Gateway are immersion classes. PREREQUISITES: 802-111 - Spanish I or 802-124 - SPA I: First Semester Spanish

**802-126**  
**Spanish for Healthcare Providers** **3.00**

This course is designed to enable students who know little or no Spanish to communicate at a rudimentary level with Spanish-speaking individuals in a healthcare setting. The course covers medical vocabulary, basic conversational skills, and a study of cultural issues related to Spanish speaking individuals in medical situations.

**804-107**  
**College Mathematics** **3.00**

This course is designed to review and develop fundamental concepts of mathematics pertinent to the areas of: 1) arithmetic and algebra; 2) geometry and trigonometry; and 3) probability and statistics. Special emphasis is placed on problem solving, critical thinking and logical reasoning, making connections, and using calculators. Topics include performing

# Course Descriptions

arithmetic operations and simplifying algebraic expressions, solving linear equations and inequalities in one variable, solving proportions and incorporating percent applications, manipulating formulas, solving and graphing systems of linear equations and inequalities in two variables, finding areas and volumes of geometric figures, applying similar and congruent triangles, converting measurements within and between U.S. and metric systems, applying Pythagorean Theorem, solving right and oblique triangles, calculating probabilities, organizing data and interpreting charts, calculating central and spread measures, and summarizing and analyzing data. PREREQUISITES: 834-109 -Pre-Algebra

**804-113**  
**College Technical Math 1A** **3.00**

In this course, topics include: solving linear, quadratic, and rational equations; graphing; formula rearrangement; solving systems of equations; percents; proportions; and operations on polynomials. Emphasis will be placed on the application of skills to technical problems. Successful completion of College Technical Math 1-A and College Technical Math 1-B is the equivalent of College Technical Math 1. PREREQUISITES: 834-110 - Elementary Algebra with Applications

**804-114**  
**College Technical Math 1B** **2.00**

This course includes the following topics: measurement systems; computational geometry; right and oblique triangle geometry; and trigonometric functions on the unit circle. Emphasis will be on the application of skills to technical problems. Successful completion of College Technical

Math 1-A and College Technical Math 1-B is the equivalent of College Technical Math 1. COREQUISITES: 804-113 - College Technical Math 1A

**804-115**  
**College Technical Math 1** **5.00**

Topics include: solving linear, quadratic, and rational equations; graphing; formula rearrangement; solving systems of equations; percent; proportions; measurement systems; computational geometry; right and oblique triangle trigonometry; trigonometric functions on the unit circle; and operations on polynomials. Emphasis will be on the application of skills to technical problems. This course is the equivalent to College Technical Math 1A and College Technical Math 1B. PREREQUISITES: 834-110 - Elementary Algebra with Applications

**804-116**  
**College Technical Math 2** **4.00**

This course includes the following topics: vectors; trigonometric functions and their graphs; identities; exponential and logarithmic functions and equations; radical equations; equations with rational exponents; dimensions of a circle; velocity; sine and cosine graphs; complex numbers in polar and rectangular form; trigonometric equations; conic sections; and analysis of statistical data. Emphasis will be placed on the application of skills to technical problems. PREREQUISITES: 804-114 - College Technical Math 1B or 804-115 - College Technical Math 1

**804-123**  
**Math with Business Applications** **3.00**

This course covers real numbers, basic operations, linear equations, proportions with one variable, percents, simple interest, compound interest, annuity, and basic statistics with business/ consumer applications. Students learn to apply math concepts to the purchasing/buying and selling processes. PREREQUISITES: 834-109 - Pre-Algebra

**804-133**  
**Mathematics and Logic** **3.00**

Students will apply mathematical problem solving techniques. Topics will include symbolic logic, sets, algebra, Boolean algebra, and number bases. PREREQUISITES: 834-110 - Elementary Algebra with Applications

**804-149**  
**Math for Nursing Clinical Success** **1.00**

Students will receive intensive review and supplementary instruction in areas of weakness demonstrated on the TEAS assessment, including but not limited to algebraic applications, metric conversions, ratio and proportion, and data interpretation.

**804-181**  
**Calculus 2** **4.00**

Students will develop techniques for differentiation and integration of transcendental functions and use the derivative and the integral to solve certain applied problems. They will also extend calculus techniques to curves in polar coordinates and three-dimensional surfaces and form a basic understanding of infinite series and associated applications. PREREQUISITES: 804-198 - Calculus 1

**804-189**  
**Statistics, Introductory** **3.00**

Students taking Introductory Statistics display data with graphs, describe distributions with numbers perform correlation and regression analyses, and design experiments. They use probability and distributions to make predictions, estimate parameters, and test hypotheses. They draw inferences about relationships including ANOVA. PREREQUISITES: 834-110 - Elementary Algebra with Applications

**804-197**  
**College Algebra and Trigonometry with Applications** **5.00**

This course covers those skills needed for success in Calculus and many application areas on a baccalaureate level. Topics include the real and complex number systems, polynomials, exponents, radicals, solving equations and inequalities (linear and nonlinear), relations and functions, systems of equations and inequalities (linear and nonlinear), matrices, graphing, conic sections, sequences and series, combinatorial and the binomial theorem. PREREQUISITES: 804-114 - College Technical Math 1B or 804-115 - College Technical Math 1

**804-198**  
**Calculus 1** **4.00**

Students analyze and graph algebraic expressions, especially conic sections, develop an intuitive understanding of limits, derivatives, and integrals, and apply the derivative and integral to certain physical problems. PREREQUISITES: 804-197 - College Algebra and Trigonometry with Applications

**804-350**  
**Mathematics/Essential** **2.00**

This course uses the scientific calculator to solve problems involving integers, decimals and fractions along with percents. Formula usage and rearrangement is used in various practical problems including area and volume. Dimensional analysis is used in conjunction with the metric system for applications involving conversions. PREREQUISITES: 834-109 - Pre-Algebra

**804-370**  
**Mathematics I/Applied** **2.00**

Reviews the four basic mathematical operations on whole numbers, fractions and decimals. Also covers basic algebra and trigonometry related to technical fields. PREREQUISITES: 854-760 - Mathematics/Pre Technical

**804-371**  
**Mathematics II/Applied** **1.00**

Covers geometric principles along with calculations of linear, area and volume measurements. Includes interpreting and sketching graphs, the metric system, a method to solve technical conversions problems, and an introduction to statistics. PREREQUISITES: 804-370 - Mathematics I/Applied

**804-502**  
**Math 1 for Apprentice** **1.00**

This course will cover fractions, decimal fractions, linear measurements (English and metric).

**804-503**  
**Math 2 for Apprentice** **1.00**

Basic principles of math as it applies to shop problems involving cutting speeds and feeds, screw threads, gear calculations and numerical control.

**804-506**  
**Math 4 for Apprentice** **1.00**

This course will cover the geometric principles of triangles, polygons and circles. Trigonometry of right and oblique triangles as it relates to the machine trades will be covered.

**804-507**  
**Intro to Math Apprenticeship** **1.00**

This course will provide a foundation in the fundamentals of the application of mathematics. Emphasis is placed on achieving an understanding of general mathematical concepts, applications for the English and metric systems, direct measurement, algebra, and plane geometry. Each section will provide the student with the opportunity to apply mathematics to a practical shop situation.

**804-508**  
**Geometry Apprentice** **1.00**

This course will provide a foundation in the fundamentals of the application of geometry. Emphasis is placed on achieving an understanding of general geometry concepts. Each section will provide the student with the opportunity to apply geometry to a practical shop situation.

**804-509**  
**Algebra Apprenticeship** **1.00**

This beginning course covers basic mathematical operations applied to signed numbers and algebraic functions. Factoring linear and quadratic equations are included. Verbal problems, formulas, and formula manipulation are stressed.

**804-510**  
**Trigonometry Apprenticeship** **1.00**

Topics in geometry and fundamental trigonometry are studied. Areas and volumes are covered with emphasis on calculating dimensions and angles using geometric relationships and right and oblique trigonometry.

**804-511**  
**Apprenticeship Math Review** **0.50**

This course will teach students to apply mathematical fundamentals. Emphasis is placed on the achieving of an understanding of general mathematical concepts, applications for the English and Metric systems, direct measurement, algebra, and plane geometry. Each section will provide the student with the opportunity to apply mathematics to a practical shop situation.

**806-102**  
**Environmental Chemistry** **4.00**

This course is intended to provide students with a basic understanding of the chemical reactions and interactions that occur in the environment and the effect these chemicals have on the environment. Specifically, this course will examine atmospheric, water, and soil chemistry principles. Students will develop skills for sampling, quantitative detection and data analysis. Students will gain an understanding of biogeochemical

cycles and human impact on these cycles. PREREQUISITES: 804-107 - College Mathematics

**806-105**  
**Principles of Animal Biology** **4.00**

Introductory course focusing on general biological principles, cell structure and function, genetics, comparative anatomy and physiology, evolution, and ecosystems. Includes dissection of various fresh and preserved materials. This course is appropriate for OTA, AODA and other allied health students.

**806-112**  
**Principles of Sustainability** **3.00**

Prepares the student to develop sustainable literacy, analyze the interconnections among the physical and biological sciences and environmental systems, summarize the effects of sustainability on health and well-being, analyze connections among social, economic, and environmental systems, employ energy conservation strategies to reduce the use of fossil fuels, investigate alternative energy options, evaluate options to current waste disposal and recycling in the U.S., and analyze approaches used by your community to promote and implement sustainability. PREREQUISITES: 838-105 - Reading & Study Skills, Intro

**806-114**  
**General Biology** **4.00**

This course introduces general biological concepts and principles. Emphasis is on cell structure and function, genetics, evolution, and taxonomical relationships. Consideration is also given to diversity among the various kingdoms.

# Course Descriptions

<p><b>806-134</b> <b>General Chemistry</b> <b>4.00</b></p> <p>This course covers the fundamentals of chemistry. Topics covered include the metric system, problem solving, periodic relationships, chemical reactions, chemical equilibrium, properties of water, acids, bases, and salts, and gas laws. PREREQUISITES: 804-106 or 804-107 - College Mathematics</p>	<p><b>806-167</b> <b>Science of Technology</b> <b>3.00</b></p> <p>This course looks at the many devices we use in our everyday life and shows how they work. In the process, students learn the basic principles of science behind those devices, as well as how they are applied in other common objects. From levers to lasers, copy machines to computers, sensors to solenoids - virtually nothing is off limits in this class. Participants gain an awareness of the vast network of technology around them by exploring the history of technology, how technology affects society, great inventors and their inventions, as well as what the future can hold. When completed, students discover that devices don't work by "magic" but are carefully designed to take advantage of the behavior of matter and the laws of science. By exploring the world with this approach, you not only learn the basic principles of physics, but develop an understanding and appreciation of the many ways these principles may be applied.</p>	<p><b>806-177</b> <b>General Anatomy and Physiology</b> <b>4.00</b></p> <p>This course examines the basic concepts of human anatomy and physiology as they relate to health sciences. Using a body systems approach, the course emphasizes the interrelationships between structure and function at the gross and microscopic levels of organization of the entire human body. It is intended to prepare healthcare professionals who need to apply basic concepts of whole body anatomy and physiology to informed decision making and professional communication with colleagues and patients. PREREQUISITES: 806-134 - General Chemistry</p>	<p><b>806-186</b> <b>Biochemistry/Introduction</b> <b>4.00</b></p> <p>This introductory course is designed for students in health sciences. Selected topics of inorganic and organic chemistry are applied to fundamental areas of biochemistry. Units of study include carbohydrates, lipids and proteins, enzymes, nucleic acids, bioenergetics, metabolic pathways, and body fluids. PREREQUISITES: 806-134 - General Chemistry</p>
<p><b>806-143</b> <b>College Physics 1</b> <b>3.00</b></p> <p>This course presents the applications and theory of basic physics principles. It emphasizes problem solving, laboratory investigation, and applications. Topics include laboratory safety, unit conversions and analysis, kinematics, dynamics, work, energy, power, temperature, and heat. PREREQUISITES: 804-113 - College Technical Math 1A or 804-115 - College Technical Math 1</p>	<p><b>806-172</b> <b>Basic Nutritional Science</b> <b>3.00</b></p> <p>This course provides an introduction into the science of nutrition. Basics concepts related to digestion and metabolism are presented. The significance of carbohydrates, lipids, proteins and vitamins to the human organism are discussed. The relationship of proper nutrition to selected pathological conditions throughout the human lifecycle is presented. The concept of sustainability and environmentally - conscious food production introduced.</p>	<p><b>806-179</b> <b>Anatomy and Physiology, Advanced</b> <b>4.00</b></p> <p>Advanced Anatomy and Physiology is the second semester in a two semester sequence in which normal human anatomy and physiology are studied, using a body systems approach, with emphasis on the interrelationships between form and function at the gross and microscopic levels of organization. Instruction is delivered both within a classroom and in a laboratory setting. Experimentation within a science lab includes analysis of cellular metabolism and the individual components of body systems, such as the nervous, neuro-muscular, cardiovascular, and urinary systems. Students examine homeostatic mechanisms and their relationship to fluids, electrolytes, acid-base balance, and blood. Integration of genetics to human reproduction and development are also included in this course. PREREQUISITES: 806-177 - General Anatomy and Physiology</p>	<p><b>806-189</b> <b>Anatomy, Basic</b> <b>3.00</b></p> <p>This course examines concepts of anatomy and physiology as they relate to health careers. Learners correlate anatomical and physiological terminology to all body systems.</p>
<p><b>806-154</b> <b>General Physics 1</b> <b>4.00</b></p> <p>This course presents the applications and theory of basic physics principles. It emphasizes problem solving, laboratory investigation, and applications. Topics include unit conversion and analysis, vectors, translational and rotational kinematics, translational and rotational dynamics, heat and temperature, and harmonic motion and waves. PREREQUISITES: 804-114 - College Technical Math 1B or 804-115 - College Technical Math 1</p>			<p><b>806-197</b> <b>Microbiology</b> <b>4.00</b></p> <p>Topics include structure and functions of microorganisms, microbial control, infectious diseases, immunity and resistance to disease, problems of sanitation and control in relation to microbiology of air, water, food and sewage. This course is equivalent to 806-197 at other WTCS schools. PREREQUISITES: 806-177 - General Anatomy and Physiology or 806-105 - Principles of Animal Biology</p>
			<p><b>808-101</b> <b>Technical Reading</b> <b>1.00</b></p> <p>This course is designed for students pursuing a degree in nursing and/or information technology. Students will learn strategies to aid them in critically comprehending and analyzing information presented in nursing and/or information</p>

technology textbooks, improve vocabulary, apply written text information to new situations, and improve recall of information. PREREQUISITES: 838-105 - Reading & Study Skills, Intro

**809-112**  
**Principles of Sustainability** **3.00**

Prepares the student to develop sustainable literacy, analyze the interconnections among the physical and biological sciences and environmental systems, summarize the effects of sustainability on health and well-being, analyze connections among social, economic, and environmental systems, employ energy conservation strategies to reduce the use of fossil fuels, investigate alternative energy options, evaluate options to current waste disposal and recycling in the U.S., and analyze approaches used by your community to promote and implement sustainability. PREREQUISITES: 838-105 - Reading & Study Skills, Intro

**809-128**  
**Marriage and Family** **3.00**

This course introduces the student to the sociological aspects of marriage and family life in contemporary American society. Emphasis is on the study of cognitive, emotional, and behavioral patterns associated with courtship, love, mate selection, sexuality, and marriage. Moreover, it discusses the life span development in the family life cycle, balancing work and family, and parenting. This course is based on the premise that human attitudes, feelings, and behaviors are largely shaped and influenced by philosophy, gender, communication, and personal beliefs. Therefore, success in the institutions of marriage and family require knowledge and skills in the roles of spouse and parent and ways to apply concepts

to daily life. PREREQUISITES: 838-105 - Reading & Study Skills, Intro

**809-134**  
**Psychology, Abnormal** **3.00**

Examines the history, description, etiology, treatment, and DSM classification of psychological disorders. Topics include anxiety disorders, affective disorders, dissociative disorders, somatoform disorders, psychophysiological disorders, schizophrenia, developmental disorders of childhood and aging, psychosexual disorders, substance abuse disorders, and ethical and legal issues. PREREQUISITES: 809-198 - Psychology, Introduction to

**809-143**  
**Microeconomics** **3.00**

This course examines the behavior of individual decision makers, primarily consumers and firms. Topics include choices of how much to consume and to produce, the functioning of perfectly and imperfectly competitive markets, the conditions under which markets may fail, and arguments for and against government intervention. The student applies the fundamental tools of economics to real world problems. PREREQUISITES: 838-105 - Reading & Study Skills, Intro

**809-144**  
**Macroeconomics** **3.00**

Macroeconomics is an introductory course. Basic social choices regarding economic systems, basic economic aggregates, fiscal policy, the banking system, monetary policy, and international trade are the principle topics discussed in the course. Balance is drawn between theory, analysis, and a critique of the institutions that

characterize modern mixed-capitalist economies. Conflicting social goals, economic constraints, and environmental concerns provide the framework through which macroeconomy is analyzed. PREREQUISITES: 838-105 - Reading & Study Skills, Intro

**809-159**  
**Psychology, Abnormal** **3.00**

This course in abnormal psychology surveys the essential features, possible causes, and assessment and treatment of the various types of abnormal behavior from the viewpoint of the major theoretical perspectives in the field of abnormal psychology. Students will be introduced to the diagnosis system of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV). In addition, the history of the psychology of abnormality will be traced. Cultural and social perspectives in understanding and responding to abnormal behavior will be explored as well as current topics and issues within abnormal psychology. PREREQUISITES: 809-198 - Psychology, Introduction to

**809-166**  
**Ethics: Theory & Applications, Intro to** **3.00**

This course provides a basic understanding of the theoretical foundations of ethical thought. Diverse ethical perspectives will be used to analyze and compare relevant issues. Students will critically evaluate individual, social, and/or professional standards of behavior and apply a systematic decision-making process to these situations. PREREQUISITES: 838-105 - Reading & Study Skills, Intro

**809-172**  
**Diversity Studies, Introduction to** **3.00**

Race, Ethnic, and Diversity Studies is a course that draws from several disciplines to reaffirm the basic American values of justice and equality by teaching a basic vocabulary, a basic history of immigration and conquest, principles of transcultural communication, legal liability, and the value of aesthetic production to increase the probability of respectful encounters among people. In addition to an analysis of majority/minority relations in a multicultural context, the topics of ageism, sexism, gender differences, sexual orientation, people with disabilities, and the Americans with Disabilities Act (ADA) are explored. Ethnic relations are studied in global and comparative perspectives. PREREQUISITES: 838-105,

**809-188**  
**Psychology, Developmental** **3.00**

Developmental Psychology is the study of human development throughout the lifespan. This course explores developmental theory and research with an emphasis on the interactive nature of the biological, cognitive, and psychosocial changes that affect the individual from conception to death. Application activities and critical thinking skills will enable students to gain an increased knowledge and understanding of themselves and others. PREREQUISITES: 838-105 - Reading & Study Skills, Intro

**809-195**  
**Economics** **3.00**

An introductory course which describes, analyzes, and critiques factors which influence the overall performance of the economic system. Topics include supply-demand analysis, national income determination models, fiscal and monetary policy, money, financial institutions, the

# Course Descriptions

federal reserve system, unemployment, poverty, international trade, economic growth, inflation, and environmental deterioration. The links between economic problems, theory, and public policy are emphasized. PREREQUISITES: 838-105 - Reading & Study Skills, Intro

**809-196**  
**Sociology, Introduction to** **3.00**

This course examines interpersonal relationships of humans and groups and the consequent structure of society. It details the various social processes and concepts which shape human behavior, analyzing such phenomena as organizations, deviance, race and ethnic relations, population, urbanization, social change, and social movements. Religion, education, and the family are studied. PREREQUISITES: 838-105 - Reading & Study Skills, Intro

**809-198**  
**Psychology, Introduction to** **3.00**

This course introduces students to some of the major theories and topics of psychology, including the physiological basis of behavior, personality and learning theories, memory, states of consciousness, stress, research methods, intelligence, human development, psychopathology, and social behavior. PREREQUISITES: 838-105 - Reading & Study Skills, Intro

**809-365**  
**Social/Occupational Interaction and Skills** **2.00**

Introduces the student to the skills necessary to work effectively in a changing, interdependent world with its global economy. Job exploration and career development are seen in the context of self development and harmoniously working with others. PREREQUISITES: 858-760 - Pre-Technical Reading

**809-991**  
**Social Science General Education Credit** **3.00**

Credit is given to students who completed their general education requirements, but did not complete a particular 809 course, through being granted up to six credits in 809-991. Students must have either a transfer designation or a "life experience" designation for any credit given. This credit is then substituted for general education coursework in the 809 area.

**831-103**  
**College Writing, Intro** **3.00**

Introduces basic principles of composition, including organization, development, unity, and coherence in paragraphs and multi-paragraph documents. PREREQUISITES: 851-769 - Writing/Pre-College

**834-109**  
**Pre-Algebra** **3.00**

Provides an introduction to algebra. Includes operations on real numbers, solving linear equations, percent and proportion, and an introduction to polynomials and statistics. Prepares students for elementary algebra and subsequent algebra related courses. PREREQUISITES: 854-760 - Mathematics/Pre Technical

**834-110**  
**Elementary Algebra with Applications** **3.00**

This course offers traditional algebra topics with applications. Learners develop algebraic problem solving techniques needed for technical problem solving and for more advanced algebraic studies. Topics include linear equations, exponents, polynomials, rational expressions, and roots and radicals.

Successful completion of this course prepares learners to succeed in technical mathematics courses. PREREQUISITES: 854-769 - Algebra Pre-College

**835-104**  
**College Success** **2.00**

This course provides learners with strategies to develop skills for success in college. Learners will apply self management techniques, explore resource management strategies, and learn about ways to improve personal effectiveness.

**836-113**  
**Biology, Basic Prep** **2.00**

Introduces learners to basic principles of biology. Students will become familiar with the nature of science, basic biochemistry concepts, and the structure and function of a cell.

**836-133**  
**Prep for Basic Chemistry** **2.00**

Introduces basic principles of chemistry including the properties of matter, atomic structure, and the classification of chemical reactions. Students learn to characterize solutions, acids, and bases, and differentiate between elements and compounds.

**838-105**  
**Reading & Study Skills, Intro** **3.00**

This course provides learners with opportunities to develop study skills and expand reading skills including comprehension, fluency, and vocabulary skills. Learners apply reading skills to academic tasks and read to acquire information from a variety of sources. PREREQUISITES: 858-760 - Pre-Technical Reading

**851-760**  
**Pre-Technical Writing** **2.00**

This course helps students with the writing fundamentals they will need to be successful

in Pre-College Writing. It emphasizes recognition of sentences and sentence parts, basic grammar and mechanics, and effective word choice. By the end of the course, students should be able to express their thoughts in clear, correctly structured sentences.

**851-760A**  
**Communications Skills/Pre Technical 1CR** **1.00**

**851-761**  
**Pre-Tech Vocational Communications** **2.00**

In this class, you will learn to use English to achieve academically in Gateway vocational programs. Advanced ESL students will learn to: use English to interact in the college classroom, provide subject matter information in spoken and written form, and use learning strategies to better understand academic knowledge taught at Gateway vocational classrooms. Your English language skills will grow as you gain the self-confidence to succeed in college courses.

**851-764**  
**Communication Skills Review** **1.00**

**851-769**  
**Writing/Pre-College** **2.00**

In this course, students will develop the writing skills needed for Intro to College Writing. Students will learn to structure effective sentences and compose unified, coherent paragraphs using the writing process. By the end of the semester, students should be able to write correct sentences, well-developed paragraphs, and multi-paragraph documents. PREREQUISITES: 851-760 - Pre-Technical Writing

**854-760**  
**Mathematics/Pre Technical** **2.00**

Pre-Technical Mathematics is a course designed to enable students to improve and enhance their mathematical skills in order to deal more effectively with mathematics in a future program. Material to be covered includes basic operations with fractions, decimals, and percents. Also included will be work with pre-geometry (measurement involving perimeter, circumference, area and volume). PREREQUISITES: 854-750 - Mathematics 200

**854-761**  
**Algebra/Pre Technical** **2.00**

A basic algebra course which covers algebraic expressions, polynomials, factoring, operations with integers, solving equations, and word problems. PREREQUISITES: 854-760 - Mathematics/Pre Technical

**854-763**  
**Mathematics Review** **1.00**

**854-765**  
**Mathematics Review for the Sciences** **1.00**

**854-766**  
**Algebra Review** **1.00**

**854-767**  
**Geometry Review** **1.00**

**854-769**  
**Algebra Pre-College** **2.00**

Pre College Algebra is a beginning and/or review course which prepares the student for college level mathematics. The course covers basic mathematical operations applied to signed numbers

and algebraic functions and also includes operations with polynomials. Factoring, linear and quadratic equations, formulas, and formula manipulation are also included. PREREQUISITES: 854-761 - Algebra/Pre Technical

**856-760**  
**Science/PreTechnical** **2.00**

**856-760A**  
**Science/Pretechnical Review-Animal Biology** **1.00**

This course is a review of basic scientific concepts and scientific method in the areas of animal biology, to prepare students for postsecondary science courses.

**856-760B**  
**Science/Pretechnical Review-Plant Biology** **1.00**

This course is a review of basic scientific concepts and scientific method in the field of plant biology, to prepare students for postsecondary science courses.

**858-760**  
**Pre-Technical Reading** **2.00**

Pre-Technical Reading is designed to help students improve their ability to read textbooks and other printed work in vocational programs. Students are placed into the course based on Gateway placement test scores and counselor or teacher recommendation. The course provides basic skills instruction, including general vocabulary and comprehension practice, but it emphasizes reading/ study skill techniques necessary for success in Gateway's courses. PREREQUISITES: 858-750 - Reading 200

**858-760A**  
**Reading/Pre Technical 1 Cr** **1.00**

**858-763**  
**Reading Review** **1.00**

**858-764**  
**Pre Technical Reading for the Sciences** **2.00**

**858-765**  
**Reading Review for the Sciences** **1.00**

**858-769**  
**Pre-College Reading** **2.00**

Pre-College Reading provides reading reinforcement for good readers with special emphasis on reading rate, vocabulary development, skimming, scanning, and effective comprehension. PREREQUISITES: 858-760 - Pre-Technical Reading

**861-141**  
**IEP: Intermediate Reading/ Vocabulary** **4.00**

In this course, students will use reading strategies, such as skimming and scanning, to increase reading comprehension and speed in academic and professional settings. Students will examine both oral and silent reading strategies, along with memory training techniques. Students will acquire skills to draw inferences and conclusions, and to distinguish fact from opinion. Students will interpret graphs, tables and diagrams. Students will increase vocabulary, develop word comprehension strategies and use multimedia resources, such as dictionaries and glossaries, independently. Upon completion of the course, students will be able to read and summarize academic and nonfiction texts by paraphrasing orally and in writing. Students will be able to use reading and vocabulary strategies, along with memory techniques, to study and prepare for exams.

**861-142**  
**IEP: Intermediate Grammar and Writing** **4.00**

In this course, students will learn to use a variety of effective sentence structures to compose unified, coherent paragraphs using the standard American rhetorical style and will write multi-paragraph documents. Students will acquire intermediate grammar, punctuation and spelling skills to write clearly and effectively in academic or professional settings. Students will be introduced to American academic standards of intellectual property. Upon completion of the course, students will be able to write multiple drafts using the writing process, edit writing, and produce grammatically correct sentences, well-structured paragraphs and 5-paragraph essays utilizing standard punctuation and spelling rules. Students will be able to write paragraphs and essays both in and out of class. Students will be able to define American concepts of intellectual property, including citations, and plagiarism.

**861-143**  
**IEP: Intermediate Speak/ Pronunciation** **4.00**

In this course, students will learn and practice conversational skills with a partner, in a small group and will speak in front of the class. Students will acquire skills to speak extemporaneously and with preparation, including multimedia presentation tools. Students will develop intermediate level pronunciation knowledge, awareness and skills for clear communication. Expanding idiomatic language, students will develop paraphrasing techniques and the ability to express both facts and opinions. They will explore speaking strategies that show awareness of culture and bias. Upon completion of the course, students will be able to speak clearly and confidently with one or more conversational partners in

# Course Descriptions

academic and professional settings. they will be able to speak extemporaneously and prepare and give an intermediate level presentation.

**861-144**  
**IEP: Intermediate Listen/**  
**Note-taking** **4.00**

In this course, students will learn and practice active listening skills with a partner, in a small group and in front of the class. Students will analyze elements of communication situations, including nonverbals, gender and cultural differences. Students will acquire skills to listen and respond in real time with and without prior knowledge and preparation. Students will develop a variety of note-taking techniques to increase speed and accuracy in listening comprehension. They will demonstrate listening comprehension by paraphrasing in speaking and writing. Upon completion of the course, students will be able to listen and demonstrate comprehension of a conversation with one or more partners and in front of the class. Students will be able to listen and respond to multimedia presentations for academic and professional situations. Students will be able to distinguish between facts and opinions and interpret nonverbal communication and body language.

**861-145**  
**IEP: Intermediate Amer**  
**College Culture** **4.00**

In this course, students will integrate their skills in reading, vocabulary, writing, grammar, speaking, and listening to acquire knowledge of the American College Culture and improve study skills. They will explore higher education vocabulary and college student roles. They will learn American societal rules and perceptions about personal responsibility, dependence,

independence, interdependence, passivity, aggression and assertiveness. Students will interact with the American College Culture in realtime in person, by phone and online. Students will be able to ask questions, seek answers, summarize interaction outcomes and formulate follow up questions and actions. Students will also be able to demonstrate personal effectiveness in the American College Culture through the use of a variety of study techniques for learning, memory and test preparation.

**890-100**  
**College Success Skills** **1.00**

Designed to promote student academic success. Through a variety of awareness activities, students are introduced to study skills, time management techniques, health-related and relationship-building skills, as well as to programs, services, policies and procedures offered by Gateway.

**890-101**  
**Life Work Evaluation** **1.00**

Provide assistance to individuals in developing documentation required for experientialcredit. Participant prepares a detailed document with appropriate validation of occupational and life experience.

**890-102**  
**Job Seeking Skills** **1.00**

This course emphasizes the development of knowledge and skills necessary to obtain employment. Students will explore job seeking techniques unique to their chosen career field, as well as techniques common to all successful job seekers.

**890-103**  
**Employability Skills** **2.00**

After completion of course, students will demonstrate positive personal image, exhibit positive work attitude, practice good work habits and ethical behavior, accept responsibility, and cooperate with others in the workplace.

**890-105**  
**Serving to Learn Locally** **2.00**

Students will collaborate with a community partner to design and perform a service project to address a community need. Students will gain an awareness of themselves and their community and develop an understanding of community diversity and civic engagement.

**890-106**  
**Serving to Learn Globally** **2.00**

Through immersion in a global community, students will collaborate to identify a need, plan a service, perform the service and/or evaluate the result. They will apply principles of professionalism, team work, and critical thinking, as well as their chosen career's technical knowledge, attitude and skill. Through reflection and dissemination, students will integrate an increased sensitivity to the diversity of the community, global connectivity, civic engagement and their own professional career path.

**890-155**  
**The Gateway Experience** **1.00**

This multi-session workshop is designed to give program students an overview of Gateway Student Service topics including advising, registration, the add/drop/withdrawal process. Support services, such as career services, advanced standing,

financial aid, and student employment will be discussed. The Gateway Student Handbook will be used as the textbook/guide for the course.

**890-156**  
**Personal/Professional Success** **1.00**

Learners in this interactive course will develop practical strategies for success to enhance personal and professional effectiveness. Topics will include problem solving, interpersonal skills, self-advocacy, adapting to workplace culture, personal responsibility, and managing transitions. This course can be counted as an elective credit towards your degree requirements at Gateway.

**890-161**  
**Critical Thinking** **3.00**

This course will develop students' analytical and creative abilities for enhanced professional and academic performance, and for more positive social interaction. Focus will be on identifying reasoning fallacies, presuppositions of arguments, critical missing information and psychological barriers to sound thinking. The application of critical thinking to problem-solving, persuasion, consumerism and personal philosophy will be an integral part of this course.

## PRESIDENT

### Bryan Albrecht

*CEO/President*

B.S., M.S., University of Wisconsin–Stout  
Ed.S., Ed.D. University of Minnesota

### Kelly Bartlett

*Assistant to the President*

A.A., B.S., Upper Iowa University

### Mary Harpe

*Assistant to the President*

A.A.S., College of Southern Nevada

## EXECUTIVE VICE PRESIDENT/ PROVOST

### Zina Haywood

*Executive Vice President/Provost*

B.A., University of Michigan  
M.P.A., Oakland University

### John Thibodeau

*Assistant Provost/ Vice President, Institutional Effectiveness & Student Success*

B.A., Marquette University  
M.A., Creighton University  
Ph.D., University of Nebraska–Lincoln

### Jacqueline Schildhouse

*Assistant to the Executive Vice President/Provost*

A.A.S., Gateway Technical College

### Denise Schneider

*Assistant to the Assistant Provost/ Vice President, Institutional Effectiveness & Student Success*

B.S. Elmhurst College

## BUSINESS & WORKFORCE SOLUTIONS

### Deborah Davidson

*Vice President, Business & Workforce Solutions*

B.A., Concordia University  
M.A., National–Louis University

### Robin Hoke

*Project Director, Business & Workforce Solutions*

B.S. Cardinal Stritch University

### Lauri Howard

*Director, Workforce Training*

B.A., Hope College  
M.A., Western Michigan University  
M.S., Kaplan University

### Jane Kluchka

*Administrative Assistant, Business & Workforce Solutions*

B.A., Barat College

### Kristin Niemiec

*Manager, Launch Box*

B.A., University of Wisconsin–Parkside

### Michelle Talhami

*Account Manager, Business & Workforce Solutions*

B.S., Carroll College  
M.S., University of Wisconsin–Milwaukee

### Kate Walker

*Director, CATI Business Services*

B.A., University of Wisconsin–Parkside  
M.B.A., Cardinal Stritch University

## COMMUNITY & GOVERNMENT RELATIONS

### Stephanie Sklba

*Vice President, Community & Government Relations*

B.A., University of Wisconsin–Parkside  
M.A., Jones International University

### Kallie Chittenden

*Program Manager, Center for Sustainable Living*

B.S., Montana State University

### Kristin Gunia

*Manager, Student Communications & Marketing*

B.S., Iowa State University  
M.B.A., University of Wisconsin–Milwaukee

### Jayne Herring

*Director, Marketing*

B.S., University of Wisconsin–Milwaukee

### Susan Walther

*Administrative Assistant to the Vice President, Community & Government Relations*

A.A.S., Gateway Technical College

## FACILITIES

### William Whyte

*Vice President, Human Resources & Facilities*

B.A., Carthage College  
M.B.A., University of Wisconsin–Milwaukee

### George Andrews III

*Manager, Facilities*

### Lawrence Paruszkiewicz

*Director, Building Services*

B.S., University of Wisconsin–Platteville

### John Thielen

*Director, Building Services*

A.A.S., Gateway Technical College  
B.A., University of Minnesota

## FINANCE

### Bane Thomey

*CFO/Vice President, Finance & Administration*

B.B.A., University of Wisconsin–Whitewater  
M.B.A., University of Wisconsin–Parkside

### Susan Debe

*Assistant to the CFO/Vice President, Finance & Administration*

### Beverly Hansen

*Controller*

B.B.A., University of Wisconsin–Milwaukee;  
C.P.A.

### Sharon Johnson

*Assistant Controller*

B.S., University South Carolina

### Debbie Lewis

*Manager, Grant Accounting*

B.S. University of Wisconsin–Parkside

### Jason Nygard

*Director, Budget & Internal Audit*

B.S., Northern Michigan University  
M.A., Marquette University

## FOUNDATION

### Jennifer Charpentier

*Executive Director, Foundation*

B.A., Carleton College  
M.A., Ph.D., University of Minnesota

# Faculty and Administration

## HUMAN RESOURCES

### William Whyte

*Vice President, Human Resources & Facilities*

B.A., Carthage College

M.B.A., University of Wisconsin–Milwaukee

### Selina Bohn

*HR Generalist*

A.A., College of Lake County

B.S., University of Wisconsin–Parkside

### John Frost, Jr.

*Director, Employee/Labor Relations & Payroll*

B.S., University of Wisconsin–Parkside

### Michael Gohlke

*Director, Safety & Security*

A.A., College of DuPage

B.A., Aurora University

M.S., Lewis University

### Mary Halberstadt

*Associate Director, Certification*

### Alan Jelinek

*Manager, Payroll*

A.A.S., Gateway Technical College

B.S., Cardinal Stritch University

### Paulette Jenrette

*Assistant to the Vice President, Human Resources & Facilities*

A.A.S., Gateway Technical College

B.S., University of Wisconsin–Parkside

### Judy McNamara

*Administrative Assistant, Benefits*

### Debbie Miller

*Director, Human Resources*

B.A., Alverno College

### Jacqueline Morris

*Director, Staffing*

B.S., University of Wisconsin–Parkside

M.S., Cardinal Stritch University

### Theresa Simpson

*Administrative Assistant, Staffing*

### Theresa Strash

*Administrative Assistant, Benefits*

## INSTITUTIONAL EFFECTIVENESS

### Anne Whyntt

*Associate Vice President, Research, Planning & Development*

B.A., M.P.A., University of Wisconsin–Parkside

### Nancy Chapko

*Instructional Designer/Student Learning Coordinator*

B.S., Carroll College

M.S., Ed.S. University of Wisconsin–Stout

### Margaret Hunter

*Learning Technologist*

B.A., American University

M.S., South Dakota State University

### Kamaljit Jackson

*Manager, Quality Systems*

A.A.S., Milwaukee Area Technical College

B.S., Cardinal Stritch University

### Joshua Vollendorf

*Manager, Employee Learning*

B.S., M.S.E., University of Wisconsin–Platteville

## LEARNING INNOVATION DIVISION

### Jeffrey Robshaw

*CIO/Vice President, Learning Innovation*

B.A., St. Norbert College

M.S., Illinois State University

### Edwin Clark

*State Reporting/Software Development Administrator*

A.A.S., Gateway Technical College

### Eric Doherty

*Director, Server & Virtualization Technology*

A.A.S., Gateway Technical College

### Daniel Madsen

*Director, Information Technology*

B.S., Illinois Institute of Technology

### Jennifer Olson

*Administrative Assistant*

B.S., University of Wisconsin–Parkside

### Alan Pinkerton

*Director, Information Systems*

A.A.S., Gateway Technical College

## LIBRARY

### Gary Flynn

*Dean, Campus Affairs/Library Manager*

B.S., University of Wisconsin–Oshkosh

M.L.I.S., University of Wisconsin–Milwaukee

### Ellen Pedraza

*Library Instruction and Reference Specialist*

B.A., University of Wisconsin–Milwaukee

M.L.I.S., University of Wisconsin–Milwaukee

### Rachel Rohlf

*Library Instruction and Reference Specialist*

B.A., M.L.I.S., University Illinois–Urbana Champaign

M.A., Penn State University

### Jason Steagall

*Library Instruction and Reference Specialist*

B.A., University of Wisconsin–Stevens Point

M.L.I.S., University of Wisconsin–Milwaukee

## WGTD 91.1 FM

### David Cole

*General Manager*

B.A., Luther College

---

## ACADEMIC ADMINISTRATION

---

## ELKHORN CAMPUS

### Manoj Babu

*Associate Dean, Business*

B.S., Texas A&M University

M.B.A., Marquette University

### Michael O'Donnell

*Dean, Campus Affairs/*

*Health/Veterinary Sciences*

A.A., County College of Morris

RN, B.S., MPH., University South Carolina

M.Ed., University Florida

## BURLINGTON CENTER

### Terry Simmons

*Burlington Center Administrator/Dean, Service Occupations*

B.S., Northern Michigan University  
M.A., Northeastern Illinois University  
Ed.S., Northern Illinois University

## KENOSHA CAMPUS/ HORIZON CENTER

### Gary Flynn

*Dean, Campus Affairs/Library Manager*

B.S., University of Wisconsin–Oshkosh  
M.L.I.S., University of Wisconsin–Milwaukee

### Cyndean Jennings

*Dean, Developmental Education*

B.S.W., University of Wisconsin – Green Bay  
M.S.E., University of Wisconsin–Oshkosh

### Teresa LaMacchia

*Associate Dean, Academic Operations*

B.S., Arizona State University

### JaTawn Pinson

*Project Director*

B.A., Concordia University  
M.S.E., University of Wisconsin–Platteville  
Ed.D., Walden University

### Diane Skewes

*Associate Dean, Nursing*

R.N., A.A.S., Milwaukee Area Technical College;  
B.S.N., Marquette University  
M.S.N., University of Wisconsin–Milwaukee

### Joseph Whiten

*Director, Law Enforcement Training*

B.A., Carroll College  
M.S., Springfield College

## RACINE CAMPUS

### Ray Koukari, Jr.

*Dean, Campus Affairs, Business & IT/  
Manufacturing, Engineering & Transportation  
(MET)*

M.B.A., Regent University

### Kathryn Nordhaus

*Dean, General Studies*

B.A., University of Illinois, Urbana–Champaign  
M.A., DePaul University

### Stacia Thompson

*Project Director*

B.S., M.S., Concordia University

## LEARNING SUCCESS

### Nicole Gustafson Binger

*Counselor, Student Support*

B.S., University of Wisconsin–Madison  
M.S., University of Wisconsin–Whitewater

### Michelle James

*Director, Testing Services*

B.A., Marquette University  
M.A., Ohio State University

### Katie Lohre

*Counselor, Student Support*

B.A., University of Wisconsin–Parkside  
M.S. Drake University

### Tammi Summers

*Dean, Learning Success*

B.S., M.S.E., University of Wisconsin–Whitewater  
Ph.D., University of Wisconsin–Milwaukee

### Christine Tutlewski

*Director, Tutoring Services*

B.A., University of Wisconsin–Parkside  
M.A., University of Wisconsin–Milwaukee

### Vicki Wahler

*Counselor, Student Support*

B.S., M.S., Illinois State University

## STUDENT SUCCESS

### Angela Becerra-Chvilicek

*Director, College Access*

B.A., University of Wisconsin–Milwaukee

### Cynthia Beltran

*Advisor, Academic*

B.A., M.A., Lakeland College

### Tanya Burton

*Manager, Student Services Center*

B.A. Indiana University  
M.A. Ohio State University

### Rachel Christman

*Manager, Student Services Center*

B.A., Miami University of Ohio  
M.S., University of Wisconsin–Milwaukee  
M.S., Cardinal Stritch University

### Janet Days

*Advisor, Academic*

B.A., University of Wisconsin–Parkside

### Jolanda Dinkins

*Assistant Registrar:*

*Registration & Transfer Credit*

B.A., Illinois State University  
M.H.A., Governors State University

### Sheri Eisch

*Counselor, Career*

B.S., University of Wisconsin–Parkside  
M.S., University of Wisconsin–Milwaukee

### Jane Finkenbine

*Director, College Connection*

B.A., Franklin College

### Kevin Gerou

*Advisor, Academic*

B.A., University of Wisconsin–Madison

### Andrew Goodman

*Director, Academic Advising & Career and  
Employment Services*

B.A., University of Wisconsin–Parkside  
M.S., Golden Gate University

### Marshall Hamilton

*Advisor, Academic*

A.A.S. Gateway Technical College  
B.A., M.S., Concordia University  
M.A., University Phoenix

### Travis Jansen

*Assistant Registrar: Degree Audit & Curriculum*

B.A., Marquette University

### Justin Kehring

*Director, Financial Aid*

A.A., University of Wisconsin–Waukesha  
B.A., University of Wisconsin–Milwaukee

# Faculty and Administration

**Jason Kemp**

*Advisor, Academic*

B.A., Morehouse College  
M.S., University of Wisconsin–Milwaukee

**Kevin McCray**

*Counselor, Career*

B.A., University of Wisconsin–Madison  
M.S., University of Wisconsin – Whitewater

**Desmar McDuffie, Sr.**

*Advisor, Academic*

B.S., Springfield College

**Monica McNaughton**

*Director, Student Finance*

B.A., American Intercontinental University  
M.B.A., Alverno College

**Chrystal Moez**

*Registrar*

B.A., Campbell University  
M.B.A., Campbell University

**Michelle Nevarez-Larkin**

*Advisor, Academic*

B.A., University of Wisconsin–Parkside  
M.S.E., University of Wisconsin–Platteville

**Raquel Palacios**

*Advisor, Academic*

B.A., University of Wisconsin–Oshkosh  
M.S., University of Wisconsin–Whitewater

**Vanessa Perez**

*Advisor, Academic*

B.A., M.S., University of Wisconsin–Milwaukee

**Stacy Riley**

*Associate Vice President of Student Success*

Technical Diploma, Mid–State Technical College  
B.A., University of Wisconsin–Stevens Point  
M.S., Capella University

**Rosalva Santana**

*Advisor, Academic*

B.A., University of Wisconsin–Parkside  
M.S., University of Wisconsin–Whitewater

**Julie Terasek**

*Student Finance Compliance Manager*

B.A., University of Wisconsin–Milwaukee

**Maria Torres**

*Advisor, Academic*

B.A., University Texas–El Paso  
M.A., University of Wisconsin–Milwaukee

**Edwardo Vargas III**

*Advisor, Academic*

B.A., University of Wisconsin–Parkside

**Yoceline Vargas**

*Advisor, Academic*

B.A., University of Wisconsin–Parkside

**Barbara Wagner**

*Advisor, Academic*

A.A.S., Waukesha County Technical College  
B.A., Carroll College  
M.A., Lakeland College

**Steven Wilkes**

*Counselor, Career*

B.S., University of Wisconsin–La Crosse  
M.S., University of Wisconsin–Stout

**Dwayne Windham**

*Advisor, Academic*

B.A., M.B.A., University of Wisconsin–Whitewater

**Ann Witte**

*Manager, Student Services Center*

B.S., M.S., Northern Illinois University

---

**DISTRICT FACULTY  
INSTRUCTIONAL STAFF**

---

**BUSINESS & INFORMATION  
TECHNOLOGY****Kari Aiello**

A.A.S., Gateway Technical College  
B.A., Carthage College

**Mary Baldwin–Grimes**

B.A., University of Wisconsin–Green Bay

**Richard Barribeau**

B.A., Carroll College  
M.A., University of Wisconsin–Eau Claire

**Michael Benoit**

A.A.S., Bay De Noc Community College  
B.S.I.T., Lake Superior State University  
M.S.A., Central Michigan University

**Kelly Brand**

B.S., Northern Michigan University  
M.B.A., Aurora University

**Jill Buchmann**

B.S., Marquette University; C.P.A.

**James Buck**

A.A.S., Carl Sandburg College  
B.A., Monmouth College

**Ellen Burton**

B.B.A., M.A.T., University of Wisconsin–Whitewater

**Jennifer Christianson**

B.S.M.E., Kettering University  
M.B.A., Northwestern University

**Sharilyn Due**

B.S., University of Wisconsin–Parkside  
M.B.A., University of Wisconsin–Eau Claire

**Paul Ehlers**

B.A., Simpson College

**Edward Grochowski**

B.S., M.S., University of Wisconsin– Stout

**Ken Haling**

A.A.S., Milwaukee Area Technical College  
B.A., Lakeland College  
M.B.A., University of Wisconsin–Whitewater;  
C.P.A., C.M.A.

**Jef Halverson**

B.S., University of Wisconsin–Parkside

**Michael Hashek**

B.A., St. Norbert College  
M.B.A., University of Wisconsin–Whitewater

**Pamela Hillman**

B.S., University of Wisconsin–Parkside; C.P.A.

**Marilyn F. Holden**

B.S.E., University of Wisconsin–Whitewater  
M.S., Johnson & Wales University

**Christian Hur**

B.S., University of Wisconsin–Oshkosh

**Achille Infusino**

A.A.S., Gateway Technical College  
B.A., Carthage College  
M.B.A., Marquette University

**Takis Kinis**

A.A., Milwaukee Area Technical College  
B.A., M.S., Cardinal Stritch University

**Wendy Klemp**

A.A.S., Gateway Technical College  
B.S., University of Phoenix

**Cheryl Konwent**

A.A.S., College of Lake County  
B.S., M.B.A., University of Wisconsin–Parkside  
M.Ed., Concordia University; C.P.A.

**Vivian Krenzke**

B.S., M.B.A., University of Wisconsin–Parkside

**Susan LaCanne**

B.S., University of Wisconsin–Parkside  
M.A., University of Phoenix

**Mark Lange**

B.B.A., M.S., University of Wisconsin–Madison

**Christine Lazaro**

A.A.S., Milwaukee Area Technical College  
B.S., Regis University

**Laura Laznicka**

B.A., University of Wisconsin–Parkside

**Pamela Manning**

B.A., Concordia University  
M.S., University of Wisconsin–Milwaukee

**Rebecca Marschner**

B.B.A., University of Wisconsin–Whitewater  
M.S.E., Concordia University

**Linda McGee**

B.S., University of Wisconsin–Parkside  
M.S., Cardinal Stritch; C.P.A.

**John Mizer**

Certificate, Gateway Technical College

**Paul Nelson**

A.A.S., University of Wisconsin–Waukesha  
B.B.A., University of Wisconsin–Whitewater

**Sharon M. O'Reilly**

B.A., University of Wisconsin–Eau Claire  
M.B.A., University of Wisconsin–Madison; C.P.A.

**Cristina Page**

B.S., Northern Michigan University  
M.S., University of Wisconsin–Madison

**Allen Pearson**

B.S., University of Wisconsin–Madison  
M.B.A., Keller Graduate School

**Peter Pham**

B.F.A. University of Wisconsin–Milwaukee

**Michelle Quinn**

B.F.A., University of Wisconsin–Oshkosh

**Pamela See**

B.S., University of Wisconsin–La Crosse

**Alysia Ruiz**

A.A.S., Gateway Technical College  
B.A., Concordia University of Wisconsin

**Sara Skowronski**

A.A.S., LPN, Gateway Technical College  
B.S., Columbia College  
M.B.A., University of Wisconsin–Parkside

**Tina Trainor**

B.S., Methodist College  
M.S., Western University

**Cheryl Ucarar**

B.A., Alverno College  
M.S., Cardinal Stritch University

**Christopher Venckus**

B.S., University of Wisconsin–Parkside  
M.I.S.M., Keller Graduate School of Management

**Syed Saad Yousuf**

B.S., M.S., Roosevelt University  
M.B.A., Keller Graduate School

## BUSINESS & WORKFORCE SOLUTIONS

**Alberta Heinen**

Diploma, Gateway Technical College

**Matthew Janisin**

B.S., M.S., University of Wisconsin–Stout

**Richard Lofy**

B.S., Milwaukee School of Engineering

**Craig Maeschen**

A.A.S., University of South Dakota  
B.S., South Dakota State University  
M.S., Mankato State University

**Daniel Neuman**

A.A.S., Moraine Park Technical College  
B.B.A., Marian University  
M.S., Cardinal Stritch University

**Elizabeth Oplatka**

B.A., Illinois Wesleyan University  
M.S., Medill School of Journalism of Northwestern University  
M.A., Adler School Professional Psychology

**Sharyn Palmer**

B.S.E., University of Wisconsin–Whitewater

**Neil Petersen**

**Randal Reusser**

A.A.S., Gateway Technical College  
B.A., Carthage College  
M.B.A., Marquette University

**Kim Sanderson**

A.A.S., Gateway Technical College  
B.A., Carthage College

## DEVELOPMENTAL EDUCATION

**Elaine Asma**

A.A.S., Ferris State University  
B.S., Eastern Michigan University  
M.B.A., Loyola University of Chicago  
M.A.T., National–Louis University

**Rudolph Collum**

B.A., Coe College  
M.S., University of Wisconsin–Milwaukee

**Iryna Faulk**

B.S., M.A., Pedagogical University

**Fawn Funderburg**

B.A., M.Ed., C.A.S., National–Louis University

**Deborah Hankel**

B.S., M.S.; University of Wisconsin–Milwaukee

**Susan Henderson**

B.S.E., University of Wisconsin–Whitewater  
M.A., University of Wisconsin–Milwaukee

**Ginger Karaway**

B.A., University of Wisconsin–Parkside  
M.S., Silver Lake College–Graduate Studies

**Larry Kirkwood**

B.S., Jackson State University  
M.A., National–Louis University

**Laura Knudson**

B.A., University of Wisconsin–Parkside  
M.A., University of Wisconsin–Madison

**Richard Malloy**

B.A., University of St. Thomas  
M.A.Ed., University of Northern Iowa

**Dawn Marabella**

B.S., Illinois State University  
M.A., University of Illinois–Chicago  
M.A., University of Phoenix

# Faculty and Administration

**Sandra Monahan**

B.A., Bethel College  
M.A., Cardinal Stritch University

**Aracely Mouradian**

B.S., Loyola University  
M.A., Northeastern Illinois University

**Miriam Perales-Hadley**

B.A., Normal Miguel Martinez  
M.Ed., University of Texas–Austin  
M.A., University of Texas–Pan American

**Craig Schambow**

B.A., Carthage College

**Debra Solomon**

B.A., Wellesley College  
M.A., Middlebury Institute of Int'l. Studies  
Ph.D., Cardinal Stritch University

**Michael Troudt**

B.A., Viterbo University  
M.L.S. University of Wisconsin–Milwaukee  
M.S.E., Long Island University

**Susan Verbeten**

B.S., M.S.E., University of Wisconsin–Platteville

**Jeannine Volbright**

B.S., University of Wisconsin–Whitewater

## DISABILITY SUPPORT

**Pamela Herr**

A.A.S., Joliet Junior College  
B.S., Illinois State University  
M.S.E., University of Wisconsin–Whitewater

**Dawn Kaiser**

B.A., M.Ed., Carthage College

**Elizabeth Mulhollon**

B.S., University of Wisconsin–Whitewater  
M.A., Aurora University

**Patty Nesheim**

B.S., University of Wisconsin–Stout  
MS, MS/EdS., University of Wisconsin–River Falls

**Susanne Stokes-Nelson**

A.A.S., Madison Area Technical College  
B.S., University of Wisconsin–Stout

**Barbara Yousefian**

B.A., M.Ed., Southern Illinois University  
M.Ed., University of Illinois–Chicago

## GENERAL STUDIES

**Colleen Aird**

B.A., University of Wisconsin–Stevens Point

**Nicole Ayala**

B.S., University of Wisconsin–Madison  
M.S., University of the Incarnate Word

**Lori Baxa**

A.A.S., Oakton Community College  
B.S., M.S., Northern Illinois University

**Soheila Brouk**

B.S., M.S., University of Wisconsin–Oshkosh  
Ph.D., University of Wisconsin–Milwaukee

**Colleen Connolly**

B.A., M.A., University of Wisconsin–Milwaukee  
Ph.D., University of South Florida

**Michael Costello**

B.S., University of Wisconsin–Parkside  
M.S., University of Wisconsin–Milwaukee

**Shahida Dar**

B.S., M.S., University of Punjab  
M.S., University of Wisconsin–Parkside

**Donnetta Davis**

B.A., University of Wisconsin–Parkside  
M.A., National University

**Michael Duprey**

B.S., University of Wisconsin–Oshkosh  
M.S., University of Wisconsin–Milwaukee

**Tiffany Garrison**

B.S., Quincy University  
M.S., University of Wisconsin–Madison

**Jason Gerber**

B.S., Illinois College  
M.S., Illinois State University

**Jessica Gleason**

B.A., University of Wisconsin–Whitewater  
M.A., National University

**Alfred Gomez**

A.A.S., Gateway Technical College  
B.S., University of Wisconsin–Parkside  
M.S., University of Wisconsin–Stout

**Dean Greve**

A.A.S., Clinton Community College  
B.S.I.E., Iowa State University

**Thomas Halloran**

B.A., Wheaton College  
M.A., Mary Immaculate College  
Ph.D., Louisiana State University

**Amy Hankins**

B.A., Purdue University  
M.A., Northwestern University

**Angelina Helt**

B.A., M.A., University of Wisconsin–Milwaukee

**Heidi Jenkins**

B.A., University of Alaska  
M.Ed., Carthage College

**Jay Johnson**

B.S., University of Wisconsin–Madison  
M.A., University of Wisconsin–Milwaukee

**Kyle Kendall**

B.A., M.A., University of Wisconsin–Madison  
M.S., Concordia University

**Lisa Kusko**

B.S., West Liberty State University  
M.A., Marshall University

**Dennis Landergott,**

B.S., St. Francis College;  
M.A., University of South Dakota  
Ph.D., New Mexico Institute of Mining & Technology

**Xiaoying Lin**

A.A., Milwaukee Area Technical College  
B.A., M.A., Ph.D., University of Wisconsin–Milwaukee

**Richard McLaughlin**

B.S., Roberts Wesleyan College  
M.S., Queen's University  
Ph.D., McGill University

**Henry Meier**

B.S., University of Ghana;  
M.A., M.Sc., University of Florida

**Ted Mizak**

B.S., University of Wisconsin–Platteville  
M.S., University of Wisconsin–Milwaukee

**Randall Mueller**

B.S., M.A., University of Wisconsin–Milwaukee

**Roxanne Norris**

B.S., University of California–Irvine  
M.S., University of Wisconsin–Milwaukee

**Lisa Packard**

B.A., University of Wisconsin–Milwaukee  
 M.A., National University

**Joan Paradiso**

B.S., B.A., M.A., University of Wisconsin–Milwaukee

**Manal Rizek**

B.S., Kent State University  
 M.S., Marquette University

**Robin Rupp**

B.S., University of Wisconsin–Whitewater  
 M.A., Trinity International University

**Ronald Schultz**

B.A., M.A., University of Wisconsin–Milwaukee

**Steven Sloan**

B.S.E., University of Wisconsin–Whitewater  
 M.S., University of Wisconsin–Milwaukee

**Karen Solliday**

B.A., M.A.L.S., M.A., M.S., University of Wisconsin–Milwaukee

**Timothy Sorensen**

B.S.N., University of Wisconsin–Milwaukee  
 M.S., Northeastern Illinois University

**Scott Stieg**

B.S., Chem., Purdue University  
 M.S., Ph.D., University of Illinois

**Ann Stotts**

A.A., College of Du Page  
 B.A., M.A., University of Illinois–Chicago

**Suzanne Sublette**

B.A., M.A., DePaul University MSSW  
 Ph.D., University of Wisconsin–Madison

**Stevie Summers**

B.S., M.S., Ph.D., University of Wisconsin–Milwaukee

**Jennifer Vanags**

B.G.S., M.A., University of Kansas

**Kathryn Vopal**

B.A., M.A., Indiana State University  
 Ph.D., University of Wisconsin–Milwaukee

**David Wang**

B.S., Tianjin University  
 M.A., Nankai University  
 Ph.D., University of Minnesota

**Manhui (Amy) Wang**

B.A., Yantai Teacher's College  
 M.A., Shandong University  
 M.A., University of Wisconsin–Milwaukee  
 Ph.D., Cardinal Stritch University

**Qun Yu**

B.S., Tianjin University  
 M.S., Ph.D., Louisiana Tech University

**Gina Zainelli**

B.S., Loyola University–Chicago  
 Ph.D., Loyola University–Stritch School of Medicine

**Donald Zakutansky**

B.S., M.S., Ph.D., Indiana University–Bloomington

**Stephan P. Zambo III**

B.S., Purdue University  
 M.S., Marquette University

## HEALTH SCIENCES

**Lori Andreucci**

Diploma, Gateway Technical College  
 B.A., Concordia University  
 M. Ed., Carthage College

**Paula Antifinger**

B.S.N., Marian College  
 M.S.N., Concordia University

**Jose Avila**

A.D.N., Milwaukee Area Technical College  
 B.S., Carroll College  
 B.S.N., Cardinal Stritch University  
 M.S.N., Concordia University

**Mary Kay Belcher**

A.A.S., Gateway Technical College  
 B.S.N., Concordia University  
 M.S.N., Loyola University

**Cory Busch**

Vocational Diploma, Gateway Technical College  
 Vocational Diploma, Milwaukee Area Technical College

**Julie Capelli**

A.A.S., Gateway Technical College  
 B.S.N., Alverno College

**Stacey Casey**

A.A.S., Gateway Technical College

**Tamia Chapple**

B.S., University of Wisconsin–Parkside  
 M.B.A., University of Phoenix

**Sonya Cooks**

A.D.N., Gateway Technical College  
 B.S.N., Marian College  
 M.S.N., Concordia University

**Diane Cozzi**

R.N., B.S.N., University of Illinois–Chicago  
 M.S.N., Concordia University

**Marianne Douglas**

L.P.N., A.D.N., Gateway Technical College  
 B.S.N., Alverno College

**Cynthia Fickenscher**

B.S., University of Wisconsin–Milwaukee  
 M.B.A., University of Wisconsin–Parkside

**Robert Formanek**

B.S., Marquette University  
 M.S., Cardinal Stritch University

**Heidi Gottfried**

C.D.A., Madison Area Technical College  
 B.A., Concordia University  
 M.S., University of Wisconsin–Stout

**Traci Gotz**

B.A., M.P.T., Marquette University  
 D.P.T., College of St. Scholastica

**Shronda Green**

A.D.N., Gateway Technical College  
 B.S.N., Marian College  
 M.S.N., H.C.I., University of Phoenix

**Doris Groom**

B.S., Alverno College  
 M.S.N., University of Wisconsin–Madison

**Susan Guttschow**

D.V.M., Iowa State University

**Jo Hart**

A.D.N., Gateway Technical College  
 B.S.N., Viterbo University

**Helen Holder**

L.P.N., A.D.N., Gateway Technical College  
 B.S.N., Viterbo University  
 M.S.N., Alverno College

**Victoria Hulback**

A.D.N., College of Lake County  
 B.S.N., South University

# Faculty and Administration

**Margaret Isaacson**

B.S.N., University of Wisconsin–Oshkosh  
M.S.N., Concordia University

**Morgan Kaiser**

B.S.N., Milwaukee School of Engineering

**Iley Kelnhofer**

A.D.N., Milwaukee Area Technical College  
B.S.N., Marquette University  
M.S.N., Cardinal Stritch University

**Donna Kempf**

Diploma, Gateway Technical College

**Elizabeth Koll**

L.P.N., A.D.N., Gateway Technical College  
B.S.N., Mount Scenario College  
M.S.N.; University of Wisconsin–Milwaukee

**Vanessa Kramasz**

B.S.N., Alverno College  
M.S.N., Concordia University

**Maryanne Kuiper**

A.D.N., Gateway Technical College  
B.A., Concordia University  
M.S.N., University of Phoenix

**Diane Labanowsky**

B.S.N., University of Wisconsin–Oshkosh  
M.S.N., University of Wisconsin–Milwaukee

**Tedd Lupella**

A.A.S., Wm. Rainey Harper College

**Katrina McGovern**

A.D.N., Gateway Technical College  
B.S.N., Liberty University

**Susan Mours**

B.S.N., Marian University  
M.S.N., Marquette University  
D.N.P., University of Wisconsin–Madison

**Kristine Mueller**

A.D.N., Gateway Technical College  
B.S.N., Viterbo University

**Patricia Ontko**

A.D.N., Gateway Technical College  
B.S.N., Marian College

**Andrea Peterson**

A.D.N., Gateway Technical College  
B.S.N., M.S.N., Ed, University of Phoenix

**Sophia Petraitis**

B.S.N., University of Illinois–Chicago  
M.S.N., St. Xavier University

**Micheal Randolph**

B.S., University of St. Francis  
M.S., Cardinal Stritch University

**Lauri Rogers**

A.D.N., Gateway Technical College  
B.S.N., Alverno College

**Cheryl Rules**

A.D.N., Gateway Technical College  
B.S.N., M.S., Regis University

**Daniel Russell**

A.D.N., Cardinal Stritch University

**Alysson Senica**

B.A., University of Wisconsin–Madison  
M.S., University of Wisconsin–Milwaukee

**Renee Seymour**

R.N., A.D.N., Gateway Technical College  
B.S.N., Marian College  
M.S.N., University of Phoenix

**Christina D. Sima**

B.S.N., Alverno College  
M.S.N., University of Phoenix

**Jodene Strommen**

B.S.N., University of Wisconsin–Milwaukee  
M.S.N., University of Wisconsin–Milwaukee

**Julie Teeter**

A.D.N., Gateway Technical College  
B.S.N., M.S., University of Wisconsin–Milwaukee

**Cherie Tenfel**

B.S.N., University of Wisconsin–Oshkosh  
M.S.N., Kaplan University

**John Ujcich**

B.S.N., M.S.N., Marquette University

**Annamarie Vagnoni**

A.D.N., Gateway Technical College  
B.S.N., Marian College

**Kristina Vines**

A.A.S., Gateway Technical College  
B.S., M.S., University of Wisconsin–Stout

**Ann Watry**

L.P.N., Gateway Technical College  
B.S.N., Marquette University  
M.S.N., Concordia University

**Anne Wilkinson**

B.S.N., University of Wisconsin–Madison  
M.S.N., University of Wisconsin–Milwaukee

**Suzanne Williamson**

B.S.N., University of Wisconsin–Milwaukee

**Susan Willing**

B.S.N., University of Wisconsin–Milwaukee  
M.S.N., Marquette University

**Elizabeth Wolf**

M.S.N., University of Phoenix

**Donna Zimany**

A.D.N., Gateway Technical College  
B.S.N., Marian College

**Megan Zingelman**

B.A., Marquette University

**HORTICULTURE****Kathleen Field**

B.S., Colorado State University  
M.Ed., University of California

**Courtney Greve**

B.S., University of Wisconsin–Madison

**Kathleen Jerome**

A.A.S., Gateway Technical College  
B.A., Austin College  
M.S., University of Wisconsin–Madison

**INTERIOR DESIGN****Rita Serpe**

B.S., University of Wisconsin–Madison

**MANUFACTURING & ENGINEERING****Richard Buhnerkemper****Gregory Chapman**

A.A.S., B.S.M.E.T., Milwaukee School of  
Engineering

**Jeremy Dutton**

A.A.S., Gateway Technical College

**Thomas Filipiak, Jr.**

B.S., University of Wisconsin–Madison

**Kevin Fulsom****Jonathon Hardbarger**

B.S., Ohio State University



## Faculty and Administration

**Charles Herman**

A.I.M., B.I.M., M.S., Milwaukee School of Engineering

**Lawrence Hobbs****Robert Hoff**

A.A.S., Gateway Technical College

**Patrick Hoppe**

A.A.S., Milwaukee Area Technical College  
B.S., M.S., Milwaukee School of Engineering

**James Jazdzewski**

A.A.S., College of Lake County  
B.S., Southern Illinois University

**JD Jones**

A.A.S., Richland Community College  
B.S., Southern Illinois University

**Robert Kaebisch**

B.S., University of Wisconsin–Milwaukee

**Jerome Kobriger****Benjamin McFarland**

Diploma; Master Craftsman, Gateway Technical College

**John Nelson**

B.S., M.B.A., University of Wisconsin–Milwaukee

**Tom Niesen**

Certificate, Gateway Technical College

**Erik Ogren**

Diploma, Gateway Technical College

**Joseph Palecek**

Diploma, Chippewa Valley Technical College  
Diploma, Gateway Technical College

**Michael Renzoni**

A.A.S., Gateway Technical College

**Scott Rohde**

B.S., University of Wisconsin–Stout

**Jill Sammons**

A.A.S., Gateway Technical College  
B.S., Milwaukee School of Engineering  
M.B.A., Concordia University of Wisconsin

**Michael Schuck**

B.S., Wayne State University  
M.S., Milwaukee School of Engineering

**Richard Shouse****Michael Skender**

Diploma, Gateway Technical College

**Patrick Stevens**

A.A.S., Gateway Technical College

**Mark Uttech**

Master Craftsman, Gateway Technical College

**Kim Weckerly**

Master Craftsman

**Steven Whitmoyer**

B.S., Purdue University  
M.S., North Carolina State University

**PROTECTIVE SERVICES****Karen Barker**

R.N., Milwaukee County General Hospital School of Nursing

**Michelle Barnes**

B.A., St. Louis University  
M.S., Nova Southeastern University

**William Blandford**

B.A., University of Wisconsin–Madison  
J.D., University of Virginia

**John Dahms**

B.S., Southern Illinois University  
M.S., Cardinal Stritch University

**Jack Jaspersen**

EMT–P, Gateway Technical College

**Gary Leyer**

A.D.N., Gateway Technical College

**Jeffrey R. Munson**

A.A.S., Central Texas College  
B.B.A., University of Wisconsin–Oshkosh  
J.D., University of Wisconsin–Madison

**Bernadette O’Connell**

A.D.N., Milwaukee Area Technical College  
B.S., Kaplan University

**Steven Spingola**

A.A.S., Milwaukee Area Technical College  
B.S., Mount Senario College  
M.A., Marquette University

**Raul Terriguez**

B.S., Mount Senario College

**SERVICE OCCUPATIONS****Karen Comer**

Stewarts School of Hairstyling, Master Craftsman

**Christina Cook**

B.A., Lakeland University  
M.A., Nova University

**Thomas Crawford**

M.A., Chicago School Professional Psychology

**Susan Curi**

Diploma, I.B.A. Cosmetology School  
Diploma, Milwaukee Area Technical College;  
Master Craftsman

**Susanna Elrod**

A.A.S., Gateway Technical College

**Michelle Gauthier****Natalie Griffin**

B.S., University of Wisconsin–Parkside  
M.E., Carthage College  
M.S., Capella University

**Adam Larkin**

A.A.S., Gateway Technical College

**Mary Mair**

B.S., Edgewood College

**R. Scott Meuret**

A.A.S., Scottsdale Community College  
B.A., Ottawa University  
M.Ed., Northern Arizona University

**Sharon Nelson**

Diploma, I.B.A. Prestige Beauty College, Master Craftsman

**Clairista Phifer**

Diploma, I.B.A. Prestige Beauty School

**Christine Spang**

B.A., Alverno College  
M.A., Carroll University

**Gina Stoebe**

B.A., University of Wisconsin–Parkside  
M.S., Capella University

**Sherry Tucker**

Diploma, Milwaukee Area Technical College

**Steve Villalobos**

A.A.S., Gateway Technical College

## *Faculty and Administration*

### **Seth Wollwage**

B.A., Illinois College  
M.S.W., University of Illinois  
Ph.D., Loyola University

### **Paul Zenisek**

B.A., Trinity College  
M.A., Southwestern Baptist Theological Seminary  
M.S., University of Texas

### **Amanda Pulda**

B.A., Carthage College  
M.A., Alverno College

### **Jennifer Wiemero**

B.S., University of Wisconsin–Madison  
M.A., San Jose State University

## **TRANSPORTATION**

### **Kenneth Dotzler**

A.A.S., University of Maryland  
A.S., Community College of the Air Force

### **William Fell**

A.A.S., Madison Area Technical College  
B.S., University of Wisconsin–Stout

### **Roderick Gordon**

Diploma, Milwaukee Area Technical College  
B.S., Purdue University

### **Justin Hoffman**

Vocational Diploma, Blackhawk Technical  
College

### **Craig Larson**

B.A., University of Wisconsin–Eau Claire

### **Steve Semon**

Diploma, Milwaukee Area Technical College

## **TUTORING SERVICES**

### **Anke Halbach**

B.A., University of Kiel, Germany  
M.S., University of Wisconsin–Milwaukee  
Ph.D., University of Wisconsin–Milwaukee







**Burlington Center**

496 McCanna Pkwy.  
Burlington, WI 53105-3623

**Center for Bioscience and Information Technology**

3520 - 30th Avenue  
Kenosha, WI 53144-1690

**Elkhorn Campus**

400 County Road H  
Elkhorn, WI 53121-2046

**HERO Center**

380 McCanna Pkwy.  
Burlington, WI 53105-3622

**Horizon Center for Transportation Technology**

4940 - 88th Avenue  
(Highway H)  
Kenosha, WI 53144-7467

**Kenosha Campus**

3520 - 30th Avenue

Kenosha, WI 53144-1690

**LakeView Advanced Technology Center**

9449 - 88th Avenue  
(Highway H)  
Pleasant Prairie, WI 53158-2216

**Racine Campus**

1001 South Main Street  
Racine, WI 53403-1582

**SC Johnson iMET Center**

2320 Renaissance Blvd.

Sturtevant, WI 53177-1763

**WGTD HD**

Your Gateway to Public Radio  
wgtd.org

**1-800-247-7122**

**Wisconsin Relay System: 711**

**gtc.edu**

WISCONSIN'S  
TECHNICAL  
COLLEGES



wistechcolleges.org



PRINTED ON 30%  
RECYCLED PAPER

Equal Opportunity Employer and Educator  
Empleador y educador que ofrece igualdad de oportunidades