Industrial Machine Repair (IMR) Boot Camp Curriculum

COURSE #	COURSE TITLE	COURSE HOURS
606-121	**Blueprint Reading/Schematics**	**36 hours**
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.		
612-102	**Pneumatics/Hydraulics**	**72 hours**
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.		
628-109	**Mechanical Skills**	**90 hours**
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.		
804-370	**Applied Mathematics**	**56 hours**
Reviews the four basic mathematical operations on whole numbers, fractions, and decimals. Also covers basic algebra and trigonometry related to technical fields.		
462-104	**Machine and Equipment Installation**	**90 hours**
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.		
462-101	**Machine Machining**	**90 hours**
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.		
605-113	**DC/AC**	**72 hours**
An introductory course that 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.		
462-103	**Mechanical Power Transmission**	**90 hours**
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.		
602-103	**Introduction to Industrial Controls**	**90 hours**
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.		
625-147	**Workplace Safety MSSC**	**18 hours**
This course introduces the student to safety and loss prevention in the workplace with an emphasis on the workers awareness for maintaining a safe, productive environment. The student will study safety concepts, hazards controls, developing safety and heal programs and Federal and State mandated regulations. This course will also focus on specific content in the MSSC Safety module.		
601-413	**Torque Applications**	**10 hours**
Students will be trained, tested and certified on various torque instruments ensuring proper tool set-up and physical technique. Students will receive general hand tool safety and electrical safety, plus they must perform lab tests with all the equipment available in order to receive certificates. Students will develop a new appreciation for the complexities behind the proper tightening of fasteners.		
801-302	**Speaking Principles**	**36 hours**
This course focuses upon developing speaking, verbal and nonverbal communication, and listening skills through individual presentations, group activities and other projects. Students learn to: select appropriate means to convey a message, speak clearly so others can understand, write with clarity so others can understand, ask questions for clarification, participate in discussions and group presentations, interpret nonverbal communications, use active listening skills, and apply spelling, English grammar and punctuation.		