Workplace Safety and Orientation (IMMT 1013, 3 credits) – Introduces basic safety instruction including OSHA requirements and other concerns (MSDS, confined space, lock out/tag out, zero energy state, hazardous materials, storage of flammable materials, storage of fuel gas and high pressure gas cylinders, portable powered tool safety, hand tool safety, record keeping, training, employer enforcement of safety regulations, right to know, etc.). Includes as introduction to measuring instruments, hand tools, portable powered tools, and procedures that are pertinent to the industrial maintenance profession. Lab projects will be designed to reinforce safety procedures and develop competency levels in using measuring instruments, hand tools and portable powered tools introduced in the course. PREREQUISITES:

Introduction to Industrial Maintenance Technology (IMMT 1102, 2 credits) - A general comprehensive study relating to Industrial safety designed to give students a practical working knowledge of safety hazards. Codes, standards and regulations are presented, discussed, and implemented throughout the entire course. All skills, philosophy and comprehension are practiced and reinforced by participants in individual and group activities. PREREQUISITES:

Computer Literacy (CPTR 1005, 3 credits) - An introductory study of computer system components, operating system environments. Internet concepts, and security issues. Includes a hands-on study emphasizing computer hardware and various operating systems features. PREREQUISITES:

Blue Print Reading I (IMMT 1112, 2 credits) – This course is designed to give the students skills to read and interpret engineering drawings encountered in industry. Provides an introduction to reading and interpreting machine shop symbols, welding blueprints and working drawings used in trades and crafts. Focuses on dimension, shape, fabrication and assembly. Applies basic mathematics to the solution of print and performance problems. PREREQUISITES:

Introductory Welding (IMMT 1123, 3 credits)– Provides basic skills and fundamental knowledge in oxy-fuel welding, cutting and brazing, Shield Metal Arc welding, Gas Metal Arc welding, and Gas Tungsten Arc welding. This course is designed for beginning welders and emphasizes safe practices in oxy-fuel and Arc welding processes. PREREQUISITES:

Technical Math (IMMT 1133, 3 credits) – The purpose of this course is to give a background in the fundamentals of mathematics in addition to providing mathematical concepts and applications that are practical to the individual pursuing a career in process technology. This course covers basic mathematical concepts including rounding, exponentiation, percentages, geometry, and trigonometry. Emphasis is placed on the scientific notation, unit conversions, graphing, problem solving equations, and area and volume. PREREQUISITES:

Basic Electricity (IMMT 1142, 2 credits) – The study of mechanical laws and principles pertaining to DC and AC circuits is the focus of the course. This includes current, voltage, resistance, power, inductance, capacitance, and transformers. Stresses the use of standard mechanical tests, mechanical equipment, and troubleshooting procedures. Safety procedures and practices are emphasized. PREREQUISITES:
Material Handling/Rigging (IMMT 1143, 3 credits) - The study and theory of the proper methods of storing, movement and securing both solid and liquid material in an industrial setting. PREREQUISITES:

Blueprint Reading II (IMMT 1122, 2 credits) - This course is a continuation of Blueprint Reading I course and is designed to enhance students’ skills to read and interpret engineering drawings encountered in industry. PREREQUISITES:

Plant Equipment (IMMT 1153, 3 credits) - Introduces the proper types of plant equipment and safety procedures dealing with working around the equipment. PREREQUISITES:

Computer Fundamentals for Technology (CPTR 1112, 2 credits) – Develop computer skills for success as a technician or technologist. Use the internet for research, communicate via email, and use utilize Microsoft Office software to create documents, spreadsheets and presentations. PREREQUISITES:

Problem Solving & Teamwork (IMMT 1163, 3 credits) – Covers critical thinking skills, collecting and analyzing data, and quality control overview, teamwork, problem solving and decision making techniques as they apply to a technological environment. As a capstone course for the Manufacturing and Industrial Technology program, this course is designed to reinforce and apply the knowledge and skills learned in previous courses and foster team and individual skills through experiments, case studies, problem solving projects, and a writing project related to a work team report. PREREQUISITES:

Job Seeking Skills (JOBS2450, 2 Credits, 75 clock) - This course assists students in making immediate and future decisions concerning job choices and educational growth by compiling résumés, evaluating job offers, and outlining information essential to finding, applying for, and terminating a job. PREREQUISITE(S):

Introductory Machining (IMMT 2103, 3 credits) – Instructs the student in shop safety, industrial terminology, tools and machine tooling, measurement and layout. Includes laboratory exercises to begin project completion of turning, milling, and grinding applications. PREREQUISITE(S):

Hydraulic/Pneumatic Systems (IMMT 2113, 3 credits) – Introduces students to fluid power principles and components. Teaches basic circuit design through the use of symbols and schematic diagrams to build a foundation in fluid power technology. Introduces the student to more complex fluid power circuits. Requires students to design, analyze and troubleshoot industrial fluid power components. Teaches students to assemble and evaluate fluid power components in the lab. PREREQUISITE(S):

Pumps, Pipefitting, and Piping Systems (IMMT 2123, 3 credits) – Covers the construction and operation of centrifugal, reciprocating, metering, special, and rotary pumps and their components. Includes procedures for troubleshooting, installation and maintenance. Course also acquaints the student with the pipe fitting skills necessary to make repairs or layout new pipe. Includes determination of the type and quantity of material needed to complete a task and joining those materials in the proper manner with a minimum of supervision. PREREQUISITE(S):

Machine Maintenance and Installation (IMMT 2133, 3 credits) – Examines the procedures for the removal, repair and installation of machine components. The methods of installation, lubrication processes, and maintenance procedures for industrial machinery are analyzed. Also presented are the techniques involved in the calibration and repair of mechanical devices and the practice in computations
pertaining to industrial machinery. Examines the operation and design of mechanical systems including belt drives, chain drives, gearboxes, and bearings. Includes the study of materials. Introduces the concepts of correct alignment of industrial process machinery. Introduces the major purpose of preventive maintenance: to save time and to cut costs. The course will study goals such as, reducing losses, improving product quality, boosting production efficiency, and increasing profits. Includes an introduction to sound planning, effective scheduling, competent inspection, control and actions at the worksite, and follow-up reporting. Lab projects will be designed to organize materials, tool control, transportation of equipment, sizing up labor requirements. PREREQUISITE(S):

**Electronics (IMMT 2142, 2 credits)** – Introduces digital electronics, including logic gates and combinational logic circuits. Studies binary arithmetic, Boolean algebra, mapping techniques, digital encodes and decoders, multiplexers and demultiplexers, parity circuits, and arithmetic circuits. Use SSI and MSI digital integrated circuits. Study of digital systems, flip-flops, memory, digital-to-analog and analog-to-digital conversion. Covers construction of specified timing circuits, driver/display systems, shift registers, counters, the arithmetic logic unit, and validation of operation. Studies hardware and general microprocessor system organization. PREREQUISITE(S):

**Instrumentation (IMMT 2152, 2 credits)** – Covers the field of industrial automation. Introduces principles of control systems both analog and digital based. Covers instrumentation and sensors, position, speed, thermal, pressure, flow, and level. Learners develop an understanding of analog and digital signal conditioning as applied to automated systems. Explain the operation, construction and applications of typical industrial pressure sensors. Identify ISA instrumentation symbols and draw basic process (P) and Instrumentation (I) diagrams for pressure and temperature devices. Explain the operation of light and sound meters. PREREQUISITE(S):

**Programmable Controllers I (IMMT 2162, 2 credits)** – Introduces the basic theory, operation and programming of programmable logic controllers. Demonstrates programming examples, set-up examples and troubleshooting, as well as PLC timing, counting, arithmetic and logic and sequencers. PREREQUISITE(S):

**Monitoring & Communication Systems (IMMT 2143, 3 credits)** – Describes the operation, installation, testing and troubleshooting requirements for initiation, signal, ancillary and supervisory circuits and devices. Includes, but is not limited to fire alarm systems, wet and dry sprinkler systems, fire suppression systems, fiber optic cables, intrusion systems and devices, call and paging systems, and common automated systems. PREREQUISITE(S):

**Motor & Motor Controls (IMMT 2153, 3 credits)** – This course is designed to give each student a general understanding of common types of electric motors, extending from the small shaded poll fan motors to the large three-phase motors. The student will receive an education in motor theory, magnetism and how it affects motor rotation. Motor starting components and protective devices for motor circuits will be explained and shown in detail. Heat dissipation from a motor, motor slippage, how they are wired to obtain different speeds, and how capacitors affect a motor circuit will be included. PREREQUISITE(S):

**English Composition (ENGL 1015, 3 credits)** - The study of the basic rhetorical modes of English composition with emphasis on prewriting, writing, and revising techniques utilizing correct English grammar, usage, and punctuation. PREREQUISITE(S):
College Algebra (MATH 1015, 3 credits) - Linear and quadratic equations and inequalities, radical and rational equations, complex numbers, graphing, functions, exponential and logarithmic functions, polynomial equations, systems of linear equations and inequalities. PREREQUISITE(S):

Introduction to Psychology (PSYC 2015, 3 credits) - An overview of psychology designed to expose students to the major theories, research practices, and applied areas of psychology. PREREQUISITE(S):

Introduction to Public Speaking (SPCH 1015, 3 credits) - Designed to teach students basic public presentation principles and skills. Students complete one speech each of personal introduction, information, persuasion, demonstration, and special occasion (influential person). PREREQUISITE(S):

Physical Science (PHSC 1015, 3 credits) - Introductory study of topics in physical science including motion, energy, temperature, light and sound, electricity, and atomic structure. PREREQUISITE(S):

Special Projects I (SPPR 2991, 1 credit, 30 clock) - A course designed for the student who has demonstrated specific special needs. PREREQUISITE(S): Consent of Instructor

Special Projects II (SPPR 2993, 2 credits, 60 clock) - A course designed for the student who has demonstrated specific special needs. PREREQUISITE(S): Consent of Instructor

Special Projects III (SPPR 2995, 3 credits, 90 clock) - A course designed for the student who has demonstrated specific special needs. PREREQUISITE(S): Consent of Instructor

Special Projects IV (SPPR 2996, 3 credits, 45 clock) - A course designed for the student who has demonstrated specific special needs. PREREQUISITE(S): Consent of Instructor

Special Projects V (SPPR 2998, 1 credit, 15 clock) - A course designed for the student who has demonstrated specific special needs. PREREQUISITE(S): Consent of Instructor

Practicum (SPPR2997, 3 credits, 135 clock) - A Practicum provides supervised on-the-job work experience related to the student's education objectives. Students participating in Practicum do not receive compensation. PREREQUISITE(S): Consent of Instructor

Cooperative Education (SPPR2999, 3 credits, 135 clock) - Cooperative Education provides supervised on-the-job work experience related to the student's educational objectives. Students participating in Cooperative Education receive compensation for their work. PREREQUISITE(S): Consent of Instructor