Advanced Manufacturing Tech (ADMT)

Courses

ADMT 0101 Introduction to Machining: 3 semester hours.
An introductory course in basic engine lathe and milling cutting operations performed on lathes, vertical mills, and computer controlled machine (CNC) tools. Basic programming of CNC machines will be introduced. D

ADMT 0102 Electronics Orientation: 3 semester hours.
Provides an introduction to computer operating systems and computer programs used in the analysis of electronic circuits. Also covers the use of electronics laboratory equipment such as digital multi-meters, oscilloscopes, function generators, breadboards and trainers used in the program. Basic soldering skills included. Laboratory exercises are included. D

ADMT 0103 Introduction to Advanced Manufacturing Welding Processes I: 3 semester hours.
Students will engage in hands-on welding practice in Gas Metal Arc Welding (GMAW) with short circuit and pulsed spray transfer in accordance with AWS D1.1 standards in preparation to enter the advanced manufacturing field. Fillets welds will be emphasized in preparation for groove welds. D

ADMT 0162 Industrial Health and Safety: 2 semester hours.
An overview of legislation, worker’s compensation, hazard recognition, and safety planning. Includes basic engineering solutions. Addresses employee safety training requirements, recordkeeping, safety inspections, and program planning in the construction industry. Includes First Aid training and responder certification. F, D

ADMT 0220 Introduction to Programmable Logic Controllers: 3 semester hours.
Ladder format, I-O instructions, external devices, operating cycle, relays, timers, counters, sequencers, shift registers, analog applications, math blocks, and troubleshooting. F, S

ADMT 0221 CAD and CAM I Theory: 3 semester hours.
Introductory theory course in the utilization of CAD/CAM systems, F, S

ADMT 0242 Practical Process Measurements and Control: 2 semester hours.
Principles of temperature, pressure, strain, flow, force, and vibration measurements are covered. Techniques of computerized data acquisition, reduction, and statistical precision and tolerance are reviewed. Signal for local indications and process control operation are also covered. Lecture plus laboratory work in selected topics. PREREQ: ESET 0122 or permission of instructor. F, D

ADMT 0243 Fluid and Pneumatic Power: 2 semester hours.
Review fluid and pneumatic power mechanics with an emphasis on symbology, circuit operation and design, pneumatic and hydraulic component, and terminology. F, D

ADMT 0243L Fluid and Pneumatic Power Lab: 2 semester hours.
Applications of fluid and pneumatic power mechanics with an emphasis on symbology, circuit operation and design, pneumatic and hydraulic component operation, and terminology. F, D

ADMT 0244 Advanced Manufacturing Welding Processes II: 3 semester hours.
Continuation of GMAW skill development with emphasis given to practice in pulsed-spray transfer mode. Guided practice will be provided in advanced manufacturing welding techniques and destructive testing will be conducted in accordance with AWS D1.1 standards as a capstone exercise for the course. D

ADMT 0245 Lean and Six Sigma: 3 semester hours.
This course provides a comprehensive overview of the Lean and Six Sigma methodologies including the Define, Measure, Analyze, Improve, and Control (DMAIC) process improvement paradigm, techniques, tools and metrics that are critical for process improvement success. The course will include demonstration and use of Lean and Six Sigma tools. D

ADMT 0246 Materials and Metallurgy: 2 semester hours.
Lecture, demonstration, and laboratory emphasizing the practical approach to basic principles of materials and metallurgical science, including behavior of materials under various conditions. S, D