

MANUFACTURING (MFG)

MFG 125 (3 credit hours)

Fundamentals of Mechatronics A

Introduces the student to the basics of Mechatronic systems and the operation of electrical, mechanical, pneumatic/hydraulic, and Programmable Logic Control components in an advanced manufacturing system. Presents a detailed explanation of the relationships of voltage, current, resistance, power, the operation of mechanical, pneumatic/hydraulic components, and programming fundamentals in industrial systems. Includes an overview of the fundamentals of alternating and direct current, rotating machinery, digital devices, and programming. (Credit may not be earned for this course if the student has earned credit for MFG 135). Lecture/Lab: 3.0 credit hours (60 contact hours).

Pre-requisite: ENGT110 and at least five other hours of approved technical electives (see Manufacturing Engineering Technology technical elective list) or consent of instructor.

Attributes: Technical

Components: LEC: Lecture

MFG 130 (3 credit hours)

Fundamentals of Mechatronics B

Combines previously learned basic operational and analytical skills as related to a Mechatronics/Advanced Manufacturing system. Applies concepts to a complete advanced manufacturing system wherein various subsystems are collectively used to build a more complex manufacturing system. Teaches the students to troubleshoot a multitude of problems involved in electrical, mechanical, and hydraulic/pneumatic systems. (Credit may not be earned for this course if the student has earned credit for MFG 135). Lecture/Lab: 3.0 credit hours (60 contact hours).

Pre-requisite: MFG125 Fundamentals of Mechatronics A or consent of instructor.

Attributes: Technical

Components: LAI: Integrated Laboratory, LEI: Integrated Lecture

MFG 135 (6 credit hours)

Fundamentals of Mechatronics

Introduces the student to the basics of Mechatronic systems and the operation of electrical, mechanical, pneumatic/hydraulic, and Programmable Logic Control components in an advanced manufacturing system. Combines basic operational and analytical skills with critical thinking and applied troubleshooting. Teaches the students to troubleshoot a multitude of problems involved in typical electrical, mechanical, and hydraulic/pneumatic systems. (Credit may not be earned for this course if the student has earned credit for MFG 125 or MFG 130.) Lecture/ Lab: 6.0 credit hours (120 contact hours).

Pre-requisite: ENGT110 and at least five other hours of approved technical electives (see Manufacturing Engineering Technology technical elective list) or consent of instructor.

Attributes: Technical

Components: LEC: Lecture

MFG 175 (2 credit hours)

Lean Operations

Introduces students to the principles and practices of lean operations. Employs a lean simulation and examples from Toyota and other lean practitioners to introduce students to lean practices. Discusses Total Productive Maintenance. Lecture/Lab: 2.0 credit hours (30 contact hours).

Attributes: Course Also Offered in Modules, Technical

Components: LEC: Lecture

MFG 256 (3 credit hours)

Production Management

Procedures and techniques employed in a manufacturing plant, analysis of production planning and control, time and motion study, quality control, plant layout, and budgetary control. Lecture: 3 credits (45 contact hours).

Attributes: Technical

Components: LEC: Lecture

MFG 265 (4 credit hours)

Robotics and Industrial Automation

A study of principles and techniques used in automated industrial systems are studied. Emphasis is placed on programming, applications, and interfacing of automated machinery to manufacturing workcells. Lecture: 3 credits (45 contact hours)n Laboratory: 1 credit (30 contact hours).

Pre-requisite: ET 256 or consent of instructor.

Attributes: Technical

Components: LAB: Laboratory, LEC: Lecture

MFG 295 (1 credit hours)

Manufacturing Engineering Technology Capstone

Serves as the capstone course for the Manufacturing Engineering Technology degree program. Integrates prior learning outcomes into a single integrated learning experience. Includes preparation for an exit exam that all program graduates must take. Lecture: 1 credit (15 contact hours).

Pre-requisite: Manufacturing Engineering Technology Program Declaration OR Consent of Instructor.

Attributes: Technical

Components: LEC: Lecture