

MANUFACTURING ENGINEERING TECH (MET)

Division: Mathematics, Engineering Technologies and Computer Sciences (METCS) Division

MET 201 Manufacturing Process & Mtrls (3 Credits)

This course deals with the principles, methodology, and economics of manufacturing processes with respect to materials, production operations, and quality control. The topics also include tooling, automation, maintenance, industrial organization and management, marketing, and statistics applied to manufacturing problems. Laboratory work is included.

Pre-requisites: PHY 101 with a minimum grade of C

MET 202 Modern Manuf. Systems/Robotics (3 Credits)

This course introduces the concept of computer integrated manufacturing systems through the use of a flexible manufacturing center comprised of a number of work cells. It covers communication between the individual process controllers and a factory control system. Robot operation and programming is introduced. The course also covers the mechanical aspects of material manipulation, various feedback mechanisms, and the integration of robots with other machines in the workcell. The student applies the design concept and techniques to develop a machine tool operation system. Field trips to assembly plants are included.

Pre-requisites: MET 201 with a minimum grade of C

MET 210 Kinematics (3 Credits)

Students learn about moving elements used in the design and analysis of basic mechanisms in machines. Topics covered in the course include velocity and acceleration analysis on a plane, design and analysis of four-bar linkages, and cams, gears, and other mechanisms using graphical and analytical methods. Laboratory work is included.

Pre-requisites: ENR 110 with a minimum grade of C

MET 211 Machines and Controls (3 Credits)

Students learn about DC and AC motors and generators and the transmission mechanisms used to drive mechanical power. The course covers transducers for position and velocity. Programmable Logic Control (PLC) Systems are introduced. The laboratory work involves the use of computer-integrated manufacturing (CIM) workcell equipment, which includes computer numerical control (CNC) machinery, robotics control systems, and vision control systems.

Pre-requisites: PHY 101 with a minimum grade of C and ELC 115 with a minimum grade of C

MET 215 Fluid Mechanics (3 Credits)

Pre-requisites: PHY 101 with a minimum grade of C

MET 221 Programmable Logic Controllers (3 Credits)

Pre-requisites: MET 211 with a minimum grade of C

MET 225 Computer Numerical Control (3 Credits)

MET 250 Mechanical Engr. Tech. Project (2 Credits)

This course is taught in a lecture and demonstration format within the confines of a specialized laboratory. The student completes a comprehensive project which includes the various aspects of Mechanical/Manufacturing Engineering Technology. The project must encompass a wide range of topics such as design, CAD, production planning, material handling, machining, quality control and inspection.