MECHANICAL ENGINEERING TECHNOLOGY (MEC)

MEC 111. Materials for Industry. (3 Credits)
Studies the nature, structure, properties, and typical applications of metallic, polymeric, ceramic, and composite materials. Focuses on applications of materials as well as the behavior of materials subjected to external stresses. Addresses as required the earth's limited material resources, energy efficient materials, dependence on foreign sources of materials, material systems, thermal processing, and electronic-related materials. Lecture 3 hours per week. Total 3 hours per week.

MEC 112. Processes of Industry. (3 Credits)
Analyzes the processes of manufacturing products from materials for industry/engineering. Includes machining, casting, forming, molding, hot/cold working, chipless machining, and welding. Addresses quality assurance and inspection procedures. Lecture 3 hours per week. Total 3 hours per week.

MEC 119. Introduction to Basic CNC and CAM. (3 Credits)
Teaches the basic concepts of Computer Numerical Control (CNC) programming of Numerical Control Machinery with emphasis on Computer Aided Manufacturing (CAM)/Computer Aided Drafting (CAD). Program writing procedures will be based on using the following: basic G-code programming language for CNC machinery, CAD/CAM programming systems to produce correct code for CNC Machinery, basic computer usage, CAD/CAM integration, and Code-to-machine transfer via Distributive Numeric Control (DNC). Lecture 2 hours per week. Laboratory 2 hours per week. Total 4 hours per week.

MEC 161. Basic Fluid Mechanics - Hydraulics/Pneumatics. (4 Credits)
Introduces theory, operation and maintenance of hydraulic/pneumatics devices and systems. Emphasizes the properties of fluids, fluid flow, fluid statics, and the application of Bernoulli's equation. Lecture 3 hours per week. Laboratory 2 hour per week. Total 5 hours per week.

MEC 211. Machine Design I. (4 Credits)
Introduces analytical design of bearings, clutches, coupling, brakes, springs, gearing systems, and power shafting. Emphasizes methods of construction, machine parts and specifications of materials, and manufacturing processes. Lecture 3 hours per week. Laboratory 3 hours per week. Total 6 hours per week. Prerequisite: EGR 130 or equivalent.

MEC 225. Metallurgy. (3 Credits)
Teaches fundamentals of metallurgy, grain size, effect on carbon content, and hardness testing devices. Tests different alloys to determine the effect of heat treatment. Lecture 2 hours per week. Laboratory 2 hours per week. Total 4 hours per week.

MEC 255. Thermodynamics. (3 Credits)
Studies the properties of fluids and basic principles of work, energy, and heat. Includes the first and second laws of thermodynamics, processes and cycles, thermal reversibilities and irreversibilities, internal combustion engines, and gas turbines. Lecture 3 hours per week. Total 3 hours per week.