EGR 105 - Introduction to Problem Solving in Technology
Teaches engineering problem solving, using hand held calculator. Applies computers to solving problems.
Laboratory 3 hours per week. 1 credits

EGR 123 - Introduction to Engineering Design
Introduces the fundamental knowledge and experience needed to understand the engineering design process through the basics of electrical, computer, and mechanical systems. Includes the completion of a project in which a specific electromechanical robot kit will be analyzed, assembled, and operated.
Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week. 2 credits

EGR 216 - Computer Methods in Engineering and Technology
Provides advanced level experience in using a computer as a tool for solving technical problems and performing office functions. Includes computer hardware and operating system usage, structured programming in a selected high level language, use of word processing software, computer graphics and spreadsheets. Focuses on the analysis and solution of problems in engineering and technology. Prerequisite: Basic computer knowledge including file management, mouse usage, and keyboarding skills. Corequisite: MTH 115.
Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week. 3 credits

ETR 113 - D.C. and A.C. Fundamentals I
Studies D.C. and A.C. circuits, basic electrical components, instruments, network theorems, and techniques used to predict, analyze and measure electrical quantities. Part I of II. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week. 4 credits

ETR 237 - Industrial Electronics I
Studies linear integrated circuits for industrial applications, motors, industrial control devices, power control circuits, transducers, industrial process control, and sequential process control. Part I of II.
Prerequisite: ETR 113 Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week. 4 credits

ETR 238 - Industrial Electronics II
Studies linear integrated circuits for industrial applications, motors, industrial control devices, power control circuits, transducers, industrial process control, and sequential process control. Part II of II.
Prerequisite: ETR 237 Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week. 4 credits

IND 230 - Applied Quality Control
Studies principles of inspection and quality assurance with emphasis on statistical process control. May include the setting up, maintaining, and interpreting of control charts, and review of basic metrology. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week. 3 credits

IND 250 - Introduction to Basic Computer Integrated Manufacturing
Presents basic principles used in the design and implementation in a computer integrated manufacturing system. Emphasizes team concept and all aspects of a computer integrated manufacturing system to include the following: Robotics, Conveyor Control, Machining Center Integration Quality Control, Statistical Quality Control, and Computer Integrated Manufacturing (CIM) software. Lecture 1 hours. Laboratory 4 hours. Total 5 hours per week. 3 credits
IND 251 - Automated Manufacturing Systems I
Presents basic principles used in the design and implementation in manufacturing work cells. Includes selection of the robot system, worksite, application cell sensors, development of cycle times, and economic analysis. Prerequisite: IND 250 or divisional approval. Lecture 2 hours. Laboratory 4 hours. Total 6 hours per week. 4 credits

IND 290 - Coordinated Internship
Supervises on-the-job training in selected business, industrial or service firms coordinated by the college. Credit/practice ratio not to exceed 1:5 hours. May be repeated for credit. Variable hours. 3 credits

MEC 113 - Materials and Processes of Industry
Studies engineering materials and accompanying industrial manufacturing processes. Investigates nature of materials structure and properties from a design standpoint. Analyzes the effects of various processes on materials, and the processes themselves. Includes machining, casting, forming, molding, hot/cold working, cipless machining, and welding. Addresses quality assurance and inspection procedures. Lecture 3 hours per week. 3 credits

MEC 131 - Mechanics I - Statics for Engineering Technology
Teaches Newton's laws, resultants and equilibrium of force systems, trusses and frames, determination of centroids, and distributed loads and moments of inertia. Introduces dry friction and force systems in space. Lecture 3 hours per week. 3 credits

MEC 132 - Mechanics II - Strength of Mat. for Eng. Tech
Teaches the concepts of stress and strain. Provides an analysis of stresses and deformations in loaded members, connectors, shafts, beams, columns, and combined stress. Lecture 3 hours per week. 3 credits

MEC 162 - Applied Hydraulics and Pneumatics
Introduces hydraulic and pneumatic systems found in construction equipment, road vehicles, and farm equipment. Includes the basic theory, construction, maintenance and repair of hydraulic and pneumatic power systems. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week. 3 credits

PHY 201 - General College Physics I
Teaches fundamental principles of physics. Covers mechanics, thermodynamics, wave phenomena, electricity and magnetism, and selected topics in modern physics. Prerequisite: MTH 163. Part I of II. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week. 4 credits

SAF 127 - Industrial Safety
Provides basic understanding of safety and health in an industrial situation. Includes hazardous materials, substances, conditions, activities and habits as well as the prescribed methods and equipment needed for the apprentice to protect himself/herself and others. Lecture 2 hours per week. 2 credits