EGR 105  Introduction to Problem Solving in Technology - 1 cr
Teaches engineering problem solving, using hand held calculator. Applies computers to solving problems.

ETR 113  D.C. and A.C. Circuits - 4 cr
Studies DC and AC circuits, basic electrical components, instruments, network theorems, and techniques used to predict, analyze and measure electrical quantities.

EGR 216  Computer Methods in Engineering and Technology - 3 cr
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.

EGR 123  Introduction to Engineering Design - 2 cr
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.

ETR 237  Industrial Electronics I - 4 cr
Studies linear integrated circuits for industrial applications, motors, industrial control devices, power control circuits, transducers, industrial process control, and sequential process control.

ETR 286  Principles and Applications of Robotics - 3 cr
Provides an overview of terminology, principles, practices, and applications of robotics. Studies development, programming; hydraulic, pneumatic, electronic controls; sensors, and system troubleshooting.

IND 113  Materials and Processes of Manufacturing - 3 cr
Studies materials and processes for the manufacture of products. Investigates the nature of various materials. Examines the manufacturing processes of industry and their effects on materials.

IND 116  Applied Technology - 3 cr
Introduces basic information and problem solving techniques in liquids, gases, solids, metrics, mechanics, forces, simple machines, heat, light, sound and nuclear energy as applied in industrial engineering technologies.

IND 243  Automated Manufacturing Systems I - 3 cr
Introduces terminology and principles related to Mechatronic system design and application. Integrates concepts of electrical/electronic, mechanical and computer technologies in the development, setup, operation and troubleshooting of automated products and systems. Covers breakdown of various automated manufacturing operations with emphasis on system planning, development and troubleshooting processes.

MEC 140  Introduction to Mechatronics - 3 cr
Presents foundational concepts in mechatronics including analog and digital electronics, sensors, actuators, microprocessors, and microprocessor interfacing to electromechanical systems. Surveys components and measurement equipment used in the design, installation, and repair of mechatronic equipment and circuits.

MEC 155  Mechanisms - 2 cr
Studies the purpose and actions of cams, gear trains, levers, and other mechanical devices used to transmit control. Focuses on motions, linkages, velocities, and acceleration of points within a link mechanism; layout method for designing cams and gear grain.

MEC 162  Applied Hydraulics and Pneumatics - 3 cr
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.

MTH 115  Technical Mathematics I - 3 cr
Presents Algebra through exponential and logarithmic functions, Trigonometry, vectors, analytic Geometry, and complex numbers.

SDV 101  Introduction to Engineering - 1 cr
Introduces students to the skills necessary to achieve their academic goals, services offered at the College, to engineering, and to topics for students on academic probation. Covers topics such as services offered at the College including the learning resources center; counseling, and advising; listening, test taking, and study skills; and topical areas which are applicable to engineering.

Total Credits 38