ENGINEERING (ENGR)

ENGR 100 G Introduction to Engineering 3 Credits (3)
An introduction to the various engineering disciplines, the engineering approach to problem solving, and the design process. Projects emphasize the importance of teamwork, written & oral communication skills, as well as ethical responsibilities. (2+3P)
Prerequisite(s)/Corequisite(s): MATH 1220G or above
Repeatable: up to 3 credits
View Course Outcomes

ENGR 110 Introduction to Engineering Design 3 Credits (3)
Sketching and orthographic projection. Covers detail and assembly working drawings, dimensioning, tolerance specification, and design project. (2+3)
View Course Outcomes

ENGR 111 Mathematics for Engineering Applications 3 Credits (3)
An introduction to engineering mathematics and basic programming skills needed to perform elementary data manipulation and analysis.
Prerequisite(s): MATH 1220G
Prerequisite(s)/Corequisite(s): MATH 1250G
View Course Outcomes

ENGR 120 DC Circuit Analysis 4 Credits (4)
This course provides an introduction DC circuit analysis using Ohm's law, Kirchoff laws, Thevenin's and Norton's theorems. (3+3P)
Corequisite(s): A grade of C- or better in MATH 1250G or higher
View Course Outcomes

ENGR 130 Digital Logic 4 Credits (4)
This course introduces logic design and the basic building blocks used in digital systems, as well as introducing applications of digital integrated circuits. Topics include Numbering systems (binary & hexadecimal), Boolean algebra and digital logic theory, simple logic circuits, combinational logic, and sequential logic, and applications such as ALU (Arithmetic Logic Units), multiplexers, encoders, counters, and registers. These basic logic units are the main parts of microprocessors. Includes hands-on labs and software designs. (3P)
Prerequisite(s): A grade of C- or better in MATH 1220G or higher
View Course Outcomes

ENGR 140 Introduction to Programming and Embedded Systems 4 Credits (4)
An introduction to programming and to the field of embedded systems. Starting from the basic concepts of programming, this course uses microcontrollers, sensors, motors, and other peripheral devices to support the learning and application of the problem-solving process through embedded systems. This course focuses on reading, writing, debugging, testing, and documenting computer programs. (3+3P)
Prerequisite(s)/Corequisite(s): E T 182 or ENGR 130
View Course Outcomes

ENGR 190 Introduction to Engineering Mathematics 4 Credits (4)
Engineering applications involving involved Math topics most heavily used in first and second-year engineering courses. Topics include engineering applications of algebra, trigonometry, vectors, complex numbers, sinusoids and signals, systems of equations and matrices, derivatives, integrals and differential equations.
Prerequisite(s): A grade of C- or better in MATH 1250G or higher
View Course Outcomes

ENGR 198 Special Topics in Engineering 1-3 Credits
Directed individual study of topics in engineering. Written reports covering work required. Restricted to engineering majors. Graded S/U.
Repeatable: for a maximum of 6 credits
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ENGR 217 Manufacturing Processes 3 Credits (3)
An introduction to modern manufacturing processes and their application. Students will be introduced to manufacturing concepts such as traditional and non-traditional machining operations, tooling, material selection, thermal joining, geometric dimensioning & tolerancing, metrology, additive manufacturing, assembly and inspection, g-code, and automated manufacturing using CAM packages.
Prerequisite(s): A grade of C- or better in both, ENGR 1110 and (MATH 1220G or higher)
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ENGR 217L Manufacturing Processes Lab 1 Credit (1)
A hands-on application of the concepts introduced in ENGR 217. This lab will expose the students to hands-on exercises and manufacturing methods used in industry. (3P)
Corequisite(s): ENGR 217
View Course Outcomes

ENGR 230 AC Circuit Analysis 4 Credits (4)
This course provides an introduction to Circuit analysis techniques, RLC transients, phasors, filter response, and an introduction to discrete electronic devices. (3P)
Prerequisite(s): A grade of C- or better in both, ENGR 120 and (MATH 1440 or MATH 1521G)
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ENGR 233 Engineering Mechanics I 3 Credits (3)
Engineering mechanics using vector methods. Force systems, resultants, equilibrium, distributed forces, area moments, and friction.
Prerequisite(s): A grade of C- or better in ENGR 190 or MATH 1440 or MATH 1521G
Prerequisite(s)/Corequisite(s): PHYS 1310G or PHYS 1230G
View Course Outcomes

ENGR 234 Engineering Mechanics II 3 Credits (3)
Kinetics of particles, kinematics and kinetics rigid bodies, systems of particles, energy and momentum principles, and kinetics of rigid bodies in three dimensions.
Prerequisite(s): A grade of C- or better in M E 236 or C E 233 or ENGR 233
View Course Outcomes