

ENGINEERING (ENGR)

ENGR 1500 Engineering Orientation 1 s.h.

Introduction to engineering careers and the different engineering disciplines. Academic success strategies and university resources to support student success.

ENGR 1500H Honors Engineering Orientation 1 s.h.

Introduction to engineering careers and the different engineering disciplines. Academic success strategies and university resources to support student success.

Prereq.: Eligibility to take MATH 1513 or higher level math course.

ENGR 1550 Engineering Concepts 2 s.h.

Introduction to the basic skills needed in engineering including engineering computing and an introduction to the engineering design process utilizing science, technology, engineering, and mathematics (STEM) fundamentals. One hour lecture and three hours laboratory per week.

Prereq.: Eligibility to take MATH 1513 or higher level math course.

ENGR 1550H Honors Engineering Concepts 2 s.h.

Introduction to the basic skills needed in engineering including engineering computing and an introduction to the engineering design process utilizing science, technology, engineering, and mathematics (STEM) fundamentals. One hour lecture and three hours laboratory per week.

Prereq.: Eligibility to take MATH 1513 or higher level math course.

ENGR 1555 Engineering Drawing & Visualization 1 s.h.

Development of visualization and sketching skills and drafting convention including standard views and dimensioning. Three hours laboratory per week. To be taken prior to or concurrently with ENGR 1560 for those lacking high school drawing proficiency. Grading is A, B, C, NC. Does not count toward a degree.

ENGR 1560 Engineering Computing 2 s.h.

Computing skills required in engineering. Structured programming. Engineering problems and open ended design projects are solved in teams with results professionally presented. 1.5 hours lecture, 1.5 hours lab.

Prereq.: ENGR 1550 or ENGR 1550H.

Prereq. or Coreq.: MATH 1571 or MATH 1571H or MATH 1585H.

ENGR 1560H Honors Engineering Computing 2 s.h.

Computing skills required in engineering. Structured programming. Engineering problems and open ended design projects are solved in teams with results professionally presented. 1.5 hours lecture, 1.5 hours lab.

Prereq.: ENGR 1550 or ENGR 1550H.

Prereq. or Coreq.: MATH 1571 or MATH 1571H or MATH 1585H.

ENGR 6900 Engineering Education Workshop 1-6 s.h.

Special topics related to engineering education. May be repeated. Grading is S/U.

ENGR 6920 Project Planning and Management 3 s.h.

Methods for planning, organizing, scheduling, supporting, and controlling projects. Network techniques, including CPM, PERT, and time-cost trade-off analysis. Techniques for the estimation of time, manpower, and other resource requirements of the projects, including economic and statistical analysis, forecasting, learning curves, and line balancing. Management of time and other resources involved. Case studies and utilization of computer resources for the analysis and presentation of projects.

Prereq.: Graduate standing or permission of instructor.

ENGR 6921 Engineering Statistics 3 s.h.

Development and application of stochastic models of engineering systems. Elementary probability models applied to decision making under uncertainty. Development and use of theoretical probability distributions for describing stochastic systems. Models for point and confidence interval estimation and models for correlation analysis applied to engineering problems.

ENGR 6922 Engineering Systems Analysis 3 s.h.

Formulation and solutions of mathematical models in the engineering field. Analysis includes frequency and time response, boundary value problems, and state space variables.

ENGR 6923 Information Technology Tools For Engineers 3 s.h.

Accessing information through library databases, newsgraphs, WWW sites, etc. Using synchronous and asynchronous communication through web-based technologies. Information content creation, HTML client/server computing and their application in the engineering domain will be covered.

ENGR 6924 Computer Based Tools For Engineers 3 s.h.

Computer simulation of engineering models used in different engineering disciplines. The computer tools will include mathematical solvers and spreadsheets. Numerical solutions of linear and non-linear equations and ordinary and partial differential equations.

Prereq.: ENGR 6922.

ENGR 6925 Applied Environmental Management 3 s.h.

Practical application of environmental management practices in industry, with emphasis on regulatory compliance and international standards (ISO 14000). Areas of focus include monitoring of emission sources, air and water pollution control, solid and hazardous waste management, pollution prevention, employee health and safety, and property development and transfer.