

# ENGINEERING (ENGR)

## Engineering (ENGR) 100

### Elements of Engineering Drawing

Drawing survey course for students in technical and engineering science major programs. Study of more advanced software "AutoCAD Mechanical Program"; also draw geometric figures, multi-view drawings, pictorial drawing, charts and graphs with emphasis on graphic elements of machine parts drawing. Writing assignments, as appropriate to the discipline, are part of the course.

2 Laboratory hours. 2 Lecture hours. 3 Credit Hours.

**Offered At:** TR

## Engineering (ENGR) 110

### Introductory Drafting

For students in non-technical and non-engineering science major programs. Learn to use "AutoCAD general program" to draw geometric figures, multi-view drafting, pictorial drawing, charts and graphs. Writing assignments, as appropriate to the discipline, are part of the course.

2 Laboratory hours. 1 Lecture hours. 2 Credit Hours.

**Offered At:** TR

## Engineering (ENGR) 111

### Engineering Success Seminar

A course that surveys engineering and engineering computer science professions, their relationships to other professions, the roles and responsibilities of practitioners, and issues of professional ethics.

This course introduces students to various specializations, and the expectations of college, and it provides support in the development of personal and professional skills that promote success in college and careers. Students will also learn the importance of taking personal responsibility for their academic and professional choices. Writing assignments, as appropriate to the discipline.

*Eligibility for ENGLISH 101 based on prior coursework or appropriate score on Placement Test; or Consent of Department Chair*

3 Lecture hours. 3 Credit Hours.

**Offered At:** DA, TR, WR

## Engineering (ENGR) 115

### Engineering Communications-Blueprint Reading

For students in technical and non-technical curricula; principles and practices involved in interpretations of engineering graphics communications; emphasis on machine and structural graphic communications. Writing assignments, as appropriate to the discipline, are part of the course.

3 Lecture hours. 3 Credit Hours.

**Offered At:** KK

## Engineering (ENGR) 131

### Engineering Graphics & Intro to Design

Graphics, both manual and computer-aided drafting and design. Introduction to design techniques in graphics and multi-view drawing, auxiliary views, selecting, tolerance dimensioning, and technical sketching. Writing assignments, as appropriate to the discipline, are part of the course.

*ENGR 111 or Consent of Department Chairperson.*

2 Laboratory hours. 2 Lecture hours. 3 Credit Hours.

**Offered At:** DA, TR

## Engineering (ENGR) 132

### Descriptive Geometry

Theory of projections. Solution by graphical methods of problems concerning the relation of points, lines, planes, and surfaces. Writing assignments, as appropriate to the discipline, are part of the course.

*Grade of C or better in ENGR 131, or Consent of Department Chairperson.*

2 Laboratory hours. 2 Lecture hours. 3 Credit Hours.

**Offered At:** TR

## Engineering (ENGR) 190

### Computer Programming for Engineers

Introduces the use of high-level programming language in algorithm development and as a problem-solving tool in engineering; including basic data structures and algorithms, structured programming techniques, and software documentation. Writing assignments, as appropriate to the discipline, are part of the course.

*Eligibility for MATH 208.*

3 Lecture hours. 3 Credit Hours.

**Offered At:** DA, HW, TR, WR

**IAI:** CS 911

## Engineering (ENGR) 202

### Advanced Drafting & Basic Machine Design

Application of fundamental stress analysis to design of complete machine units involving machine elements such as shafts, springs, gears and screws, mechanical properties of materials and their significance in design; and classification of fits, specification of materials in use, and the manufacturing processes. Writing assignments, as appropriate to the discipline, are part of the course.

*Grade of C or better in ENGR 131, or Consent of Department Chairperson.*

2 Laboratory hours. 2 Lecture hours. 3 Credit Hours.

**Offered At:** TR

## Engineering (ENGR) 206

### Elements of Mechanics-Statics

Rigid bodies, fluid statics, friction, moments of inertia, centroids, and virtual work. Writing assignments, as appropriate to the discipline, are part of the course.

*Grade of C or better in PHYSICS 235 and MATH 208 or Consent of Department Chairperson.*

3 Lecture hours. 3 Credit Hours.

**Offered At:** DA

## Engineering (ENGR) 208

### Strength of Materials for Architecture

Concepts of stress and strain relationships; analysis of elementary stress distributions and deformations; study of axial loading, shear and bending moment diagram, and bending theory application. Writing assignments, as appropriate to the discipline, are part of the course.

*Grade of C or better in ENGR 206.*

3 Lecture Hours. 3 Laboratory Hours. 3-4 Credit Hours.

**Offered At:** KK

**Engineering (ENGR) 215**

**Electrical Circuit Analysis**

Basic electrical circuits, nodal and mesh analysis, voltage and current laws, circuit analysis techniques and superposition, operational amplifiers, RL, RC, and RLC circuits, frequency response, resonance, AC power analysis, Laplace transform methods, and BJT logic applications.

Writing assignments, as appropriate to the discipline are part of the course.

*Grade of C or better in PHYSICS 236, MATH 209 and credit or concurrent enrollment in MATH 210*

3 Laboratory hours. 4 Lecture hours. 5 Credit Hours.

**Offered At:** DA, HW, KK, OH, TR, WR

**IAI:** EGR 931L

**Engineering (ENGR) 225**

**Introduction to Thermodynamics**

Principle of energy transport and work; properties of substances and equation of state; first and second laws of thermodynamics, entropy, and equilibrium with applications. Writing assignments, as appropriate to the discipline, are part of the course.

*Grade of C or better in PHYSICS 235 (Engineering Physics I) and MATH 208 (Calculus and Analytical Geometry II), or Consent of Department Chairperson.*

3 Lecture hours. 3 Credit Hours.

**Offered At:** DA, MX, OH, WR

**Engineering (ENGR) 250**

**Engineering Projects**

Projects of experimental and analytical nature to stimulate creativity; recommended scheduling and integrating subject material with selected engineering courses. Writing assignments, as appropriate to the discipline, are part of the course.

*Grade of C or better in ENGR 202, or Consent of Department Chairperson.*

1-2 Lecture Hours. 1-2 Credit Hours.

**Offered At:** DA, KK