

# Basic Engineering Courses

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## Courses

### **BE 1205. Graphics in Engineering Design.**

Graphic Fundamentals in Engineering Design: [TCCN ENGR 1204] Fundamentals of multiview projections, auxiliaries, sections, pictorial drawings, dimensioning; introduction to CAD, decision process, and geographical information systems.

**Department:** Basic Engineering

**2 Credit Hours**

**4 Total Contact Hours**

3 Lab Hours

1 Lecture Hour

0 Other Hours

### **BE 2303. Intro. to Mats. Sci. and Engr..**

Introduction to Materials Science and Engineering: [TCCN ENGR 2332] Introduction to properties of engineering materials and relationships to their structure, behavior, and processing; materials testing and measurement of properties. Selection of materials for engineering applications considering interrelationships between structure, properties, processing, and performance.

**Department:** Basic Engineering

**3 Credit Hours**

**3 Total Contact Hours**

0 Lab Hours

3 Lecture Hours

0 Other Hours

**Prerequisite(s):** (CHEM 1305 w/C or better)

### **BE 2338. Mechanics II.**

Mechanics II: [TCCN ENGR 2302] A second course in Newtonian mechanics; dynamics (kinematics and kinetics) of particles and rigid bodies; work and energy; impulse and momentum.

**Department:** Basic Engineering

**3 Credit Hours**

**5 Total Contact Hours**

3 Lab Hours

2 Lecture Hours

0 Other Hours

**Prerequisite(s):** (MATH 1312 w/C or better ) OR (MATH 2313 w/C or better ) OR (MATH 2326 w/C or better)

### **BE 2375. Intro. to Thermal-Fluid Sci..**

Introduction to Thermal-Fluid Science: [TCCN ENGR 2334] An introduction to the basic concepts of thermodynamics and fluid mechanics to include properties, property relationships, states and fields. Presentation of the basic equations of thermal-fluid science, continuity, first and second laws of thermodynamics and momentum. BE 2338 may be taken concurrently with BE 2375.

**Department:** Basic Engineering

**3 Credit Hours**

**5 Total Contact Hours**

3 Lab Hours

2 Lecture Hours

0 Other Hours

**Prerequisite(s):** (BE 2338 w/C or better ) OR (MECH 2338 w/C or better)

### **BE 2377. Electrical Circuits and Motors.**

Electrical Circuits and Motors: [TCCN ENGR 2305] Principles of electrical circuits, generators, and motors. Introduction to electronics and introduction to microprocessors for data acquisition.

**Department:** Basic Engineering

**3 Credit Hours**

**5 Total Contact Hours**

3 Lab Hours

2 Lecture Hours

0 Other Hours

**Prerequisite(s):** (PHYS 2421 w/C or better ) OR (PHYS 2121 w/C or better AND PHYS 2321 w/C or better AND PHYS 2411 w/C or better)

**BE 2434. Mechanics I.**

Mechanics I: [TCCN ENGR 2301] A first course in Newtonian mechanics using vectors. Equilibrium of particles and rigid bodies, forces in space, centroids, moments of inertia, study of stress and strain; use of stress-load equations to determine the state of stress in specific structural elements; study of combined stresses.

**Department:** Basic Engineering

**4 Credit Hours**

**6 Total Contact Hours**

3 Lab Hours

3 Lecture Hours

0 Other Hours

**Prerequisite(s):** (MATH 1411 w/C or better ) OR (MATH 1312 w/C or better ) OR (MATH 2313 w/C or better ) OR (MATH 2326 w/C or better)