

# EGN: Engineering: General Courses

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## Courses

### EGN 2911L Sophomore Engineering Design I

College of Sci and Engineering, Department of Mechanical Engineering

3 sh (may not be repeated for credit)

Prerequisite: [MAC 2311](#)

First course in a sophomore engineering design sequence. Students work in teams with other engineering design students in an active, discovery based learning environment employing practice based learning.

### EGN 2912L Sophomore Engineering Design II

College of Sci and Engineering, Department of Mechanical Engineering

1 sh (may not be repeated for credit)

Prerequisite: [EGN 2911L](#)

Second course in a sophomore engineering design sequence. Students work in teams with other engineering design students in an active, discovery based learning environment employing practice based learning.

### EGN 3204 Engineering Software Tools

College of Sci and Engineering, Department of Electrical & Computer Engineer

1 sh (may not be repeated for credit)

Prerequisite: [MAC 2312](#)

Gives students an introduction to important Engineering software tools such as MATLAB, Labview, MATHCAD, and FSPICE.

### EGN 3365 Engineering Materials

College of Sci and Engineering, Department of Mechanical Engineering

3 sh (may not be repeated for credit)

Prerequisite: ([MAC 2311](#)) AND (CHM 1045 OR [CHM 2045](#) OR CHM 1045C)

Fundamentals in structure, properties, and mechanical behavior of engineering materials.

### EGN 3613 Principles of Engineering Economy

College of Ed and Prof Studies, Department of Administration and Law

3 sh (may not be repeated for credit)

Prerequisite: [MAC 2311](#)

Provides students with a broad-based understanding of finance, cash flow, and economic decision making practices. Addresses the principles and techniques needed for making economic decisions about building systems and subsystems. Explores decision making techniques pertaining to cost and value engineering. Emphasis will be placed on the time-value of money and equivalence, replacement analysis, uncertainty and life cycle costing.

### EGN 3913L Junior Engineering Design I

College of Sci and Engineering, Department of Mechanical Engineering

1 sh (may not be repeated for credit)

Prerequisite: ([EGN 2912L](#)) AND ([EML 3011\\*](#))

First course in a junior engineering design sequence. Students work in teams with other engineering design students in an active, discovery based learning environment employing practice based learning. This course may be a continuation of the project from the Sophomore Engineering Design, or may be a starting point for Juniors who are new to the program (Students without Sophomore Engineering Design must receive permission from their advisor).

### EGN 3914L Junior Engineering Design II

College of Sci and Engineering, Department of Mechanical Engineering

1 sh (may be repeated for up to 4 sh of credit)

Prerequisite: [EGN 3913L](#)

Continuation of a Junior engineering design sequence. Students work in teams with other engineering design students in an active, discovery based learning environment employing practice based learning. This course is repeatable for elective credit with permission of the instructor.

### EGN 4950 Capstone Design I

College of Sci and Engineering, Department of Electrical & Computer Engineer

1 sh (may not be repeated for credit)

Preliminary work on senior design project. This portion of the senior design will focus on the objectives and criteria, synthesis, and analysis elements of project development. After developing design concepts, researching for implementation methods, and performing a feasibility study (which will include economic, social, ethical, etc., factors), the semester will culminate with a senior design project proposal and presentation.

### EGN 4952L Capstone Design II

College of Sci and Engineering, Department of Electrical & Computer Engineer

2 sh (may not be repeated for credit)

Prerequisite: [EGN 4950](#)

Continuation of Capstone Design I, with emphasis on construction, testing, and evaluation elements of project development. Material and Supply fee will be assessed. Permission is required.

### EGN 4965 Fundamentals of Engineering Exam Preparation for Electrical and Computer Engineering Major

College of Sci and Engineering, Department of Electrical & Computer Engineer

3 sh (may not be repeated for credit)

Prerequisite: [EGN 4950\\*](#)

This course is designed to help prepare ECE senior students to take the FE exam, which is the first step in becoming a professional engineer. Course content will include review of relevant math, science, engineering economy, and ethics topics as well as fundamental concepts from the ECE engineering program including from such areas as circuits, electronics, controls, communications, electromagnetics, etc.

**EGN 6429 Principles of Engineering Analysis**

College of Sci and Engineering, Department of Electrical & Computer Engineer

3 sh (may not be repeated for credit)

This course will cover topics in advanced engineering analysis, including linear algebra, partial differential equations, Fourier series, complex variables, and vector calculus with numerical techniques.

**EGN 6960 Engineering Project**

College of Sci and Engineering, Department of Electrical & Computer Engineer

3 sh (may be repeated for up to 6 sh of credit)

Prerequisite: EGN 6429\*

Capstone course for Masters of Engineering students who do not elect the thesis option. Students will define and carry out a project that shows mastery of some topic in Engineering and produces a final product.

**EGN 6975 Thesis**

College of Sci and Engineering, Department of Electrical & Computer Engineer

3 sh (may be repeated for up to 6 sh of credit)

Prerequisite: EGN 6429\*

Design, research, and presentation of a master's thesis under the direction of a faculty committee.

\* This course may be taken prior to or during the same term.