

**ENGR 10 Course Outline as of Fall 2024****CATALOG INFORMATION**

Dept and Nbr: ENGR 10 Title: INTRO ENGINEERING

Full Title: Introduction to the Engineering Profession

Last Reviewed: 12/12/2023

Units	Course Hours per Week		Nbr of Weeks		Course Hours Total	
Maximum	2.00	Lecture Scheduled	2.00	17.5	Lecture Scheduled	35.00
Minimum	2.00	Lab Scheduled	0	3	Lab Scheduled	0
		Contact DHR	0		Contact DHR	0
		Contact Total	2.00		Contact Total	35.00
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 70.00

Total Student Learning Hours: 105.00

Title 5 Category: AA Degree Applicable

Grading: Grade or P/NP

Repeatability: 00 - Two Repeats if Grade was D, F, NC, or NP

Also Listed As:

Formerly:

**Catalog Description:**

Students will explore the branches of engineering, the functions of an engineer, and the industries in which engineers work. This course explains the engineering education pathways and explores effective strategies for students to reach their full academic potential. The students will learn the methods and tools of engineering problem solving and design, including the interface of the engineer with society and engineering ethics. Engineering communication skills will be developed.

**Prerequisites/Corequisites:****Recommended Preparation:****Limits on Enrollment:****Schedule of Classes Information:**

Description: Students will explore the branches of engineering, the functions of an engineer, and the industries in which engineers work. This course explains the engineering education pathways and explores effective strategies for students to reach their full academic potential. The students

will learn the methods and tools of engineering problem solving and design, including the interface of the engineer with society and engineering ethics. Engineering communication skills will be developed. (Grade or P/NP)

Prerequisites/Corequisites:

Recommended:

Limits on Enrollment:

Transfer Credit: CSU;UC.

Repeatability: Two Repeats if Grade was D, F, NC, or NP

## **ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:**

<b>AS Degree:</b>	<b>Area</b>	Effective:	Inactive:
<b>CSU GE:</b>	<b>Transfer Area</b>	Effective:	Inactive:

<b>IGETC:</b>	<b>Transfer Area</b>	Effective:	Inactive:
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<b>CSU Transfer:</b>	Transferable	Effective:	Fall 1989	Inactive:
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<b>UC Transfer:</b>	Transferable	Effective:	Fall 1989	Inactive:
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### **CID:**

CID Descriptor:ENGR 110	Introduction to Engineering
SRJC Equivalent Course(s):	ENGR10

### **Certificate/Major Applicable:**

Major Applicable Course

## **COURSE CONTENT**

### **Student Learning Outcomes:**

At the conclusion of this course, the student should be able to:

1. Apply a spectrum of resources and personal skills to develop opportunities and make decisions regarding their education and career.
2. Demonstrate effective study skills and teamwork for a career in engineering.

### **Objectives:**

At the conclusion of this course, the student should be able to:

1. Describe the role of engineers in society and classify the different engineering branches, the functions of an engineer, and industries in which they work.
2. Identify and describe academic pathways to bachelor's degrees.
3. Develop and apply effective strategies to succeed academically.
4. Explain engineering ethical principles and standards.
5. Demonstrate knowledge of effective practices for writing technical engineering documents and making oral presentations.
6. Analyze engineering problems using the engineering design process.
7. Demonstrate teamwork skills, including effective collaboration in culturally and gender diverse engineering design teams.

### **Topics and Scope:**

- I. Role of Engineering, Science, and Technology in Society

## II. Overview of the Engineering Profession

- A. Branches
- B. Functions
- C. Industries
- D. Careers
- E. Job outlook

## III. Legal, Moral, and Ethical Issues in Engineering

## IV. Engineering Education

- A. Academic success strategies
- B. Curriculum and preparation for upper division coursework
- C. Pathways to and through university programs

## V. Engineering Design

- A. Scientific foundations
- B. Creativity
- C. Problem-solving processes
- D. Project planning
- E. Team member roles and behaviors
- F. Cultural and gender diversity awareness

## VI. Engineering Communication

- A. Pictorial
- B. Oral
- C. Written

### **Assignment:**

1. Readings from textbook, handouts, or online resources (5-10 pages per week)
2. Investigations and reports on engineering topics (6-10). Suggested report topics such as:
  - A. A periodical or online article related to engineering,
  - B. An engineering field or job function,
  - C. A university engineering program
  - D. A local engineering company
  - E. A local engineer
  - F. How a product works or is made
3. Career and academic development documents (6-10). Suggested documents such as:
  - A. Weekly schedule
  - B. Goals essay
  - C. Education plan
  - D. Guest speaker questions
  - E. Resume, cover letter, and interview questions
4. Engineering documents (2-4). Suggested documents such as:
  - A. Project specifications
  - B. Process instructions
  - C. Build plan
  - D. Gantt chart
5. Oral presentation(s) (1-2)
6. Group design project(s) (1-3)
7. Engineering fieldtrip(s) and guest speaker(s) (1-3 each)
8. Final exam or project

### **Methods of Evaluation/Basis of Grade:**

**Writing:** Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

Investigations and reports; career and academic development documents; engineering documents

Writing  
30 - 50%

**Problem Solving:** Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Group design project(s)

Problem solving  
10 - 20%

**Skill Demonstrations:** All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

Oral presentation(s)

Skill Demonstrations  
5 - 15%

**Exams:** All forms of formal testing, other than skill performance exams.

Final exam or project

Exams  
5 - 15%

**Other:** Includes any assessment tools that do not logically fit into the above categories.

Participation including fieldtrips and guest speakers

Other Category  
10 - 20%

**Representative Textbooks and Materials:**

Engineering Your Future. 9th ed. Oakes, William and Leone, Les. Oxford University Press. 2016 (classic).

Studying Engineering: A Roadmap to a Rewarding Career. 5th ed. Landis, Ray. Discovery Press. 2018.

Instructor Prepared Materials