

ENGR 10 Course Outline as of Fall 2018**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:

The course explores the branches of engineering, the functions of an engineer, and the industries in which engineers work. Explains the engineering education pathways and explores effective strategies for students to reach their full academic potential. Presents an introduction to the methods and tools of engineering problem solving and design including the interface of the engineer with society and engineering ethics. Develops communication skills pertinent to the engineering profession.

Prerequisites/Corequisites:**Recommended Preparation:**

Course Eligibility for ENGL 100 OR Course Eligibility for EMLS 100 (or ESL 100)

Limits on Enrollment:**Schedule of Classes Information:**

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

introduction to the methods and tools of engineering problem solving and design including the interface of the engineer with society and engineering ethics. Develops communication skills pertinent to the engineering profession. (Grade or P/NP)

Prerequisites/Corequisites:

Recommended: Course Eligibility for ENGL 100 OR Course Eligibility for EMLS 100 (or ESL 100)

Limits on Enrollment:

Transfer Credit: CSU;UC.

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

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

| | | | |
|-------------------|----------------------|------------|-----------|
| AS Degree: | Area | Effective: | Inactive: |
| CSU GE: | Transfer Area | Effective: | Inactive: |

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|---------------|----------------------|------------|-----------|
| IGETC: | Transfer Area | Effective: | Inactive: |
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| CSU Transfer: | Transferable | Effective: | Fall 1989 | Inactive: |
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| UC Transfer: | 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.

Objectives:

During the course, the students will:

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 in working on an engineering design team.

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

VI. Engineering Communication

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

VII. Engineering Tools and Practices

- A. Graphing calculators
- B. Software tools
- C. Fabrication tools

Assignment:

1. Readings from textbook, handouts, or online resources (5 to 10 pages per week)
2. Investigations and reports on engineering topics (6 to 10). Suggested report topics: a periodical or online article related to engineering, an engineering field or job function, a university engineering program, a local engineering company, a local engineer, how a product works or is made
3. Career and academic development documents (6 to 10). Suggested documents: weekly schedule, goals essay, education plan, guest speaker questions, resume, cover letter, interview questions
4. Engineering documents (2-4). Suggested documents: project specifications, process instructions, build plan, Gantt chart
5. Oral presentations (1 to 2)
6. Group design projects (1 to 3)
7. Final Exam

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.

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| Written Reports and Documents |
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| Writing 30 - 50% |
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Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

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| Group Projects | Problem solving 10 - 20% |
| Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams. | |
| Oral Presentations | Skill Demonstrations 5 - 15% |
| Exams: All forms of formal testing, other than skill performance exams. | |
| Final Exam | Exams 5 - 15% |
| Other: Includes any assessment tools that do not logically fit into the above categories. | |
| Participation | Other Category 10 - 20% |

Representative Textbooks and Materials:

Engineering Your Future. 9th ed. Oakes, William and Leone, Les. Oxford University Press. 2016
Studying Engineering: A Roadmap to a Rewarding Career. 4th ed. Landis, Ray. Discovery Press. 2013 (classic)
Instructor Prepared Materials