

# ENGR 10: Introduction to Engineering

Spring 2024

Sections #52006

**Class Meetings:** Tuesdays/ Thursdays in PHY 77 9:00-10:50am

**Instructor:**

Dr. John Heathcote

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**Come see me in my office!**

I am often available, even outside of my regular office hours. If you see me in my office, I am available to answer your questions or just to discuss engineering! Please come by!

**Office Hours:**

MTWThF, 11:00-11:50am

If you cannot make regular office hours, feel free to make an appointment.

## Welcome to Introduction to Engineering!

I would like to welcome you to ENGR 10. This is a fun and enlightening course in which you will learn more about the career field of engineering while taking part in design projects and other group activities that will keep you engaged. We will also prepare you for the challenging academic study of engineering by discussing the types of personal study skills you will want to develop. I look forward to helping you in this course and I hope to see you in many more engineering courses in the future!

**Textbook:** Landis, R., Studying Engineering, 5<sup>th</sup> Edition, Discovery Press, 2019

You do not need to purchase this textbook. It is available for check-out in the library.

## Catalog

**Description:** This course is an introduction to the engineering profession for students interested in a career in engineering or technology. Topics include opportunities in engineering, education plans, internships, the design process, analytical problem solving techniques, project management, and professional ethics. Hands-on projects are used extensively in the course.

## Point-Based Grading:

All assignments and projects will be given a certain number of points in value. Your score will be based on your performance on each assignment. Your overall grade will be based on the percentage of the overall points that you earn, using the grading scale below.

### Grading Scale:

90-100%	A
80-89.9%	B
70-79.9%	C
60-69.9%	D
<60%	F

### Types of Assignments and Projects:

**Online Canvas Assignments:** You will be given regular assignments that you will need to complete on your own. Many of these assignments will involve reading from the textbook and then writing your answers to questions based upon your thoughts of the reading.

**Presentations:** Several times this semester, you will give a presentation either by yourself or as a member of a group. For group presentations, it is important that you participate well, communicate with your group, and carry your load for your team!

**Group Projects:** Working as an engineering team is a big theme of this course. Throughout the semester, we will have you work together in groups in small design challenges, class activities, robotics projects, and in the Central California Engineering Design Challenge.

**Other Assignments:** You will also complete other assignments such as developing your student education plan, writing a research report, career planning exercises, and constructing a resume.

**Central California Engineering Design Challenge:** Each semester, students in this course compete with students at Fresno State, Fresno City College, Clovis Community College, Madera Community College and West Hills College in an engineering design competition. It is an enjoyable exercise in which teams of students design and build contraptions to meet an assigned goal. This project will involve participation at the competition -- a Saturday morning (Tentative Date, April 13<sup>th</sup>), from 8am-12pm (*approximately*) at Fresno State or Fresno City College. All students in this course are expected to attend this competition. The details of the competition will be made available as soon as possible. It is the student's responsibility to notify the instructor well ahead of time if he/she cannot attend for a justifiable reason. **An alternative assignment** (a written paper on some aspect of engineering) will be given to students who cannot attend the competition.

**Final Exam:** As a way of summing up what you have learned from this course, a final exam will be taken during finals week. This will involve topics that we have discussed or studied throughout the term.

**Late Work:** Assignments on Canvas are still available after the deadline date. However, please note that your score will drop by 1% for each day that an assignment is submitted late. HOWEVER, I do understand that circumstances to come up. If you have a good reason to ask for an extension for a task, please communicate that to me as early as possible. Depending on the situation, I will consider an extension for you.

**Attendance:** Class attendance will be recorded. If there is a reason that you must miss class, please let me know so that I can be sure that you stay up to date in the course. In accordance with college policy, if a student misses more than two class sessions, that student may be dropped. (However, if you decide to drop the course, it is **your** responsibility to make the drop official in the Administrations and Records Office or else possibly receive a grade of F.)

**Cheating and/or plagiarism:** Cheating and/or plagiarism will not be tolerated. A student will receive no credit for the assignment if in the opinion of the instructor the individual has cheated.

**Accommodations for Students with Disabilities:**

If you have a verified need for an academic accommodation or materials in alternate media (i.e., Braille, large print, electronic text, etc.) per the Americans with Disabilities Act (ADA) or Section 504 of the Rehabilitation Act, please contact me as soon as possible.

<b>Add Date:</b>	Friday, January 26	Last day to add a course
<b>Drop Date:</b>	Friday, March 8	Last day to drop this course
<b>Holidays:</b>	Monday, January 15	Martin Luther King Jr. Day
	Friday, February 16	Presidents' Day
	Monday, February 19	Presidents' Day
	Monday-Friday, March 25-29	Spring Break
<b>Final:</b>	On Canvas during Finals Week	

**COURSE OBJECTIVES:**

*In the process of completing this course, students will:*

1. describe the role of engineers in society and classify the various branches of engineering, the functions of an engineer, and the industries in which they work.
2. describe how products are designed and created by engineers.
3. investigate new products being developed by engineers.
4. develop and apply effective strategies to succeed academically.
5. identify and describe academic pathways to bachelor's degrees.
6. investigate engineering career and internship opportunities.
7. develop a resume and cover letter for an engineering internship.
8. evaluate an engineering job and compare it to their own career interests.
9. discuss the standards of engineering ethics.
10. apply ethical standards towards engineering case studies.
11. analyze the application of the engineering design process toward the creation of a product.
12. work in engineering teams to apply the engineering design process toward meeting an engineering challenge.
13. write technical documents and present oral presentations based upon an engineering project.

**STUDENT LEARNING OUTCOMES:**

A successful student will be able to:

- analyze issues using the guidelines of engineering ethics.
- apply engineering teamwork skills and the engineering design process towards group projects.
- identify the engineer's role in society.
- make informed decisions about their educational and career plans.