

Introduction to Engineering (ENGR D010 – Section 20)

De Anza College Fall 2024

Ali Saeidi Ashtiyani

Email: saeidiashtiyani@fhda.edu

Lectures & Labs:

Mon-Tue-Thu 01:30 PM - 02:20 PM

Mon-Tue-Thu 02:30 PM - 03:20 PM

Classroom:

S48

In case of an online meeting:

Join Zoom Meeting

<https://fhda-edu.zoom.us/j/97088838498?pwd=b0kxNWJYV2J3TE1LNURVa3hoNElOdz09>

Meeting ID: 970 8883 8498

Passcode: 051813

Office hours (Online):

Office Hour: Tuesdays 5:30 to 6:30pm (BY APPOINTMENT)

<https://fhda-edu.zoom.us/j/95909058655?pwd=YUNnTUF3aWpWYk1FT2p4ZHlwNmhNZz09>

Meeting ID: 959 0905 8655

Passcode: 137866

Course objectives

Introduction to Engineering is designed to allow students to explore engineering through hands-on design projects. Students learn about various aspects of the engineering profession and acquire both technical skills and nontechnical skills, in areas such as communication, teamwork, and engineering ethics. Students would learn about human factors as well as design factors within an overall process and including product life cycle stages.

By designing and implementing an actual engineering project, students will be exposed to many ideas and principals. Students will form teams of 2 to 4 and choose projects which excite them – and importantly, projects that have a good purpose. Successfully completing the project is not required; this provides the opportunity to deeply understand and analyze different technical and non-technical aspects of the project.

The theory is an important part of the projects. The actual goal of the projects is to prove or disprove a theory by gathering supporting data by creating proper tests and analyzing why or why not the expected outcome was achieved.

It is highly recommended to create a diverse team so students would get a good sense of the different engineering fields and how they overlap. Students will understand the importance of team work and leadership. They would learn to understand the concept of project management by experiencing the importance of organizational skills and time management skills while keeping track of the budget. They would create PERT and Gantt chart.

Throughout the course, students will be reminded to check for engineering ethics.

Students would be able to have several mini-presentations and draft reports opportunities before submitting their final ones. As a class, students would do peer evaluations by providing constructive feedbacks.

Course Requirement:

Special interest in engineering.

Text

Recommended but not required

ENGINEERING YOUR FUTURE, A Comprehensive Introduction to Engineering By William C. Oakes, PhD 2009-2010 Edition

A Whole New Engineering, The Coming Revolution in Engineering Education by DAVID R. GOLDBERG and

Mark SOMERVILLE

Overall course grade (letter-grade) will be assigned based on the distribution below:

- 100% to 94.5%: A
- 94.5% to 89.5%: A-
- 89.5% to 86.5%: B+
- 86.5% to 83.5%: B
- 83.5% to 79.5%: B-
- 79.5% to 74.5%: C+
- 74.5% to 69.5%: C
- 69.5% to 66.5%: D+
- 66.5% to 63.5%: D
- 63.5% to 59.5%: D-
- <59.5%: F

Important Notes:

- **Progress reports and presentations must be submitted on time otherwise up to 50% credit will be given.**
- **This is a project heavy course, requiring active teamwork and contribution of every student**
- **Project reports, PPTs, and the presentation must be on time. No exceptions!**
- **All team members must be present and participate in the presentation; otherwise, they will lose up to 50% credit.**
- **Equal contribution to projects and pair reviews has 10% of overall grade.**

Grading Policy

Written Reports

15% Format

10% Summary/Introduction/Abstract

- 10% Design/Idea
- 10% Theory
- 20% Project management such as Pert, Gantt, budget, Part, task assignment, ...
- 20% Test/Verification/Result/Setup techniques
- 10% Conclusion
- 5% References/Appendices

Presentation PPTs

- 25% Presentation (team and individual)
- 10% Format
- 20% Body/Overall content (Including project management/charts)
- 20% Theory and procedures
- 20% Testing, Verifications & Outcome/Results
- 5% Answering Questions

Overall Course Grade Weights

- 25% Discussions / Assignments/ Activities / Quizzes**
- 35% Progress Reports and Presentations**
- 30% Final Project Report and Presentation**
- 10% Peer Reviews (Contribution to project)**

Course Outline:

<u>Week</u>	<u>Topics</u>
	Introduction
	Project Guide
1-2	Engineering Profession PPT
	Team Formations
	Project Ideas/Discussion
	Project Proposal PPT
	Project Presentation PPT
3-4	Project Management PPT
	Quiz 1
	Project Proposal Presentations
	Engineering Success and Teamwork PPT
5-6	Report Format and Technical Writing PPT
	Quit 2
	Problem Solving PPT
7-8	Project Progress Presentations
	Quiz 3
	General Lecture (selective topics)
9-10	Quiz 4
	Final Project Presentations
11-12	Final Project Reports

Student Learning Outcome(s):

- Analyze, graph and develop a formula for a given data set.
- Prepare and write technical specifications and documentation, and be able to orally present them.
- Work collaboratively on an engineering team.

Office Hours:

F 04:00 PM 06:00 PM Zoom,Canvas,Email,By Appointment By Appointment