

Introduction to Engineering
Engr 10
De Anza College Fall 2015

9:30am-11:20am
Monday and Wednesday in S42
Tuesday and Thursday in MQ2

Dr. Lee Aarons

Office hours (S43):
Monday 11:30 am to 12:30 pm
Thursday 1 pm to 2 pm
Email: aaronslee@fhda.edu

Syllabus:

The goal of this course is to introduce students to the many facets of engineering, so that students gain appreciation of engineering in its various forms and learn good engineering practices. Students will acquire both technical and non-technical skills, in areas such as communication, teamwork, and engineering ethics. Students will learn about human factors and engineering design factors in a design process and product life cycle stages.

Following are the grading breakdown, description of the final project, and a list of topics that are planned to be discussed in this class. Due to the broad scope of this course, there may not be sufficient time to cover all of these topics, and so students are encouraged to request topics to be covered during the term, regardless if they are listed below.

Grading breakdown:

35% Final project
20% Proposal for final project
35% Other projects and homework
10% Class participation

Final project:

For the final project, students have the choice of working alone or in groups of 2 or 3. Students may work on any project a professional engineer may. This includes, but is not limited to, (1) constructing or repurposing a piece (or multiple pieces) of useful technology, (2) creating a useful computer program or phone app, or (3) performing research and writing a report in the style of a journal article. Success of the project will be judged on the analysis performed and documented, not on whether the intended goals of the project were achieved. If the group

chooses to construct machinery or code, it does not need to work. If the group performs research, the intended goals of the research do not need to be reached.

Each group will submit a written proposal and final report and give a presentation. Presentations will be given during the final exam period and, if needed, the final week of regularly scheduled classes. The exact dates depend on the total number of presentations. The final written report will be due the last class day before the day of the first presentation. The proposal will be due tentatively on Thursday, October 29. Students must receive approval of their projects (either verbally or in writing) at any time before submitting a proposal. Students will have the option to submit rough drafts of the proposal and final report before they are due to receive feedback.

Topics to be covered (in no particular order):

Estimation and Simplification Techniques

Error checking

Cost Analysis

Data Analysis

Time Management

Writing and Presenting

Newton's Laws of Motion

Thermodynamics

Numerical Analysis and Simulation Techniques

Chemical Engineering

Mechanical Engineering

Civil Engineering

Computer Science

Computer and Electrical Engineering

Biomedical Engineering