# ENGR/ECE 1618 – Introduction to Engineering I

## Course Description

### ENGR/ECE 1618 – Introduction to Engineering I (2)

This course will provide an introduction to the practice of engineering and the various areas within the engineering disciplines. Students will be informed of engineering curricula and career opportunities within the various engineering disciplines. This course will also introduce students to important topics for academic success, both at the major level and at the university level. (GE FYS)

## Prerequisite by Topic

None

## Units and Contact Time

2 semester units. 2 units lecture (100 minutes).

## Type

Required for Computer Engineering, Electrical Engineering, and Engineering Science

## Required Textbook

No textbook is required for this course.

## Recommended Textbook and Other Supplementary Material

*Runner Life 2013-2014: The First-Year Experience Handbook* by Dr. Brett Schmoll & Matthew Woodman. ISBN: 978-1490547008. (Updated for 2016/17)

Other supplementary materials (handouts, articles, etc.) will be available in class and on the course website.

## Coordinator(s)

Melissa Danforth (ECE), Jorge Talamantes (ENGR)

## Student Learning Outcomes

Upon completion of this course, students will be able to:

* Describe the various areas of engineering and career opportunities within them.
* Describe the role of engineers in society and analyze the impact of engineering decisions.
* Explain engineering ethical principles and professional responsibilities.
* Work effectively on teams to complete an engineering design project.
* Prepare effective written and oral reports on projects.
* Describe students' rights and responsibilities as members of the CSUB campus community. (GE Outcome F-1A)
* Locate sources of campus policies and procedures. (GE Outcome F-1B)
* Identify and locate campus, school, and department resources at CSUB. (GE Outcome F-1C)
* Develop strategies to succeed academically at CSUB, including technical, academic, and information literacy skills. (GE Outcome F-2A)
* Explain the general and university education requirements at CSUB, including the option of general education thematic minors. (GE Outcome F-2B)
* Develop an academic roadmap to graduation for engineering majors. (GE Outcome F-2C)

## ABET Outcome Coverage

This course maps to the following outcomes for engineering (EAC/ABET):

*3f. An understanding of professional and ethical responsibility.*

Students will develop an understanding of professional and ethical responsibilities through presentations by practicing engineers and case studies.

*3g. An ability to communicate effectively.*

Written and oral project reports will require effective communication of projects undertaken during the course.

*3h. The broad education necessary to understand the impact of engineering solutions in a global economic, environmental, and societal context.*

Assignments will be used to provide an understanding of how engineering fits into a global context and to analyze the impact of decisions.

## Lecture Topics and Rough Schedule

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| **Week** | **First Class Period** | **Second Class Period** |
| 1 | Overview of Engineering Profession  Introduction to CSUB | Overview of Engineering on Campus  Campus, School, Department Resources |
| 2 | Intro. to Design & Project 1  Safety in the Classroom/Lab | Speaker 1 |
| 3 | Intro. to Instrumentation; Project 1 | Speaker 2 |
| 4 | Intro. to Hand Tools; Project 1 | Teamwork; Project 1 |
| 5 | Continue Project 1 | Speaker 3 |
| 6 | Present Project 1 | Academic Advising and Registration |
| 7 | More on Design; Intro. to Project 2 | Speaker 4 |
| 8 | Unit Conversions; Project 2 | Unit Conversions; Project 2 |
| 9 | Student Clubs and Involvement | Speaker 5 |
| 10 | Intro. to Excel; Project 2 | Speaker 6 |
| 11 | More Excel; Project 2 | Safety in Design; Project 2 |
| 12 | Library Resources; Paper Requirements | Speaker 7 |
| 13 | More on Design; Project 2 | Engineering Ethics; Project 2 |
| 14 | Student Rights and Responsibilities | Speaker 8 |
| 15 | Finish Project 2 | Present Project 2 and Turn in Report |

Homework assignments will require out-of-class time to read articles and/or watch videos on additional topics. Topics include academic skills, success at college, challenges facing engineering students, and techniques to overcome those challenges.

## Design Content Description

Students will complete introductory design projects and learn about engineering design. Students must demonstrate knowledge of appropriate safety procedures and complete the appropriate laboratory safety form before they will be allowed to work on the projects.

## Prepared By

Melissa Danforth on July 12, 2014

## Approval

Approved by CEE/CS Department on [date]; Approved by Physics and Engineering on [date]

Effective Fall 2016