## ECE/ENGR 1618 – Introduction to Engineering I

Instructor TBD

Contact Information TBD

Meeting Times TBD

Office Hours TBD

Textbook/Materials See Textbook and Supplementary Material section below

General Education This course meets the First Year Seminar requirements of the CSU Bakersfield General Education Program (GE FYS).

## Course Description

### ECE/ENGR 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)

## ABET 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.

## Course Coordinator(s)

Melissa Danforth (ECE), Jorge Talamantes (ENGR)

Instructors will be selected from the faculty of the Department of Computer and Electrical Engineering and Computer Science and the Department of Physics and Engineering.

## Course 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.

## 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.

## General Education Student Learning Outcomes

* 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)

## Classroom Participation and Attendance

Attendance is critical for completion of group projects and for the scheduled speakers, so the course grade will reflect attendance. Students unable to attend for a serious and compelling reason should notify the instructor as soon as possible. The instructor may require proof for an excused absence, such as a doctor’s note.

## 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 |

## Assignments, Quizzes or Exams

Students will complete two group projects as part of this course. The projects are introductory in nature and will introduce engineering design concepts. Oral reports for each project will be required (see above schedule). A written report will also be required for the second project. 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.

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.

Example Homework Assignments:

* Week 1: Learn and apply time management strategies.
* Week 2: Learn how to seek academic help from instructors, peers, and tutoring centers, particularly in courses historically known to be a bottleneck for engineering majors.
* Week 3: Brainstorm different ways to deal with academic stress and maintain a work/life balance.
* Week 6: Develop an academic roadmap specific to the student’s current academic background.
* Week 12: Use library resources to find articles related to specific engineering disciplines.
* Week 13: Apply academic skills in note-taking and developing questions at different levels of inquiry to analyze an article on the challenges engineering students face in the first year.

## Missed Assignments Policy

Assignments are due by the date given. It is up to the discretion of each instructor if late assignments will be accepted.

## Grading

Attendance 5%

Homework Assignments 30%

Project 1 30%

Project 2 35%

## Accommodation for Students with Disabilities

To request academic accommodations due to a disability, please contact the Office of Services for Students with Disabilities (SSD) as soon as possible. Their office is located in SA 140, and they may be reached at 661-654-3360 (voice) or 661-654-6288 (TDD). If you have an accommodations letter from the SSD Office documenting that you have a disability, please present the letter to the instructor during the instructor’s office hours as soon as possible so you and the instructor can discuss the specific accommodations that you might need in this class. Further information on the SSD office and support services available to you can be found at <http://www.csub.edu/UnivServices/SSD/>

The campus accessibility policy can be found here:

<http://www.csub.edu/UnivServices/SSD/CampusAccessPolicy.pdf>

## Policy Academic Integrity and Dishonesty

Students are expected to complete individual homework assignments without receiving unauthorized assistance and without giving unauthorized assistance. Group projects may be discussed within members of the group. All non-original work included in the written group project report must be appropriately quoted (or paraphrased) and cited.

For the complete policy, see the university catalog. The Academic Integrity policy can also be found online at: <http://www.csub.edu/osrr/Academic%20Integrity/>

## Prepared By

Melissa Danforth on July 12, 2014

## Approval

Approved by CEE/CS Department on [date]

Approved by Physics and Engineering Department on [date]

Approved by GECCo on [date]

Effective Fall 2016