Introduction to Engineering

The Henry Samueli School of Engineering

ENGR 7A, Fall 2018

Course Syllabus

COURSE WEBSITE

https://canvas.eee.uci.edu/courses/11876

INSTRUCTOR

Dr. Lawrence Kulinsky, lkulinsk@uci.edu

TEACHING ASSISTANTS

Dorsa Shirazi, dshirazi@uci.edu
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UNDERGRADUATE STUDENT ASSISTANTS

Youssef Gorge, ygorge@uci.edu; Makayla Campbell, makaylac@uci.edu; Kevin Flaieh, kflaieh@uci.edu; Huy Ho, huyth@uci.edu; Nicholas Oune, ounen@uci.edu

OFFICE HOURS CALENDAR

Location: Besides Dr. Kulinsky, all Office Hours will be held at Engineering Tower, Room 408

	Monday	Tuesday	Wednesday	Thursday	Friday
9:00 AM					
10:00 AM	Kevin				
11:00 AM					
12:00 PM			Youssef	Huy	Zoe (12:30 to 1:30)
1:00 PM		Nicholas	Dorsa		
2:00 PM		Makayla			
3:00 PM				Kristin	Peng
4:00 PM	Lawrence Kulinsky CalIT2, room 3418				

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COURSE OBJECTIVES

ENGR 7, Introduction to Engineering is a two-quarter course that instructs students the fundamental engineering design process and exposes students to different engineering disciplines. This course focuses on the following areas:

- *Engineering and design principles*
- *Project-based and team-based learning*
- *Fabrication skills*
- *Development of strong analytical and problem solving skills*
- *Technical Communications*
- *Project Management*
- *All engineering disciplines within the Henry Samueli School of Engineering*
- *Interaction with industry leaders and alumni*

The students will design, build and test a remote control (RC) and an autonomous tasked quadcopter or a fitness tracker in Fall and Winter Quarter respectively. Students will be trained through essential engineering skills including Computer Aided Design (CAD) modeling, programming, and mechanical and electrical fabrication. The course will introduce students to the concept of engineering project management as well, in which the student will be required to develop a timeline and set milestones for the project. Students will also experience a real-world product development process through planning, research, design, manufacturing, and evaluation the assigned project. Each student will be assigned to work in a team of four to seven students and responsible for evaluation of oneself and teammates. Each team will learn and prepare technical reports and presentations during the course. Students will obtain basic computer skills, including use of the internet databases for research, and use of basic spreadsheet, word processor and power point presentation to aid product development. In addition to technical aspects, faculty from each engineering department is invited to speak to students on each engineering discipline. We will also encourage interaction of students with engineering companies by inviting guest speakers and alumni to present and discuss current engineering trends and challenges in class.

TEXTBOOK

Dally, J.W., et.al. Introduction to Engineering Design. Book 11: Engineering Skills and Quadcopter Missions, 4th Edition. College House Enterprises, 2017.

Book available at the UCI Bookstore.

GRADING POLICY

Individual Grades

Team Evaluation + Laboratory Notebook/Attendance + iQuizzes	25%
Homework	15%

Team Grades

Design Presentations	20%
Quadcopter Structure and Testing	20%
Design Report	20%

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Extra Credit Opportunities will be announced in class

COURSE REQUIREMENTS

Code of Conduct

All participants in the course are bound by the University of California Code Of Conduct, found at http://www.ucop.edu/ucophome/coordrev/ucpolicies/aos/uc100.html

Citation of Sources

The University of California seeks to foster a spirit of honesty and integrity. Any work submitted by a student must represent original work produced by that student. Any source used by a student must be documented through normal scholarly references and citations, and the extent to which any sources have been used must be apparent to the reader. The University further considers resubmission of a work produced for one course in a subsequent course or the submission of work done partially or entirely by another to be academic dishonesty. It is the student's responsibility to seek clarification from the course instructor about how much help may be received in completing an assignment or exam or project and what sources may be used. Students found guilty of academic dishonesty or plagiarism shall be subject to disciplinary action up to and including dismissal from the University.

Attendance

Regular attendance and participation in lectures is expected. Laboratory attendance is mandatory.

Homework

Homework guideline is posted on course webpage. Assignments are required to be turned in by due dates. Late homework will be accepted with penalty.

i>clickers

We will be using the i>clicker student response system in class. i>clicker helps me to understand what you know and gives everyone a chance to participate in class. In class quizzes using i>clicker compose 5% of your final grade. I will drop the lowest score for in-class iClicker quiz.

You need to purchase and use one of the following models: The original i>clicker; i>clicker +; i>clicker 2
The mobile application, i>clicker GO will not be allowed.

Lab Note Book

Each student will be required to keep a record/log of their work in a lab note book. This note book will record your progress on design, building and testing of the quadcopter, and also track the time and effort spent on the project. It can include minutes from the meeting, a list of action items (including who is responsible), an update of what action items were accomplished from previous meetings (including who did the work), etc. Teams must bring their note books to each lab session for your TA to inspect.

Peer Evaluations

One peer evaluation will be given at the end of each quarter. The peer evaluation form will be available from the course website. The results will be summarized and made available to each individual student. The result of this evaluation, the recommendation of the TA, and information from the team logs will be used to determine the "Individual Contribution to Team" grade.

Financial Requirements

There is a $53 material fee per quarter for this course. The school will provide necessary materials and components for each quadcopter. However, if you would like to use extra components other than the ones provided, excess cost may be qualified for reimbursement depending on the amount. Otherwise, it will be the student team's responsibility, which should be shared equally among the team members.

Laboratory Policy

Students must complete safety training during the first week of class. During the lab session, each team will check out toolboxes and specialty tools to use during lab sessions. You are responsible to return the tools at the end of each lab session. **ALL TOOLS MUST REMAIN IN THE LAB.** You will be charged with replacement costs if tools are broken or missing. Please clean up your work station after usage, and failure to do so will affect your attendance grades.

Accommodations

If you need support or assistance because of a disability, you may be eligible for accommodations or services through the Disability Services Center at UC Irvine. For more information, contact the Disability Services Center at (949) 824-7494 (voice), (949) 824-6272 (TTY), at www.disability.uci.edu, or stop by the center at Building 313 on the UC Irvine map.