How to Succeed in Engineering

Jim Schaaf
Associate Dean – Undergraduate Studies
August 2017
Success in Creating Solutions

- Engineers solve problems
Success in Creating Solutions

- Engineers create solutions for the good of humanity and the needs of society
  - Being an engineer requires a great deal of responsibility
  - When the discipline is practiced ethically and done well, engineers can command considerable respect by their peers and society
Mission

Mission of engineering at UC Davis:

- Focus on finding technical solutions to some of our nation’s most challenging problems
- Prepare highly skilled engineers to join us in this challenge
A Foundation to Your Success

- Get Engaged in Your Education!
- Get Help!
- Get a Degree!
Your Engineering Degree

Building a Strong Foundation

- The engineering curriculum is highly structured and progressively builds from core skills
- Initial priorities
  - Math
  - English
  - Chemistry
Building on your Strong Foundation

- Engineering courses build upon core math, science, and communication skills

- Complete courses in their ordered sequence
  - Pay attention to prerequisites
Getting Engaged in Your Education

- You have what it takes to succeed at UC Davis
  - You have proven your commitment to academic success
  - You have met admissions standards set for success by our faculty
Getting Engaged in Your Education

Quarter System

- The quarter system – 10 weeks - a very fast-paced instruction system
- Time management is critical
- When struggling, ask for help
- UC Davis performance is uncorrelated with previous academic performance
Getting Engaged in Your Education

Classes
- Show up to classes, pay attention, actively participate
- Get to know teaching assistants and instructors
- Attend office hours
- Take advantage of tutoring
- Teamwork approach
  - Meet other students to form study groups
Getting Engaged in Your Education

- Weekly study time
  - 2-3 hours for each hour of lecture
  - 1 hour for each hour of discussion
  - 1 hour for each 2-3 hours of lab
  - 50-60 hours of class and study time
  - Manage your time carefully
An exciting program of innovative seminars that reflect instructor’s intellectual interests. These once-in-a-lifetime courses promote intellectual exchange, critical thinking, and community.

200+ seminars offered every year, limited to 19 students/seminar

Credit is only given for one seminar per quarter.

The seminars do not count towards your General Education or major requirements.

Examples:
- Zombies, Vampires and Werewolves: The mind-altering, blood-sucking, flesh-eating real life of infectious diseases
- How Satellites Work
- Political Rhetoric and The Daily Show with Jon Stewart
- Ethics, Morality and Breaking Bad

http://fys.ucdavis.edu
Getting Engaged in Your Education

Outside of Class
- Research opportunities
- Design competitions
- Engineering professional society student chapters
- Internships
- Study Abroad Program
Undergraduate Research

- Talk with instructors and teaching assistants during office hours about opportunities in their department
  - For-credit opportunities
  - Paid opportunities
    - Google “Aggie Job Link”

- Undergraduate Research Conference
  - [http://urc.ucdavis.edu](http://urc.ucdavis.edu)
“Hands-On” Design Competitions

Formula SAE Electric

Baja SAE

Concrete Canoe

Steel Bridge

AMAT

iGEM

NATCAR
## Engineering Professional Societies


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<th>Major/Program Organizations</th>
<th>Design Teams</th>
<th>Multicultural Organizations</th>
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<td>Biomedical Engineering Association (BMES)</td>
<td><strong>Aerobrick and Advanced Modeling Aeronautics Team (AMAT)</strong></td>
<td>American Indian Science and Engineering Society (AISES)</td>
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<tr>
<td>Society of Biological Engineers (SOBE)</td>
<td><strong>BAJA SAE</strong></td>
<td>Black Engineers Association (BEA)</td>
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<tr>
<td>American Institute of Chemical Engineers (AIChE)</td>
<td><strong>Chem-E Car</strong></td>
<td>Chicano and Latino Engineers and Scientists Society (CALES)</td>
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<tr>
<td>International Society of Life Sciences &amp; Engineering (ISPE)</td>
<td><strong>Concrete Canoe</strong></td>
<td>Pilipino Americans in Science and Engineering (PASE)</td>
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<tr>
<td>Institute of Electrical and Electronics Engineers (IEEE)</td>
<td><strong>Environmental Project</strong></td>
<td>Society of Women Engineers (SWE)</td>
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<tr>
<td>American Society of Civil Engineers (ASCE)</td>
<td><strong>GeoWall</strong></td>
<td><strong>Others</strong></td>
</tr>
<tr>
<td>Association for Computing Machinery (ACM)</td>
<td><strong>Human Powered Vehicle</strong></td>
<td>Engineers Without Borders (EWB)</td>
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<tr>
<td>American Institute of Aeronautics and Astronautics (AIAA)</td>
<td><strong>Hybrid Electric Vehicle</strong></td>
<td>Theta Tau</td>
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<td>American Society of Mechanical Engineers (ASME)</td>
<td><strong>MAE Design Clinic</strong></td>
<td>Tau Beta Pi (Honor Society)</td>
</tr>
<tr>
<td>Society of Manufacturing Engineers (SME)</td>
<td><strong>People, Prosperity, and the Planet (P3)</strong></td>
<td></td>
</tr>
<tr>
<td>Materials Advantage Student Chapter (MASC)</td>
<td><strong>Steel Bridge</strong></td>
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Engineering Internships

Internship and Career Center (ICC)

- [http://icc.ucdavis.edu](http://icc.ucdavis.edu)
- Career Fairs
- Workshops
  - Resume writing workshops
  - Interviewing and negotiating workshops

Aggie Job Link

- Types of opportunities
  - Traditional summer internships
  - Co-ops (longer, usually take one quarter off)
  - Credit and/ or transcript notation available
Study Abroad Programs

- Visit Study Abroad
  (http://studyabroad.ucdavis.edu)
- International Immersion Programs
  (through UC-EAP)
  - Singapore
  - London
  - Hong Kong
  - Melbourne
- Summer Abroad (UCD Courses)
  - Tokyo, Japan (ENG 035)
  - Reykjavik, Iceland (ENG 105)
- Seminar Abroad
  - Between Fall and Winter Quarters
The Student Startup Center (SSC) is an on-campus space where all UC Davis students can prototype ideas and collaborate on technology ventures.

**INTRO TO ENTREPRENEURSHIP**
- NEW COURSE FOR FALL 2017 -

T/Th 10:30-11:50am  
Listed as ENG 098  
(Directed Group Study)  
CRN #41679  
3 units  
Open to ALL STUDENTS, ALL DISCIPLINES, NO PREREQUISITES

**ENG 1: INTRODUCTION TO ENGINEERING**

**“NUTS & BOLTS”**

**FRIDAYS: 12:10PM-1:00PM**
176 Everson Hall  
CRN # 41648  
1 UNIT P/NP

- OVERVIEW OF ENGINEERING MAJORS
- THE “CUTTING EDGE” IN EACH DISCIPLINE
- EMPHASIS ON PATH TO SUCCESS IN ENGINEERING
- INTRODUCTION TO CAMPUS RESOURCES
See You There!

Ice Cream Social

**Thursday, October 5th**
2:00-4:00PM

Bainer Hall South Lawn
Getting Help

**CoE Academic Advising Mission**

- Provide timely and accurate advising to cultivate connections, success, and advancement in engineering excellence
- Empower and support students with achieving their educational, profession, and personal goals
- Advocate for our students and programs through campus partnerships
Getting Help

- Advising Holds
  - Meet one-on-one with an academic advisor
  - Review degree programs
  - Confirm academic plans
  - Discuss individual life factors
  - Discuss educational, career, and life goals
Getting Help

- Academic advising resources for engineers
  - Engineering Peer Advisors
  - Program Advisors
  - Engineering Undergraduate Office Advisors
  - Faculty Advisors
Engineering Peer Advisors

- Upper division engineering students
- Available:
  - Engineering Undergraduate Office, 1050 Kemper Hall
  - Residence Hall Advising Centers
  - Most departments also have peer advisors
Program Advisors

- Meet with your program advisor today
- Contact information in your handbook
- Address not only academic issues but also any issues impacting academic success
- Provide advice on degree requirements
- Review of one-year academic plan
Annual Advising Requirements

All Engineering Students

- Annual advising with your program advisor
  - Enforced by hold on registration:
    - A – G 15 December
    - H – N 15 March
    - O – Z 15 September
  - Your program advisor will discuss with you
- If you are in additional academic programs you may have additional advising holds
- Encouraged to meet with an advisor more frequently
Engineering Undergraduate Office Advisors

- Support for all students
- Transfer credit evaluation
- Degree certification
- Change of major
- Career exploration
- Pre-graduate school advising
- Petitions
  - Late drop
  - P/NP
- Additional advising services
- Not sure where to go – come to EUO
Faculty Advisors

- Mentoring
- Choice of major and area of specialization
- Career plans
- Internship sponsorship
- Research opportunities
- Graduate study
Other Resources

College of Engineering
- Engineering Undergraduate Office Counselor

Campus Resources
- SASC – Student Academic Success Center
- SHCS – Student Health & Counseling Services
- AB540 and Undocumented Student Center
- LGBTQIA Resource Center
- Cross Cultural Center
- And many more!
How do I communicate with faculty and staff?

Official Communications

- Through your UC Davis email address
  - Check your email daily

- Read messages on myucdavis Messaging Center
  - You will be informed via email that you have a message in
    http://my.ucdavis.edu
  - Respond as directed to maintain your academic status

- Online student advising information is available at
  http://oasis.ucdavis.edu
Official Communications

- Email (http://davismail.ucdavis.edu) and Messaging Center (http://my.ucdavis.edu)
  - Follow proper format, grammar, spelling, punctuation, etc.
  - Identify yourself in the body of the message
    - Full name
    - Student ID
    - Major
  - Avoid text message formatting

Engineering FACEBOOK: Good source of information about activities!
Getting A Degree

- Progress to Degree
- Academic Planning
- Changing Majors
Minimum and Expected Progress

n Financial Aid: minimum of 12 units per quarter

n Minimum Progress: average at least 13 units/quarter
  n Checked annually after Spring quarter
  n Less than 39 units: declared not in good standing

n Expected Progress: average 15+ units/quarter to “Finish in Four”

http://engineering.ucdavis.edu/undergraduate/advising-q-a/#a14
Prerequisites

- Prerequisites are checked at the time of registration
  - Many courses have prerequisites with a grade of C- or better

- “D grade” = DO NOT MOVE ON, DO OVER

http://engineering.ucdavis.edu/undergraduate/advising-q-a/#a5
ENG 102 A01 – Dynamics

Units: 4

** Course Notes: **
** OPEN TO STUDENTS IN THE COLLEGE OF ENGINEERING **

Instructor(s): Z. Kong

Description:
Kinematics and kinetics of particles, systems of particles, and of rigid bodies; application of these topics are applied to engineering problems.

Course Credit Limitation: Only two units of credit allowed to students who have previously taken course 36.

Prerequisites: ENG 035 C- or better; MAT 022B C- or better

New GE Courses (Start Fall 2011 catalog Rights): SE,VE

Former GE Credit (Prior to Fall 2011 catalog rights): SE

Final Exam: 12/13/2017 10:30 AM

Course Materials: UC Davis Bookstore

Course Drop Date: 10/10/2017 (10 Day Drop)

View the UC Davis online catalog

Lecture 8:00 AM – 9:50 AM MW Giedt 1001

Discussion 7:10 PM – 8:00 PM M Social Science & Humanities 70
Our records indicate you have not completed ALL of the prerequisite requirements below:

- C– or better in ENG 035
- C– or better in MAT 022B

Please refer to the course details from the class search results or the general catalog for the complete restrictions on this course. The prerequisites listed here are only course based requirements.

If you believe the prerequisite(s) for this course have been satisfied and still want to enroll in the course, you must submit a petition to the instructor of the course for review.

[Click here] to create a prerequisite petition.

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**Create Prerequisite Petition**

**ENG 017 001 – Circuits I**

Below, describe how you met the prerequisite and/or the reason why you should be allowed to take this course. Upload any supporting documentation, such as transcripts or syllabi, if necessary. Submit the petition during your pass time. After submission, you can then register/waitlist for the course if there are no other enrollment restrictions on your registration. For more important information, visit our website.

**Prerequisites:** (MAT 022A, MAT 022B (can be concurrent)); (PHY 009C or PHY 009HD); C– or better recommended for each course.

**Leave Comments:**

Add Comments…

**Upload Files:**

- Choose File
- Choose File
- Choose File
Academic Planning

Change of major:
- Must have completed at least one quarter
- Must be in good academic standing
- Have completed fewer than 135 units

Within or into CoE
- 2.0 GPA in Math, Physics, Chemistry and Engineering
  - Exception: 2.8 GPA for Biomedical or Mechanical Engineering

http://engineering.ucdavis.edu/undergraduate/advising-q-a/#a1
Academic Standards

- Good standing is a GPA > 2.0
- To graduate:
  - Your UC Davis GPA must be 2.0 or better
  - Your UC Davis Engineering GPA must be 2.0 or better

- If your GPA falls below a 2.0 the Engineering Undergraduate Office will contact you
  - We expect you to respond to this correspondence in a timely manner
  - If you do not respond and you are Subject to Disqualification, you may be dismissed from the University
Campus privacy regulations allow **only** “directory information” to be released*

- Students may declare this information to be confidential

Grades and academic status are **not** released without your approval

- We encourage you to have an open dialog with your family about your academic performance

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*These regulations are in compliance with the Federal Education Right to Privacy Act (FERPA), but often more restrictive
A Foundation to Your Success

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Questions?

- **Additional information:**
  - [http://engineering.ucdavis.edu/undergraduate/advising](http://engineering.ucdavis.edu/undergraduate/advising)
  - [http://facebook.com/UCDEngineering](http://facebook.com/UCDEngineering)

- **Ice Cream Social**
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