Freshmen Advising
Civil & Environmental Engineering
Fall 2015 for 2015-2016 AY
Professor M. G. McNally
Professor Diego Rosso

Advising 101
• What was in your Toolbox 4 years ago?
• Learn how to learn…
  What can you add to your toolbox?
• Basic Knowledge:
  Math, Science, and computational skills are fundamental to engineering, but so are…
• Attitudes & Behaviors:
  Creativity and Innovation; Global Perspective; Teamwork and Leadership; Ethical Reasoning;
  Entrepreneurial Thinking
• What will you need in your Toolbox in 4 years?

Is CEE a Good Choice?
The college majors most and least likely to lead to underemployment.

Faculty Advising Process
• Faculty advising complements other forms of advising:
  – HSSOE Counselors, Peer Advising, Professional mentors
• Annual Process: every year!
• Format: Each entering class will keep the same group of faculty advisors throughout the degree program
• Mandatory Process:
  1. Group Advising: sessions for Freshmen in the Fall and separate sessions for Sophomores and for Juniors in the Winter
  2. Individual Advising: select a faculty member by name, teaching and research area, or session format (sign-up on-line)
• Freshmen are recommended to see a faculty advisor often, but must see an advisor at least once per year.
• Penalty: Registration Hold (not a good thing!)

Individual Advising
• All freshmen must schedule an appointment with a freshman faculty advisor this quarter.
  You will receive an email with a web link to select an advisor. Your advisor will then email you with available advising slots scheduled over the next few weeks.
  FAQ: http://www.its.uci.edu/~mmcnally/FAQ-Fresh-advising.html
• All transfer students will be assigned to an appropriate faculty cohort for advising
  – Sophomores, juniors, and seniors will meet with their faculty advisors after the Winter group sessions
  FAQs: http://www.its.uci.edu/~mmcnally/FAQ-advising.html
Advising FAQs

Advisers: Freshmen 2015-16 (Class of 2019)

Dr. Faczin Zareian
EG 4141
Structures
CEE150, CEE155
zariean@uci.edu

Dr. Russ Detwiler
ET 716E
Water/Environ
CEE171, CEE172
detwiler@uci.edu

Dr. Ritchie
ARIB 4014
Transportation
CEE121, CEE124
(she leaves 15-16)

Dr. Saphores
ARIB 4028
Transportation
CEE111, CEE122
saphores@uci.edu

Dr. Jiang
ET 716E
Envi Water Quality
CEE 160, CEE 169
djiang@uci.edu

Structural Engineering Faculty

Dr. Sun
EG 4139
Mechanics, Composites
CEE 30, CEE 152

Dr. Zareian
EG 4141
Earthquake Engr
CEE 150, CEE153A

Dr. Quen
EG 4151
Structures

Dr. Mosallam
EG 4149
Composite Structures
CEE 151C, ASCE

Dr. Lemmens
EG 4149
Geotechnical
CEE 159C, CEE 156

Dr. Li
EG 4145
Structures
(Winter 2016)

CEE@UCI

Hydrology & Water Resources Faculty

Dr. Detwiler, ET 844C
Groundwater Hydrology
CEE 171, CEE 172

Dr. Sanders, ET 844D
Computational Hydrodynamics
CEE 170

Dr. Sorooshian, EH 5308
Hydrologic Systems
CEE 176

Dr. Viugl, ET 844E
Systems Modeling
CEE 20, CEE21

Dr. Aghakhouchak
ET 506A
Remote Sensing
CEE15b, CEE173

Dr. Hsu, EH 5320
Hydrologic Modeling
CEE30

CEE@UCI

Water (cont’d.)

Dr. Davis, ET 944E
Coastal Engineering
CEE 178

Dr. Cooper, ET 355
Environmental Chemistry
CEE 162

Dr. Jiang, ET 716E
Water Quality
CEE 160, CEE 169

Dr. Recker, ET 944F
Environmental Engr
CEE 11

CEE@UCI

Environmental Faculty

Dr. Grant, ET 944D
Environ Engr
CEE 11

Dr. Rosso, ET 844F
Environmental Processes
CEE163, CEE165
Engr UG Advisor

Dr. Olson, ET 844
Environmental Microbiology
CEE 60

CEE@UCI

Transportation Systems Engineering

Dr. Jay, ARIB 4055
Transport Systems Analys
CEE 81a

Dr. Jin, ARIB 4038
Traffic Flow, ITS
CEE 110

Dr. McNally, ARIB 4048
Travel Behavior & Modeling
CEE123, CEE181abc

Dr. Reckler, ARIB 4074
ITS, Emerging Technology
CEE 111, Engr189

Dr. Ritchie, ARIB 4014
CEE121, CEE124

Dr. Saphores, ARIB 4028
Transport Planning & Policy
CEE 111, CEE122

CEE@UCI
Freshmen Issues

- What’s New?
  - Freshman Seminar (Engr7A-B) …
  - Gen Ed and CEE60 versus SocEcol E8
  - Engineering Science Elective & Engr. Design Elective
- Grades and pre-requisites
- Choices:
  - Degree programs, Specializations, Minors
  - Student Clubs & Professional Associations, E-Week
- Assessment (ABET) & Registration (FE, PE)

ABET Program Assessment

1. Stakeholders: students, faculty, alumni, and employers
2. Program Educational Objectives: accomplishments of graduates expected by a few years after graduation
3. Student Learning Outcomes: knowledge and skills to be attained by the time of graduation
4. Course Outcomes (or Performance Criteria) are restatements of Program Outcomes that define specific knowledge and skills to be attained in a specific course
5. Degree Requirements comprise core, specialization, labs, General Ed, and a capstone design experience

CE Program Educational Objectives:
Describe the expected accomplishments of graduates during the first few years following graduation. Our graduates are expected to:

1. Establish a Civil Engineering career in industry, government, or academia and achieve professional licensure as appropriate.
2. Demonstrate excellence and innovation in engineering problem solving and design in a global and societal context.
3. Commit to lifelong learning and professional development to stay current in technology and contemporary issues.
4. Take on increasing levels of responsibility and leadership in technical and/or managerial roles.

Note: EnE PEOs are virtually identical

CE and EnE Student Learning Outcomes:

a. An ability to apply knowledge of mathematics, science, and engineering.
b. An ability to design and conduct experiments, as well as to analyze and interpret data
c. An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
d. An ability to function on multidisciplinary teams
e. An ability to identify, formulate, and solve engineering problems
f. An understanding of professional and ethical responsibility
g. An ability to communicate effectively
h. The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
i. A recognition of the need for, and an ability to engage in life-long learning
j. A knowledge of contemporary issues
k. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Sample Course Syllabus & Outcomes
http://plaza.eng.uci.edu/course/outline/engrcee/
## CE Course Requirements 1

**Mathematics and Basic Science (48 units)**
- Math2A-B-D-E, 3A-D
- Phys7C-D and 7LC-D, Chem 1A-B
- Science Elective (one BioSci or ESS course from list)
- **Elective** (two from Chem1LE, ENGR7A-B, LDEE)
  [LDEE is one of (EECS70A, Engr54, MAE80, MAE91)]

**General Education Requirements (44+ units)**
- Provides flexibility, overlaps encouraged, etc.
- Engineering Professional Topics include Econ 20A-B and CEE60 (or SocEcol E8), E190W UD Writing

## CE Course Requirements 2

**Engineering Topics Courses (77 units):**
- **LD Core:** CEE 11, 20, 21, 30, 81A-B
- **UD Core:** CEE 110, 111, 121, 130, 130L, 150, 150L, 151A, 151C, 160, 170, and 171
- **Elective** (two from Chem1LE, ENGR7A-B, LDEE)
  where LDEE is one of (EECS70A, Engr54, MAE80, MAE91)
- **Engr Design Elective** (one of 155, 172, 122 or 123)
  (No double counting!)
- **Senior Design Practicum:** CEE 181A-B-C

**Specialization (16 units)**
- Must complete senior design project in same area

**Summary:** A nominal total of 188 units (22+ design units)

## BSCE: Freshman 2015-2016

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- Science Elective: BioSci or ESS (NOT chemistry or physics)
- *Engr7A-B Option (freshmen only)

## BSCE: Sophomore 2016-2017

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- Gen Ed Recommendation: Econ 20A-B, CEE60
- LD Engr Elective: EECS70A, ENGR54, MAE80, MAE91

## BSCE: Junior 2017-2018

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- Civil Engineering “core”; pre-requisites are important!

## BSCE: Senior 2018-2019

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- Engr Design Elective (122, 123, 155, or 172) – quarter varies!
- Specialization Elective: flexibility with 4th course!
Specializations 1

General Civil Engineering:
Requires four (three) courses from CEE122 or CEE123; CEE152, CEE153, CEE155, or CEE156; CEE162, CEE163, CEE165, or CEE169; CEE172, CEE173, CEE176, or CEE178; or CEE55 or courses from an approved list.

Environmental Hydrology & Water Resources:
Requires four (three) courses from CEE162, 163, 165, 169, CEE172, 173, 176, or 178, or courses from an approved list.

Specializations 2

Structural Engineering:
Requires four (three) courses from CEE149, CEE151B, CEE152, CEE155, CEE156, MAE157, or courses from an approved list [requires CEE155 as the Engr Design Elective]

Transportation Systems Engineering:
Requires CEE122 and CEE123, and two (one) courses from CEE124, CEE125, E189, EECS70A, or courses from an approved list.

Note: the 4th course is any UD HSSOE technical elective

Key Pre-requisites

EnE Program Educational Objectives:
Describe the expected accomplishments of graduates during the first few years following graduation. Our graduates are expected to:

1. Establish an Environmental Engineering career in industry, government, or academia and achieve professional licensure as appropriate.
2. Demonstrate excellence and innovation in engineering problem solving and design in a global and societal context.
3. Commit to lifelong learning and professional development to stay current in technology and contemporary issues.
4. Take on increasing levels of responsibility and leadership in technical and/or managerial roles.

EnE Course Requirements 1

Mathematics and Basic Science (64 units)
- Math 2A-B-D-E, 3A-D
- Phys 7C-D, 7LC-D
- Chem 1A-B-C, 1LC-D, 51A
- 4 units of Earth System Science and 4 units of Biological Sciences (must choose from approved list)

General Education Requirements (44+ units)
- Engineering Professional Topics Courses include:
- Economics 20A-B and CEE60 (or Soc Ecol E8)
- E190W for Upper Division Writing

EnE Course Requirements 2

Engineering Topics Courses (81+ units):
- LD Core: CEE 11, 20, 21, 30, 81A, 81B, MAE91
- UD Core: CEE 110, 130, 130L, 150, 150L, 160, 162, 170
- LD Engr Elective (Engr7A-B, EECS70A, Engr54, MAE80)
- Senior Design Practicum: CEE 181A-B-C
- Engineering Electives (2 from 2 areas/1 from other):
  - Water Supply and Resources (CEE171, 172, 173, 176, 178, ESS132)
  - Environmental Processes (CEE163, 165, 169)
  - Atmos Systems & Air Poll Control (MAE110, 115, 164, ESS 112)
- A nominal total of 189 units
- Must verify Program of Study and unit counts with UG Office
### BS EnE: Freshman 2015-2016

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* Gen Ed Recommendation: WR39B-C or CEE60
* Engr 7A-B Option (freshmen only)

### BS EnE: Sophomore 2016-2017

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* Gen Ed Recommendation: CEE60
* Engr Science Elective: ECE70A, ENGR54, MAE80, etc.

### BS EnE: Junior 2017-2018

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* Consider pre-requisites!
* Science Electives: 1 each in Bio Sci and Earth Systems Sci

### BS EnE: Senior 2018-2019

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* Spread Gen Ed (include Econ 20A-B, UD Writing)
* Consider pre-requisites for Science and Engineering Electives

### General Education Requirements

1. **General Education requirements:**
   - Writing (3 courses: 2 LD and 1 UD)
   - Arts and Humanities (3 courses)
   - Social and Behavioral Sciences (3 courses)
   - Multicultural Studies / International Issues (1)

2. **BSCE and BSEnE already cover:**
   - Science and Technology
   - Quantitative, Symbolic, Computational Reasoning

3. **Need to consult with HSSoE counselors**

### HSSOE UG Office

http://plaza.eng.uci.edu

CEE@UCI
Civil and Environmental Engineering offers annual scholarship opportunities for qualified undergraduate students:

- **Emeriti Scholarships**, supported by the UCI CEE Affiliates:
  - Jan Scherfig Scholarship: for freshmen returning in the fall
  - Gary Guymon Scholarship: for sophomores returning in the fall
  - Robin Shepherd Scholarship: for juniors returning in the fall

- **Huit Zollars Civil Engineering Scholarship**:

Applications for the $1,000 scholarships are submitted online in Winter Quarter (check your UCI email!)

- Other HSSOE and UCI Scholarships:
  http://www.ofas.uci.edu/content/Scholarships.aspx

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**Academic Honesty**

- Civil and Environmental Engineering is perhaps at the pinnacle of the practice of, and the need for, ethical behavior.
- At you progress through the program, any form of cheating decreases in benefit (on grades) and increases in cost (of not finishing your degree).
- The UCI Policy on Academic Honesty is defined at: http://www.eduinfo.uci.edu/catalogue/appe/appe.2.html#academic
- Take note of the descriptions of cheating, dishonest conduct, plagiarism, and collusion.
- Ask your instructors to discuss course policies on Academic Honesty, including policies on joint work on HW, labs, or other required tasks.
- “Cheaters” are posted on-line at: http://honesty.uci.edu/blotter.html

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**Professional Registration**

1. **Profession Registration**: licensure as a professional engineer is required to practice as a civil or environmental engineer.

2. **Steps Toward Licensure: First…**
   a. Complete a BS from an accredited institution (UCI!)
   b. Successfully complete the Fundamentals of Engineering (FE) exam (material covered includes physics, chemistry, thermo, circuits, mathematics, statics & dynamics, engineering economics, fluids, engineering ethics, strength of materials, computers, etc.)

3. **Steps Toward Licensure: Then…**
   a. After 2 years of work under professional engineers …
   b. … soon 30 units of post-graduate continuing education
   c. Successfully pass the Principles and Practice of Engineering (PE)
   d. http://www.ncees.org/exams/professional/
Summary

1. Academic Honesty...
2. Faculty Advising versus HSSOE Counselors
3. ABET and UCI course evaluations
4. Petitions: substitutions, variations, and related issues
5. Student Clubs? [G-E-T I-N-V-O-L-V-E-D]
6. Research Opportunities, Internships, Jobs
7. Careers: Graduate School? (GRE)
8. Careers: Professional Practice (FE, PE)

Contact Information

HSSOE UG Affairs Office:
1. UG Counselors in REC 305 (824-4334)

Civil & Environmental Engineering:
1. Department Office in EG 4130 (824-5333)
2. CEE web site: http://www.eng.uci.edu/dept/cee/
3. CE Advisor: Professor McNally mmcnally@uci.edu
4. EnE Advisor: Professor Rossobidui@uci.edu

UCI General Catalogue: Your contract with UC
http://www.editor.uci.edu/catalogue/engr/engr.6.htm