Freshmen Advising
Civil & Environmental Engineering
Fall 2017 for 2017-2018 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

<table>
<thead>
<tr>
<th>Most unemployed majors</th>
<th>Least unemployed majors</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRIMINAL JUSTICE</td>
<td>CIVIL &amp; ENVIRONMENTAL ENGINEERING</td>
</tr>
<tr>
<td>BUSINESS ADMINISTRATION</td>
<td>AEROSPACE ENGINEERING</td>
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<tr>
<td>HEALTH CARE ADMINISTRATION</td>
<td>COMPUTER ENGINEERING</td>
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<td>SOCIAL WORKS</td>
<td>CHEMICAL ENGINEERING</td>
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<td>SOCIOLOGY</td>
<td>LAW</td>
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<td>ENGLISH</td>
<td>PHYSICS</td>
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<td>ENGLISH LANGUAGE &amp; LITERATURE</td>
<td>MECHANICAL ENGINEERING</td>
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<td>GRAPHIC DESIGN</td>
<td>ELECTRICAL ENGINEERING</td>
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<td>GENERAL STUDIES</td>
<td>MECHATRONICS</td>
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<td>LIBERAL ARTS</td>
<td>MEASUREMENT</td>
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<tr>
<td>EDUCATION</td>
<td>MATHEMATICS</td>
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% saying they are underemployed in a recent PayScale survey, by undergraduate major

Freshmen Advising Topics
• The UG Advising Process
• The UCI General Catalogue
• Programs, Policies, Participation, Performance
• Academic Honesty
• Performance Assessment and Accreditation
• Questions? E-mail us at: mmcnally@uci.edu or bidui@uci.edu
• Answers? Read your UCI e-mail regularly!
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: Freshmen must complete either:
  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 meet in a group or individual session once per year.
• Penalty: Registration Hold (not a good thing!)

Group or Individual Advising

• FAQs for Freshmen faculty advising, including a list of faculty advisors, can be found at:
  http://www.its.uci.edu/~mmcnally/FAQ-Fresh-advising.html
• If you miss a group session, you must schedule an appointment with a faculty advisor.
• Transfer students will be assigned to an appropriate faculty cohort for advising
  – Sophomores, juniors, and seniors will meet with their faculty advisors in Winter group sessions
  http://www.its.uci.edu/~mmcnally/FAQ-advising.html

Advising FAQs

Advisers: Freshmen 2017-18 (Class of 2021)

Dr. Jayakrishnan
AIRB 4055
Transportation
CEE 81A
rjayakri@uci.edu

Dr. Qomi
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Dr. Lemnitzer
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Geotechnical
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lemnitzer@uci.edu

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Freshmen Issues

- What’s New?
- Grades and pre-requisites
- Plan of Study (see counselors in UG Office)
- 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

CEE@UCI

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

BSCE Degree Program

CE and EnE Student Learning Outcomes:

Describe what students are expected to know or be able to do by graduation (a-k)

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
CE and EnE Student Learning Outcomes (continued)

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.

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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

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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 2017-2018

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<thead>
<tr>
<th>Fall</th>
<th>Winter</th>
<th>Spring</th>
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<tbody>
<tr>
<td>Math 2A</td>
<td>Math 2B</td>
<td>Math 2D</td>
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<tr>
<td>Chem 1A</td>
<td>Chem 1B</td>
<td>Sci. Elect.</td>
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<td>Gen. Ed.</td>
<td>Chem 1LE</td>
<td>CEE 81A</td>
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<tr>
<td>Engr 7A *</td>
<td>Or Engr 7B</td>
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- **Fall**: 14-16
- **Winter**: 15-16
- **Spring**: 16

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

### BSCE: Sophomore 2018-2019

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<td>CEE 30</td>
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<td>CEE 20</td>
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<td>CEE 21</td>
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* Gen Ed Recommendation: Econ 20A-B, CEE60
* LD Engr Elective: EECS70A, ENGR54, MAE80, MAE91

### BSCE: Junior 2019-2020

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<thead>
<tr>
<th>Fall</th>
<th>Winter</th>
<th>Spring</th>
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<tr>
<td>CEE 150, L</td>
<td>CEE 151A</td>
<td>CEE 151C</td>
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<td>CEE 170</td>
<td>CEE 171</td>
<td>CEE 160</td>
</tr>
<tr>
<td>CEE 121</td>
<td>CEE 130, L</td>
<td>CEE 110</td>
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* Civil Engineering “core”: pre-requisites are important!

### BSCE: Senior 2020-2021

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<thead>
<tr>
<th>Fall</th>
<th>Winter</th>
<th>Spring</th>
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<tbody>
<tr>
<td>CEE 181A</td>
<td>CEE 181B</td>
<td>CEE 181C</td>
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<tr>
<td>Engr Dsgn</td>
<td>CEE 111</td>
<td>Spec. Elec.</td>
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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; CEE149, CEE151b, CEE152, 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 CEE163, 164, 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, 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 Plan of Study and unit counts with UG Office

BS EnE: Freshman 2017-2018

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<tr>
<td>Math 2A</td>
<td>4</td>
<td>Math 2B</td>
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<tr>
<td>Gen. Ed.</td>
<td>4</td>
<td>Phys 7C, L</td>
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<tr>
<td>Chem 1A</td>
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<td>Chem 1B</td>
</tr>
<tr>
<td>Gen. Ed. *</td>
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<td>Gen. Ed.</td>
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<tr>
<td>16</td>
<td>17</td>
<td>CEE 81A</td>
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</tbody>
</table>

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

BS EnE: Sophomore 2018-2019

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<td>4</td>
<td>CEE 81B</td>
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<tr>
<td>CEE 30</td>
<td>4</td>
<td>CEE 11</td>
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<tr>
<td>Chem 51A, Chem 1LD</td>
<td>4</td>
<td>Gen. Ed.</td>
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<td>17</td>
<td>15</td>
<td>MAE 21</td>
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</table>

- Gen Ed Recommendation: CEE60
- Engr Science Elective: EECS70A, ENGR54, MAE80, etc.
**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**
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 the next fall
  - Gary Guymon Scholarship: for sophomores returning the next fall
  - Robin Shepherd Scholarship: for juniors returning the next 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](http://www.ofas.uci.edu/content/Scholarships.aspx)

### 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.editor.uci.edu/catalogue/appx/appx_2.htm#academic](http://www.editor.uci.edu/catalogue/appx/appx_2.htm#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](http://honesty.uci.edu/blotter.html)

### 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/](http://www.ncees.org/exams/professional/)
**Education Abroad Program**

UCIrvine

EAP Planning for Civil Engineering

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**Student Clubs**

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**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)

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**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)
3. CE Advisor: Professor McNally mmcnally@uci.edu
4. EnE Advisor: Professor Rosso bidui@uci.edu

**UCI General Catalogue:** Your contract with UC


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**Why Study Civil Engineering abroad?**

UC civil engineering student studying abroad, you will gain

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10/2/2017