Freshmen & Transfer Advising
Civil & Environmental Engineering
Fall 2019 for 2019-2020 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?

Some Definitions

• CEE: Civil and Environmental Engineering
• HSSOE: Henry Samueli School of Engineering
• BSCE: Bachelor of Science in Civil Engineering
• BSEnE: Bachelor of Science in Environmental Engineering
• Faculty Advising: An annual meeting with a faculty member
• Faculty Advisor Cohort: the designated group of faculty members who serve as faculty advisors during your program
• UG Advisors: a faculty who manages your degree program
• HSSOE Counselors: school staff that help you develop and complete your academic program
• ABET: accreditation organization for our engineering programs

Is CEE a Good Choice?

The college majors most and least likely to lead to underemployment
% saying they are underemployed in a recent PayScale survey, by undergraduate major

<table>
<thead>
<tr>
<th>Most underemployed majors</th>
<th>Least underemployed majors</th>
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<tbody>
<tr>
<td>CRIMINAL JUSTICE</td>
<td>CIVIL &amp; ENVIRONMENTAL ENGINEERING</td>
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<td>BUSINESS MANAGEMENT &amp; ADMINISTRATION</td>
<td>AEROSPACE ENGINEERING</td>
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<td>HEALTH CARE ADMINISTRATION</td>
<td>COMPUTER ENGINEERING</td>
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<td>ENGLISH LANGUAGE &amp; LITERATURE</td>
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<td>MATHEMATICS</td>
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WASHINGTONPOST.COM/WONKBLOG  Source: PayScale
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 cohort 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 even schedule availability
• 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. Call, email, or visit office hours for individual advising.
• Transfer students are assigned to an appropriate faculty cohort for advising
  – Sophomores, juniors, and seniors should meet with their faculty advisors in Winter group sessions

Advising FAQs

FAQs: CEE Freshmen Advising Process [2019-2020]

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<thead>
<tr>
<th>What</th>
<th>Why</th>
<th>When</th>
<th>Where</th>
<th>Who</th>
<th>Other</th>
<th>Problems</th>
<th>Contacts</th>
</tr>
</thead>
</table>
| Brand Notices on the Faculty Advising Process
  Your official UCI email serves as the only communication path from the Department of Civil and Environmental Engineering regarding the mandatory Faculty Advising Process, as well as other program matters. You are required to periodically check your UCI email and respond as appropriate. No other contact options are currently used.

<table>
<thead>
<tr>
<th>Why Do We Have Faculty Advising for Undergraduates?</th>
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<tr>
<td>The advising process was implemented for several practical reasons. Our program requirements evolve so regular meetings with students are the best way to provide information on current programs and planned changes. In this regard, faculty advising complements but does not replace annual meetings with Samuel School of Engineering (HSSOE) counseling to develop a Plan of Study. The faculty advising process also provides an opportunity for students to discuss a broad range of issues with program faculty, whether involving degree issues, specialization choices, career opportunities, or even professional practice. It provides a great deal of potential opportunity at a very low cost.</td>
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<tr>
<th>What is the CEE Faculty Advising Process for Freshmen?</th>
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<tbody>
<tr>
<td>Many academic programs assign freshman to advisors. Faculty who will remain in that capacity as the student proceeds through the program. This fixed reference point is a benefit to many students who have questions throughout the year. We have chosen to assign freshmen to a cohort of faculty advisors, providing a fixed group of advisors for the same group of students over the entire time that they are in the degree program. Each advising cohort has a faculty member from each research area (structures, transportation, and water resources and environments). Your faculty advisor will continue to advise you as long as you are in our CEE programs.</td>
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</tbody>
</table>
CEE Chair and UG Program Advisers

Dr. Jiang, Chair
AIRB 4055
Environmental
CEE 160
sjiang@uci.edu

Dr. McNally, CE UG Advisor
AIRB 4049
Transportation
CEE 123
mmcnally@uci.edu

Dr. Rosso, EnE UG Advisor
ET 844F
Environmental
CEE 163, CEE 165
bidui@uci.edu

Advisers: Freshmen 2019-20 (Class of 2023)

Dr. Zareian
EG 4141
Structures
CEE 160
zareian@uci.edu

Dr. Detwiler
ET 716E
Water/Environmental
CEE 171, CEE 172
detwiler@uci.edu

Dr. Saphores
AIRB 4028
Transportation
CEE 111
saphores@uci.edu

Dr. McNally
AIRB 4048
Transportation
CEE 123
mmcnally@uci.edu

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Transportation
CEE 123
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Transportation
CEE 123
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Dr. McNally
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Transportation
CEE 123
mmcnally@uci.edu

Dr. McNally
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Transportation
CEE 123
mmcnally@uci.edu

Advisers: Sophomore 2019-20 (Class of 2022)

Dr. Recker
AIRB 4074
Transportation
CEE 111
wrecker@uci.edu

Dr. Qomi
ET 506A
Water/Environmental
CEE 176
amiraq@uci.edu

Dr. Ritchie
AIRB 4014
Transportation
CEE 121, CEE 124
sritchie@uci.edu

Dr. Sun
EG 4139
Structures
CEE 150, CEE 152
lsun@uci.edu

Dr. Sanders
Calit2 3415
Water/Environmental
CEE 170
bsanders@uci.edu

Advisers: Juniors 2019-20 (Class of 2021)

Dr. Vrugt
ET 844E
Water/Systems
CEE 176
jasper@uci.edu

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

Dr. Hsu
EH 5320
Water Resources
CEE 176
kuolinh@uci.edu

Dr. Lemnitzer
EG 4149
Geotech / Structures
CEE 130, CEE 156
lemnitzer@uci.edu

Dr. Qomi
ET 4151
Structures
CEE 151a
mjaq@uci.edu

Dr. Vrugt
ET 844E
Water / Systems
CEE 20
jasper@uci.edu
Advisers: Seniors 2019-20 (Class of 2020)

- Dr. Davis
  - ET 544E
  - Water / Environmental
  - CEE 21, CEE 178
  - davis@uci.edu

- Dr. Jin
  - AIRB 4038
  - Transportation
  - CEE 122
  - wjin@uci.edu

- Dr. Sorooshian
  - EH 5308
  - Hydrologic Systems
  - CEE 176
  - soroosh@uci.edu

- Dr. Mosallam
  - EG 4167
  - Structures
  - CEE 151C
  - mossalam@uci.edu

- Dr. Bannerjee
  - ET 844D
  - Water/Environmental
  - CEE 11
  - tirthab@uci.edu

Freshmen Issues

Important Information for Freshmen & Transfers:
- Who are your Faculty Cohort Advisors?
- Who are your HSSOE Counselors?
- Grades and pre-requisites
- Plan of Study (see counselors in UG Office)
- ABET Visit in October

Important Information for Subsequent Years:
- Program choices:
  - Degree programs, Specializations, Minors
  - Student Clubs & Professional Associations
- 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 Outcomes (ABET 1-7):
By graduation, students must have the ability to:
1. to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics;
2. to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors;
3. to communicate effectively with a range of audiences;
4. to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts;
5. to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives;
6. to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions;
7. to acquire and apply new knowledge as needed, using appropriate learning strategies.

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)

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)
• Senior Design Practicum: CEE 181A-B-C

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

Summary: A nominal total of 184 units (22+ design units)
BSCE: Freshman 2019-2020

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<th>Fall</th>
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<td>CEE 81A</td>
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- Science Elective: BioSci or ESS (NOT chemistry or physics)
- * Engr7A-B Option (Lower Division only)

BSCE: Sophomore 2020-2021

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

BSCE: Junior 2021-2022

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

BSCE: Senior 2022-2023

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- 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 CEE155, and three (two) courses from CEE149, CEE151B, CEE152, CEE156, MAE157, or courses from an approved list.

**Transportation Systems Engineering:**
Requires CEE122 and CEE123, and two (one) courses from CEE124, CEE125, Engr189, EECS70A, or courses from an approved list.

*Note: 4th course may be any UD HSSOE technical elective*

### Pre-requisites are Important!

**Pre-requisite Chains for CEE181A & C**

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### BS EnE Degree Program

**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 2019-2020

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

BS EnE: Sophomore 2020-2021

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* Gen Ed Recommendation: CEE60
  * Engr Science Elective: EECS70A, ENGR54, MAE80, etc.
BS EnE: Junior 2021-2022

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

BS EnE: Senior 2022-2023

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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:
   - I. Writing (3 courses: 2 LD and 1 UD)
   - III. Social and Behavioral Sciences (3 courses)
   - IV. Arts and Humanities (3 courses)
   - VI. Language (if not 3+ years of H.S. language)
   - VII. Multicultural Studies / VIII. International Issues (1)

2. BSCE and BSEnE already cover:
   - II. Science and Technology
   - V. 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 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)

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

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.

Academic Integrity & Student Conduct: [http://aise.ucir.edu/](http://aise.ucir.edu/)

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/)
Study Abroad Program

Student Clubs

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 Rosso bidui@uci.edu
UCI General Catalogue: Your contract with UC
http://catalogue.uci.edu/thehenrysamuelischoolofengineering/departmentofcivilandenvironmentalengineering/