Soph & Junior Advising  
Civil & Environmental Engineering  
Winter 2020 for 2019-2020 AY  
Professor M. G. McNally  
Professor Diego Rosso

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 advising meeting with a faculty member  
- **Faculty Advisor Cohort**: A designated group of faculty members who serve as your faculty advisors during your program  
- **UG Program Advisor**: A faculty member who manages the program  
- **HSSOE Counselors**: School staff that help you develop and complete your academic program  
- **ABET**: Accreditation organization for our engineering programs

Soph & Junior Advising Process

- **Annual**: Faculty advising *complements* other forms of advising (HSSOE Counselors, Peer Advising, Professional mentors)  
- **Advisors**: Each entering class will keep the same group of faculty advisors throughout the degree program  
- **Format**: Faculty Advising is Mandatory — *either*:
  - **Group Advising**: Sessions for Freshmen in the Fall and separate sessions for Sophomores and for Juniors in the Winter  
  - **Individual Advising**: Select a faculty member by name, teaching and research area, or session format  
  - **Make-up Procedure**  
- **Students** are recommended to see a faculty advisor regularly.  
- **Penalty**: Registration *Hold* (not a good thing!)

HSSOE Advising Requirements:

1. All students are required to meet annually with a faculty advisor for advising and mentoring.  
2. All students are required to have an academic plan of study on file with the Student Affairs Office.  
3. Students who do not have a plan on file, or deviate from this plan without approval from an academic counselor will be subject to probation. Students on probation for two consecutive quarters who do not have a plan on file, or deviate from this plan without approval from an academic counselor will be subject to disqualification. Students who fail to meet with a faculty advisor each year will be subject to disqualification.
Advising FAQs

FAQs: CEE Faculty Advising Process [2019-2020]

- **Who**
  - Dr. Rosso, EnE UG Program Advisor
  - Dr. McNally, CE UG Program Advisor
  - Dr. Zareian, Structures
  - Dr. Adeyeye, Environmental
  - Dr. Sanders, Water/Environmental

- **When**
  - Freshmen 2019-20 (Class of 2023)
  - Sophomore 2019-20 (Class of 2022)

Advisors: Freshmen 2019-20 (Class of 2023)

- **Dr. Zareian**
  - EG 4141
  - Structures
  - CEE150
  - zareian@uci.edu

- **Dr. Saphores**
  - AIRB 4028
  - Transportation
  - CEE111
  - saphores@uci.edu

- **Dr. Hyland**
  - AIRB 4022
  - Transportation
  - CEE110
  - hylanddm@uci.edu

- **Dr. Detwiler**
  - ET 716E
  - Water/Environment
  - CEE171, CEE172
  - detwiler@uci.edu

- **Dr. Lanning**
  - EG 4167
  - Structures
  - CEE155, CEE181
  - bsanders@uci.edu

- **Dr. Adeyeye**
  - ET 516F
  - Environmental
  - CEE162
  - Adeyemi.adeyeye@uci.edu

Advisors: Sophomore 2019-20 (Class of 2022)

- **Dr. Aghakouchak**
  - ET 506A
  - Water/Environmental
  - CEE81B, CEE173
  - amir.a@uci.edu

- **Dr. Li**
  - EG 4145
  - Structures
  - CEE30
  - Mo.li@uci.edu

- **Dr. Adeyeye**
  - ET 516F
  - Environmental
  - CEE162
  - Adeyemi.adeyeye@uci.edu

CEE Chair and UG Advisers

- **Dr. Jiang**, Chair
  - ET 844E
  - Environmental
  - CEE 160
  - sjiang@uci.edu

- **Dr. McNally**, CE UG Program Advisor
  - AIRB 4048
  - Transportation
  - CEE 123
  - mmcnally@uci.edu

- **Dr. Rosso**, EnE UG Program Advisor
  - ET 844F
  - Environmental
  - CEE163, CEE165
  - bidui@uci.edu

- **Dr. Hyland**
  - AIRB 4022
  - Transportation
  - CEE121, CEE124
  - bsanders@uci.edu
Advisers: Juniors 2019-20 (Class of 2021)

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

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

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

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

Dr. Vrugt
ET 844E
Water / Systems
CEE 20
jasper@uci.edu

Advisers: Seniors 2019-20 (Class of 2020)

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

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

Dr. Qomi
EG 4151
Structures
CEE 151
mjag@uci.edu

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

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

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

Dr. Fonoula-Georgiou
EH 5428
Hydro/Geomorph
Asc Dean of Research
efi@uci.edu

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

ABET accreditation site visit was in Fall 2019.

CE@UCI

CE Program Educational Objectives:

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

2019-2020
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.

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 GE2)
- 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

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) complete senior design project in same area
  - Fall 2020: Minimum grade of C- in CEE30 to take CEE150

Summary: A nominal total of 184 units (22+ design units)
### BSCE: Freshman

<table>
<thead>
<tr>
<th></th>
<th>Fall</th>
<th>Winter</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 2A</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Gen. Ed.</td>
<td>4</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Chem 1A</td>
<td>4</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Gen. Ed.</td>
<td>2-4</td>
<td>2-3</td>
<td>3</td>
</tr>
<tr>
<td>Engr 7A*</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>14-16</td>
<td>15-16</td>
<td>16</td>
</tr>
</tbody>
</table>

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

### BSCE: Sophomore

<table>
<thead>
<tr>
<th></th>
<th>Fall</th>
<th>Winter</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 3A</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>CEE 30</td>
<td>4</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>CEE 20</td>
<td>4</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Gen. Ed.</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>16</td>
<td>15</td>
<td>16</td>
</tr>
</tbody>
</table>

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

### BSCE: Junior

<table>
<thead>
<tr>
<th></th>
<th>Fall</th>
<th>Winter</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEE 150, L</td>
<td>5</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>CEE 170</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>CEE 121</td>
<td>4</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>E190W</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>17</td>
<td>17</td>
<td>16</td>
</tr>
</tbody>
</table>

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

### BSCE: Senior

<table>
<thead>
<tr>
<th></th>
<th>Fall</th>
<th>Winter</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEE 181A</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Engr Dsgn</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Gen. Ed.</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>14</td>
<td>14</td>
<td>14</td>
</tr>
</tbody>
</table>

- Engr Design Elective (eliminated in Fall 2018)
- Specialization Elective: flexibility with 4th course!
Specializations 1

General Civil Engineering:
Requires four (three) courses from CEE122 or CEE123; CEE149, CEE152, CEE151B, 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

Key Pre-requisites

BS EnE Degree Program

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 (68 units)**
- Math 2A-B-D-E, 3A-D, CEE11
- Phys 7C-D, 7LC-D
- Chem 1A-B-C, 1LC-D, 51A
- 4 units of Earth System Science and 4 units of Biological Sciences (*a GE 2 course in each area*)

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

BS EnE: Freshman

<table>
<thead>
<tr>
<th>Fall</th>
<th>Winter</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 2A</td>
<td>4</td>
<td>Math 2B</td>
</tr>
<tr>
<td>CEE 20</td>
<td>4</td>
<td>Phys 7C, L</td>
</tr>
<tr>
<td>Chem 1A</td>
<td>4</td>
<td>Chem 1B</td>
</tr>
<tr>
<td>Gen. Ed.*</td>
<td>4</td>
<td>Gen. Ed.</td>
</tr>
</tbody>
</table>

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>CEE 81A</td>
</tr>
<tr>
<td>16</td>
<td>17</td>
<td>19</td>
</tr>
</tbody>
</table>

* Gen Ed Recommendation: WR39B-C or CEE60
* Engr 7A-B option in F/W for lower division only
* 52 units

2019-2020

EnE Course Requirements 2

**Engineering Topics Courses (78+ units):**
- LD Core: CEE 20, 21, 30, 81A, 81B, MAE91
- UD Core: CEE 110, 130, 130L, 150, 150L, 160, 162, 170
- Engr Sci 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, 167)
  - Atmos Systems & Air Poll Control (MAE110, 115, 164, ESS 112)

- **Fall 2020:** Must include one of CEE 165, CEE 172, or CEE 178
- **Fall 2020:** Minimum grade of C- in CEE30 to take CEE150
- A nominal total of 191 units
- Must verify Program of Study and unit counts with UG Office

BS EnE: Sophomore

<table>
<thead>
<tr>
<th>Fall</th>
<th>Winter</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 3A</td>
<td>4</td>
<td>Math 3D</td>
</tr>
<tr>
<td>CEE 20</td>
<td>4</td>
<td>CEE 11</td>
</tr>
<tr>
<td>CEE 30</td>
<td>4</td>
<td>LDEE</td>
</tr>
<tr>
<td>Chem 51A, Chem 1LD</td>
<td>4</td>
<td>Gen. Ed.</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Gen Ed.</td>
</tr>
</tbody>
</table>

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>19</td>
</tr>
<tr>
<td>16</td>
<td>16</td>
<td>16</td>
</tr>
</tbody>
</table>

* Gen Ed Recommendation: CEE60
* LD Engr Elect: Engr 7A-B, ENGR54, MAE80, etc.
* 51 units

2019-2020
**BS EnE: Junior**

<table>
<thead>
<tr>
<th></th>
<th>Fall</th>
<th>Winter</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEE 150, L</td>
<td>5</td>
<td>CEE 130, L</td>
<td>5</td>
</tr>
<tr>
<td>CEE 170</td>
<td>4</td>
<td>CEE 162</td>
<td>4</td>
</tr>
<tr>
<td>Sci. Elect. 1</td>
<td>4</td>
<td>Eng. Elect.</td>
<td>4</td>
</tr>
<tr>
<td>E190W</td>
<td>4</td>
<td>Gen. Ed.</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>17</td>
<td>17</td>
<td>16</td>
</tr>
</tbody>
</table>

- Science Electives: 1 each in Bio Sci and Earth Systems Sci
- At least one Engr Elect from 165, 172, or 178
- 50 units

**BS EnE: Senior**

<table>
<thead>
<tr>
<th></th>
<th>Fall</th>
<th>Winter</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEE 181A</td>
<td>2</td>
<td>CEE 181B</td>
<td>2</td>
</tr>
<tr>
<td>Eng. Elect.</td>
<td>4</td>
<td>Eng. Elect.</td>
<td>4</td>
</tr>
<tr>
<td>Gen. Ed.</td>
<td>4</td>
<td>Gen. Ed.</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>14</td>
<td>10</td>
</tr>
</tbody>
</table>

- Spread Gen Ed (include Econ 20A-B, UD Writing)
- Consider pre-requisites for Science and Engineering Electives
- 38 units (nominal total units = 191)

**General Education Requirements**

1. General Education requirements:
   - Writing (3 courses: 2 LD and 1 UD)
   - Arts and Humanities (3 courses)
   - Social and Behavioral Sciences (CE/EnE reqs.)
   - 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://undergraduate.eng.uci.edu
- CEE@UCI

---

2019-2020
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

---

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 has reduced benefit (on grades) and increased cost (of not finishing your degree).

The UCI Policy on Academic Honesty is defined at:
http://www.senate.uci.edu/senateweb/default2.asp?active_page_id=754

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.

Full details are posted on-line at: http://honesty.uci.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/
Summary

1. Academic Honesty...
2. Faculty Advising, HSSOE Counselors
3. ABET evaluations versus 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)