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

Junior 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:
  – 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 (sign-up on-line)
• Juniors are recommended to see a faculty advisor often, but
  must see an advisor following Group Advising.
• Penalty: Registration Hold (not a good thing!)

Individual Advising Format

• All juniors must schedule an appointment with a
  junior class 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...
FAQs: http://www.its.uci.edu/~mmcnally/FAQ-advising.html

• Junior individual advising will be individual or
  small group sessions:
  – After selecting an advisor, you will be able to
    schedule an appointment in winter quarter.
  – You must fulfill the individual requirement or a hold
    will be placed on next quarter’s registration.

Advising FAQs

Advisers: Juniors 2015-16 (Class of 2017)

Dr. Jayakrishnan
AIRB 4055
Transportation
CEE 91A
jayakri@uci.edu

Dr. Lemnitzer
EG 4149
Geotechnical
CEE130, CEE156
lemnitzer@uci.edu

Dr. Hau
EH 5320
Hydrologic Modeling
CEE30
kundinh@uci.edu

Dr. Qomi
EG 4151
Structures, Materials
CEE 151A
mjaq@uci.edu

Dr. Lemnitzer
EG 4149
Geotechnical
CEE130, CEE156
lemnitzer@uci.edu

Dr. Zareian
EG 4141
Earthquake Engr
CEE 150

Dr. Li
EG 4145
Structures
CEE 151A

Structural Engineering Faculty

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

Dr. Zareian
EG 4141
Earthquake Engr
CEE 150

Dr. Qomi
EG 4151
Structures, Materials
CEE 151A

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

Dr. Lemnitzer
EG 4149
Geotechnical
CEE130, CEE156

Dr. Li
EG 4145
Structures
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. Soroorian, EH 5308
Hydrowic Systems
CEE 176

Dr. Vrugt, ET 844E
Systems Modeling
CEE 20

Dr. Aghakouchak
Remote Sensing
CEE110, CEE117

Dr. Hsu, EH 5320
Hydrowic Modeling
CEE30

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Water (cont’d.)

Environmental Faculty

Dr. Davis, ET 844E
Coastal Engineering
CEE 20, CEE 178

Dr. Cooper, ET 305
Environmental Chemistry
CEE 162

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

Dr. Grant, ET 844D
Environmental Engr
CEE11

Dr. Rosso, ET 844F
Environmental Processes
CEE163, CEE165

Dr. Olson, ET 844
Environmental Microbiology
CEE 60

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Transportation Systems Engineering

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

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

Dr. McNally, AIRB 4048
Travel Behavior & Modeling
CEE123, CEE910

Dr. Rackar, AIRB 4074
Transport Systems Analys
CEE 111, Engr169

Dr. Ritchie, AIRB 4016
ITS, Emerging Technology
CEE121, CEE124

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

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Junior Issues

• Academic Program?
  – Engineering Design Elective
  – Specializations and Senior Design
• Grades and pre-requisites … and letter grades!
• Choices:
  – Degree programs, Specializations, Minors, Gen. Ed.
  – Student Clubs & Professional Associations
• E-Week: February 2016 – Get Involved
• ASCE Student Conference
  – This year: March 31st - April 2nd at CSULB
  – UCI will host in 2017 – volunteers needed!

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

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BSCE Degree Program

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

2015
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.

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 lifelong learning.

j. A knowledge of contemporary issues.

k. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Course Offerings:

Mathematics and Basic Science (48 units):
- Math2A-B-D-E, 3A-D
- Phys7C-D and 7LC-D, Chem 1A-B, Chem 1LE
- Science Elective (one BioSci or ESS course from list)

General Education Requirements (44+ units):
- Provides flexibility, overlaps encouraged, etc.
- Engineering Professional Topics Courses include Economics 20A-B and CEE60 (or SocEcol E8)
- E190W Upper Division Writing

Specialization or Concentration (16+ units):
- Must complete senior design project in same area

Summary:
- A nominal total of 187 units (22 design units)

CE Course Requirements 1

Mathematics and Basic Science (48 units):
- Math2A-B-D-E, 3A-D
- Phys7C-D and 7LC-D, Chem 1A-B, Chem 1LE
- Science Elective (one BioSci or ESS course from list)

General Education Requirements (44+ units):
- Provides flexibility, overlaps encouraged, etc.
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- E190W Upper Division Writing

BSCE: Freshman 2013-2012

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- Gen Ed Recommendation: WR39B-C, CEE60
- EECS10 or CEE20, now CEE20 and CEE21
BSCE: Sophomore 2014-2015

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

BSCE: Junior 2015-2016

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*E190W is required (may petition other options)
* Civil Engineering “core”; pre-requisites are important!

BSCE: Senior 2016-2017

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* Specialization or concentration, and 181 sequence
* Specialization Elective: flexibility with 4th course!

Specializations 1

General Civil Engineering:
Requires four (three) courses from CEE122 or CEE123;
CEE149, 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, 165, 169,
CEE172, 173, 176, or 178, or courses from an approved list.

Specializations 2

Structural Engineering:
Requires CEE155 (as the EDE) and four (three) 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, E189, EECS70A, or courses from an
approved list.

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

Concentrations

Concentrations comprise courses from other Schools;
CEE does not control the scheduling for these courses.

* Concentrations have been eliminated effective 2014-2015 *

Computer Applications
Infrastructure Planning
Mathematical Methods
Engineering Management

2015
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

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**BS EnE: Freshman 2013-2014**

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- Gen Ed Recommendation: WR39B-C or CEE60
- EECS10, MAE10, or any programming course (CEE20/21)

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**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
- 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)

- A nominal total of 189 units
- Must verify Program of Study and unit counts with UG Office

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**BS EnE: Sophomore 2014-2015**

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- Gen Ed Recommendation: CEE60
- Lower Division Elective: EECS70A, ENGR54, MAE80, etc.
BS EnE: Junior 2015-2016

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

BS EnE: Senior 2016-2017

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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

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Department Scholarships

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 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/

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/

Education Abroad Program

http://www.cie.uci.edu/

Student Clubs

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://www.editor.uci.edu/catalogue/engr/engr.6.htm

Summary

1. Academic Honesty…
2. Faculty Advising versus 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)