Civil & Environmental Engineering Graduate Student Handbook

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Welcome to the Civil & Environmental Engineering Graduate Program at UCI

This handbook is designed to help you navigate through your graduate career and provide useful resources. The first year of graduate school can seem very difficult at times, but we have a good track record of graduating highly successful students. Many students have found additional resources on campus that have helped them throughout their graduate studies. I will remind you that if you feel stressed, there are free campus resources available to you at the Counseling Center (949) 824-6457.


Russell Detwiler
Associate Professor of Civil & Environmental Engineering
CEE Program Graduate Advisor

Department of Civil & Environmental Engineering (CEE) Key Personnel (E4130 Engineering Gateway)

Professor Sunny Jiang: Department Chair (E4130 Engineering Gateway)
Professor Amir AghaKouchak: Graduate Advisor for Hydrology/Water Resources (5404 Engineering Hall)
Professor Russell Detwiler: CEE Program Graduate Advisor
Graduate Advisor for Environmental & Energy Systems (844C Engineering Tower)
Professor Jay Jayakrishnan: Graduate Advisor for Transportation Systems (4055 AIRB)
Professor Farzin Zareian: Graduate Advisor for Structures, Geotechnics and Materials (E4141 Engineering Gateway)
April Heath: Interim Department Manager (E4130 Engineering Gateway)
Sergio Carnalla: Laboratories Manager (148B ELF)
Nancy Carter: Payroll & Personnel Coordinator (E4130 Engineering Gateway): Assists with TA, Grader, and GSR appointments
Angie Zuniga: Graduate Coordinator (E4130 Engineering Gateway): Advises graduate students regarding enrollment and registration procedures; degree process; and general Department, School and University policies and procedures
Jennifer Miller: Business Office Assistant Analyst (E4130 Engineering Gateway): Assists with key requests, Seminars and Department Administration
Mailboxes for graduate students are located in E4128 Engineering Gateway. Note: Students in the transportation focus area are assigned mailboxes in ITS. Desks are provided by research advisors for full time students conducting research. The CEE Department Study Lounge is located in AIRB 1010. Computer access is provided in various computer labs across the campus, including Engineering Hall and the Engineering trailer: https://laptops.eng.uci.edu/computer-labs.

The four CEE focus areas for both MS and PhD are: Environmental & Energy Systems (Advisor: Prof. Russ Detwiler); Hydrology/Water Resources (Advisor: Prof. Amir AghaKouchak); Transportation Systems (Advisor: Prof. Jay Jayakrishnan); and, Structures, Geotechnics and Materials (Advisor: Prof. Farzin Zareian).

**MS Degree General Requirements:** Students entering the PhD program directly, but have not yet completed an MS, are required to earn an MS along the way to their PhD.

1. The Plan of Study for both the Thesis and Course Work options must be developed in consultation with the student's Faculty Advisor and approved by the CEE Program Graduate Advisor by the end of the first quarter of enrollment. Timely submission of the Plan of Study is necessary in order to receive email alerts regarding the graduation process and deadlines.
2. Complete 3 quarters of CEE 295: Seminars in CEE.
3. Discuss with your advisor early on whether the Thesis or Course Work option best suits your interests. Students in the MS/PhD track may select either option. Students interested in the Thesis option are required to first identify a Faculty Advisor.
4. Advance to Candidacy **one quarter prior to graduating** (submit form to CEE Graduate Coordinator). Please contact the CEE Graduate Coordinator to initiate the MS Advancement form via DocuSign on your behalf. **Note:** The Department must receive forms at least two weeks prior to the campus deadline.
   a. MS Advancement Form (Course Work option)
   b. MS Advancement Form (Thesis option)
5. Complete the course requirements (see below under Options 1 & 2).
6. Submit the MS Exit Survey during your last quarter: https://apps.grad.uci.edu/exitsurvey/

| Department Policy on Reduced Fee Part-Time Study or Filing Fee Petitions: | As part of the approval process, your committee must review a draft of your thesis prior to the Program Graduate Advisor making a decision on your Part-Time or Filing Fee request. You will need to submit the petition and an electronic draft of your thesis to the Graduate Coordinator at least two weeks prior to the campus deadline. |
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| Please contact the CEE Graduate Coordinator to initiate the Filing Fee form on your behalf. |
| Visit the [UCI Registrar’s website](https://graduation.uci.edu/) for more information on how to electronically submit a Part-Time Study request. |
CEE Graduate Student Handbook Revised 9.21.21

Option 1: MS Degree with Thesis (original research with an advisor and a written MS thesis)

- The Thesis option requires completion of 48 units of study.
- Of the 48 units, a minimum of 28 units must be in non-research, graduate-level approved engineering or related courses (numbered 200–292).
- A maximum of 10 MS Thesis Research units (CEE 296) can be taken for study in conjunction with the Thesis research topic. Upon approval of the Program Graduate Advisor, the maximum of 10 units of thesis research can be extended to 16 units.
- The remaining units may be earned as graduate-level course work, individual research, or upper-division undergraduate units (maximum ten units).
- Please review your focus area Plan of Study for any possible core courses.
- The committee must include 3 members (including your advisor) with at least 2 faculty that hold a primary or joint appointment in the CEE Department. Your Plan of Study must include all 3 signatures of your committee members, or you can submit confirmation emails of each member agreeing to serve on your committee to the CEE Graduate Coordinator. Please confirm your committee before submitting your MS Advancement form.
- Pay a $55 Master’s Thesis Submission fee at the following link: https://www.grad.uci.edu/academics/filing-deadlines.php. You will need to attach a copy of the electronic receipt to your DocuSign Master's Thesis/Signature Page form before you can submit the form. Without the receipt, the form is considered incomplete.
- During your last quarter, submit approved Master’s Thesis/Signature Page and all final degree paperwork via DocuSign to the CEE Graduate Coordinator for Department Graduate Advisor approval/signature. Please contact the CEE Graduate Coordinator to initiate the DocuSign form on your behalf at least two weeks prior to the campus deadline.
- For final degree paperwork and additional instructions on submitting the Thesis please visit: https://www.grad.uci.edu/academics/degree-completion/index.php

Option 2: MS Degree with Course Work (also referred to as Comprehensive Exam Option)

- The course work option requires completion of 48 units of study, at least 40 of which must be in nonresearch graduate-level approved engineering or related courses (numbered 200–292).
- The remaining units may be earned as graduate-level course work, individual research, or upper-division undergraduate units (maximum ten units).
- Please review your focus area Plan of Study for any possible core courses.
- The Department and SoE will resubmit your MS Advancement/Conferral form to the Graduate Division at the end of your last quarter.

PhD Degree General Requirements: Students entering the PhD program directly, but have not yet completed an MS, are required to earn an MS along the way to their PhD.

PhD students must maintain full time status each quarter throughout the duration of their program. A minimum of 12 units per quarter (Fall, Winter and Spring) is considered as full time. The following bullet points describe the basic information pertaining to our PhD program.

- The detailed program of study for each PhD student is formulated in consultation with a faculty advisor (a.k.a. the research advisor) who takes into consideration the objectives and preparation of the candidate.
- Doctoral students are required to complete annual Engineering-Individual Development Plans (E-IDPs) in consultation with their faculty advisor. The E-IDP is a tool that aids in communication between the student and faculty advisor, goal-setting and assessing progress
towards those goals on a regular basis. It is intended as a mentoring document and not an evaluative tool.

- Students are expected to regularly attend the CEE seminar series on Fridays and must enroll in and successfully complete at least one unit of CEE 295 (Seminars in CEE) per year during their PhD studies.
- There are no specific course requirements. The School maintains specific guidelines that outline the milestones of a typical doctoral program:
  1. The PhD Preliminary Exam is the first general exam on your path to a PhD degree (see below).
  2. The PhD Qualifying Exam (advancement to candidacy) is the second general exam on your path to a PhD degree (see below).
  3. A written dissertation with an Oral Defense is the final exam on your path to a PhD degree (see below).

**Preliminary Exam**

The Preliminary Exam is an important milestone for the PhD program and will be administered in the final weeks of Fall and Spring quarter each academic year. Students must register for the Preliminary Exam by completing and submitting the CEE preliminary exam form to the Graduate Coordinator at least 5 weeks prior to the beginning of the examination period. The Graduate Coordinator will send an email announcing the dates of the exam period at the beginning of the Fall and Spring quarters.

**Purpose:** The Preliminary Exam establishes whether the PhD Candidate understands sufficiently well important fundamental material and concepts necessary to conduct scholarly research in their chosen research focus area. In addition, the candidate must show the ability to synthesize different elements of knowledge to solve open-ended problems and exhibit a capability for sound scientific reasoning. It is expected that the student has proficiency in oral English at the time of the exam.

- All PhD, including MS/PhD students are required to take the Preliminary Exam prior to the end of the 4th quarter of study.
- The Preliminary Exam includes an oral component and may also involve a written component (Transportation Systems only).
- Passage of the Preliminary Exam is required to remain in good standing and to be eligible for the Qualifying Exam. If the Preliminary Exam is not taken by the end of the 4th quarter, students will no longer be considered as making Satisfactory Progress (See Engineering Graduate Student Handbook).
- Coursework requirements prior to taking the Preliminary Exam (Transportation Systems only) will be communicated by the focus area Graduate Advisor.
- The default is for the Exam to be held in person, but the Department will remain flexible and allow for it to be held virtually via Zoom. Students are responsible for coordinating the Exam date and time with their committee members, and providing Zoom meeting information, if necessary.
- **Grading:** To pass the Preliminary Exam, the student must have the unanimous passing vote of the Exam Committee. If the student receives a no-pass decision from the Exam Committee, the student may petition to take the exam only one additional time. A successful petition requires the support of the student’s advisor and all members of the Exam Committee. Moreover, the student is allotted 2 attempts to pass the Preliminary Exam, and if the student fails to pass the exam in those 2 attempts, they may be academically disqualified.
Exam Committee: The Exam Committee includes a minimum of three faculty members affiliated with the Civil and Environmental Engineering department. The Graduate Advisor for each focus area appoints the Exam Committee Chair for the focus area who serves as chair for all preliminary exams during a single academic year. The student, in consultation with their primary research advisor (or focus-area graduate advisor if the student does not yet have a research advisor), selects at least two additional committee members, preferably faculty members from whom the student has taken at least one graduate course. None of the committee members may be the student’s primary research advisor, who is excluded from participating in the exam. In the event the student’s primary research advisor is serving as the Exam Committee Chair, the Graduate Advisor for the focus area will appoint an ad hoc Chair for the student’s exam.

Oral Exam Format: This is a 75‐minute oral exam in which the candidate presents a critical review of a peer-reviewed research paper (15 minutes) and answers questions from the exam committee (60 minutes).

Critical review of research paper: The candidate, in consultation with their research advisor, selects a list of three research papers, includes them on the CEE Preliminary Exam Form and provides PDF files of the selected papers. These papers should each present a focused scientific study in the general area of the student’s likely PhD research. They should be full-length, peer-reviewed papers in respected (high-impact) journals in the field. The list of papers should avoid short ‘letter’-type articles and review papers. In addition, none of the authors of the publication should be current or former members of the candidate’s research group. The Preliminary Exam Committee then selects one of these papers and notifies the candidate of the selected paper at least 4 weeks prior to the start of the exam period.

The student begins the exam with a 15‐minute presentation that provides a critical review of the research paper. The presentation should describe the scientific objectives of the study, the approach used to meet the objectives and the important conclusions of the study. In addition, the candidate should address why the study is important and novel with respect to previous supporting research, suggest possible improvements of the work, and identify important outstanding scientific questions raised by the study.

Question and answer period: The candidate will answer questions from the committee (60 minutes), which will include a combination of questions related to the presented research paper and foundational material from courses identified by the student. These questions will be aimed at assessing the student’s ability to apply their understanding of foundational principles to formulating and addressing research questions.

Written Exam Format: The Transportation Systems focus area also requires students to pass a written exam as part of the preliminary exam. This portion of the exam is administered by the Transportation Systems graduate advisor.

Qualifying Exam

- The Qualifying Exam covers dissertation ideas and results of preliminary research.
- The committee must be comprised of 5 members with at least 3 faculty that hold a primary or joint appointment in the CEE Department, and at least 1 faculty member not affiliated with the CEE Department (outside member). Your research advisor will serve as the Chair of your exam committee.
- The Qualifying Exam is taken after passing the Preliminary Exam and typically by the end of the second year in the PhD program. It is expected the Qualifying Exam will be taken no less than one year before graduation. A written research proposal must be submitted to the
committee members at least one week prior to the exam. The recommended format is a 15-page narrative (supplemental material may be included as an appendix).

- The exam will take 2-3 hours – your research presentation should be 40-50 minutes and reviewed by your advisor before your exam.
- Students must register for the Qualifying Exam at least 2 weeks prior to the examination date. You may obtain the Registration form from the Graduate Coordinator or online at: https://engineering.uci.edu/files/qualifying-exam-nomination-form-fillable.pdf
- The default is for the Exam to be held in person, but the Department will remain flexible and allow for it to be held virtually via Zoom. Students are responsible for coordinating the Exam date and time with their committee members, and providing Zoom meeting information, if necessary.
- Pay a $90 Advancement to Candidacy fee at the following link: https://www.grad.uci.edu/academics/filing-deadlines.php.
- Submit approved PhD Form I to the CEE Graduate Coordinator after successful completion of the exam. For forms that have a required fee, the student will need to attach a copy of the electronic receipt before they can submit the form to the CEE Graduate Coordinator. Without the receipt the form is considered incomplete. Please contact the Graduate Coordinator to initiate PhD Form I via DocuSign on your behalf.

I. Research Proposal

The Research Proposal must be reviewed and signed off by your research advisor before it is distributed to the other committee members. The Research Proposal must be distributed to the committee members at least one week prior to the scheduled Oral Presentation. The Proposal should use Times New Roman 11- or 12-point font or equivalent, and be 1.5 line or double-spaced. A suggested outline follows.

1) **Title Page:** Title, Name of Student, Degree Program, Date, Advisor's Name and Advisor’s Signature.

2) **Abstract Page:** Approximately 200-word Summary – include the new information/new understanding that the dissertation will provide.

3) **Introduction:** Rationale for this research, engineering context, why important, what key questions will be answered.

4) **Research Hypotheses and Objectives:** List of the major research accomplishments to be completed during the course of the dissertation research. Typically, 3-5 in number.

5) **Background:** Summaries of prior published research key and relevant papers should be discussed to demonstrate a knowledge of the current state of the field.

6) **Preliminary Results:** Summary work to date, including interpretation of data obtained by the PhD candidate. Include figures, graphs, and tables and the development of any models.

7) **Proposed Research:** Thorough exposition of the experiments/modeling/theory/computation the student plans to complete and how these will provide critical information for the dissertation and be an original, significant contribution to the research field.
8) **Timeline:** Provide an estimated timeline of when different experimental tasks will be completed.

9) **Summary:** of fundamental contributions expected from this research.

10) **References:** Authors name, full title of articles, journal name, volume, page, year.

The typical Research Proposal is 15-pages, including Figures and Tables. Document length does not necessarily correlate with quality. While it is likely that the research plan will evolve as the research progresses, the proposed research plan presented in the Qualifying Examination should be comprehensive and commensurate with the general expectations for the PhD. This document will serve as the basis for the PhD dissertation, and will save time later when writing the dissertation.

### PhD Oral Defense

- A 45-60 minute oral presentation that summarizes your major research findings is required at the completion of your PhD dissertation.
- The committee must be comprised of 3 members with at least 2 faculty that hold a primary or joint appointment in the **CEE Department**. Your research advisor will serve as the Chair on your exam committee.
- The oral exam will involve questions from the committee. The committee may request a closed session for their questions.
- It will be best if the written dissertation has been approved by the committee prior to the exam.
- Please confirm the composition of your committee with the Graduate Coordinator at least two weeks prior to your exam.
- The default is for the Exam to be held in person, but the Department will remain flexible and allow for it to be held virtually via Zoom. Students are responsible for coordinating the Exam date and time with their committee members, and providing Zoom meeting information, if necessary.
- Note: Department faculty members, graduate students and visitors are invited to attend. Please contact the Graduate Coordinator at least two weeks prior to your exam to finalize the announcement.
- Submit Dissertation to [Library Archives](https://etd.lib.uci.edu/).
- Submit [PhD Form II](https://etd.lib.uci.edu/) to Graduate Coordinator after successful completion of your exam. Please contact the Graduate Coordinator to initiate PhD Form II via DocuSign on your behalf.
- For additional final degree paperwork and instructions please visit: [https://www.grad.uci.edu/academics/degree-completion/index.php](https://www.grad.uci.edu/academics/degree-completion/index.php).

### Dissertation

- Copies of dissertations are available in the UCI Library. Formatting guidelines are available at: [https://etd.lib.uci.edu/](https://etd.lib.uci.edu/).
- Students must submit an electronic copy to the Department (email pdf to Grad Coordinator).
Department Policy on Reduced Fee Part-Time Study or Filing Fee Petitions: As part of the approval process, your committee must review a draft of your dissertation prior to the Program Graduate Advisor making a decision on your Part-Time or Filing Fee request. You will need to submit the petition and an electronic draft of your dissertation to the Graduate Coordinator at least two weeks prior to the campus deadline.

Please contact the CEE Graduate Coordinator to initiate the Filing Fee form on your behalf.

Visit the UCI Registrar’s website for more information on how to electronically submit a Part-Time Study request.

Advisors

MS students taking the Course Work option do not need an advisor other than the focus area graduate advisor. MS students selecting the Thesis option should select an advisor as soon as possible. PhD and MS/PhD students should match with a research advisor during the first quarter of study to remain in good standing in the program. PhD students must submit the Faculty Research Advisor Verification Form by the end of the first quarter.

Advisor Termination Policy:
A faculty member who wishes to terminate his/her advising role must provide at least a two-month notice to the student to allow for him/her to make arrangements for finding a new adviser. In extreme cases (as determined by the CEE Graduate Committee), faculty can terminate their advising role effective immediately and the program graduate advisor will assume the role of the advisor for that student. If this termination of advisor/advisee relationship results in termination of funding for the student, then the CEE Graduate Committee will make all efforts to use CEE Departmental resources to continue the same level of support for the two-month period in which the student is identifying a new advisor. Advisors shall provide written research expectations for each student enrolling in research units under their supervision for each quarter. Assessment of student performance at the end of each quarter should be consistent with the expectations defined at the beginning of the quarter.

Means of Support
- All support is given competitively, and based on continuous good standing
- Department Fellowships (usually awarded to new students for recruitment)
- GSR – Research Assistantships, funded from faculty research grants
- Hours worked are in ADDITION to units earned for research credit
- All U.S. citizens & Permanent Residents must fill out the FAFSA each year in order to be eligible for funding: http://www.fafsa.ed.gov
- Additional funding information can be found at: https://www.grad.uci.edu/funding/index.php and http://engineering.uci.edu/dept/cee/graduate/financial-support

What do Teaching Assistants and Graders Do?
- TAs grade homework and tests, run demonstrations, hold office hours, lead discussions, maintain class websites, maintain records of grades, and run labs.
- Graders grade homework and tests and can also hold office hours.
- Students are selected based on faculty nominations, match with course material, past experience, etc.
- All students must complete the TA Professional Development Program in order to be eligible to TA (training session once per year in early September).
Additional information on TA Academic Qualifications can be found at: http://ap.uci.edu/ase/teaching-assistant/#TA

What are the Language requirements for international students who want to serve as a TA?

- All graduate students, except those who have earned an undergraduate degree from an institution at which English was the sole language of instruction according to the World Higher Education Database, must pass one of the following English Proficiency exams in order to qualify to serve as a TA:
  - A TOEFL iBT score of 26 or higher on the speaking component, or a score of 8 in the speaking component of the IELTS.
  - UCI SPEAK Exam: Minimum score of 50 for passing: https://www.humanities.uci.edu/studio/speak/
  - UCI TOEP Exam: Minimum score of 5 for passing: https://www.humanities.uci.edu/glc/toep/

- Classes offered through ESL can help prepare graduate students for these exams and improve communication skills. Please visit the following link for more information: https://www.humanities.uci.edu/glc/graduate/index.php

What grades do I need to have to maintain good standing?

- Students must have a 3.0 GPA minimum with no grades below a B to remain in good standing. MS/PhD and PhD students are generally expected to achieve GPAs greater than 3.5. Students must receive a B or higher in a course in order for it to count toward their degree requirements. You need to have a GPA higher than 3.2 for certain types of fellowships, and a GPA higher than 3.1 for any TA position.

- P/NP Grade Option – no courses graded “Pass” are to be included as part of the advanced degree program, nor are they to be considered as satisfying academic criteria for fellowships and academic appointments/employment.

- Satisfactory/Unsatisfactory (S/U) - A grade of Satisfactory (S) is equivalent to a grade of B (3.0) or better. No credit is given for a course in which a grade of Unsatisfactory (U) was assigned. You cannot self-elect S/U grading. The S/U grading is assigned by the instructor and may be assigned to all participants in a graduate course. Similarly, with the consent of the academic unit involved, individual study and research or other individual graduate work may be evaluated by means of the grades Satisfactory or Unsatisfactory.

- Course Repetition - Courses in which a grade below a B, or a grade of U, was received may be repeated only once. Only the most recently earned grades will be used in computing the student’s grade point average for the first eight (8) units of repeated graduate course work. Thereafter, both the earlier and later grades are averaged.

NOTE: When registering, your options listed include "grade" or "P/NP" only. Students taking graduate courses that offer an S/U option, and who wish to elect the S/U option, should select the "grade" option, and then make the necessary arrangements with the instructor. It is at the discretion of each individual faculty member to choose whether to
utilize the letter scale (A, B, etc.) or the Satisfactory/Unsatisfactory (S, U) system when assigning grades for research classes.

It is very important that you discuss this option with your instructor. Do not assume the instructor will remember this option at the end of the quarter. Please make arrangements for S/U grading well before grades are to be assigned. Moreover, grading is at the discretion of the adviser, including whether or not to approve your request for S/U grading.

**How to Reach the Graduate Advisor?**

- If your question involves paperwork or other administrative issues, please consult the CEE Graduate Coordinator, Angie Zuniga: angeliaz@uci.edu (or the Engineering Graduate & Professional Studies Office: gradengr@uci.edu).
- The focus area Graduate Advisor handles academic and research matters while the CEE Graduate Coordinator handles administrative issues.
- If you have an academic issue to discuss, contact your Graduate Advisor of your focus area first via email to describe the issue and arrange for an appointment.

**What should I do if I want to change my research advisor?**

- Inform the graduate advisor of your focus area.
- Meet with your research advisor – if unable to do so, ask the graduate advisor of your focus area to speak with your advisor.
- Discuss with other faculty in the department about research projects.
- If you have been fully supported financially by your research advisor on a GSR, you can be required to finish up a project component (requiring no more than one extra quarter), before you can switch advisors.
- PhD and M.S./PhD students who want to change their research advisor must find and successfully match with a new advisor at the latest one quarter (Summer quarter not included) after they stop working with their previous advisor or will no longer remain in good standing in the program.
- Once matched with a new advisor, students must submit a new PhD Faculty Research Advisor Verification form to the Graduate Coordinator.

**Can I switch to another degree program at UCI if I find my interests are better matched by another degree program?**

- Yes, you can apply to other degree programs at UCI. However, if you are accepted and decide to change your degree program, you cannot apply for readmission to the CEE program after the start of the next academic quarter in your new degree program. All financial support from the department will be terminated if you change degree programs in midyear.
Questions?

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CEE Graduate Advisor
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Engineering Graduate & Professional Studies (GPS):

Graduate Counselor
Mark Banderas
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(949) 824-3562
204 Rockwell Engineering

GPS General Contact Information
Office Hours: Mon-Fri. 9am-4pm, closed 12-1pm
gradengr@uci.edu
(949) 824-8090
204 Rockwell Engineering

UCI International Center
internationalcenter@uci.edu
http://ic.uci.edu/index.php
(949) 824-7249
G302 UCI Student Center

UCI Counseling Center
https://counseling.uci.edu/
(949) 824-6457
203 Student Services 1

UCI Forward (COVID Information)
https://uci.edu/coronavirus/