UC Davis Department of Civil and Environmental Engineering

PhD Program Overview

September 8, 2021
The PhD consists of:

1. Coursework (Years 1 & 2)
2. The Qualifying Exam (2\textsuperscript{nd} or 3\textsuperscript{rd} year)
3. Your Dissertation & Exit Seminar
4. Hard work
PhD Coursework Requirements

• A minimum of 46 units of coursework beyond the baccalaureate degree are required. A minimum of 24 units must be taken at the UC Davis campus. The majority of your units should be graduate level (Program of Study will be approved by a three person committee).

• Coursework used to fulfill degree requirements may not be taken S/U unless the course is normally graded S/U; seminars, such as ECI 296, and research units cannot be counted towards the unit requirement.

• Core class requirements (specific to each area) must be fulfilled.

• All students must demonstrate proficiency in public speaking and technical presentation (usually through presenting in an appropriate seminar series, or a course).
PhD Coursework

46 units total ~ 11.5 courses

• Generally take 2 or 3 courses per quarter
• 2 per quarter → 6 quarters
  • Allows more time to get started on research
• 3 per quarter → 4 quarters

Acceptable Programs of Study must satisfy the following qualitative criteria:

• **Depth**: knowledge of theoretical and practical aspects of the field usually, but not always;
• **Breadth**: should expand foundational knowledge;
• **Coherence**: courses taken should be complementary and intentionally chosen. The requirement of coherence expressly precludes taking a large number of single courses in unrelated areas.
PhD Program of Study

• Your coursework roadmap. Create a draft as soon as possible in consultation with your major professor

• Must be signed by your PoS committee (3 CEE faculty) and submitted to the Graduate Program Coordinator
  • Talk with your MP about who should be on your PoS committee

• Must submit preliminary PoS for approval by the second quarter of entering the Ph.D. program at the latest

• Submit final PoS for approval after completing all coursework, or in last quarter when you are taking courses.
  • Final PoS must be approved prior to applying for and taking the Qualifying Exam.

• Ph.D. Program of Study forms available on the CEE website:
  [http://cee.engr.ucdavis.edu/graduate-resources](http://cee.engr.ucdavis.edu/graduate-resources)
PhD Qualifying Exam

• **You are expected to take your QE by the end of 2\textsuperscript{nd} year or early in 3\textsuperscript{rd} year**
  • If you already have an MS, you should plan on Y2
  • If you do not have an MS, you should plan on Y3 (or earlier)
  • Talk to your MP about exact timing

• Must have completed all coursework first (up to two courses taken concurrent)

• May require a **written research prospectus** and **oral presentation and oral exam**

• See the degree requirements and talk to your faculty (slightly different by area)

• Must apply for the QE at least 1 month in advance to QE date

• More information and a recorded session on the our **Degree Requirements** website
PhD Qualifying Exam

- Oral Exam
  - 3 hours
  - Includes oral presentation
  - Coursework-related questions
  - *Schedule well in advance (2-3 months)...hard to schedule in summer*
  - Study
  - Consider asking friends/older grad students to conduct a mock exam.

- Oral Presentation
  - Part of the oral exam
  - Typically 15-20 minutes straight through
  - Prepare to be interrupted
  - Builds off your written prospectus
  - Practice

https://gradstudies.ucdavis.edu/current-students/forms-information
PhD Qualifying Exam

• The QE Committee
  • 4 members
    • Determine with your major professor
  • QE Committee Chair
    • must be from CEE Grad Group
    • Cannot be your major professor
  • Probably includes your PoS Committee members
  • At least 3 members from CEE Grad Group
  • At least 1 external member
  • Can include your major professor

• Must submit form to Graduate Program Advisor for approval by Grad Studies
  • Submit at same time that you schedule your exam (one month or earlier)

https://gradstudies.ucdavis.edu/current-students/forms-information
Constitute a Dissertation committee after passing your QE

- 3 members (at minimum)
  - Major professor (chair)
  - At least one other CEE member
  - If non-faculty, requires exception (aka forms!)
  - *Engage your committee early and often* (not only your MP)

- Dissertation = a written documentation of the academic research you have done as a Ph.D. student

- Talk with your major professor early on about expectations

- Everyone’s dissertation is different
  - Some are very focused and build on one constant theme
  - Others cover multiple topics
Dissertation

• *Typical* length?
  • Introduction, linking everything together
  • Approximately 3 publishable units (i.e. main chapters)
  • No specific page requirement
• Strict formatting requirements (see Grad Studies website)
• Provide to committee **at least** 1.5 to 3 months prior to expected graduation
  • Typically, first reach consensus with your MP, then you can send to other members...but okay to talk with them about your work early!
  • they have 4 weeks to return it to you and you have to respond to comments, questions, etc.
Exit Seminar

- Presented in the quarter you submit the dissertation to the committee or in your last quarter
- Talk with your MP about structure
  - Everything? The most exciting aspect? Hard to pack it all into one presentation
- Must provide a seminar announcement at least 1 week before the seminar (send to Lauren for distribution)
  - Title
  - Date
  - Time and Location
PhD Timeline

Year 1:
- Coursework + initial research
- Preliminary program of study by winter

Year 2:
- Coursework + research
- Identify and ask QE committee
- Final program of study (when courses are done)
- If you have an MS already:
  - Write prospectus (if needed) in Winter
  - Take QE in Spring

Year 3:
- If no MS, write prospectus (if needed) and take QE
- Research

Year 4:
- Research + begin dissertation

Year 5:
- Research + final dissertation + Exit Seminar
Path to the PhD

- You will find that there are many challenges along the way
- Be proactive in finding/asking for help when you need it
- Build a cohort you can talk with
- Don’t isolate yourself
- You must be your best advocate