

The Preliminary Examination 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 Examination by completing and submitting the Environmental Engineering Preliminary Examination Form (attached) to the graduate coordinator (April Heath) at least 5 weeks prior to the start of the exam period.

Purpose:

The Preliminary Examination establishes whether the Ph.D. Candidate understands sufficiently well important fundamental material and concepts necessary to conduct scholarly research in Environmental Engineering. 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. The Preliminary Examination cannot be taken before the student has established a documented mutual agreement with a research advisor for the candidate's doctoral work and the candidate has demonstrated proficiency in oral English (required for students who are not native English speakers).

Examination Committee:

The Examination Committee includes three [Environmental Engineering program faculty members](#). The Director appoints the Examination Committee Chair, and the student selects two additional committee members. None of the committee members may be the student's primary research advisor. In the event the student's advisor is serving as the Examination Committee Chair, the Director will appoint a temporary Chair for the student's exam.

Examination Format:

The Preliminary Examination is a 75-minute oral examination in which the candidate presents a critical review of a peer-reviewed research paper (15 minutes) and answers questions from the examination committee (60 minutes).

The candidate, in consultation with their research advisor, selects a list of three research papers and includes them on the Environmental Engineering Preliminary Examination Form. 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 Examination 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 examination 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.

The remainder of the exam involves a 60-minute interactive discussion with the exam committee. Questions from the committee will be aimed at assessing the candidate's:

- 1) understanding of the specific ideas presented in the publication and their implications in the broader context of previous related studies;
- 2) grasp of related fundamental concepts, particularly those related to the expertise of the committee members; and
- 3) ability to think critically "on the spot" and communicate effectively.

The candidate is expected to understand the derivations and assumptions of all the fundamental science and engineering underpinning the publication and to have some familiarity with the key references associated with the publication.

Students may choose to prepare for the exam by giving a mock presentation to their peers; this is encouraged but these practice sessions may not include the student's research advisor. Students are also encouraged to meet with committee members prior to the exam to help constrain the range of potential fundamental topics the exam may cover.

Grading:

To pass the preliminary examination, the student must have the unanimous passing vote of the Examination Committee. If the student receives a no-pass decision from the Examination Committee, the student may petition to take the exam a second time. A successful petition requires the support of the student's advisor and all members of the Examination Committee.

Registration:

The student, together with their research advisor, must petition to the Director of the Environmental Engineering program for the Preliminary Examination (through

submission of the attached form and an e-mail including pdfs of the proposed research papers to the graduate coordinator) at least five weeks prior to the start of the Examination period. Students who are not native English speakers must meet the requirements for “Demonstration of Oral English Proficiency for Teaching Assistant Employment” as described in the UCI catalogue before petitioning for the Preliminary Examination.

Scheduling:

The Preliminary Examination is offered at the end of Fall and Spring quarter each year. For those who do not pass and successfully petition to retake the exam, the exam must be taken the second time within 6 months of the initial exam. All registration requirements are the same for the second exam. Scheduling the exam is the candidate’s responsibility. The candidate should contact members of their examination committee once they have submitted the registration form to schedule the exam. The exam must be scheduled during the examination period as provided by the graduate coordinator at the start of the quarter.

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NOMINATION OF Ph.D. PRELIMINARY EXAMINATION ENVIRONMENTAL ENGINEERING

SUBMIT THIS FORM TO APRIL HEATH AT LEAST 5 WEEKS PRIOR TO THE START OF THE EXAMINATION PERIOD.

STUDENT INFORMATION:

Student name:	ID:
Date of first enrollment:	Faculty Advisor:
Previous exam date (if applicable):	Exam Date & Time:
GPA (attach transcript):	GPA in non-research courses:
Email:	Phone:

List 3 suggested research papers on which you may be examined:

Students must also email pdfs of the proposed research papers to the Graduate Coordinator

1.
2.
3.

The student's proposed Preliminary Exam Committee is as follows (Chair determined by Program Director):

Environmental Engineering Faculty Members:	Department
1.	CEE
2.	CEE
3.	CEE

PLEASE NOTE: Once committee is approved, it is the student's responsibility to schedule the date, time and location of the exam with the committee members.

CANDIDATE SIGNATURE: _____ DATE: _____

FACULTY ADVISOR SIGNATURE: _____ DATE: _____

PROGRAM DIRECTOR SIGNATURE: _____ DATE: _____