

# Procedures for the PhD Preliminary Exam in CEE-Geotechnical Engineering

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The purpose of this document is to outline the standard operating procedure for the Civil & Environmental PhD Preliminary Exam for students specializing in Geotechnical Engineering. Presently, the faculty who administrate this program are:

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## Planning and Scheduling

### *Departmental Policy*

Per the CEE departmental guidelines, each PhD student in Civil & Environmental Engineering must take the Preliminary Exam no later than 17 months after the beginning of their first semester as a PhD student at the University. Students may elect to take the exam sooner, but the exam will be administered the same way irrespective of how long a student has been enrolled at the University.

The research advisor of a student planning to take the Preliminary Exam is considered to be the Chair of the student's exam committee. As the Chair, he/she is required to send a memo to the Chair of the Graduate Committee, specifying the date of the exam, and requesting authorization to hold the exam. This memo should be sent no later than one week before the time of the exam. After the exam is completed, the advisor is required to send another memo to the Chair of the Graduate Committee, with the exam outcome. Standard templates for both these memos can be obtained from the CEE Graduate Programs Coordinator. All memos sent to the Graduate Committee Chair should be CC'd to the Graduate Programs Coordinator, as well as the student's preliminary exam committee.

The student's research advisor is also responsible for notifying the advisee of the exam outcome. This should be done in the form of an official letter, sent to the student via email. A standard template for the letter can be obtained from the Graduate Programs Coordinator.

### *Standard Exam Schedule*

Following CEE department policy, Preliminary Exams in the Geotechnical Engineering area are held twice per year, during the first week of January and the first week of May. Students planning to take the exam during these periods must first consult with their advisor, and then must notify (via email) the Graduate Chair. The student must send this email **no later than November 30** of the prior semester for a January exam, or **no later than March 31** of the semester for a May exam. This will allow time for scheduling the exam, forming the committees, and developing the exam questions.

Each student's Preliminary Exam committee will consist of 4 members, 3 of which should be CEE faculty members from the Geotechnical Engineering area. The specific members of the committee will be assigned by the student's advisor. Committee assignments will be made by **December 15 and April 15** for the January and May exam dates respectively.

### *Exceptions to Standard Exam Times*

Students in the Geotechnical Engineering area are expected to take their exam at the standard January or May time, and students should begin planning for this exam upon arrival at the University of Michigan. However, if extenuating circumstances require a student to take the exam at a different time of the year, an ad-hoc exam can be administered on a case-by-case basis. A petition needs to be filed to the CEE Graduate Committee by the student's advisor explaining the reason for the request. This should only be planned as a last resort.

### **Format**

The CEE Geotechnical Engineering preliminary exam consists of two parts: the first part is a 2-hour written exam and the second part is a 2-hour oral exam. The student is not allowed to bring reference materials of any kind to the exam, unless explicit permission is given by their entire examination committee, prior to the day of the exam. The student is allowed to bring blank scratch paper, and a calculator. The student will be notified of the exam location at least 24 hours prior to the exam.

At the beginning of the exam, the student is given four written questions, one from each member of the student's preliminary exam committee. The student is then given 2 hours to work on the problems (written exam). Following this 2-hour period, the student turns in their written responses and is allowed a 30 minute break before the oral exam begins.

For the remainder of the exam period (i.e., 2 hours) the committee will ask the student to present their answers and ask additional questions about the four problems. The student is given the right to choose the order in which the four problems are discussed. However, once a problem is started, the student must continue the discussion on this problem until the committee decides to move on. It is not necessarily the case that the time for the four problems will be divided evenly. It is also not necessarily the case that the student must provide a complete solution to all parts of all the problems, in order to pass exam. Additionally, on each problem, the committee can (and usually does) pose impromptu questions to the student which were not on the written problems provided to the student, but involve related concepts. The student's answers to such questions are considered part of the exam, and will be taken into account when determining the outcome of the exam. The student is allowed to consult with his/her responses/notes from the written part of the exam during this discussion.

After the oral part of the exam is completed, the examination committee will deliberate to determine the outcome of the exam. The student will be notified of the decision regarding the exam within 48 hours from the end of the exam. This notification will be in the form of an official letter from the student's advisor, which states the outcome and provides feedback from the committee.

Students are prohibited from discussing exam problems during and after the exam period. Violations of this rule will be considered a serious breach of the College of Engineering's Honor Code.

## **Topic Areas**

The Preliminary Exam is designed to test a student's proficiency in the broad topics of geotechnical engineering as well as other disciplines if they pertain to the examinee's coursework and/or fields of research interest. The exam is not designed to test a student's proficiency with very specific topics covered in a class they may have taken. The student is advised to contact the members of his/her preliminary exam for additional details.