

# CIVIL ENGINEERING - DOCTOR OF PHILOSOPHY (PHD)

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Students typically complete their PhD in civil, environmental and architectural engineering within 4 to 5 years, depending on whether they enter the program with a master's degree. It is possible for highly qualified students to enter the PhD program directly without a master's degree.

Our PhD program is intended to help students achieve a high level of engineering competence and develop their ability to perform original research that advances the field of civil engineering and beyond. PhD students in the program are typically supported with research and teaching assistantships, but are also often successful in obtaining their own fellowships or sponsorships from external agencies.

Areas of study within the Civil Engineering Department are:

- Building systems engineering
- Construction engineering and management
- Geoenvironmental engineering
- Geotechnical engineering
- Civil systems engineering
- Engineering science
- Structural engineering and structural mechanics
- Hydrology, water resources and environmental fluid mechanics

For more information, visit the department's Graduate Studies (<http://www.colorado.edu/ceae/prospective-students/graduate-studies/>) webpage.

## Requirements

The PhD requires 30 credit hours of coursework, plus 30 hours of dissertation credit. PhD students are also required to successfully complete a preliminary exam, a comprehensive exam and a final dissertation defense.

### Preliminary Examination

Each doctoral student shall take a preliminary examination as determined by the faculty of the specialty area in which the student is enrolled, normally not later than 12 months from the time the student is first enrolled in the doctoral program. The student must pass this examination in order to continue in the doctoral program. Specific format of the preliminary examination varies by the area of study, so the student should check with their advisor for additional details.

### Comprehensive Examination

The comprehensive examination shall consist of a written and an oral examination. The exam may not be attempted until the student's last semester of formal coursework. At the comprehensive examination, the student shall present a plan for the dissertation research to the advisory committee for approval. Failure to pass the comprehensive examination may be remedied by repeating the examination after an interval of not less than four months. Specific format of the comprehensive examination varies by the area of study, so the student should check with their advisor for additional details.

### PhD Dissertation

Students must write a dissertation based on original research conducted under the supervision of a graduate faculty member. The dissertation must fulfill all Graduate School requirements. After the dissertation is completed, an oral final examination on the dissertation and related topics is conducted by the student's doctoral committee.

### Time Limit

All degree requirements must be completed within six years of the date of commencing coursework.

## Learning Outcomes

By the completion of the program, students will be able to:

- Demonstrate a mastery of the fundamentals of their chosen civil engineering discipline.
- Communicate knowledge through effective oral presentations and technical writing.
- Successfully conduct high-quality, original research in civil engineering.