

# ENVIRONMENTAL ENGINEERING - DOCTOR OF PHILOSOPHY (PHD)

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The Environmental Engineering Graduate Program (<http://www.colorado.edu/even/>) focuses on fundamental and applied understanding of the processes that govern our natural and engineered environmental systems. The program of over 35 research and instructional faculty members and about 70 graduate students covers topics ranging from drinking and wastewater treatment, water re-use, ecosystem processes, fate and transport of contaminants, alternative energy, air quality, sustainability and global engineering.

For more information, visit the Environmental Engineering Program (<https://www.colorado.edu/even/prospective-students/>) website.

## Requirements

The PhD in environmental engineering requires 30 credit hours of relevant graduate-level coursework, plus 30 credit hours of thesis credit. PhD students are also required to successfully complete a preliminary exam, a comprehensive exam and a final dissertation defense.

Applicants for this degree must demonstrate the capability for both rigorous academic accomplishments and independent research.

All doctoral students must have completed the environmental engineering core courses (6 credit hours), and a quantitative analysis class (3 credit hours). Coursework must be completed with a minimum cumulative GPA of 3.00.

Graduates of the department's MS program may transfer up to 30 credit hours of relevant graduate-level courses, pending program approval. Up to 21 credit hours of previous graduate-level work from another institution may be transferred with advisor and Graduate School approval.

## Preliminary Examination

Students must pass a preliminary examination based on MS degree-level coursework in environmental engineering topics. 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.

## Comprehensive Examination

By no later than the fifth semester, students must also take and pass a 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.

## PhD Dissertation

Students must write a dissertation based on original research conducted under the supervision of a graduate faculty member who is a member of the Environmental Engineering Program faculty.

## 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 and exercise technical training in core environmental engineering topics that form the foundation of modern-day environmental engineering problems and solutions.
- As independent learners, demonstrate knowledge of the scientific literature in environmental engineering topics, the ability to critically evaluate that literature, and the ability to synthesize that knowledge and critical evaluation in written and oral forms.
- Successfully design and conduct original research that answers questions of interest to the environmental engineering community and that employs appropriate research methods.
- Effectively communicate and present research to academic and public audiences.
- Demonstrate expert knowledge in environmental engineering and the ability to synthesize research results in the form of academic writing in peer-reviewed journal publications.