

# DOCTOR OF PHILOSOPHY IN CIVIL ENGINEERING

## Student Learning Outcomes

Students graduating from this program will:

- Demonstrate a thorough degree of knowledge in the discipline
- Demonstrate an ability to use proper investigation techniques for the discipline
- Use oral and written forms of communication to convey their ideas

## Program Structure

**Total Credits Required for Graduation:** 42

**Residence requirements:** Ph.D. students must satisfy the doctoral residency requirement by satisfactory completion of at least 18 credits in no more than 24 consecutive months. When satisfying the residency requirement, all Ph.D. students are subject to the following restrictions:

- The doctoral residency requirement must be satisfied no later than the end of the semester in which the student completes his or her comprehensive examinations.
- Students must achieve a cumulative graduate grade-point average of at least 3.0 in all courses counted toward satisfying the residency requirement.

## Civil Engineering Topics:

- Structures
- Materials
- Construction
- Water resources

## Admission Requirements

A student who satisfies the general requirements for admission and meets the minimum requirements stated below will be considered for regular admission to the Civil Engineering Ph.D. program. A student who does not meet some of the requirements but shows high potential for advanced-level work may be considered for provisional admission. Admission also depends on factors such as number of seats available, resources available in the area of the student's interest, the quality of previous work, etc.

1. The applicant must have a bachelor's degree or a master's degree in civil or mechanical engineering or related disciplines with a grade-point average of at least 3.0 on a 4.0 scale in the last 60 hours of undergraduate engineering coursework. In addition, a GPA of 3.5 or better in all post-baccalaureate coursework is required. Pre-program requirements may be specified in case the bachelor's degree is in a discipline different than that to which the candidate is applying.
2. The GRE test is preferred but not required. It is beneficial to applicants to take the test and submit scores.
3. TOEFL or IELTS scores are required for international students without prior U.S. degrees. The minimum required score is 80 or 6.5 on TOEFL or IELTS, respectively. TOEFL requirements may be waived for applicants with a baccalaureate from an ABET accredited program.
4. The student must provide at least three recommendation letters from professors at previous institutions or mentors at work. The application can be initially reviewed with just one recommendation letter.
5. The applicant must provide a maximum 300-word statement on their goals and objectives in pursuing the Ph.D. The statement at the least should indicate which of the areas (civil or mechanical) the student is interested in and preferably indicate the sub-discipline the student is interested in as well, such as structures, construction management, biomechanical, HVAC etc.
6. Provisional admission may be granted if the minimum GPA and GRE requirements are not met, but other indicators promise the student's success in the program. To be fully admitted to the Interdisciplinary Ph.D. program, the provisionally admitted student must obtain a grade of B or better in the first nine hours of coursework and submit a satisfactory GRE score within their first year of the program.

## Program Requirements

The PhD in Civil Engineering offers courses designed to provide students with advanced knowledge and skills in Civil Engineering topics. Students can select their required courses from those offered within the unit. Non-Civil Engineering courses can also be selected after discussion and approval by the student's Primary Advisor.

After completing coursework, students entering the program with an MS must complete at least 30 credit hours, inclusive of the 12 dissertation hours. The table below shows existing courses that will be offered under this program.

Code	Title	Credits
<b>Civil Engineering Coursework</b>		<b>30</b>
CIV-ENGR 5505	Capital Project Delivery Methods	
CIV-ENGR 5506	Construction Project Risk Management	
CIV-ENGR 5517	Advanced Structural Analysis	
CIV-ENGR 5523	Advanced Structural Steel Design	
CIV-ENGR 5531	Fund of Geomaterial Characterization	
CIV-ENGR 5547	Legal Topics for Engineers	
CIV-ENGR 5553	Hydraulics and Variability of Rivers	
CIV-ENGR 5567	Introduction to Construction Management	
CIV-ENGR 5568	Construction Planning and Scheduling	
CIV-ENGR 5529	Advanced Design of Structures for Blast and Fire	
CIV-ENGR 5501	Advanced Topics in Civil Engineering (Intro to Geoenvironmental Engineering)	
CIV-ENGR 5501	Advanced Topics in Civil Engineering (Intro to Freight Railroads Engineering)	
CIV-ENGR 5504	Project Management of Integrated Design and Construction	
CIV-ENGR 5516	Advanced Engineering Mathematics	
CIV-ENGR 5521	Matrix Methods of Structural Analysis	
CIV-ENGR 5527	Advanced Reinforced Concrete Design	
CIV-ENGR 5549	Environmental Compliance, Auditing, & Permitting	
CIV-ENGR 5552	Hydraulics of Open Channels	
CIV-ENGR 5563	Construction Law	
CIV-ENGR 5569	Construction Methods and Equipment	
CIV-ENGR 5570	Corrosion Engineering	
CIV-ENGR 5554	River Stability and Scour	
CIV-ENGR 5556	Urban Hydrology	
CIV-ENGR 5575	Seismic Design of Structures	
CIV-ENGR 5526	Prestressed Concrete	
CIV-ENGR 5571	Advanced Portland Cement Concrete	
CIV-ENGR 5532	Foundation Engineering	
Dissertation		12
<b>Total Credits</b>		<b>42</b>
<b>Total Credit Hours: 42</b>		