

Civil Engineering PhD Program Requirements

Total Minimum Hours: 78

Coursework Requirements: Students work with their advisor and committee to develop a plan of study. A minimum of 48 credits of formal coursework beyond the bachelor's degree are required:

- A minimum 15 credits of coursework are required within the area of concentration (see below).
- A maximum of 9 credits of independent study may be applied toward the coursework requirements.
- A maximum of 6 credits of master's thesis may be applied toward the coursework requirements.
- No credits of directed research or graduate instruction methods may be used toward the coursework requirements.
- Up to 30 credits of coursework from an approved master's degree may be applied to meet the coursework requirements.

Core requirement: Graduate Research Methods in Civil & Environmental Engineering (CGN 6945). This course is normally taken by students prior to taking their qualifying exam.

Additional Credits: An additional 9 credits of coursework, dissertation or directed research.

Doctoral dissertation committee: consists of at least five members, two of whom must come from the department of Civil and Environmental Engineering, one of whom must be a member of the College of Engineering outside the department of Civil & Environmental Engineering, and one of whom must be outside the College of Engineering.

Qualifying Exam: doctoral students are expected to pass a qualifying examination no later than the semester following the completion of 48 credits of coursework beyond a bachelor's degree. At minimum, the exam will include a written dissertation proposal and oral defense by the dissertation committee. A written exam in the area of concentration may also be required. Poor performance on the qualifying exam based on the judgment of the committee may result in the student failing the exam. If a student does not pass on the first attempt, he/she may request in writing to repeat the exam. Students who fail the Qualifying Examination the second time will be dismissed by the program.

Dissertation Requirements: A minimum of 20 credits of dissertation, an approved PhD dissertation and a dissertation defense are required. Students may not sign up for dissertation credits until they have defended their proposal and advanced to candidacy.

Publication Requirement: The department requires that all doctoral students have a paper accepted to a peer reviewed journal or conference. Please discuss this with your advisor in a timely manner as it can take six months or more to receive review comments back from a journal. Many faculty members in the department require their students to have more than one paper accepted.

PhD Concentration requirements

Geotechnical Engineering (GTL)

- CEG 5115 Foundation Engineering (3)
- CES 6118 Applied Finite Element Method (3)
- 9 additional credits of coursework in Geotechnical Engineering or related areas

Materials Engineering and Science (MTL)

- 2 courses from the following:
 - CGN 6933 Concrete Construction Materials (3)
 - CGN 6720 Electrochemical Diagnostic Techniques (3)
 - CES 6010 Structural Life Prediction (3)
 - CGN 6933 Corrosion of Materials (3)
 - ECH 6931 Characterization of Materials (3)
- 9 additional credits of coursework in Materials Engineering or related areas

Structural Engineering (STR)

- 1 course from the following list:
 - CES 6706 Advanced Concrete Design (3)
 - CES 6835 Design of Masonry Structures (3)
 - CES 5715C Prestressed Concrete (3)
 - CES 6118 Applied Finite Elements (3)
 - CES 5105C Advanced Mechanics of Materials (3)
 - MAP 5316 Nonlinear Analysis
- 1 course from the following list:
 - CES 6841 Rehab and Restoration of Structures
 - CES 6103 Experimental Stress Analysis
 - EMA 5326 Corrosion Control
 - CES 6118 Applied Finite Elements Finite 2, 3
- 9 additional credits of coursework in Structural Engineering or related area

Transportation Engineering (TPT)

- TTE 5205 Traffic Systems Engineering (3)
- TTE 5501 Transportation Planning and Economics (3)
- TTE 6507 Travel Demand Modeling (3) **OR** CGN 6933 Statistical and Econ. Methods (3)
- 6 additional credits of coursework in Transportation Engineering or related areas

Water Resources Engineering (WRS)

- 4 courses (12 credits) from the following list:
 - CWR 6235 Free Surface Flow (3)
 - CWR 6239 Waves and Beach Protection (3)
 - CWR 6305 Urban Hydrology (3)
 - CWR 6534 Coastal and Estuary Modeling (3)
 - CWR 6535 Hydrologic Models (3)
 - CGN 6933 Vadose Zone Hydrology (3)
 - CGN 6933 Groundwater Hydraulics (3)
 - CGN 6933 Advanced Computational Fluid Mechanics (3)
 - CGN 6933 Advanced Numerical Methods (3)
 - CGN 6933 Global Sustainability (3)
 - CGN 6933 Ecological Engineering (3)
- 3 additional credits in WR engineering or related areas

20 Credits of Dissertation					
Course Title	Number	Credits	Semester	Taken @ USF?	Grade
9 Additional Credits – Coursework, Grad Instruction Methods, Directed Research, Independent Study, or Dissertation					
Course Title	Number	Credits	Semester	Taken @ USF?	Grade
				Total Credits of Coursework	
				Total Credits (78 required)	

Student: Print or Type Name, Signature, and Date

Advisor: Print or Type Name, Signature, and Date

Graduate Program Coordinator: Signature and Date