

Ph.D. in Civil Engineering

Degree Requirements

The department approves specific degree requirements and dissertation topics on an individual basis. Students must attain a minimum overall GPA of 3.0. Students must conduct independent original research in a specific area of civil engineering. Students must select an advisor willing to supervise dissertation work.

Ph.D. in Civil Engineering (students entering with a master's degree in civil engineering or equivalent)

Code	Title	Credits
Electives		
700-level course work ¹		12
Dissertation		
CE 790A	Doct Dissertation & Res ²	
CE 792	Pre-Doctoral Dissertation ²	
Seminar		
CE 791	Graduate Seminar ³	
Total Credits		12

¹ No more than 3 credits may be received for CE 725 (Independent Study) and no more than 3 credits may be received for CE 726 (Independent Study). 700-level courses may be substituted by 600-level courses if the academic advisor appeals on behalf of the student to the Office of Graduate Studies and receives approval. A Ph.D. student's dissertation committee may ask the student to take additional courses above the aforementioned minimum requirements.

² Ph.D. students who pass the Qualifying Examination (QE) must register for 3 credits of pre-doctoral research (CE 792 Pre-Doctoral Research) per semester until they defend successfully the dissertation proposal.

Ph.D. students who defend the dissertation proposal successfully must then register for the 1-credit dissertation course (CE 790A Doctoral Dissertation & Research) each semester until they complete all degree requirements

³ Required of all doctoral students every semester.

Ph.D. in Civil Engineering (students entering with only a baccalaureate degree in civil engineering or equivalent)

Code	Title	Credits
Electives		
600-700-level course work ¹		36
Dissertation		
CE 790A	Doct Dissertation & Res ²	
CE 792	Pre-Doctoral Dissertation ²	
Seminar		
CE 791	Graduate Seminar ³	
Total Credits		36

¹ A minimum of 12 credits of this requirement must be 700 level courses. No more than 3 credits may be received for CE 725 (Independent Study) and no more than 3 credits may be received for CE 726 (Independent Study). 700-level courses may be substituted by 600-level courses if the academic advisor appeals on behalf of the student to the Office of Graduate Studies and receives approval. A Ph.D. student's dissertation committee may ask the student to take additional courses above the aforementioned minimum requirements

² Ph.D. students who pass the Qualifying Examination (QE) must register for 3 credits of pre-doctoral research (CE 792 Pre-Doctoral Research) per semester until they defend successfully the dissertation proposal.

Ph.D. students who defend the dissertation proposal successfully must then register for the 1-credit dissertation course (CE 790A Doct Dissertation & Res) each semester until they complete all degree requirements.

³ Required of all doctoral students every semester.

Preliminary Qualifying Examination

All doctoral students must pass a doctoral qualifying examination. To prepare adequately for the examination, students should take appropriate course work as well as other related subjects.

The qualifying examination consists of two parts:

Part I: Written Examination

- Graduate-Level Subject Knowledge - Questions related to the student's area of specialization.
- Undergraduate Mathematics (for Structural and Construction Management students). Topics include calculus, ordinary differential equations, and probability and statistics.
- Essay or Literature Review Report

Part II: Oral Examination (for Geotechnical students)

- This exam consists of a presentation to the qualifying exam committee, focusing on a topic that aligns with the literature review report.

Full-time students must take the preliminary qualifying exam for the first time within one year of beginning active study and must pass it completely by the next time the examination is offered. Part-time students must take the preliminary qualifying exam for the first time within three years of the beginning of active study and must pass it completely by the next time the examination is offered. Exceptional students having only bachelor's degrees who are admitted directly into the doctoral program must take the preliminary qualifying examination within one and one-half years of admission and must pass it within two years. All students are permitted to take the examination only twice.

If a student fails the qualifying exam on their first attempt, the qualifying exam committee may, by a two-thirds supermajority vote, recommend dismissal from the program.

Dissertation Committee

The committee consists of a minimum of five members, one of whom is external to the Ph.D. program or to NJIT. The majority of the committee members are NJIT Graduate Faculty from the student's program or department having research experience or developing research interests related to the dissertation research. The dissertation committee chairperson typically is the doctoral candidate's dissertation advisor. This chairperson must be a tenured or tenure-track faculty member in the program. Two committee members, including an external member, may serve as co-advisors. The advisor, or at least one of the co-advisors, must be a tenured or tenure-track faculty member from the program. The other members of the dissertation committee, except for an external member from outside the university, must be members of NJIT's Graduate Faculty. Former students of any committee member, who are less than four years beyond doctoral completion, are specifically excluded from membership. The external members should either have appropriate faculty rank elsewhere or have sufficient research expertise.

Research Proposal

Doctoral students must prepare a written research proposal and make an oral presentation for approval by their dissertation committee. The proposal must be presented after formation of the committee but within twelve months after passing the qualifying examination. Research is expected to investigate or develop a unique contribution to science and technology.

Dissertation Defense

An oral defense of the dissertation is required after submission of the final document to the department for approval. Signatures of all members of the dissertation committee must be received for final approval to be granted.