

# Civil Engineering PhD Profile

## Civil Engineering PhD

The Doctor of Philosophy (PhD) is a research-based degree program involving a high level of advanced training in the chosen field. A dissertation consisting of original research in a specialty area within the field is required.

A minimum of 48 credit hours of coursework are required. No dissertation credits are required.

A student entering the program with a prior MS degree may petition to transfer in a maximum of 30 graduate-level credits as approved by the program director.

A minimum of three years of graduate study is required. Students typically complete their degree within five years.

We encourage you to become familiar with the [research areas](#) in the Department, to reach out to our [faculty](#) for support, and to become actively engaged in the Department community. One way we encourage our students to become involved is by attending the seminar series we hold throughout the academic year. This is an opportunity to learn about advances in the academic community and to network with faculty and students from across campus.

### · Academic Integrity

Syracuse University aspires to the highest standards of integrity and honesty in all endeavors. The Academic Integrity Policy is designed to make integrity and honesty central to the Syracuse University experience by:

- setting forth clear ethical expectations for students in their academic endeavors;
- promoting consistency of standards and practices across colleges, schools and programs;
- encouraging reporting of suspected violations; and
- facilitating the resolution of cases as promptly as possible while providing thorough and fair consideration for students and instructors.

Education is a central goal of the policy, including affording students an opportunity to discuss and learn from academic integrity violations.

Students must fully inform themselves of their responsibilities in the conduct of their academic work and should familiarize themselves with Syracuse University's policy on Academic Integrity.

### · Advising

The candidate, with advice from the department chair and/or the program director, selects a dissertation advisor, whose consent must be obtained. The candidate and the advisor together, with consent from the department chair, select the members of the examination and dissertation committees. The candidate, in consultation with the advisor and dissertation committee, selects a program of coursework appropriate to the research and scholarly interests of the student.

### · Exit Requirements

- No fewer than 48 total credits of graduate-level coursework;
- minimum 3.333 GPA for all coursework used toward the completion of degree;
- minimum 2.800 GPA cumulative for all coursework taken at SU;
- for students with an M.S. degree, at least two-thirds of the Ph.D. coursework must be at or above the 600 level, and no more than one-third of the coursework can be independent study;
- satisfactory academic performance;
- successful completion of a qualifying examination;
- successful completion of a candidacy examination; and
- successful defense of a dissertation in an oral examination.

### · Exceeding Time to Degree Requirements

#### **Exceeding Time to ABD Status (7 Years)**

If the student has exceeded the seven-year limit for achieving ABD status, the student must register for GRD 991, which requires a minimum of one credit hour per semester, each fall and spring semester until ABD status is achieved. Students will be charged the tuition rate of one credit each semester for GRD 991. This cost will not be covered by the college or department. If the student fails to register for GRD 991, for a given term, the student will be withdrawn from the program.

#### **Exceeding Time to Graduate Status (5 Years after ABD)**

If the student has exceeded the degree completion limit of five years after achieving ABD status, the student must register for GRD 991, which requires a minimum of one credit hour per semester, each fall and spring semester until the completion of the doctoral degree. Students will be charged the tuition rate of one credit each semester for GRD 991. This cost will not be covered by the college or department. If the student fails to register for GRD 991, for a given term, the student will be withdrawn from the program.

---

# **PhD Milestones**

## **Qualifying Examination**

The examination is composed of two parts: a written exam followed by an oral examination covering materials from at least three graduate level classes that the student has taken at Syracuse University, as well as relevant materials from undergraduate coursework. The purpose of this examination is to assess the student's background knowledge in his/her primary subject area(s) and his/her preparedness for Ph.D. level research. The result of this examination is a decision by the exam committee as to whether or not the student should continue in the Ph.D. program.

### **Timing**

Students are expected to complete their Qualifying Exam after their first year of study.

### **Exam Committee**

**The exam committee shall consist of at least three faculty members. The majority of the committee membership shall be faculty members from the Department of Civil and Environmental Engineering at Syracuse University.**

### **Scheduling**

The student must work with their advisor to select the members of their exam committee, and to determine the date and time of the written and oral parts of the examination. The length of time spent on the written portion of the exam will be determined by the advisor in coordination with the committee.

Students must notify the department's administrative assistant at least two weeks prior to the oral examination date with the Date, Time and Location of the oral exam and the selected Committee Members.

Qualifying oral examinations can be held in the CEE Conference Room (151A Link Hall) or in the Link-Plus Conference Room (462K Link Hall) if available, or other space upon request.

At least 2.5 hours should be scheduled for the oral exam to allow sufficient time for questions.

### **Exam Process**

If the student does not pass this examination, they can request to retake the examination one more time in the following semester. In the event that the student fails the examination for the second time, their Ph.D. program of study will be terminated.

## **Candidacy Examination**

### **Timing**

Students are expected to present their research proposal to a faculty examination committee after completion of the student's required Ph.D. coursework, but no later than the fifth semester after admission into the Ph.D. program.

### **Organization of the Proposal**

Prior to this examination, the student shall prepare a detailed research proposal that includes but is not limited to a review of relevant literature leading to a statement of objectives (including major questions or hypotheses to be addressed in the dissertation), a description of methods and approaches to be used, and a brief description of the significance of the proposed work. The proposal will often include preliminary results from the student's work to date.

### **Exam Committee**

The examination committee will consist of five members: the dissertation advisor and at least four other faculty members.

The majority of the committee membership shall be faculty members from the Department of Civil and Environmental Engineering at Syracuse University.

A copy of the research proposal must be delivered to all members of the exam committee at least two full weeks prior to the oral defense date. Any committee member who receives their copy fewer than 14 calendar days prior to the defense may ask for a postponement of the defense. The student should not distribute the final draft of the research proposal until the advisor is satisfied with it.

### **Scheduling**

The student must work with their advisor to select the members of their exam committee, and to identify which committee member will serve as exam chair, and to determine the date and time of the presentation.

A copy of the research proposal must be delivered to all members of the exam committee at least two full weeks prior to the oral defense date.

Students must contact the department's administrative assistant at least two weeks prior to the presentation date with the Date, Time and Location of the Exam and the selected Committee Members.

Candidacy examinations can be held in the CEE Conference Room (151A Link Hall) or in the Link-Plus Conference Room (462K Link Hall) if available, or other space upon request.

At least 2 hours should be scheduled to allow sufficient time for questions.

## Exam Process

The oral examination is initiated by a 30-40 minute summary of the dissertation research proposal and progress to date by the student.

Following the presentation, the dissertation committee members ask the student questions concerning the research proposal.

Following the examination, the dissertation committee confers to determine if the student is a suitable Ph.D. candidate based on his/her performance on the candidacy examination, as well as to determine if the student should be required to take additional coursework beyond the minimum required for the degree.

If the student successfully completes the candidacy examination by receiving an affirmative vote from the majority of the committee, the advisor notifies the student and the graduate school and the student is considered a Ph.D. candidate.

If the student does not successfully complete the candidacy examination, the committee determines whether the student will be permitted to retake the examination after a minimum period of six months or whether the student's Ph.D. program should be terminated.

## Dissertation

The Oral Dissertation Defense and submission of the dissertation document to the Syracuse University Graduate School are the final requirements of the PhD program.

Defense paperwork must comply with [Graduate School's guidelines](#), including formatting.

## Preparation

It is recommended that the student meet with their defense committee to review dissertation progress at least three to six months in advance of the defense. The student should not distribute the final draft of the dissertation until the advisor is satisfied with it. Readers should be presented with a polished draft that has been proofread, paginated, and contains professional quality tables and figures with captions.

## Deadlines

The official Request for Examination form must be signed and submitted to the Graduate School at least **three full weeks** prior to the oral defense date.

A copy of the dissertation document must be delivered to all members of the defense committee at least **two full weeks** prior to the oral defense date. Any committee member who receives their copy fewer than 14 calendar days prior to the defense may ask for a postponement of the defense.

## Defense Committee

The dissertation defense committee will consist of six members, including

- the research advisor;
- four tenured or tenure-track faculty members from the department; and
- the Chair of the Oral Examination Committee.

The Chair of the Oral Examination Committee must be a Syracuse University tenured or tenure-track faculty member from outside the department and program.

The student may substitute one committee member based on subject-matter expertise who does not satisfy the second bullet above and may be internal or external to Syracuse University. Additional external committee members may be allowed by petition.

## Defense Process

The dissertation defense is usually initiated with a 30-40 minute summary of the research. This is followed by open questioning from the audience. When this is completed, the candidate is questioned by the dissertation committee members.

For the candidate to pass the dissertation defense, a majority vote on the quality and originality of the research, the quality of the dissertation, and the performance of the candidate at the examination is required.

---

## Electives

Graduate students at Syracuse University are able to take courses at both SUNY ESF and SUNY Upstate Medical University.

Students may register for SUNY Upstate Medical University coursework using the Inter-Institutional Graduate Course Registration Form, which is available from the department's administrative assistant. All coursework taken at SUNY Upstate Medical University must be approved by petition.

Students may register for SUNY ESF coursework normally using MySlice.

Please contact the department if you are interested in an elective that is not included on one of the approved lists below.

Additional coursework at Syracuse University or SUNY ESF may be approved by petition. CEE Master's Degree Programs require at least 15 Credits of Coursework be CEE Prefixed.

### · Approved by Prefix and Level

Unless otherwise noted, all courses offered by either Syracuse University or SUNY ESF that are numbered 600:996 with one of the following prefixes are approved as electives for all MS & PhD programs of study.

Prefix	Department
APM	Applied Mathematics
ARC	Architecture
BCM	Biochemistry
BEN	Bioengineering
BIO	Biology
BPE	Bioprocess Engineering
BTC	Biotechnology
CEN	Chemical Engineering
CHE	Chemistry
CME	Construction Management Engineering
CIS	Computer and Information Science
CPS	Computational Science
CSE	Computer Engineering
EAR	Earth Sciences
ECS	Engineering and Computer Science
EGR	Engineering
FCH	Chemistry
IST	Information Studies
MAE	Mechanical and Aerospace Engineering
MAT	Mathematics
MEE	Mechanical Engineering
MFE	Manufacturing Engineering
MTS	Materials Science
PHY	Physics
SCM	Supply Chain Management

### · Approved by Course, Syracuse University

Additionally, the following specific courses offered by Syracuse University are approved as electives for all graduate-level programs of study.

Course	Description
ARC 555	Introduction to Building Information Modeling*
ARC 558	Advanced Building Information Modeling and 3D Design
COM 600	Multimedia Reporting: Climate Change
EAR 600	Water Energy Field Course

EAR 601	Hydrogeology
EAR 665	Groundwater Modeling
ECS 526	Statistics for Engineers
ECS 651	Strategic Management & The Natural Environment
ECS 759	Sustainability Driven Enterprise
GEO 683	Geographic Information Systems
IST 687	Introduction to Data Science
IST 719	Information Visualization
MAE 548	Engineering Economics and Technology Valuation
MAE 573	Application of Finite Element Analysis
MAE 587	Design of Solar Energy System
MAE 626	Vibration of Mechanical Systems
MAE 658	Built in Environmental Modeling
MBC 616	Operations Management
MBC 617	Supply Chain Management
PAI 734	Public Budgeting
PAI 895	Managerial Leadership
SCM 656	Project Management
SCM 701	Supply Chain and Logistics Management
SCM 702	Principles of Management Science

\*Note that CEE 520 - Building Information Modeling and ARC 555 - Introduction to Building Information Modeling can only be counted once towards a program of study. If a student has taken either CEE 520 or ARC 555 and used it towards any program of study, they cannot take the other course for program credit.

### · Approved by Course, SUNY ESF

Additionally, the following specific courses offered by SUNY ESF are approved as electives for all graduate-level programs of study.

Course	Description
APM 595	Probability and Statistics for Engineers
APM 620	Experimental Design and ANOVA
CME 531	Construction Safety
CME 535	Cost Engineering
CME 543	Construction Estimating
ERE 527	Stormwater Management
ERE 551	GIS for Engineers
ERE 645	Hydrologic Modeling
ERE 693	GIS-Based Modeling
ENS 607	Wetland Practicum
EST 695	Environmental Journalism
EST 770	Ecological Economics & Policy