CIVIL ENGINEERING, PHD

The PhD program at the Johns Hopkins University Department of Civil and Systems Engineering aims to inspire the leaders of tomorrow to take on the challenge of creating and sustaining the built environment that underpins our society. Focal research areas in the Department include structural engineering, structural mechanics, probabilistic methods, hazards management, and systems engineering.

The small size of the CE Department fosters a collegial, close-knit relationship between the students, staff, and faculty, while our partnerships with the Mechanical Engineering, Biomedical Engineering, Materials Science & Engineering, Applied Mathematics & Statistics, Departments of Environmental Health and Engineering, Emergency Medicine, Public Health, and other John Hopkins groups provide a wide range of opportunities that surpasses those of much larger programs.

Students graduate from the program with a sense of the responsibility that the civil engineering profession accepts for applying the principles of engineering sciences for the betterment of the built environment and society. Its graduates have an appreciation of professional ethics and the value of service to their profession and society through participation in technical activities, and in community, state and national organizations.

Financial Support

Financial support from the Department of Civil and Systems Engineering provides full tuition, health insurance coverage, matriculation fee, and a 12-month stipend for enrollment. These additional resources are provided to support the student in good standing.

Also, financial assistance is available to Civil Engineering graduate students in the form of teaching assistantships, research assistantships, including fellowships from the Joseph Meyerhoff Scholarship Fund, the Richard D. Hickman Endowment, and the Hoomes Rich Graduate Fellowship. Fellowships and Assistantships are awarded on a competitive basis and continued support is subject to the student’s performance and future availability of research or teaching assistantship funds.

Program Requirements

Ph.D. student requirements for the Civil Engineering Department include:

- 8 Courses at the 600- or 700-level, completed with a grade of B or better
- Department Qualifying Examination (DQE)
- Graduate Board Oral Examination (GBO)
- AS.360.625 Responsible Conduct of Research short course
- EN.500.603 Graduate Orientation and Academic Ethics short course
- Final Ph.D. Thesis Defense

There are a number of Whiting School of Engineering policies related to Ph.D. students, which are listed at http://engineering.jhu.edu/graduate-policies (http://engineering.jhu.edu/graduate-policies/).

Typical Timeline for Ph.D. Students

Year 1 Fall:

- Arrival prior to start of classes
- Selection of first semester courses (typically 4) with Director of Graduate Studies or research advisor

Year 1 Intersession:

- Interim research
- Department Qualifying Exam (DQE) (completed in early January)
- Annual review completed by January 31

Year 1 Spring:

- Second semester coursework and research

Year 1 Summer:

- Research

Year 2 Fall:

- Research
- Coursework (typically finishing up this semester)
- Ph.D. Thesis Committee Meeting required prior to end of Fall semester

Year 2 Intersession:

- Research
- Annual review completed by January 31

Year 2 Spring:

- Research
- Coursework (if necessary)

Year 2 Summer:

- Research

Year 3:

- Research (Year-round)
- Ph.D. Thesis Committee Meeting
- Annual review completed by January 31
- GBO: Exact timing determined by advisor in consultation with the student

Year 4 and Beyond:

- Research (Year-round)
- Ph.D. Thesis Committee Meeting every Fall prior to the end of the semester
- Annual review completed by January 31

Final semester:

- Thesis Defense
Note: Teaching assistant duties may also be assigned during one or more semesters.

Language/Communication Testing and Placement
All Ph.D. students who do not have a prior degree from an English speaking university must take an English Language Assessment. If it is determined at the assessment that the student needs further English language instruction, he/she will be required to take AS.370.602 Pronunciation and Discourse or equivalent.

Determination of Permanent Advisor
Students are admitted to work with a specific advisor, the faculty member, listed in the offer letter. If several faculty in the Department of Civil and Systems Engineering expressed a strong desire to work with the student, a nominal advisor will be assigned before the first semester to aid in course selection and provide general advice on PhD degree requirements. In this case, a permanent research advisor, from the faculty who expressed interest, will be selected by the end of the first semester.

A PhD student will not be able to remain in good standing with their academic and research progress if they do not have a research advisor. A student who is without a research/dissertation advisor for a period of 3 months may be placed on probation or terminated from the PhD program.

Intersession (the period between Fall and Spring terms) is an important time for research. Intersession is not a vacation. Any leave taken during intersession is subject to the policies outlined in the Graduate Student Assistant Leave Guidelines (http://engineering.jhu.edu/include/content/pdf/RA_TA20%20leave%20guidelines%20(FINAL).pdf). Release time (if any) granted in that period must be approved by the advisor.

Department Qualifying Examination (DQE)
The DQE is a comprehensive oral exam designed to determine whether or not the student is properly prepared to continue in the Ph.D. program. All first-year students studying for a Ph.D. take the DQE after their first semester of enrollment, typically in early January of the first year. This exam tests whether the student is prepared to continue in their Ph.D. studies based on their grasp of basic undergraduate-level and introductory graduate-level Civil Engineering knowledge. Possible outcomes of the exam are Pass or Fail. Only an outcome of Pass will allow the student to continue in the Ph.D. program. If the student receives a Retake, they are provided a single retake of the exam, typically in the late Spring of the first year (in some circumstances in the Fall or early January of their second year). Possible outcomes of this exam retake are Pass or Fail. If the outcome of the exam is Fail, the student may pursue, with approval from the chair, a M.S.E. degree. Financial support beyond the first academic year is not typical.

Annual Reviews
Reviews of all Ph.D. students in Civil Engineering must be performed annually prior to January 31, and are consistent with the WSE policy found in the Graduate Student Academic Review Policy (https://engineering.jhu.edu/include/content/pdf/Acad%20Review%20Policy%20(FINAL).pdf). The review process follows the format given in the annual review form. The completed form must be submitted to the Sr. Academic Program Coordinator by January 31. If this annual review is not completed by this date, the student’s funding may be jeopardized.

Ph.D. Thesis Committee
Every Ph.D. student must have a Thesis Committee of at least 3 faculty members. The advisor, in consultation with his/her student, selects the makeup of the committee, and this information is recorded in the student’s file. The student is encouraged to meet with this committee a minimum of once per year. The thesis committee also typically serves as a subset of the actual GBO examination committee and forms the final Ph.D. defense committee. This committee must consist of a minimum of 2 full-time faculty of the Civil and Systems Engineering Department.

Responsible Conduct of Research
Every Ph.D. student of the Whiting School of Engineering is required to take the Responsible Conduct of Research course (details on the requirement can be found on the WSE Policy on the Responsible Conduct of Research Training (http://engineering.jhu.edu/wse-research/resources-policies-forms/responsible-conduct-of-research/) webpage). For Civil Engineering students, this should be completed in the Fall or Spring of the first year of studies. Students who do not complete this requirement prior to Fall of their third year of studies may put their funding in jeopardy.

GBO Examination
The University maintains complete guidelines for the Graduate Board Orals here. (http://homewoodgrad.jhu.edu/academics/graduate-board/degree-candidacy/) The GBO committee consists of 5 members, (3 in Department, 2 outside) with 2 alternates (1 in Department, 1 outside) and is selected by the Chair of the Department and the Director of Graduate Studies, who will consult with the student’s advisor. When a Ph.D. student and advisor feel that the student is ready to take the GBO, the advisor should consult with the Director of Graduate Studies and the Civil Engineering Sr. Academic Program Coordinator to initiate the process of scheduling the exam. Both students and advisors should be aware that 4-6 weeks advance notice is needed in order to allow for scheduling the exam with the faculty and with the Graduate Board.

The exact format of each GBO examination is specified by the individual Chair of the GBO committee. The student may be requested to provide to the GBO committee prior to the examination some written document describing his or her research. In such cases, the latest annual Thesis Committee report and/or a recent conference or journal publication may suffice. It is typical that the student would be asked to provide a brief presentation of research at the beginning of the examination (no more than 10 slides, no longer than 10 minutes). The examination questions may be on any topic of the committee members’ choosing, but many of the questions relate to the student’s coursework and research. At the conclusion of the examination, the GBO committee may recommend pass, conditional pass, fail with re-examination, fail (final) as detailed here (http://homewoodgrad.jhu.edu/academics/graduate-board/graduate-board-oral-exams/).

M.S.E. Degree for Ph.D. Students
Ph.D. students may petition for a M.S.E. degree following their GBO Examination. If the student passes the GBO, he/she may file for a non-terminal M.S.E. degree. If the student fails (final) the GBO, he/she may petition for a terminal M.S.E. degree. In all instances the students must have satisfied the M.S.E. degree course requirements as detailed here (http://engineering.jhu.edu/civil/graduate-studies/mse-requirements/).

In instances where the research is highly interdepartmental, the student, with permission of the advisor, may request that the M.S.E. degree be awarded by another department in the Whiting School of Engineering. In such cases, the student must have satisfied M.S.E. degree requirements.
and receive the approval of, and an accepted application to, the awarding Department, as well as satisfied M.S.E. degree requirements of the Civil and Systems Engineering Department and receive approval from the Civil Engineering Chair. In all cases, the awarding of any JHU M.S.E. degree to a Civil Engineering Ph.D. student may only occur after the student has completed the GBO exam.

**Thesis Defense**

The Thesis Defense is the final examination before conferral of the Ph.D. degree. The student defends his/her thesis in a seminar setting that is open to the public. The seminar is followed by a comprehensive examination of the student, focused on the thesis research.

**Ethics:** The Department of Civil and Systems Engineering is dedicated to upholding the highest standards of academic and research integrity. Plagiarism, and other forms of unethical conduct, are not tolerated. Students are referred to the JHU Graduate Board Policy (http://homewoodgrad.jhu.edu/academics/policies/) webpage and the Whiting School of Engineering’s Responsible Conduct of Research Policy (https://engineering.jhu.edu/wp-content/uploads/2013/07/WSE_Research_Rules.pdf) for a discussion of ethics and university policies.

**Defense Committee:** A committee of at least 3 members administers the exam (typically the Ph.D. Thesis Committee). The Advisor, in consultation with the Department, selects the committee members, at least 2 of whom must be full-time faculty of the Civil and Systems Engineering Department. This should be done at the beginning of the semester in which the student plans to graduate.

**Scheduling and Pre-Defense:** The defense should be scheduled at least 3 weeks in advance through the Department’s Sr. Academic Coordinator. A complete written dissertation should be given to the committee at least 14 days in advance of the defense. Failure to meet this 2 week deadline will result in rescheduling the Ph.D. defense. The date and place of the defense, along with the thesis abstract, should be circulated 5-7 days prior to the defense.

**Post-Defense:** Completion of the Ph.D. requirements typically takes 4-8 weeks after a successful defense examination. All data and source codes related to the thesis should be properly archived according to requirements set forth by the Advisor. Any changes or additions specifically requested by the reviewers before or during the defense seminar should be incorporated into the thesis in consultation with the Advisor. A final copy of the thesis must then be made available to the reviewers for inspection no less than 48 hours before the deadline date for filing set by the Graduate Board. A receipt of ETD approval email must be sent to the Sr. Academic Program Coordinator and the Graduate Board/WSE Office of Academic Affairs (for M.S.E. students).

**Additional Information:** It is the responsibility of the student to be aware of requirements and deadlines. It is suggested that this information be obtained before the start of the semester of intended graduation. All students should plan the timing of the final defense accordingly (making sure to account for the 4-8 week period following the defense) to satisfy any deadlines related to upcoming graduation or exhaustion of funding.

University requirements for the thesis can be obtained from the Sheridan Libraries (https://www.library.jhu.edu/library-services/electronic-theses-dissertations/) web site. Doctoral Theses must be submitted to the ETD (Library). The deadline date for filing is set by the Graduate Board. (https://homewoodgrad.jhu.edu/academics/graduate-board/deadlines/)