Guidelines and Expectations for students enrolled in the PhD Program in Civil Engineering

The purpose of this document is to provide a concise summary of departmental and university rules and expectations concerning the PhD program in Civil Engineering. It is the responsibility of each student to be aware of all the guidelines governing their degree. The complete guidelines for all degrees are available at the Tandon School of Engineering Bulletin published at: http://bulletin.engineering.nyu.edu

General Requirements

The PhD Degree is a research degree. A PhD is awarded either for the discovery of new phenomena in civil engineering, or related fields, or the invention of new methods or procedures that advance the practice or research infrastructure of civil engineering and related fields. Students are expected to perform research leading to the publication of at least 2 peer reviewed journal articles in reputable journals.

Students are expected to concentrate in a sub-area of civil engineering such as geotechnical, environmental, construction, traffic, urban, or structural engineering. Other emerging areas are also possible. In all cases students are expected to demonstrate mastery of their concentration area through both course work and research output.

Admitted students must first pass a qualifying exam administered by the department prior to becoming PhD candidates. During their first semester, students must (1) declare a concentration area within civil engineering, (2) identify a potential doctoral adviser, and in consultation with the potential adviser (3) form an Advisory Committee that will administer the qualifying exam and advise students on the necessary course work. After being admitted to candidacy, students must form a Dissertation Committee that will provide guidance on the dissertation.

Admission Requirements

Doctoral students are expected to have already demonstrated superior academic performance at a reputable institution. Doctoral students typically have the following admission profile:

- A masters degree in civil engineering or a related field.

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1 Make sure to review both (i) Graduate Academic Requirements and Policies as well as (ii) Doctoral Program in Civil Engineering Degree and Program Information

2 Journals published by ASCE, ICE, Elsevier, Springer, Wiley, TRR are generally considered reputable. Publication in journals published by organizations other than those listed herein require prior approval by the CUE department chair.
• A GPA greater than 3.5 is typically expected in the masters degree and a GPA greater than 3.0 is required in all previous degrees.

• A competitive GRE Score.

Transfer credits for PhD students typically include a 30-credit blanket transfer from a prior masters degree. A maximum of nine (9) additional credits can be individually transferred, but they cannot include project, thesis, dissertation, guided studies or readings, or special topics credits. Requests for transfer credits must be made prior to the end of the first semester.

**Degree Requirements**

Doctoral students must satisfy all of the following requirements:

1. Register for every Spring and Fall semester until the degree is awarded.
2. Complete at least 75 credits beyond the B.Sc. degree
3. Complete at least 45 credits beyond the M.Sc. degree
4. Complete six (6) credits of CE-GY 998x Dissertation Level Research
5. Pass the qualifying examination(s) administered by the CUE department.
6. Register for RE-GY 9990 – PHD EXAMINATION during the semester that they take the qualifying exam.
7. Complete at least fifteen (15) credits of CE-GY 999x Dissertation, with grades. Students may not register for CE-GY999x until they have passed the doctoral qualifying examination. Students must be continuously registered in CE-GY999x until they defend their dissertation.
8. Maintain a GPA of 3.0 or better at all times. Failure to do so will result in termination, after one probationary semester.
9. Present a proposal to the Dissertation Committee, within 6 months of passing the qualifying exam
11. Apply for graduation.
12. Full-time students are expected to complete all PhD work within six (6) calendar years, and part-time students must complete within twelve (12) years, counted from the time of admission to graduate studies at NYU TANDON, not from admission to the PhD program. These periods include any approved leave of absence.

**PhD Adviser**

Every PhD student must identify a PhD Adviser during their first semester. The adviser will guide the student throughout their studies and serve on both the Advisory Committee and Chair the PhD dissertation committee.

The relationship between the Student and his or her advisor is an important one. Fundamentally it is based on mutually beneficial interactions.

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3 All graduate and undergraduate courses, taken as part of the PhD program, will count towards meeting this GPA computation
PhD Advisory Committee

Every PhD student will need a PhD Advisory Committee. The advisory committee will advise the student until the student passes the qualifying exam, where the responsibility for providing advice will be handed to the Dissertation Committee. The Advisory Committee should be formed at least 1 semester before taking the exam. The advisory committee shall consist of at least 3 full time faculty members at NYU, of which one must be a tenured member of the CUE department, and the other must be a member of the CUE department. Typically, the committee is formed based on the student’s area of study and members of that area are expected to serve on the committee. The Chair of the Advisory Committee is expected to be a senior faculty member in the specialty area. Students are expected to file a form with the Graduate Advisor identifying members of the advisory Committee.

The primary responsibilities of the Advisory Committee are to (1) advise the student on which courses to take, and (2) prepare and grade the qualifying exam.

Qualifying Exam

The Graduate Adviser of the Civil and Urban Engineering Department administers the CUE qualifying exam, twice per year, typically on the third Fridays of March and October. Students must register for RE-GY 9990 during normal registration period of the semester when they intend to take the exam, and inform the graduate advisor of their intent. Students are encouraged to take the exam in their first year of the PhD program. If students have not passed the qualifying exam by the end of their second year, they may be disqualified permanently from the PhD program.

The PhD qualifying examination is designed to evaluate the student’s general knowledge and preparation for undertaking a doctoral program in his or her chosen area of study. The exam consists of two parts, written and oral. The written part will be composed of areas appropriate to the PhD student’s chosen area of study. The Advisory Committee will prepare and evaluate the written portion of the qualifying exam. The written portion typically consists of two three-hour parts, morning and afternoon. The morning part is typically closed book, testing the student’s fundamental understanding of the subject matter. A passing grade of 75% is expected. The afternoon portion is typically open book testing the student on more advanced topics, and a passing grade of 65% is expected. A take home exam may be substituted for either or both portions of the written exam, with the concurrence of the department chair. If a take-home exam is given, it shall be open book and will involve four questions to be completed in four consecutive days. Each question will be designed by a PhD Advisory Committee member and should be addressed by the student around a day. The questions can be open-ended questions as well as questions that might have single correct answers. The evaluation of the results of the written examination should be completed within the month following the written exam date.

Students who pass the written portion will be invited to the Oral examination, which will be conducted by the Advisory committee at a date prior to the end of the semester. The result of the PhD Qualifying Examination will be announced only after both parts are evaluated by the examination committee and then reviewed and approved by the entire faculty of the Department of Civil and Urban Engineering.
The following categories provide a structured evaluation of the results to the PhD Qualifying Examination Committee:

- **Pass**: meaning that the evaluation of the student’s performance in written and/or oral parts are satisfactory.
- **Conditional pass/retake**: meaning that the evaluation of the student’s performance in the written and/or oral parts were not satisfactory and the student needs to either take the exam again no later than the next scheduled exam period, or perform a set of conditions before s/he can be considered as a pass. The committee will define the timeframe for completion of the conditions or retake of the examination. If the exam to be re-administered, the committee should write a new set of questions for the candidate. If conditions will be imposed, the committee should define the conditions to be satisfied by the candidate. A third attempt is rarely permitted only with written permission from the Advisory Committee and the approval of the department Chair.
- **Fail**: meaning that the evaluation of the student’s performance in the written and/or oral parts were not satisfactory. When a student fails the PhD qualifier exam, there is no option to retake the exam.

The candidates will not know if they passed the qualifying examination until after they complete both parts of the examination and are notified by the department.

**PhD Dissertation Committee**

Every student must receive direction throughout their PhD from an individual PhD Dissertation Committee. The student in consultation with their Dissertation Adviser forms this committee. The PhD dissertation guidance committee is preferably composed of 5 members, but at least four members are required. The committee typically consists of:

- Thesis advisor, full-time faculty from the Department of Civil and Urban Engineering,
- Full time faculty from the Department of Civil and Urban Engineering.
- Full time faculty from another department at NYU.
- External member typically from another university, or any other research group, selected as appropriate for guiding the research area.

PhD candidates are expected to develop their own research ideas and direction in consultation with their Dissertation Committee. The committee will evaluate the dissertation proposal and the final dissertation. The committee members agree to meet with the candidate at discrete time intervals to get progress updates and evaluate the progress at that point, and serve during the thesis proposal and final dissertation defense. The chair of the Dissertation Committee is typically the principal thesis advisor. They decide on whether the student passes or fails the thesis proposal and final thesis defense, and advises the faculty and the Department Chair at Civil and Urban Engineering.

Doctoral candidates must submit a progress report 2 weeks before the end of each semester to the Chair of the Dissertation Committee. The Chair will consult with the rest of the committee on the progress of the research, and what grade should be assigned to CE-GY999x at the end of each semester. Grades of S (satisfactory), or U (unsatisfactory) are possible. S grades are
converted to regular grades after the dissertation defense. The Chair must consult the committee members on the appropriate grade. U grades do not count towards the minimum number of required dissertation credits.

Students must notify the Associate Dean and the Graduate advisor of the composition of their dissertation committee by completing the Request for Appointment or Reconstitution of PhD Dissertation Guidance Committee form.

PhD Proposal

Upon passing the qualifying exam and the appointment of a Dissertation Committee, the PhD candidate must submit a written Dissertation Proposal outlining the subject of the proposed research. This proposal should be 15 to 20 pages long and should address the following specific items:

- Description of the topic;
- Literature review sufficient to ensure original work;
- Method(s) for the research;
- Data and/or laboratory needs and their availability; and
- Anticipated outcomes.

The Dissertation Proposal must be submitted within one semester of full-time study after passing the qualifying exam, or before 9 credits of dissertation credit are completed.

The Dissertation Proposal is presented orally and defended before the Dissertation Committee and other interested departmental faculty. The date of the proposal and copies of the draft Dissertation Proposal must be available to departmental faculty at least two weeks (14 calendar days) before the event.

When the Dissertation Proposal is formally accepted, the chairperson of the Dissertation Committee shall submit a letter to the Graduate Adviser indicating this acceptance, together with a copy of the Dissertation Proposal. While the Dissertation Committee has reasonable flexibility to modify the Dissertation Proposal during the research, any significant change in focus area or methodology requires submission of an amended Dissertation Proposal and formal acceptance as described herein.

PhD Defense

The culmination of the student’s PhD work is the oral presentation and defense of the final draft dissertation. A defense is generally scheduled after the Dissertation Committee reviews the draft dissertation and determines that it is complete and of sufficient quality to be presented and defended publically.

The defense is organized and scheduled by the Dissertation Committee. All Institute faculty members may observe and ask questions at all NYU Polytechnic School of Engineering dissertation defenses. Therefore, the date of the defense must be announced Institute-wide at least one month before the event, and copies of the draft dissertation must be available to any
faculty member who requests one in a timely fashion and in no case less than two weeks before the defense.

Students must fill-out the form to Request to Schedule Dissertation Defense for the Ph.D. Degree (available on-line). This form should be completed once a defense date has been determined in consultation with the dissertation committee members. Once the form is completed and signed by the chairman of the dissertation committee it should be submitted, along with a copy of the Abstract, to Prof. Jose Ulerio (RH412A) at least 30 days prior to the defense date.

**Application for Graduation**

Students should apply for graduation before the deadline set by the Registrar’s office. You will receive email reminders from the Registrar’s office each semester. You may apply for graduation via Albert. Instructions on how to apply for graduation are available on-line.

**Closing Comment**

PhD degrees are not equal to each other. Students will get as much benefit of their degrees as they put into their studies. This document provides minimum requirements. Students who want to excel in their career should strive to exceed the requirements stated herein.
Application for Taking Oral Ph.D. Qualifying Examination

(Available Separately for download under the Forms Section)