This document contains the Department of Civil and Environmental Engineering procedures for Doctoral Qualifying Exam (DQE) as approved by the CEE Faculty on May 2014. These requirements apply to doctoral students who start their programs in fall 2014 semester or thereafter.

PURPOSE

The purpose of the DQE is to evaluate: (1) student’s fundamental knowledge in the field of civil and environmental engineering and (2) student’s ability and aptitude to undertake independent doctoral level research under supervision of a faculty adviser.

DOCTORAL QUALIFYING EXAM (DQE)

The DQE comprises two parts: 1) a Written Exam, which evaluates the student’s proficiency in fundamentals and foundations of civil and environmental engineering and 2) a follow-up Oral Examination. The requirements for both parts of the exam are set out below:

Part 1. Written Doctoral Qualifying Exam (W-DQE)

1.1. Written Exam Coverage and Format: This “uniform exam”, taken by all eligible doctoral students in a given semester, covers all areas of civil and environmental engineering but with the choice of selecting a required number of areas for passing, as elaborated below. The exam includes questions at fundamental level (i.e., the level of undergraduate courses) from six areas of CEE and the related engineering mathematics. The sample courses to select from in each topic area are given in parentheses. Note that the exam questions are intended to examine the proficiency of the students in the fundamentals of a given area and are not necessarily tied to any specific course. However, the student’s proficiency in these courses, or their equivalents elsewhere, will be tested on this basis.

Topic Areas:

ii. Water Resources Engineering (MAE-3126, CE-3610, CE-4620)
iii. Geotechnical Engineering (MAE-3126, CE-2220, CE-3110W, CE-4410)
iv. Transportation Safety Engineering (CE-2710, CE-3720, CE-3730)
v. Environmental Engineering (MAE-3126, CE-3520, CE-3610, CE-4530)
Examination Format:

- Students will take the written doctoral qualifying exam; (a) in their major area and (b) in the area of Engineering Mathematics.
- The written examination grade distribution will be as shown in the table below.

<table>
<thead>
<tr>
<th>Examination Area</th>
<th>% weight of the total grade from the respective area</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Area (Part 1 of exam)</td>
<td>80%</td>
<td>Must be passed individually, independent of the other area</td>
</tr>
<tr>
<td>Engineering Mathematics Area (Part 2 of exam)</td>
<td>20%</td>
<td>Must be passed individually, independent of the other area</td>
</tr>
<tr>
<td>Total Grade</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

1.2 Written Examination Results, Pass/Fail: The final grades communicated to the student will be Pass or Fail.

- Completed examination booklets and/or papers will remain the property of the CEE Department and will not be distributed to students.
- Students will be informed of the results by the Department and can request to review their exam papers.
- Students who pass the written exam will be scheduled to take the oral exam (see the requirements for oral exam below).
- Students who fail the exam will not be scheduled for the oral exam and their doctoral studies will be terminated.

1.3 Written Examination Dates: DQE’s are offered in the fall and spring semesters and all students must adhere to the schedule:

- Students entering in the fall semester must take their DQE in the proceeding spring sitting. Students entering in the spring semester must take their DQE in the proceeding fall sitting (if applicable).

The exact exam dates are determined by the Department each semester.

1.4 Provision: Students are expected to take this exam within the first year of their doctoral studies according to the schedule specified in section 1.3. A provision is allowed for those who may have been taking deficiency courses before starting their PhD courses. However, applicable only to this group of students, the period before taking the written DQE must not exceed two semesters (excluding summer sessions).
Part 2. Oral Doctoral Qualifying Exam (O-DQE)

After successful completion of the written exam, student will take an Oral Exam which evaluates the student’s higher level aptitude and ability to undertake independent research, and also ensures the qualifications for a rigorous doctoral research.

2.1 Oral Examination Committee: The Graduate Program Committee (GPC) recommends to the Department Chair, an oral examination committee comprised of at least three faculty members (including the student’s adviser). This committee is chaired by someone other than the adviser but in the area of specialty of the student (to the extent possible); at the recommendation of the GPC and approval of the Department Chair, faculty members from other areas of engineering or sciences may also serve on the oral examination committee. The Committee will comprise of at least two CEE faculty members and as deemed necessary by the Graduate Programs Committee up to three additional committee members may be added from CEE or other SEAS or GWU departments or even external members, who offer expertise relevant to the doctoral research area.

2.2 Committee Chair: The oral examination will be chaired by the Committee Chair and not the student’s adviser.

2.3 Oral Exam Coverage and Requirements: The Oral Examination Committee will determine a research topic and date for the Oral DQE. A written statement of the problem along with guidelines and necessary reference articles will be provided to the student by the Department. The student will have 10 working days (not to exceed 14 calendar days) to prepare a 5 to 8 (maximum) page paper that describes her/his approach to the problem highlighting the significant issues, challenges, and solution methods to overcome them, as learned from the referenced articles and other material s/he has found on the subject.

The student will present her/his approach during the oral exam, scheduled one week after submission of the oral exam paper, and will be questioned both on this material as well as any other related fundamental subjects.

Student Oral Exam Paper Documents and Format:

• Student paper must be 5-8 pages maximum; the page limit excludes references, which could take additional pages; no other supplementary material is accepted.

• Format should be Font 12, single space, with 1 inch minimum margins all around.

• Student must submit the proposal to the Department within the 10 business day period (not to exceed 14 calendar days)

• Oral exam is scheduled one week after the 10-business day submission limit (i.e. 5 business days after the expiration of the 10 business days submission limit).
• Student must also prepare the presentation material (PowerPoint) and present her/his findings at the Oral exam.

• The hardcopy of the oral exam paper and the presentation material prepared by the student will be kept as the oral DQE records.

2.4 Oral Examination Results: The Oral Examination Committee decides immediately on the passing, failing, or conditional passing of the student. The conditional passing may recommend (1) taking additional deficiency courses to be passed by a grade of ‘B’ or higher, (2) another oral examination to focus on the deficiency points, or (3) both items 1 and 2. The Department will communicate the outcome of the oral exam to the student within two weeks of the date of the oral exam. Those with conditional passing with deficiency must fulfill the requirements within one additional semester or considered failing the oral examination.

• Students who pass the Oral DQE will be considered Doctoral Candidates and will be officially informed by the Department of this status.
• A failure in oral Doctoral Qualifying Exam constitutes termination of the student from the doctoral program.

STUDENT RESPONSIBILITY FOR DOCTORAL QUALIFYING EXAM (DQE)

Doctoral students are required to apply to take the DQE tests by completing and submitting the DQE-Form 4 Application during their first semester of doctoral study at GWU but before the semester ends. Students with deficiencies or out of proper sequence will be allowed to take the exam in their third semester.

Students are encouraged to prepare themselves for the written DQE. There will be no make-up tests. Under extenuating circumstances of medical or other family emergencies, students will be allowed to take the exams in their third semester.

After being informed of passing the written DQE, the student must immediately consult with her/his adviser about preparation for the Oral DQE. The arrangements for the oral DQE are scheduled by the Department.

Students must take the Oral DQE according to a schedule set by the Department within the same semester after passing the written DQE.

The Oral DQE statement of problem is communicated to the student by the Department and not by the student adviser or Examining Committee c=Chair. In case of electronic exchange, the student should acknowledge the receipt of the problem statement.

Students need to be prepared to take the oral examination on time. No make-up tests are offered. Under extenuating circumstances of medical or other family emergencies, the Department and the
examining committee may offer another date within the same semester for oral examination; otherwise the students must wait until the following semester to take the oral DQE exams.