

National Taiwan University Graduate Institute of Environmental Engineering

Ph.D. Qualifying Examination Regulations

(93.6.10 所務座談通過、93.10.14 所務會議修正、94.1.6 所務座談修正、101.8.23 所務座談修正、103.03.27 所務座談修正、107.9.13 所務會議修正、107.10.11 所務會議修正、108.10.24 所務會議修正、110.12.16 所務會議修正、111.08.18 所務會議修正、114.08.14 所務會議修正)

- 1、 The Ph.D. Qualifying Examinations include a written exam portion, and an oral research plan/proposal and English journal paper critique portion. The written examination must be passed before the oral examination can be administered. Both written and oral examinations may only be taken a maximum of twice. Those who have passed all Qualifying Examinations (10%) are considered to have Ph.D. Candidate status. Those who have not completed the Qualifying Exams within 3 years(6 semesters) of enrollment will be reported to the University for withdrawal.
- 2、 Within 2 months of enrollment, a 5-person advisory committee should be convened by the student's advisor, including at least 3 GIEE assistant professors or above. Other members should be composed of assistant professors or above (which may include assistant researchers or above from Academia Sinica). The advisory committee should be convened by the student's advisor to draw up the student's study plan (Form 1), and will regularly advise on the student's progress (including Qualifying Exams, 40%, and 70% progress assessments) per the study plan. Progress assessments results should be turned into the GIEE academic coordinator for filing and future reference.
- 3、 After completing each progress review, students should submit the review results with signatures of committee members to the GIEE office so it can be recorded on the Ph.D. progress assessment form.
- 4、 Within 1 year of enrollment, Ph.D. students can apply for Qualifying Exams if they meet the requirements of their study plan and obtain approval from their advisor.
- 5、 For the written examination, the advisory committee should select 4 foundational and core courses related to the student's research topic, and up to 2 courses outside of the student's core and foundational courses. 100 points is the maximum score on each exam, and 240 points in total are required to pass the written Qualifying Exams. The time, date, and location of the written Qualifying Exams are scheduled at the end of each academic year in mid-July by the GIEE office. Exam question administration and grading responsibilities will be assigned to the professors after discussion at the departmental meeting. If there is sufficient need as determined at the department meeting, an additional written Qualifying Exam date may be added during winter break.

Doctoral course "Special Topics on Water Quality Control (I)" can also be one of the 4 course for written exam.

Aside from the core and foundational courses, international students may elect to take exams in English-taught courses: Air Pollution Control, Biological Treatment Processes, Physical and Chemical Treatment Processes, Analysis of Environmental Chemical Pollutants, and Environmental Planning and Management.

- 6 、 The oral examination portion consists of a Research Proposal and an English journal paper critique, which is the responsibility of the student's individual advisory committee. The details of the oral examination, like language, time, and location are decided by the advisory committee. The written examination must be passed before the student is able to take the oral exam.
- 7 、 Four course subjects should be chosen for written Qualifying Exams. Ph.D. students are able to offset written Qualifying Exams by achieving grades of 'A' or above in 4 relevant GIEE courses within the first 2 years(4 semesters) of enrollment. From the 3rd year(5th semester) after enrollment, students are no longer eligible to offset their written Qualifying Exams with course grades. Course grade substitution is limited to courses offered by GIEE, and if the course name and content are consistent, the substituted grades will be handled per University regulations (grading system and percentile).

Those who elect to use course grades to offset their written Qualifying Exams must be able to offset all 4 of their written exams, or else all 4 courses must be passed via official written Qualifying Exams. If the student has elected to offset their written Qualifying Exams but fails to meet the grade requirement of 'A' for at least 1 course, the student must take all 4 official written exams.

The written Qualifying Exams cannot be offset by grades if the course was repeated, except with consent from the student's advisor and the course instructor.

If the student has taken Introduction to Water Pollution Control, Introduction to Air Pollution, Introduction to Solid Waste, and Soil and Groundwater Pollution and has received an 'A' or above in each of the classes, the student is eligible to to offset Introduction to Environmental Engineering. Courses taken in NTU GIEE within the last 10 years prior to Ph.D. enrollment with grades of 'A' or above may be offset.

- 8 、 The oral examination portion is divided into 2 parts: the student's research proposal and the English journal paper critique. The oral examination time should be determined by the student's advisory committee. Students taking the oral examination should submit the Qualification Test Application Form and the certificate for passing the written examination, their research plan, and a hard copy of their selected English journal for critique to the GIEE office before the day of their oral exam.
- 9 、 The oral examination process should be proctored by a member of the advisory committee who is not the student's direct advisor. The advisory committee will conduct the oral examination, for which the student should give an oral report on their research plan and present their English journal paper critique. At the end, after the examinee leaves the room, the committee members will discuss and decide the results of the oral examination (pass, conditional pass, or fail). The committee members will then inform the student of their result.

The research plan should include the following:

1. Research Origin: The background, development, and core question(s) of the research should be described, and research needs should be stated, to explain the value of the expected results' contribution. Emphasis should be placed on the

analysis of the review of literature, in particular, the relevance and development of the research topic.

2. Review of Literature: Important literature and research documents or theories are reviewed and arranged.
3. Research Project and Purpose: List research project, purpose, and hypotheses.
4. Research and Experimental Methods: Describe your research methodology or experimental design, or relevant theory for achieving your research purpose. Please discuss the feasibility of achieving your research purpose.
5. Expected Results and Contributions: Describe your estimated research progress and expected results, and emphasize your novelty or contributions.
6. References: List your references according to the appropriate format.

Oral Examination English Journal Paper Critique

The student's advisory committee should provide the student with an English journal paper (related to the student's Ph.D. dissertation topic). The student should then write a 3-5 page (double spaced) written critique of the English journal paper and provide committee members with a copy.

- 10 、 After private discussion, all advisory committee members will decide whether to pass, conditionally pass, or fail the student in the oral portion of the Qualifying Examinations, and write suggestions, corrections, or criticisms for the student. Students who conditionally pass must propose an action plan based on or respond to the corrections or suggestions given by committee members within 60 days after the examination. The student is only considered to have passed if all committee members have signed and confirmed the student's action plan and comments. If the action plan is not submitted or signed by all committee members within 60 days, the student is deemed to have failed. Please submit all examination records to the GIEE office for record-keeping prior to passing the Qualifying Examinations.
- 11 、 These measures were implemented on August 1, 2019, and are applicable to Ph.D. students who enrolled before August 1, 2019 if they had not taken Qualifying Exams prior August 1, 2019. Otherwise, these measures do not apply to those who have passed Qualifying Exams and enrolled before August 1, 2019.
- 12 、 The regulation will take effect after being approved or modified by the departmental meeting.

