

National Cheng Kung University Department of Environmental Engineering Regulations on Study and Advising for Doctoral Students

Approved at the 228th Departmental Affairs Meeting on March 2, 2005

Amended at the 312th Departmental Affairs Meeting on September 12, 2012

Amended at the 172nd Academic Committee Meeting on December 4, 2024

Amended at the 435th Departmental Affairs Meeting on January 8, 2025

Amended at the 440th Departmental Affairs Meeting on July 2, 2025

I. Entrance Examination

The Departmental Admissions Committee administers the doctoral entrance examination.

Examination methods and grading follow the regulations stipulated in the University's Graduate Admissions Guidelines.

II. Admission Qualifications

1. Applicants who have obtained a master's degree recognized by the Ministry of Education, Taiwan, and who have passed the University's doctoral program entrance examination; or
2. Students in the Department's master's program who, after one year of study, meet the requirements of Article 4 of the University Graduate Student Policies and Rules, may directly pursue a doctoral degree upon passing review by the Doctoral Admissions Committee of the Department and recommendation by the Departmental Affairs Meeting.

III. Course Requirements

1. Credit Requirements:

After admission, doctoral students may, with their advisor's consent, take courses in this Department or other relevant departments of the University. A minimum of 24 credits must be earned (students directly pursuing a doctoral degree must complete at least 48 credits, including those earned in the master's program). Additionally, students must complete 4 semesters of Seminar.

2. Fundamental Courses:

Fundamental courses include the following four required foundation courses offered by the Department:

- (1) Applied Mechanics or Mechanics of Materials
- (2) Fluid Mechanics (I)
- (3) Laboratory of Environmental Analysis
- (4) Environmental Engineering Design

and three environmental engineering professional courses chosen from:

- Sanitary Engineering or Water Treatment Engineering
- Air Pollution Control Engineering
- Solid Waste Engineering

Students who have not taken these courses must complete them.

- Local students required to make up seven courses may count up to 9 credits of electives toward graduation if they pass with a minimum of 70. Those completing six courses may earn six credits, while those completing five courses may earn three credits under the same conditions.
- International students must take 4 out of the above seven fundamental courses. If no English-taught courses are available, equivalent master's/doctoral-level courses may be substituted for up to **6 credits**. Additionally, they must enroll in the Chinese Course for International Degree Students (CIDS) at the Chinese Language Center, University College of Liberal Arts, for two terms free of charge. Before admission, students with proof of equivalent Chinese language proficiency (equivalent to two terms) may be exempt from the language requirement.

3. **Core Courses:**

Students must take at least two of the following:

- (1) Mathematics Principles of Environmental Engineering
- (2) Physics Principles of Environmental Engineering
- (3) Chemistry Principles of Environmental Engineering
- (4) Biology Principles of Environmental Engineering

IV. **Degree Examinations**

The doctoral degree examinations consist of an English proficiency test, a qualification examination, and a dissertation defense.

1. English Proficiency (applicable to students admitted from Academic Year 2013 onward):

Students must fulfill one of the following before applying for the degree examination:

- TOEFL iBT ≥ 71
- IELTS ≥ 5.5
- TOEIC ≥ 750
- Other equivalent English proficiency tests

Alternatively, students with a TOEIC score of 590 or higher (or equivalent) may enroll in **two English-taught courses** at a foreign university/college for at least one semester, with a minimum grade of C or equivalent in each, and submit proof. Approval must be obtained from the Department Curriculum Committee before study.

International students from English-speaking countries, countries where English is the official language, or whose previous degree program was entirely taught in English, are exempt from submitting proof of English proficiency. (See the link for The List of Nations with English as the Official or Common Language.)

2. **Qualification Examination:**

Conducted according to the "NCKU Directions for the Administration of the Ph.D. Qualifying Examination," and includes:

- Doctoral students of the Department may apply for the qualification examination per the regulations. Their advisor shall serve as the convener and organize the Doctoral Candidacy Qualification Examination Committee (hereinafter referred to as "the Committee") to administer the examination.

- The Committee consists of 5–7 members, recommended by the convener from experts related to the student’s field, approved by the Departmental Affairs Meeting, and appointed by the Department Chair.
- Held once per semester within one month after the semester begins.
- Must be completed within 2 years of admission (no more than 3 years).
- Requires submission and oral presentation of a dissertation research proposal, approved before applying for the written exam.
- The written exam includes three subjects related to the students' research, selected by the committee. Passing score: 70 per subject.
- Each subject is set and graded by designated committee members.
- Students must take all three subjects in the first attempt; failed subjects may be retaken twice. Failure thereafter results in dismissal.
- Students who pass are granted doctoral candidacy.

3. Dissertation Defense:

Requirements before application:

- At least 2 SCI journal papers (representative works) must be published or accepted.
- For representative works, the student must be the first author, with a maximum of 4 authors (including student and advisor). At least two papers must be affiliated with the Department of Environmental Engineering, NCKU.
- If any representative work has more than four authors, at least 3 SCI papers are required.
- Special cases may be reviewed by the Academic Committee six months before the defense.
- Journal articles must form part of the dissertation.

Procedure:

- Candidates meeting course and publication requirements may apply to the Academic Committee for qualification review and dissertation defense. Documents required: application form, transcripts, dissertation draft and abstract, and list of published/accepted works. The doctoral degree examination for postgraduate students shall be conducted in accordance with the “NCKU Rules and Regulations of Graduation Examination for Graduate Students” and the “Regulations for Doctoral Degree Examinations of the Department of Environmental Engineering, National Cheng Kung University” (approved at the Departmental Affairs Meeting on March 6, 1993).
- Review and approval are followed by appointment of a Review Panel of associate professors or above, responsible for reviewing the dissertation draft and publications.
- After the review results of the Review Panel are approved by the Department Chair, the application for the degree examination shall be submitted to the University one month before the examination (including the application form for the degree examination, the list of examination committee members, the examination schedule, the budget plan, and the minutes of the Review Panel meeting). The application shall then undergo administrative review and countersignature, and be forwarded to the Dean of Academic Affairs for approval before the degree examination is conducted..
- At least two weeks before the defense, the advisor must send the dissertation draft to committee members (both internal and external).

- The Defense Committee comprises 5–9 members, with at least one-third external. At least five members must attend; over two-thirds attendance is required, including a minimum of one-third external. Proxies are not allowed.
- Defense results are graded anonymously using the University’s defense evaluation form. Passing requires the approval of at least two-thirds of the attending members and an average score of 70 or higher. Only one defense attempt is allowed.
- The process of the degree examination shall be recorded, and the relevant documents and records shall be submitted by the Department within one week, along with the dissertation examination results, to the Registrar Division for further processing.

V. Advising and Supervision

1. To align with the Chinese Institute of Environmental Engineering’s request to allow junior college lecturers opportunities for in-service doctoral study, the Department resolved at its 92nd Affairs Meeting (1993.9.3) that postgraduate students applying for in-service research must meet the following:
 - Written consent from both the employing institution and the advisor.
 - At least 3 days per week on campus during the first three years. Adjustments may be made with advisor approval and Academic Committee consent (amended at the 306th Departmental Affairs Meeting, 2012.2.18).
2. Doctoral students must, within two months of the start of each academic year, present a public report to Department faculty (with at least three professors, including the advisor, invited by the Chair) on coursework, research progress, and publications. Faculty may provide feedback for the advisor’s reference.
3. Within one month before the dissertation defense, candidates must hold a public presentation of their dissertation in English at the Department.

VI. These regulations take effect upon approval by the Departmental Affairs Meeting. Amendments shall follow the same procedure.