

National Taiwan Normal University

科學—科技—工程—數學整合教育國際博士學位學程 修業暨研究生學位考試規定

(111學年度起入學博士新生適用)

International Doctoral Program in Integrative STEM Education Rules for Graduate Studies and Graduate Degree Examinations (Applicable to Doctoral Students Enrolled in Academic Year 2022-2023 or Later)

Last passed on April 13, 2022, during the 2nd Academic Affairs Meeting, Academic Year 2021-2022

Article 1 Length of the Program

1. The *Rules for Graduate Studies and Graduate Degree Examinations* (hereinafter referred to as “the *Rules*”) were established in accordance with National Taiwan Normal University’s (hereinafter referred to as “the University”) *Degree Conferral and Graduate Degree Examination Regulations*.
2. Students may remain enrolled in the program for a period of two to seven years, not including periods of time during which a student is not registered due to a deferred registration or suspension of studies.
3. Graduate students who fail to complete the required course and credits or who fail to pass their degree examination within the stipulated enrollment period shall be required to withdraw from the University.

Article 2 Registration and Course Enrollment

1. At registration, graduate students must obtain the approval of their advisor for their course schedule or, if an advisor has yet to be assigned, the approval of the head of the International Doctoral Program in Integrative STEM Education (hereinafter referred to as “the Program”). The same shall apply to courses added or dropped after registration.
2. Graduate students may not enroll in more than 18 course credits per semester.
3. Graduate students shall obtain at least 18 credits (at least 15 credits from elective courses within the Program and three credits from common elective courses) in accordance with the Program’s curriculum table before they can graduate.
4. Graduate students’ course performance evaluations shall be based on a letter grade system, with B- being a passing grade. Students who receive a grade of lower than B- shall not receive credits for the corresponding course.
5. The Curriculum Committee shall determine which courses count toward graduation requirements. Courses offered by undergraduate programs shall not count toward graduation requirements.
6. To promote research ethics, the University requires graduate students to complete an academic and research ethics training workshop and pass the certification exam before beginning their degree dissertation.

Article 3 Thesis Advisors

1. Graduate students shall choose a thesis advisor from among the full-time faculty of the Program within the first semester of enrollment. Thesis advisors must be associate professors or above.
2. Graduate students whose dissertation topic is beyond the academic scope of the Program may seek out a suitable advisor from outside the Program to serve as co-advisor upon approval by the head of the Program.
3. In principle, each professor may only serve as advisor or co-advisor to one student in the Program.
4. The responsibilities of an advisor shall be as follows:
 - (1) Assist and supervise graduate students in course planning
 - (2) Supervise graduate students in publishing their academic papers
 - (3) Assist and supervise graduate students in completing their dissertation
5. Graduate students who wish to change advisors during the course of their studies shall fill out an application explaining their reasons for doing so and obtain approval from both the former advisor and the newly assigned advisor. If a student and their advisor cannot reach an agreement, the head of the Program shall convene a committee meeting to mediate the disagreement and resolve the issue. If a student's advisor resigns or retires, a co-advisor shall be assigned to the student.

Article 4 Qualifying Examination

1. Graduate students must pass the qualifying examination in order to qualify for candidacy.
2. In order to apply for the qualifying examination, graduate students must meet one of the following criteria after enrollment (or during the course of their studies) at the University.
 - (1) Publication of at least one journal paper in any journal indexed in SCI, SCIE, SSCI, or SCOPUS.
 - (2) Publication of at least two international conference papers that are peer-reviewed and orally presented.
3. The qualifying examination shall be conducted in the form of an oral defense of the dissertation proposal. Graduate students who fail to pass the qualifying examination may not apply to conduct the oral defense of their dissertation.
4. The members of the Qualifying Examination Committee shall be appointed in accordance with the provisions for the organization of Ph.D. graduate degree examination committees in the University's *Degree Conferral and Graduate Degree Examination Regulations*.
5. The qualifying examination may be taken multiple times. Graduate students who fail the examination may apply to take it again but shall be required to withdraw from the University if they fail to pass the qualifying examination within five years of their enrollment. Special cases may be taken to the Academic Committee for further deliberation.
6. When applying for the qualifying examination, graduate students shall attach the following documents to their application and submit them to the Program office:
 - (1) One copy of the applicant's curriculum vitae and bibliography
 - (2) One copy of the applicant's doctoral dissertation proposal
 - (3) One original copy of the applicant's academic transcript
 - (4) One photocopy of each of the published academic paper

Article 5 Publication of Academic Papers

1. Graduate students must publish at least one academic paper in an SCI-, SCIE-, or SSCI-indexed journal (including papers that have been accepted but not yet published at the time). The published paper must be a doctoral dissertation or paper related to STEM education and must be published under the auspices of the National Taiwan Normal University International Doctoral Program in Integrative STEM Education. Students must be listed as the first or corresponding author of their paper (an exception can be made if the first or corresponding author is the student's advisor) in order for the paper to be accepted for the application. Students may file an application for the degree examination after obtaining approval from their advisor. Papers submitted with the qualifying examination application may not be resubmitted with the degree examination application.
2. Academic papers published by students shall not be recognized if they re-enroll in the Program after dropping out.
3. Submitted or published academic papers that are found to be in violation of academic ethics norms (e.g., multiple submissions, plagiarism, falsification, or data theft) shall not be accepted for the application if the Academic Committee deems the violation severe enough.

Article 6 Graduate Degree Examinations

1. Graduate students may only take the graduate degree examination after submitting an application to the Program office by the end of April or November. This restriction shall not apply to students who have already reached the end of the allowed period of studies and have obtained approval from their advisor and the head of the Program. Application requirements: Graduate students who complete the 18 credits required, meet the criteria for the dissertation defense, and obtain approval from their advisor may submit their application with the following documents to the Academic Committee for review within four months of passing the qualifying exam. Applicants who receive approval from the Academic Committee may participate in the graduate degree examination.
 - (1) One copy of the application form for the oral dissertation defense
 - (2) One copy of the doctoral candidate's curriculum vitae
 - (3) Original copy of the doctoral candidate's academic transcript
 - (4) One copy of the list of recommended members for the Ph.D. graduate degree examination committee
 - (5) One copy of the doctoral candidate's bibliography and one copy of each paper published during their enrollment. If a published copy is not available, a submitted copy may be filed instead with the paper acceptance letter from the journal attached (the advisor's signature is also required if the acceptance letter is in electronic form).
 - (6) One copy of the first draft of the dissertation
 - (7) One copy of the dissertation's originality report generated by an online plagiarism checker
 - (8) One copy of the declaration of academic integrity for the dissertation
2. Graduate degree examinations shall be held in the form of a public oral defense. Graduate students shall announce the time and place of their oral defense as well as the title of their dissertation seven days prior to the defense.
3. The Ph.D. graduate degree examination committee shall consist of five to nine members, at least one-third of whom shall be personnel from outside the University (including part-time faculty members). Committee members shall be selected by the President, with one member appointed as convener by the head of the Program. The convener cannot be a committee

member chosen from among the University's personnel or an advisor to any of the candidates.

4. Candidates shall submit the first draft of their dissertation to the graduate degree examination committee for review at least seven days before the date of the graduate degree examination.
5. Graduate degree examination committee members must meet the qualifications listed in the *Degree Conferral and Graduate Degree Examination Regulations*.
6. The Program grants the title of Doctor of Philosophy (Ph.D.) to its graduates.

Article 7 Matters unaddressed herein shall be subject to the applicable regulations of the University and the Ministry of Education. Disputes concerning the interpretation of the *Rules* shall be settled by the Program General Meeting.

Article 8 The provisions of the *Rules* that involve degree conferral and graduation requirements shall be reviewed by the General Meetings of the Program and the College of Technology and Engineering before being submitted to the Academic Affairs Meeting for further deliberation; the remaining provisions shall be reviewed by the Program General Meeting and then submitted to the Office of the Academic Affairs for reference. The same shall apply to all subsequent revisions.

National Taiwan Normal University International Doctoral Program in Integrative
STEM Education
Curriculum Table

Academic year	Compulsory course credits	Credits from program electives	Elective credits	Minimum credits required for graduation
2022/ 2023	2 credits	13 credits	3 credits	18

I. Compulsory courses: 2 credits

Course category code	Course code	Course title	Credits	Course hours		Remarks
				Lecture	Lab or internship	
		Seminar I	1	16		
		Seminar II	1	16		

I. Program electives: at least 13 credits required

Course category code	Course code	Course title	Credits	Course hours		Remarks
				Lecture	Lab or internship	
		Trends and Issues in STEM Education	3	48		
		Theory in Technology and Engineering (Online)	2	32		
		Theory in Science and Mathematics (Online)	2	32		
		Research on STEM Education (Online)	3	48		
		STEM Education Pedagogy	3	48		
		STEM Literacy by Design	3	48		

II. General elective courses: at least 3 credits required