

Regulations for Ph.D. Program of CS Department

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I. Course Credits 課程學分

- A. Besides the university required courses and dissertation courses, a minimum of 18 credits of graduate level courses have to be completed, in which at least 12 credits are from courses in the computer science discipline. For a student in the direct PhD program, a minimum of 30 credits of graduate level courses have to be completed, in which at least 24 credits are from courses in the computer science discipline.
- (1) Eligible courses in the computer science discipline include “CS 5xxx~7xxx” courses, “ISA” courses, “COM” courses, and “IIS” courses, except all “Research Methodology”, “Special Topics”, and English presentation/writing courses. Upon approval by the dissertation supervisor and the department chair, courses not listed above may be considered as courses in the computer science discipline.
 - (2) Credits from courses with prefix “LANG” are not counted as graduation course credits, but can be used for satisfying the foreign language requirement (see Section III-C).
- B. A student is required to take a minimum of one course per semester; from the second year onwards, a student may just take “Dissertation” to fulfill the minimum coursework requirement. Failing to do so will result in dismissal from the school.

C. A student must have passed an operating systems course, a computer architecture course, and a course on design and analysis of algorithms before the final PhD defense.

(1) The requirement on each course listed above is deemed satisfied if credits of the corresponding undergraduate or graduate course have been obtained from our school or other university prior to admission to the PhD program.

(2) The requirement on each course listed above may be satisfied by taking and passing the corresponding undergraduate course in our department with a grade of B- or above. However, credits of undergraduate courses cannot be counted towards the graduation course credits.

II. Qualifying Examination 資格考

A. A student must fulfill the “Professional Coursework Requirement” and pass the “Research Ability Evaluation” to pass the qualifying examination.

(1) Professional Coursework Requirement

- i. A student must obtain grades of A- or above in four graduate courses spanning at least two of the three categories “Theory”, “Systems”, and “Applications”
- ii. Any professional courses that were taken in our department within three years prior to admission to the PhD program can be counted.

Note: The list of eligible courses in each category approved by the academic committee will be posted on the department webpage before the start of each semester.

(2) Research Ability Evaluation

This is intended to evaluate if a student possesses sufficient ability to carry out academic research. A student is required to **write a literature survey on a topic within his/her research area and submit it at the time of application** for **research ability** evaluation.

- i. Research Ability Evaluation should be conducted after fulfilling the professional coursework requirement. However, if a student is expected to fulfill the professional coursework requirement in the fifth semester which happens to be a fall semester, then Research Ability Evaluation is also permitted in the fifth semester. In this case, if the student fails to complete the professional coursework requirement at the end of the fifth semester, the student will be dismissed from the school irrespective of the result of Research Ability Evaluation.
- ii. A student must have the first Research Ability Evaluation within the first five semesters (including any leave of absence). If a student fails in the first evaluation, there is one more chance

for re-evaluation in a different semester. A student must pass the evaluation within the first seven semesters (including any leave of absence) after admission. Students failing to do so will be dismissed from the school.

iii. The evaluation is divided into two stages: **written** report review and **an** oral examination.

- Request for Research Ability Evaluation should be made before day 15 of each month to allow sufficient time for the academic committee to hold a meeting in that month to form an evaluation committee. An application form should be submitted together with the research report written in English and signed for approval by the dissertation supervisor. Application can be made during a leave of absence.
- An evaluation committee consists of three professors chosen by the academic committee. The dissertation supervisor may recommend suitable candidate(s) to the academic committee for consideration. Once the evaluation committee is formed, one member is to be elected as the convener by its members.
- Information of the oral exam (date, time, venue) should be announced one week prior to the oral exam and everyone is welcome to attend. People other than the PhD student and the evaluation committee members are not allowed to speak during the exam.
- Oral exam includes a presentation and a Q&A session. **The student should make an oral presentation based on his/her written report and three research papers which are picked by the evaluation committee in advance.** The presentation time is limited to **60** minutes, and the expected total exam time is no longer than 2 hours. During the Q&A session, any questions related to the research topic may be asked and are not limited to questions about the given presentation.
- The evaluation committee makes an evaluation based on the research report and the oral exam. The final result is either “Pass” or “Fail”, which is decided by majority vote among the members.

B. Deadline: The qualifying examination has to be passed within the first seven semesters (including any leave of absence) after admission. Students failing to do so will be dismissed from the school. However, if delay is caused by some uncontrollable circumstance, extension may be granted upon the approval of the department chair.

III. Foreign Language Requirement 第一外語能力

Before graduation, a student must satisfy the foreign language requirement in one of the following ways.

- A. Scoring 79 or above in the New Internet-based TOEFL exams, or scoring 210 or above in the Computer-based TOEFL exams, within the period starting from five years prior to the admission to PhD studies until graduation.
- B. Passing the first and second stages of the upper-intermediate level of the General English Proficiency Test (GEPT) with a score of 80 or above, within the period starting from five years prior to the admission to PhD studies until graduation.
- C. Scoring 6.0 or above in IELTS, within the period starting from five years prior to admission to PhD studies until graduation.
- D. Obtaining a minimum of six credits from the following courses, all with grades of B+ or above, after admission to the PhD program:
 - (1) "CS5912 Scientific and Technological English", "CS5913 Academic Research Writing".
 - (2) Courses offered by NTHU Language Center with prefix "LANG" which are designated as "Priority given to Graduate Students", "Intermediate Level", or "Advanced Level".
 - (3) English courses approved by the department chair.
- E. Possessing a degree certificate from a university in an English-speaking country which is recognized by the Ministry of Education ROC.

IV. Dissertation Supervisor 論文指導教授

- A. A student is required to have a dissertation supervisor before the end of the second semester after admission. Otherwise, an explanation form must be filled in before the start of the second year, and the student must give an oral explanation at the first academic committee meeting at the start of the second year. If the academic committee concludes that the student does not fit into the PhD program of the department, the student will be dismissed from the school.
- B. The dissertation supervisor must be a full-time or a joint faculty member of the department with a rank of assistant professor or higher.
- C. A student may apply to have a co-supervisor with a rank of assistant professor or higher.
- D. Application for a co-supervisor from another department or another university can be made from the second semester of PhD studies onward. Only upon the approval by both the dissertation supervisor and the department chair shall the co-supervision begin.
- E. Changing Dissertation Supervisor
 - (1) A student cannot change supervisor within one year before graduation.

- (2) A student who would like to change supervisor must submit written agreements from both the current and the new supervisors to the department office for record.

VI. Dissertation Proposal Exam and Dissertation Committee 研究計畫口試

- A. A dissertation committee of 4 to 5 members should be formed. The members should be recommended by the dissertation supervisor and invited by the department chair. The supervisor is a default member of the committee and the committee convener. At least half of the members must be faculty members of the department. Apart from the dissertation supervisor, there must be at least one full professor of the department in the committee.
- B. The dissertation proposal exam is a public oral presentation. To pass the exam, a student must get at least half of the dissertation committee members' approval (with scores of 70 or more). If a student fails, there is one more chance for a re-exam, to be taken at least 4 months after the first one. If the student fails again in the re-exam, the qualification as a doctoral candidate will be lost.

VII. Final PhD Defense 論文考試

- A. An examination committee of 5 to 9 members should be formed for a student's final defense. The members and convener should be recommended by the dissertation supervisor, invited by the department chair, and appointed by our university president. The dissertation supervisor must serve as a default committee member. The dissertation committee members, and members from other universities, should each make up at least 1/3 of the examination committee (an individual member can be counted in both categories).
- B. A student's dissertation must be examined and approved by the academic committee before the final PhD defense. To have the approval from the academic committee, full or partial results of the dissertation must have been converted into research articles satisfying one of the following conditions.
 - (1) At least one research article has been accepted, or clearly on the verge of acceptance, by a high-quality journal.
 - (2) At least two research articles have been accepted by high-quality international conferences.
 - (3) At least one research article is under review by a high-quality journal. In this case, an external review process has to be invoked to determine if the results of the dissertation are considered sufficiently innovative and up to the standard of a PhD dissertation. The dissertation should be submitted to the department office at least three months before the intended defense date, then the academic committee will invite at least two anonymous expert

reviewers outside NTHU to help review the dissertation. The dissertation is considered up to standard if all reviewers agree so.

- C. A student should submit the doctoral dissertation (and all relevant documents, if any) to the academic committee before day 15 of each month, allowing the academic committee to review the application during the rest of that month.
- D. The PhD defense is a public oral exam. At least 5 members of the examination committee should be physically present in the exam, with at least 1/3 of them from other universities. (Video conferencing is allowed for any committee member not physically present.) The examination committee members have the right to request for a demonstration of the dissertation results.
- E. The attending examination committee members give their scores by anonymous ballots, where the average of these scores becomes the PhD defense score. If more than 1/3 of the examination committee members give a failing score (less than 70) or the average score is less than 70, the student then fails the PhD defense. If a student fails the PhD defense the first time, there is one chance for a re-exam within the maximum studying period and the re-exam is to be taken either in the following semester or in the following academic year. If a student fails again in the re-exam, the qualification as a doctoral candidate will be lost.
- F. A student in the direct PhD program who has not passed the PhD defense but satisfies all the requirements of a master degree may be granted a master degree.

VIII. Students in the PhD program have responsibilities to assist teaching in departmental courses. The department curriculum committee can request to have a discussion at the department meeting on doctoral candidates who are not willing to fulfill this duty, and all the funds from the department for the candidates will be removed if 2/3 of professors attending the departmental meeting agree.

IX. Increasing PhD students' Understanding of Different Areas of Computer Science

- A. Every semester, all PhD students in the department must attend at least ten research talks hosted by the department. These talks may include qualifying examinations, dissertation proposal exams, and PhD defenses.
- B. At the end of every semester, a PhD student should list out all the talks attended in the semester and hand it to his/her supervisor.
- C. If a PhD student does not follow the regulation, his/her dissertation supervisor could report the student's attitude issue.

X. For any matter that is not discussed in the above, it will be resolved by the regulations of the Ministry of Education and the regulations of our university.

XI. The above regulations were approved by the faculty of the CS Department before taking effect. The same applies to any revision of the regulations.

(These Regulations are adopted in Chinese, which shall prevail in case of any discrepancy between the English translation and the Chinese original.)