

Guidelines for the Ph.D. program in the Department of Chemistry, NTHU

Revised after the faculty meetings on 1/8/2003, 11/5/2003, 10/5/2005, 12/7/2005, 4/12/2006, 11/1/2006, and 12/6/2006

- I. Entrance Exams: Following the rules set by the Office of Academic Affairs.
Subjects of Entrance Exams: Comprehensive Chemistry Exam (required for all students), and one of the following: Organic, Inorganic, Physical or Analytical Chemistry Exam.
- II. Every Ph.D. student must join a research group before the first year ends.
- III. The graduate advisor serves as the Chair of the Dissertation Research Advisory Committee and members of the Committee consist of three or more faculty members (including assistant professors) in the Department.
- IV. The roles and responsibilities of the Dissertation Research Advisory Committee:
 - (1) Assist the Ph.D. student with his or her dissertation research topics, and give advice on the progress in classes and research.
 - (2) Evaluate the student's qualification and ability to continue the Ph.D. program.
 - (3) Evaluate the Ph.D. candidate's research progress and see if he or she is ready to write the dissertation draft.
- V. Ph.D. Qualifying Exams:
 - (1) Must pass the Ph.D. qualifying exams within three years after starting the Ph.D. program, otherwise the student will be dismissed from the program.
 - (2) *Rules for qualifying exams in the physical chemistry division:*
 - (a) The qualifying exams for the physical chemistry division include two parts:
 - [1] Advanced Physical Chemistry (written exam)
 - [2] Research Proposal Defense (oral exam)One must pass both to advance to the Ph.D. candidacy.
 - (b) Advanced Physical Chemistry Exam is administered once every semester. Schedule for taking the Research Proposal Defense depends on the individual cases.
 - (c) Procedure for taking the Research Proposal Defense:
 - [1] Faculty in the physical chemistry division should serve alternately as Chair of the Qualifying Exam Committee, which includes 3 or more faculty members (including assistant professors). Half or more than half of the committee members should be physical chemistry professors in the Department. However, the student's graduate advisor cannot be on the

committee.

[2] The student should submit a title and abstract of his or her Research Proposal to the committee. With the approval of the committee (respond within one week), the student can then provide a detailed research proposal. The topic of this Research Proposal should not be directly related to the research topic currently undertaking in his or her lab.

[3] The administration of the Research Proposal exam proceeds in two stages: "Evaluation of the Research Proposal" and "Oral Defense". The committee should respond to the full and detailed research proposal within three weeks after the student has submitted the proposal. After successfully passing this evaluation, an oral defense exam should be held within one month.

[4] For both stages, the student needs to receive a passing grade from at least 2/3 of the committee members.

[5] If the student fails to pass the research proposal evaluation, he or she can modify the proposal, and re-submit the revised proposal to the committee within one month. If this revised proposal still does not pass the evaluation, he or she must submit a completely new proposal six months later. If the student does not re-submit a revised proposal, his or her right to re-submission is waived. In this case, the student should submit a completely new proposal six months later. Each student can at most submit three research proposals for evaluation.

[6] If the student does not pass the oral exam, he or she may apply for a re-examination within one month. After one month, the right to take another oral exam on the same proposal is waived, and he or she must submit a completely new proposal six months later. And if the student fails the second oral exam, he or she has to submit a complete new research proposal six months later.

[7] If the Research Proposal was found fraudulent with a significant part of its contents derived from others' work or ideas, the right to take the oral qualifying exam is lost.

(d) The above rules for the Ph.D. qualifying exams apply to all students starting their program in and after the Fall Semester, 2006, and can be applicable to those entering the program in 2004 and 2005.

(3) *Rules for qualifying exams in the analytical chemistry division:*

Exams are given once every semester, and one can take two exams each time. One needs to pass the following two exams: [1] Instrumental Analysis and [2] Chromatographic Techniques.

(4) *Rules for qualifying exams in the organic and inorganic chemistry divisions:*

- [1] Exams are given 8 times a year, 4 in each semester.
- [2] Each exam taken is graded as A, B, or C. A grade of A counts as 2 points, B as 1 point, and C as 0 point. Once a student has accumulated 10 points, he or she has successfully passed the qualifying exams.
- [3] A student can take either inorganic or organic exam, but he or she must accumulate at least 5 point in the division the student belongs to.
- [4] Must pass the qualifying exams within 3 years.

(5) *Rules for qualifying exams in the chemical biology program:*

Plan A, pass 2 of the following 3 exam subjects: [1] Comprehensive Biochemistry, [2] Comprehensive Chemical Biology, and [3] Inorganic or Organic Cumes (5 or more points), or one Advanced Physical Chemistry Qualifying Exam, or one Analytical Chemistry Qualifying Exam.

Plan B, pass the following exam subjects: [1] Biochemistry (counted as 3 points), [2] Any one of the following: Bioorganic Chemistry, Bioinorganic Chemistry, Biophysics, Molecular Biology, Genomics, or Proteomics (3 points), and [3] Inorganic and Organic Cumes (accumulate 4 points), or one Advanced Physical Chemistry Qualifying Exam, or any one Analytical Chemistry Qualifying Exam.

Note: The above rules for the Ph.D. qualifying exams apply to all students starting their program in and after the Fall Semester, 2006, and can be applicable to those entering the program in 2004 and 2005.

(6) *Rules for qualifying exams in the materials chemistry program:*

Pass 2 of the following 3 exam subjects: [1] Materials Synthesis and Applications (5 points), [2] Materials Property and Characterization (5 points), and [3] Organic or Inorganic Cumes (5 or more points), or one Physical Chemistry Qualifying Exam, or one Analytical Chemistry Qualifying Exam.

- VI. M.S. students admitted to the Ph.D. program at the end of their first M.S. year should take at least 30 credits of classes, among these at least 24 credits are from graduate-level courses.
- VII. Ph.D. students must take 4 semesters of Colloquium (CHEM5700). Students entering the Ph.D. program directly from college should also take 4 semesters of Colloquium. The credits for this class are not counted.
- VIII. In the second year of his or her Ph.D. program, the student must serve as a teaching assistant for chemistry lab sessions. In that semester, the student has to register for the Seminar class (CHEM662000, 665000, 667000, or

669000). If for some reason the student cannot perform this duty in the second year, the service can be postponed.

- IX. Ph.D. students should show a level of proficiency in English. Below are ways to satisfy this requirement.
- (1) Take the High-intermediate Level GEPT (General English Proficiency Test) offered by the Language Training & Testing Center and pass, or TOEFL and receive a score of 530 (or 197 for the new test), or IELTS (International English Language Testing System) and pass above the 5.5 level.
 - (2) Take one related English training course and earn 3 credits. Below are such courses: (a) Technical English Writing, (b) Training in English Speaking (I and II), (c) Listening and Writing, (d) Listening and Speaking, (e) Advanced English, (f) any course of similar level as those of (a) to (e).
 - (3) The language requirement is effective for students entering the Ph.D. program in 1997, and can also be applied to those entering in 1995 and 1996.
 - (4) Foreign Ph.D. students entering the program in and after 1997 should, in addition to meeting the above (1) or (2) language requirement, obtain proof of passing the “Basic Chinese for International Students” course before graduation.
 - (5) Foreign Ph.D. students entering the program in and after 2001 should take the Chinese courses offered by the Department (3 credits) for two semesters in the first year (Students in the TIGP program should take the Chinese courses offered by Academia Sinica), and should pass the courses in 2 years.
 - (6) These language classes are not counted in the 18 credits of graduate-level courses needed for the Ph.D. program.
- X. Rules for the required 12 credits of graduate-level courses for Ph.D. students:
- (1) These are courses offered by the Department with class numbers CHEM5 and above, or similar courses in the TIGP program. Credits for the Seminar (CHEM6) classes are counted.
 - (2) Similar courses already taken in college and the M.S. program can not be used to waive the credits.
- XI. Minimum research publication requirement for graduating Ph.D. students: Each graduating Ph.D. student must publish at least one SCI paper, and be the first author of that paper. This requirement applies to new students starting their Ph.D. program after Fall 2007. For special situations, the cases can be presented to the Courses Committee for consideration.
- XII. Rules for the Ph.D. dissertation defense examination:
- (1) Before working on the Ph.D. dissertation writing, the student should arrange to give a presentation of the research progress to the Dissertation Research

Advisory Committee. With the approval of the Committee, the student can then take the Ph.D. dissertation defense exam a year later from the date of this preliminary presentation. This rule applies to all first-year Ph.D. students entering the program in and after 2002.

- (2) After meeting all the Ph.D. course requirements and have finished the dissertation draft, the student may obtain a graduate school transcript, and submit the dissertation draft and abstract, transcript, and the dissertation defense exam application form to the Department. The student should arrange to submit these items at least two weeks before the examination. With the approval of the Department Chairman, the Department will submit the application form and a Committee member list to the Office of Academic Affairs for the approval of the University President. Then the dissertation defense examination can be held.
 - (3) Dissertation Defense Committee consists of 5 to 9 members. At least 1/3 of them are from other institutions. The student's graduate advisor is on the Committee, but cannot be the Chairman. The Chairman is chosen among the members. The Department Chairman submits a list of Committee members to the University President for appointment.
 - (4) The dissertation defense exam is given in a public form. The grade received is the average scores given anonymously by all the Committee members present, and is based on the contents of the dissertation and the performance on the defense exam. The scores are given only once, with 70 being the passing grade. If 1/3 or more of the Committee members regard the student as failing the exam, the student does not pass the exam. In that case, the student may apply for a re-examination in the following semester or academic year, before the end of the stipulated duration of the Ph.D. program. The student can only have one chance for re-examination. If the student fails the second time, he or she will be dismissed from the Ph.D. program.
- XIII. The stipulated length of the Ph.D. program may be extended to a maximum of 7 years.
 - XIV. TIGP students should follow the same guidelines listed above. Places where "The Department" are mentioned can be replaced with "TIGP" instead.
 - XV. The guidelines are effective now, and will be when amended after future faculty meetings.