

Graduate guidelines

May 2008

1. Ph. D. program

A) With no prior Masters degree

Preliminary examinations

Upon arrival on campus, incoming graduate students must take a set of placement exams to assess the student's knowledge of undergraduate chemistry. The examinations will be graded by the faculty. Students who are judged to be deficient in certain areas of chemistry will be recommended to take undergraduate level courses in these areas, with the courses to be taken determined by the exam panel. These courses will be in addition to the required graduate-level coursework described in the catalog and will not count towards the student's Ph.D. degree. Students may also fulfill this requirement by taking the final exam in the required undergraduate course and earning a grade of B or higher, as determined by the instructor for that course in the semester in which the course is given.

Research advisor

Each student must meet one-on-one with at least five (5) faculty members to discuss research opportunities before the end of the first semester. Students must select a research advisor no later than the last day of the first month of their second semester. A dissertation committee (see below) will then be formed in the second semester.

Upon approval of the department, students may choose a research advisor that is not a chemistry faculty member. In this case, a chemistry faculty member will serve as the student's academic advisor. The academic advisor must be a member of the student's dissertation committee.

Dissertation Committee

The purpose of the Dissertation Committee is to advise the student on his or her coursework and research and to evaluate the student's seminars, candidacy exams, and dissertation. The committee will consist of at least 5 members, including the research advisor. A majority of the committee must be either tenured or tenure-track faculty from the Department of Chemistry. At least one member of the committee must be from a department other than chemistry. The inclusion of a committee member from outside New Mexico Tech is not required, but is encouraged. The graduate office must approve the composition of the committee. A committee meeting is required once a year, and should be held in conjunction with the seminars that the student is giving. At least 4 of the 5 committee members must be present at the annual meetings, except for the dissertation defense, when all committee members must participate. Within one week after the annual meetings, the student will receive a joint evaluation report from the committee. If a student has not earned a PhD by the end of his/her fifth year, the committee should assess the student's overall performance and provide advice on how to complete the degree in a timely manner.

Course requirements

See the catalog.

CHEM 554/555

All Ph.D. students are required to complete CHEM 554/555 (Research Proposal Writing, I and II) as part of the requirements of the candidacy examination.

CHEM 529/530

Every student must present two departmental seminars. One seminar may be based on any chemistry-related topic, and must be given in their first year. A second seminar must be based on the student's Ph.D. research and must include detailed research findings and interpretation. The second seminar must be given after the student becomes a Ph.D. candidate. All faculty members on the student's committee must be in attendance at the seminars. If the committee has not been chosen at the time of the first seminar, a majority of the chemistry faculty must be in attendance. It is the student's responsibility to inform his/her committee

members and the chemistry faculty members of these seminars and to make sure the seminars are announced in Scope at least 2 weeks before the presentation.

Graduate students must take CHEM 529/530 for credit in the semester they are presenting a seminar. They must also audit CHEM 529/530 in semesters when they are not presenting. Attendance at all departmental seminars is mandatory for all graduate students.

Candidacy examination

To progress from the level of a Ph.D. student to a Ph.D. candidate, each Ph.D. student must pass the candidacy examination. The candidacy examination consists of a cumulative system of written exams and a completion of CHEM 554/555, which includes the defense of a research proposal. This requirement must be completed by the end of the student's third year. Only Ph.D. candidates are permitted to register for CHEM 595 (Dissertation).

Cumulative written examinations

As part of the Ph.D. candidacy examination process, every Ph.D. student must take a series of written examinations. Written examinations will be given once a month, from September to April, eight times per year. These examinations will cover graduate-level questions in the following four sub-fields: 1) analytical/environmental, 2) inorganic, 3) organic/biochemistry, and 4) physical chemistry. All Ph.D. students must pass four exams and at least one in three different sub-fields in no more than twelve attempts and within two years of the first exam taken. Students must start taking cumulative exams no later than the first written exam given in their second academic year. A Ph.D. student who does not fulfill these cumulative exam requirements will be dismissed from the Ph.D. program. Upon approval of the department, students failing the cumulative exam may be permitted to enter the M.S. program.

Dissertation

The focus of the student in the Ph.D. program is to propose and complete original research. Oral defense of the Ph.D. dissertation is required prior to graduation. The Ph.D. candidate must present a written dissertation to their committee at least 30 days prior to the defense. The student must ensure that this presentation is publicly announced in Scope at least 2 weeks prior to the event. On the defense date, the candidate must give a public, oral presentation of the conducted research. Following the public presentation and discussions, the candidate will defend his/her research in a closed session open only to the committee. The committee members will then discuss the oral defense without the student's presence and decide if the student passes.

Candidates failing the oral defense will either be offered a second chance at a later date or be dismissed from the Ph.D. program, at the committee's discretion. A second chance is not guaranteed. Upon approval of the department, students failing the oral defense may be permitted to enter the M.S. program.

Publication

Each Ph.D. candidate is strongly recommended to have at least one research article accepted by a peer-reviewed journal prior to graduation.

B) Ph. D. with prior M.S. degree

Students entering the Ph.D. program with a M.S. degree may be given approval to follow the plan outlined below. The choice to approve this option is made by dissertation committee. Students are advised to note that some foreign M.S. degrees and those in fields outside of chemistry may not be counted.

All requirements for the Ph.D. are the same as for students with no prior M.S. degree, except the following:

Course requirements

See the catalog.

2. M.S. degree

Preliminary examinations

Same as Ph. D. program

Research advisor

Each student must meet one-on-one with all faculty members to discuss research opportunities before the end of the first semester. Students must select a research advisor no later than the first month of their second semester.

Thesis Committee

The purpose of the Thesis Committee is to advise the student on his or her coursework and research and to evaluate the student's seminar and thesis. The committee will consist of at least 3 members, including the research advisor. A majority of the committee must be either tenured or tenure-track faculty from the Department of Chemistry. The graduate office must approve the composition of the committee. A committee meeting is required once a year, and should be held in conjunction with the seminars that the student is giving. All committee members must participate in the thesis defense. If a student has not earned a M.S. degree by the end of his/her second year, the committee will assess the student's overall performance and provide advice on how to complete the degree in a timely manner.

Course requirements

See the catalog.

CHEM 529/530

Every M.S. student must give one departmental seminar prior to the defense of their M.S. thesis. The seminar should focus primarily on their M.S. research. All faculty members on the student's committee must be in attendance at the seminar. It is the student's responsibility to inform his/her committee members and the chemistry faculty members of these seminars and to make sure the seminars are announced in Scope at least 2 weeks before the presentation.

Graduate students must take CHEM 529 or CHEM 530 for credit in the semester they are presenting a seminar. They must also audit CHEM 529/530 in semesters when they are not presenting. Attendance of all departmental seminars is mandatory for all graduate students.

Thesis

M.S. students must present a written thesis to their committee 30 days prior to the defense. The student must ensure that this presentation is publicly announced in Scope at least 2 weeks prior to the event. On the defense date, the student must give a public, oral presentation of the conducted research. All faculty members on the student's committee must be in attendance at the defense. Following the public presentation and discussions, the candidate should defend his/her research in a closed session open only to the committee and other chemistry faculty. The committee members will then discuss the oral defense without the student's presence and decide if the student passes.

Candidates failing the oral defense will either be offered a second chance at a later date or be dismissed from the M.S. program, at the committee's discretion. A second chance is not guaranteed.