



LEHIGH
UNIVERSITY

DEPARTMENT OF CHEMISTRY

**PROCEDURES AND REGULATIONS
RELATING TO GRADUATE STUDY IN
CHEMISTRY**

I. Introduction

The Department of Chemistry at Lehigh University provides a unique and exciting program of study for graduate students. Our program is designed to provide students with a broad background in chemistry while simultaneously offering opportunities to do cutting-edge, multidisciplinary research. The information in this booklet provides students with the procedures and regulations relating to graduate study in the Department. Students who enroll in graduate studies through the Department of Chemistry can pursue the following degree:

Chemistry – PhD

II. General Regulations

A student must maintain a cumulative GPA of 2.70 or better to remain in good standing in the chemistry graduate program. If a student falls below a 2.70 GPA, they will be given one probationary semester in which to raise their GPA to a 2.70 or better. If after the probationary semester, the student's GPA is not raised to a 2.70 or better, the student will be ineligible to receive a Teaching Assistantship until their GPA is raised above a 2.70.

No student who earns more than three grades of C+ or below will be able to continue in the PhD or Terminal MS degree programs. In addition, grades below B- may not be counted towards a degree.

Each PhD student must satisfy Lehigh's residence requirements: Either two semesters of full-time graduate study or 18 credit hours of graduate study within a 12-month period. The residence requirement is intended to ensure that doctoral students spend a period of concentrated study and intellectual association with other scholars. Practically, this requirement translates into a student spending *full-time, years-long* effort on research and/or course work toward the degree during which they may not hold employment requiring work outside the University.

After a student's second semester in residence, the student must have a designated research advisor in order to remain in the PhD program.

Teaching and Research assistantship awards are determined on a semester-by-semester basis. Teaching assistants are awarded a stipend and up to 10 credits per semester of tuition for each semester they are a teaching assistant. Research assistants are awarded a stipend from a faculty member's research grant along with the required tuition. Fellows are awarded a stipend and tuition waivers for 9 credits per semester. Tuition awards are tax-free; however, stipends are taxable.

III. Proficiency Requirement

The Chemistry Department will administer proficiency examinations to all graduate students regardless of previous academic standing (i.e., entering with a Bachelor's or MS degree) at the

time of matriculation. Each full-time student is required to take three examinations: general chemistry 1, general chemistry 2, and one in an area of choice (i.e., biochemistry, analytical, organic, inorganic or physical chemistry). Information regarding material to be covered on these examinations will be sent to each student several months in advance of matriculation, and students should prepare diligently for these tests.

An incoming student who fails one or more of the examinations will have one additional opportunity to demonstrate proficiency by re-taking the examination(s), approximately three weeks after their first semester in residence. A student may change the area of choice for their second attempt; however, changing does not result in any additional attempts should the student fail. The student is highly encouraged to meet with the Graduate Director to determine the best course of action in light of the exam performance and projected area of study. If a student fails to demonstrate proficiency after taking the examination(s) for a second time, they will not be allowed to continue in the PhD program and will be transferred to the Terminal MS Degree program.

IV. First Semester Coursework

First semester graduate students will meet with the Graduate Director during Department Orientation to discuss their proficiency exam results and appropriate coursework for their first semester in the program. All full-time graduate students, regardless of previous academic standing (i.e., entering with a Bachelor's or MS degree), must register for at least 9 credits of graduate-level (i.e., 400-level) coursework (excluding CHM 421 and CHM 499) offered by or cross listed in the Chemistry Department (CHM). In addition, all students must register for the course entitled, *Foundational Graduate Chemistry*; however, if a student performs exceptionally well on both the general chemistry 1 and general chemistry 2 proficiency exams, they may be exempt from enrolling in the course.

V. Choosing a Research Advisor

At orientation all new graduate students will receive information concerning the procedure for selecting a research advisor. In short, each student will receive a form directing them to arrange one-on-one meetings with faculty to discuss research. Once the requisite number of meetings is completed, the student will rank their choices and return the form to the Graduate Coordinator. It is anticipated that a student's first choice will be honored unless for various reasons the faculty member is unable to advise that student. In such cases, the GAC will discuss the concern with those students and faculty and with the Department Chair (where appropriate) before mutually agreeable graduate student/faculty advisor relationships are established.

VI. Doctor of Philosophy Degree

Completion of a Doctor of Philosophy degree program requires:

- A minimum of 72 credit hours if entering with a Bachelor's degree or 48 credit hours if entering with a MS degree.
- Not less than 18 credit hours of 400-level courses (excluding CHM 421 and CHM 499), 15 credits hours of which must be in Chemistry. If a student wishes to register for a course in a different department, a petition must be submitted to the GAC for approval no less than 20 business days before classes begin for that semester.
- At least 3 credit hours must be in a 400-level course designated as scientific writing.
- *Exactly* 6 credit hours of CHM 421 Chemistry Research.
- Any remaining credit hours should be fulfilled by CHM 499 Dissertation.

Research productivity will be used as the primary measure for awarding the degree; study for any specified period of time or the completion of a specific program of courses is NOT regarded as grounds for awarding the degree.

All post-baccalaureate work for the doctorate must be completed within a 10-year period. A student beginning doctoral coursework after an elapsed period of at least one semester after the MS degree has been conferred is granted seven years in which to complete the doctoral program.

Students entering the doctoral program with a MS degree can petition the GAC to have coursework from their MS degree count towards the PhD degree. However, in most cases credit will not be granted unless the course is a direct match to one taught at Lehigh.

Doctoral Committee: The purpose of the doctoral committee is to guide the student through the PhD program. The committee must be formed before the start of a student's second year in residence. Students are encouraged to suggest to the GAC the members of their doctoral committee; however, ultimately the GAC will determine the final composition of the committee to ensure equity and appropriateness. A doctoral committee must have a minimum of four members. The members of the committee are chosen from the Chemistry faculty, faculty in related disciplines at Lehigh or from other universities, or knowledgeable persons located in industrial or government laboratories. One person on the doctoral committee must be from outside the Chemistry Department. The doctoral committee is charged with the responsibilities of administering the General Doctoral Examination, overseeing the progress of the student in research, and of assessing the doctoral dissertation.

General Doctoral Examination: The General Doctoral Examination, sometimes also referred to as the "Qualifying Exam," is an oral defense of a student's research project and/or goals. The 18 credit hours of 400-level courses (excluding CHM 421 and CHM 499) referred to in Section VI **must** be completed before the General Doctoral Examination. A document entitled *Procedures and Regulations Relating to the General Doctoral Examination* will be distributed by the GAC to all students on a yearly basis in early January. During the examination, members of the Doctoral

Committee will have an opportunity to ask any questions that they consider useful in evaluating a candidate's likelihood for success in the PhD program. Interjections during the exam by the student's research advisor are expected to be minimal.

Students must make their first attempt at the General Doctoral Examination within 10 weeks of earning 36 credits.

Students who fail the first attempt have a second chance to be completed not sooner than 5 months after the first attempt but before 6 months after the first attempt. Students who fail a second attempt at this examination may not continue in the Ph.D program and will be transferred to the Terminal MS Degree Program.

Each attempt of the General Doctoral Examination will be recorded by the committee on the form entitled *Report on the General Doctoral Examination*. Information concerning this form can be obtained from the Graduate Coordinator.

Yearly Updates: After every two semesters in residence after passing the General Doctoral Examination, a student must provide a written report to committee members detailing the progress made towards their thesis.

4th year Seminar: A student must give a public departmental seminar on their PhD research by registering for CHM 481. If entering with a Bachelor's degree, this seminar must take place after earning 54 credits but before they reach 72 credits. If entering with an MS degree, the seminar is due after 48 credits.

Admission to Candidacy: A student must meet with their committee members after completion of 72 credit hours if entering with a Bachelor's degree or 48 credit hours if entering with a MS degree. Students can begin this process after they earn 60 or 45 credits if entering with a Bachelor's or MS degree, respectively. A document entitled *Procedures and Regulations Relating to Admission to Candidacy* will be distributed by the GAC to all students on a yearly basis at the end of the Spring semester. This meeting must take place no later than 2 months after the student reaches the requisite number of credits.

Upon approval from the doctoral committee, the student must submit an application and a proposed program of study to the CAS Graduate School. The procedure for admission to candidacy can be found on the CAS website. Per CAS guidelines, there must be a seven month period after the College approves Admission to Candidacy before a student graduates with a PhD.

If the committee decides not to admit a student to candidacy, the student must make subsequent attempts at candidacy every 3-6 months until successful.

Publication Requirement: A minimum of one publication in a peer-reviewed journal in which the student has made a primary contribution is required for receiving the PhD degree. Importantly, such a paper must be fully accepted by the journal at the time of the PhD defense, and it is the

responsibility of the Doctoral Committee to ensure that this requirement has been fulfilled. Please note that non-peer reviewed articles (i.e., preprints), review articles, chapters based on proceedings of symposia or meetings, and published meeting abstracts/presentations do not satisfy this requirement. The committee must sign an electronic form indicating that the student has fulfilled this requirement before the degree can be awarded.

Dissertation Defense: After the PhD dissertation has been written and approved by the research advisor, the student should distribute copies of the dissertation to the members of the doctoral committee and arrange a suitable date for the defense of the dissertation. The student must notify the Graduate Coordinator at least two weeks prior to the dissertation defense, so that it can be advertised for at least one week. Sufficient time must be allowed for the committee members to read the dissertation--a period of not less than one week is required, though it is imperative that the student ask individual committee members whether they need longer than that. The date of the dissertation defense is published in the Department and is reported to the Graduate School for information purposes. The defense is open to the public. The Doctoral Committee will ask the public to leave and then ask additional questions of the candidate in closed session. The Doctoral Committee will issue a decision on the dissertation defense after deliberation in private, and will communicate that decision to the student immediately. If a student does not pass the defense, a second attempt may be made at a later date to be set by the doctoral committee.

There are many additional administrative steps not mentioned here that must be taken in order to submit your thesis and graduate. Please refer to the CAS website for a comprehensive list of tasks.

VII. Changing Research Advisor

If a student wishes to change research advisors or is asked to leave a research group, they *must* proceed according to the following steps:

1. Arrange a meeting with the Graduate Director (or Department Chair if there is a conflict with the Graduate Director) to discuss the circumstances.
2. Meet with other faculty and establish a relationship with a new potential advisor.
3. Request a formal change of advisor via a written letter addressed to the GAC.

A student has a timeframe of **one** month to choose a new advisor.

VIII. Terminal MS Degree

We do not offer a MS degree program. However, should you decide or be asked to leave the program before completing the PhD, you may be eligible to receive a Terminal MS degree. A MS degree requires: a) not less than 30 credit hours of graduate work; b) not less than 24 hours of 300- and 400-level course work of which at least 18 hours are from the 400 level; c) not less than 18 hours in Chemistry; d) not less than 15 hours of 400-level courses in Chemistry; d) no more

than six credits of Chemistry Research (i.e., CHM 421). Please note that there is no teaching assistant support for students who are on the terminal MS degree track.

IX. Extenuating Circumstances

In the case of qualifying extenuating circumstances (e.g. severe illness, emergency, etc.), a compelling request for exception to any of these requirements can be made by the student in the form of a petition, which will be evaluated by the GAC. Inclusion of supporting documentation with a petition request is highly recommended. Furthermore, requests should be submitted as soon as reasonably possible.

X. Grievance Policy

Graduate students may raise grievances specifically pertaining to study in Chemistry in writing with either the Graduate Director or any member of the GAC. A list of the current members of this committee is available from the Graduate Coordinator. If the problem cannot be resolved immediately, it will be referred to the full GAC for consideration. If not satisfied with the outcome from the GAC, the student may appeal the matter to the Chair of the Department, and then, if necessary, to the Associate Dean of the College of Arts and Sciences. Grievances not directly related to study in Chemistry should be processed using the standard procedures outlined in University and College policy.