



LEHIGH UNIVERSITY
DEPARTMENT OF CHEMISTRY

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

Revised Spring 2016

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 one or more of the following degrees:

Chemistry – M.S., Ph.D.

Polymer Science and Engineering – M.S., Ph.D.

The Polymer Science and Engineering (PSE) degree is an interdisciplinary degree program. A student wishing to pursue a degree in PSE must first apply and be admitted to the Chemistry Department or one of the other participating departments. After being admitted, a student must then petition to the home department for entrance into the PSE program. Information concerning the PSE program can be found at: <http://www.lehigh.edu/engineering/academics/graduate/polymerscieng.html>

II. General Regulations

A student must maintain a cumulative GPA of 3.0 or better to remain in the chemistry graduate program. If a student falls below a 3.0 GPA, he or she will be given one probationary semester in which to raise her/his GPA to a 3.0 or better. If after the probationary semester, the student's GPA is not raised to a 3.0 or better, the student will be dismissed from the graduate program in chemistry. Any grade of C+ or below may not be credited toward a degree. Furthermore, no more than one grade below B- may be accumulated. Doing so will lead to dismissal from the program. An incomplete grade must be removed within 12 months for credit to be received. CHM 421, 490, and 499 are exceptions – a final grade is usually given in these courses during the semester in which a student graduates.

Each Ph.D. student must satisfy Lehigh's residence requirements. The residence requirement is intended to ensure that doctoral students spend a period of concentrated study and intellectual association with other scholars. During this time, the student must spend full-time effort on research and/or course work toward the degree and may not hold employment requiring work outside the University. Either two semesters of full-time graduate study or 18 credit hours of graduate study within a 12-month period must be completed to fulfill this requirement. There is no residency requirement for M.S. students.

Teaching assistants are awarded a stipend and up to 10 credits per semester of tuition for each semester they are a teaching assistant. Fellows obtain a stipend and tuition waivers for 9 credits per semester depending upon the fellowship. Research assistants are usually paid a stipend from a faculty member's research grant along with the required

tuition. Tuition awards to teaching and research assistants are tax-free; however, stipends are taxable.

III. Proficiency Requirement

The Chemistry Department will administer proficiency examinations in biochemistry, analytical, organic, inorganic and physical chemistry to all graduate students at the time of matriculation. Each full-time student is required to take at least three examinations. 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. A Ph.D. candidate must demonstrate proficiency in three areas (i.e., passing three examinations), and an M.S. candidate two areas (i.e., passing two examinations), within their first two years in residence and prior to scheduling their General Exam.

An incoming student who fails one or more of the examinations will have up to 3 additional opportunities to demonstrate proficiency by re-taking the examination(s), which will be given each January and May. The student is highly encouraged to meet with the Graduate Administrator to determine the best course of action in light of the exam performance, projected area of study, and degree aspiration. The student may prepare for the examination(s) by self-study and/or enrolling in or auditing of appropriate courses, and is strongly encouraged to seek faculty advice on preparing to retake any exams. Each incoming student must make a second attempt at these exams by the end of two academic semesters (fall and spring) in residence. If a student fails to demonstrate proficiency after the administration of examinations by the end of four academic semesters in residence, the student must exit the program. A compelling request for exception to any of these requirements can be made by the student in the form of a written petition, which will be evaluated by the Graduate Admissions and Advisory Committee.

The Graduate Admissions and Advisory Committee (GAAC) determines the proficiency status of transfer students, M.S. degree holders readmitted to the graduate program, and graduate students designated originally as M.S. candidates, and who are granted permission to continue on to the Ph.D.

IV. First Year Coursework

First Year Graduate students will meet with the Graduate Administrator during Department Orientation to discuss their proficiency exam results and appropriate coursework for their first semester in the program. All full-time graduate students must register for at least 9 credits of graduate-level coursework offered by or cross listed in the Chemistry Department (CHM) during their first semester of graduate studies. If a student wishes to register for a course in a different department, a petition must be submitted to the GAAC for approval before classes begin for that semester.

V. Choosing a Research Advisor

Approximately one month after beginning classes, the Graduate Administrator and chair of the GAAC shall meet with the new graduate students to inform them of the procedure for selecting a research advisor. This meeting will include the following: (1) motivation of the new graduate students to investigate research opportunities within the department and to participate in the process seriously and conscientiously because of the obvious importance of the decision to be made; (2) suitable information on the research interests of each faculty member and on scheduled faculty presentations during the semester; (3) distribution and explanation of the required form with spaces for at least three faculty signatures. During the semester, each graduate student will contact a minimum of three chemistry faculty to discuss research and obtain the signature of the faculty member consulted. These contacts could be individual meetings, or the signature could be obtained after a faculty member's scheduled research presentation. Once the minimum of three chemistry faculty signatures has been obtained, the student will indicate his or her first and second choice and return the form to the Graduate Coordinator. This must be done by November 1 (fall term) or March 1 (spring term). The GAAC will meet to process the requests. It is anticipated that a student's first choice will be honored, unless (a) the faculty member elects not to advise that student, or (b) so many graduates choose the same faculty member that a serious mal-distribution is created. In such cases, the GAAC 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. Masters of Science Degree

The Masters of Science Degree through the Chemistry Department includes 3 options: 30 credits of coursework; 24 credits of course work and completion of a 6-credit research project resulting in a published paper, thesis or report; or 27 credits of course work and completion of a 3-credit literature review project/report. Each option requires a minimum of 18 credits at the 400 level (15 of which must be in chemistry) and one credit of CHM 481 (Seminar). There are no other specifically required courses for the M.S. degree, allowing each student to design a curriculum that fits his/her needs and interests. Normally, work for the Masters degree can be completed in 18-24 calendar months of full-time study.

To be officially admitted to M.S. degree candidacy, a student must submit a program of courses that satisfies both the Department and Graduate School requirements and which meets the approval of the Graduate Administrator and the Department Chairperson. The required form for application to degree candidacy is called "Program for Masters Degree." This form can be found in the Chemistry Graduate Office (room 781) and must be completed and submitted to the Graduate Coordinator during the semester in which a student plans to graduate. The minimum M.S. program must include:

- i. Not less than 30 hours of graduate work.
- ii. Not less than 18 semester hours in the major field of which at least 15 hours must be at the 400 level
- iii. One credit of CHM 481 (seminar)
- iv. All remaining credits must be in 300 or 400 level chemistry courses or 200 level outside-chemistry courses
- v. No grades C+ or below may be credited toward the degree
- vi. Proficiency requirement met in 2 areas.

All work on a program for a Masters degree must be completed within a period of six years following the initial registration. Extensions may be requested by petition, but approval is not guaranteed.

Please consult the Registrar's website: www.lehigh.edu/~inrgs for specific deadlines for graduation paperwork and thesis submission deadlines.

VII. Doctor of Philosophy Degree

Completion of a Doctor of Philosophy degree program normally requires a minimum of four years of full-time work after entrance with a Bachelor's degree. In general, the minimum number of 400-level credits (18) required for an M.S. degree should be the base for a Ph.D. program. Ph.D. students must accumulate a considerable number of dissertation credits (CHM 499) beyond the 30 credits required for the M.S. degree. A student must recognize that tuition equivalent to 72 credit hours is normally required to obtain the Ph.D. A student entering the Ph.D. program with a M.S. degree from another institution is normally required to roster 48 credit hours for the Ph.D. Thus, the program consists of approximately one-third of credits from formal course work and two-thirds of them from independent study and research including two one-credit seminars (CHM 481).

A student seeking a doctorate is usually expected to devote three or more academic years to graduate research. In no case is the degree awarded to one who has spent less than two full academic years in graduate research. 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. Individuals who wish to undertake work for the doctorate after an elapsed period following work at the M.S. level are allowed seven years in which to complete a doctoral program.

Doctoral Committee: A doctoral committee (minimum of four members) is formed to guide the student in the doctoral program. The student and research advisor should decide jointly on the constitution of the committee. 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 committee is charged with the responsibilities of administering the General Doctoral Examination and overseeing the progress of the student in research and of assessing the doctoral dissertation. In order for the committee to perform these responsibilities as required by the University, it is important that the committee be chosen as soon as possible after a research advisor has been selected by the graduate student. It is the student's responsibility to meet with his/her full committee once per academic year, but students are encouraged to meet/consult with individual committee members more often.

General Doctoral Examination: The General Doctoral Examination, sometimes also referred to as the "Qualifying Exam," is an oral defense of a written research proposal presented to the chemistry faculty on the student's doctoral committee as well as any other interested members of the faculty. In general, the proposal should focus on the area of the student's anticipated PhD research and contain three basic components: 1) an Introduction & Background section that contains a summary of the relevant literature and a description the student's preliminary results on the project; 2) a Proposed Research section describing the planned future research; and 3) an Original Contribution to the research plan that demonstrates the student's creativity and has been developed independently from the research advisor. The student must notify the Graduate Coordinator at least two weeks prior to the oral defense, so that it can be advertised for at least one week prior to the exam. The written research proposal should be distributed to the members of the Doctoral Committee not less than one week before the examination date. During the examination, members of the Doctoral Committee and any additional faculty members present will have an opportunity to ask any questions that they consider useful in evaluating a candidate's likelihood for success in the Ph.D. program. Some portion of this examination may be closed to the public.

Students must make their first attempt at the General Doctoral Examination by the end of their fourth regular semester in residence. Students who fail the first attempt have a second chance to be completed not sooner than 5 months and not later than 12 months after the first attempt.. Students must pass the general exam at least seven months before graduating with a Ph.D. Students who fail a second attempt at this examination may not continue for the Ph.D. Students who pass the exam will have that fact recorded by the examining committee on the form "Report on the General Doctoral Examination." This form may be obtained from the Chemistry Graduate Office. Once completed, it is given to the Graduate Coordinator who will make suitable copies for the student's file and transmit the original to the Graduate School.

Admission to Candidacy: In order to be formally admitted to candidacy for the doctorate, the student must submit an application and a proposed program of study to the Graduate School for approval. A printed form called "Application for Admission to Candidacy for the Ph.D." is obtained from the Chemistry Graduate Office and completed immediately following successful completion of the General Doctoral Examination. The Admission to Candidacy requirement must be completed at least 7 months before the student plans to graduate with a Ph.D.

Final Examination – Defense of Dissertation. After the Ph.D. dissertation has been written and approved by the research advisor, a copy should be signed by the advisor and submitted to the Graduate School as evidence of satisfactory progress toward meeting a graduation deadline. This copy is returned to the student. At this time, 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 Faculty 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 final exam is published in the Department and is reported to the Graduate School for information purposes. The final examination 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 Final Examination after deliberation in private, and will communicate that decision to the student immediately. Certification of a successfully defended doctoral dissertation is provided by a properly completed copy of "Report on the Final Doctoral Examination." Copies of this form are available in the Chemistry Graduate Office. In the event a student does not pass the final examination, a second attempt may be made at a later date to be set by the doctoral committee.

Each member of the Doctoral Committee must sign the original signature page of the final copy of the Dissertation that will be submitted to the Registrar's office. Please consult the Registrar's website: www.lehigh.edu/~inrgs for specific deadlines for graduation paperwork and dissertation submission deadlines.

VIII. Grievance Policy

Proposed: Graduate students may raise grievances in writing with either the Graduate Administrator or any member of the Graduate Admissions and Advisory Committee (GAAC). A list of the current members of this committee is available from the Graduate Administrator. If the problem cannot be resolved immediately, it will be referred to the full GAAC for consideration. If not satisfied with the outcome from the GAAC, 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.