

2015-2016

Graduate Handbook

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Regulations

Governing Graduate Study in Chemistry

Department of Chemistry

University of Cincinnati

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INTRODUCTION

The Office of the Vice Provost and Dean of the Graduate School oversees graduate instruction and research in the pursuit of graduate degrees consistent with policies determined by the All-University Graduate Faculty. In determining the educational policy of the Graduate School, the graduate faculty leaves the departments free to determine specific courses of study and other details of their graduate degree programs. Consequently, the Department of Chemistry has formulated and revised over the years "Regulations Governing Graduate Study in Chemistry" at the University of Cincinnati. These are presented here, along with references to the University Graduate Student Handbook that clarify certain points of interest to graduate students. The URL for the University of Cincinnati Graduate Student Handbook is http://grad.uc.edu/academics/graduate_studenthandbook.html.

It is the intent of the Departmental regulations governing graduate study and this Departmental graduate handbook to be in complete compliance with the rules and policies of the University of Cincinnati Graduate School. Amendments will be made as changes are made in the rules and policies of the Graduate School, and in the case of any apparent discrepancies between policies stated here and those of the Graduate School, the Graduate School policies shall be followed. Important information relevant to graduate students and graduate study can be found in the University Graduate Handbook, which can be accessed at the following URL: <http://grad.uc.edu/content/dam/grad/docs/Publications/handbook.pdf>.

SECTION A – Admission, Registration, and Graduate Credits

Application and Admission

All applications for admission to the graduate program in chemistry at the University of Cincinnati must be submitted online. Information about the graduate program and a link to the online application can be found by choosing the Graduate Program link on the left side of the Chemistry Department web site (<http://www.artsci.uc.edu/chemistry/>), then following the links under Application Information. The application includes a completed application form, official transcripts of all undergraduate and graduate work, three letters of recommendation, the Graduate Record Examination (GRE) general test, and the application fee determined by the Graduate School of the University of Cincinnati. International students must also take the TOEFL exam.

For admission to full graduate standing in the Chemistry Department of the University of Cincinnati, a student must have a Bachelor's degree in Chemistry or a closely related field from a college or university regarded as standard by a regional or general accrediting agency. The Department does not have a fixed grade point average requirement for admission, recognizing the diversity of undergraduate programs in the country. Typically, the applicant should have a B average or better in relevant undergraduate coursework (math and science courses), or otherwise give strong evidence of promise of ability to do graduate work (such as exceptional letters of recommendation or high scores on the GRE).

Students with undergraduate majors other than chemistry may be admitted provisionally if they lack essential undergraduate coursework in chemistry. Remediation of the deficiencies is decided on a case-by-case basis, and usually involves successfully completing one or more undergraduate courses, without graduate credit. Provisionally admitted graduate students may obtain full

graduate standing when these deficiencies have been corrected, assuming they have also maintained a satisfactory academic record in all coursework taken as part of their graduate program.

Unclassified students may be admitted to the Graduate Division for study without being admitted to the graduate degree programs of the Department of Chemistry. Students so admitted may take courses for graduate credit, provided eligibility requirements for the course are satisfied. These courses will generally be applied to degree requirements of the Department, should the student subsequently apply and be admitted to one of the graduate programs of the Department. Acceptance of these credits will also be contingent on satisfactory performance in these courses. Unclassified students may not participate in any part of the Candidacy Examination [*vide infra*].

Foreign students may be admitted to full graduate standing only. Complete transcripts of undergraduate and graduate work in their native country and submission of results from the GRE are required. All foreign applicants are required to submit the results from the TOEFL and TSE, taken in the student's own country prior to admission. Students of foreign origin who have lived in the United States for two or more years may demonstrate English language proficiency in other ways, such as obtaining a degree in a U.S. college or university. Upon admission and arrival at the University of Cincinnati, all foreign students are required by state law to take the Oral English Proficiency Exam; those students not performing to a satisfactory level on this exam will not be permitted to perform teaching duties involving direct student contact until satisfactory performance is demonstrated. Students not passing the exam will be retested according to the published University schedule of examinations. If a student has been awarded a teaching assistantship, yet does not pass this entrance requirement, the student will retain that assistantship for a maximum of one year and will generally be assigned duties within the Department that do not involve instruction/student contact. Beyond one year, if the student has not passed the Oral English Proficiency Exam, (s)he will not be eligible for a teaching assistantship. If the student passes the exam at a later time, he or she may regain the assistantship, subject to satisfactory academic performance as defined in Section B of this handbook and availability of teaching assistantship positions.

The Department of Chemistry endeavors to make prompt decisions when an application file is completed. The deadline for applications is listed with the Graduate Program information on the department's web site. Prospective applicants are encouraged to complete the process as early as possible. Consideration of applications generally begins by early January for the following Fall class. Admission decisions are based solely on the materials provided by the student in the application file, namely the application forms, transcripts of all college-level work, letters of recommendation and any additional relevant materials the applicant wishes to include. Admission decisions are not made on the basis of race, age, sex, sex orientation, religion, or handicap, except where the handicap may place the student or other students, faculty or staff in physical danger. Applications from minority groups and women are strongly encouraged.

Students accepted into the graduate program of the Chemistry Department must complete all University requirements prior to registration, including but not limited to documentation of required medical examinations and all employment-related paperwork.

Registration

A student must be registered in the graduate division in order to earn graduate credit, and must follow the procedures outlined above to gain admission to the graduate programs of the Department of Chemistry. A student is generally expected to register each semester while in residence and active in the graduate program. Students should consult their Advisor and/or the Graduate Program Director about the courses for which they should register. The number of credits for which a student should register may depend on their candidacy status and other factors. If there are any questions about course requirements or other aspects of registration including number of credits for which to register, the student should consult the Graduate Program Director. All first year graduate students must consult the Graduate Program Director prior to registering. Students incurring late registration fees are responsible for payment of those fees. Students may alter their schedules once registered by completing a drop/add form. Graduate students in the Department of Chemistry should consult with their Advisor and/or the Graduate Program Director prior to dropping a course. A student may be withdrawn by the instructor at any time in the semester when excessive absences have been incurred. Students are encouraged to consider the financial ramifications of withdrawal (see the University Graduate Handbook) prior to withdrawing from a course.

A full-time student will normally register for twelve graduate credits each semester, until (s)he accrues 90 graduate credits for a Doctoral student or 30 credits for a Master's student. After such time (s)he may be able to register for fewer credits, but must register for at least one graduate credit each year to retain his/her candidacy. Foreign students, under the terms of their visas, must be enrolled as full time students. The Graduate Program Director should be consulted about the appropriate number of credits for which a student should register once the minimum number of credits for the degree has been obtained. Some funding sources have minimum registration requirements. Students with 174 or more semester graduate credits (140 for those entering with a M.S.) are ineligible for funding from the State of Ohio. This applies to GAS and TA support.

Students may audit a course when the credits are not needed for the degree program, and the approval of the student's advisor has been obtained. Admission to a course with audit status is at the discretion of the instructor, who is not obligated to accept a student for audit. Audit hours do not count toward the 174 credit limit, nor are they included in the determination of full-time status. The maximum number of credits per semester that may be taken (without an overload fee being charged) is 18. A course taken with "audit" status counts toward this limit of 18 credits.

Any and all courses taken outside the Chemistry Department must be approved prior to registration by the student's M.S. or Ph.D. committee and the Graduate Program Director. *This approval is required even if the course is not being used to satisfy any graduation requirement.* Note that all graduate courses taken for credit, whether required for the degree program or not, are counted by the graduate school in determining GPA for purposes of eligibility for a graduate degree.

Safety and Eligibility to Undertake Laboratory Work

The Department of Chemistry takes safety issues very seriously. Safety policies of the department must be followed at all times; gross negligence or repeated violations will result in dismissal from the program.

Graduate students are responsible for following departmental safety policies and procedures and for maintaining a safe environment. Safety protocols, policies, and practices are available in the departmental Blackboard site and in the Environmental Health and Services web site. To be in good standing and eligible to do work in a laboratory, a student must:

1. Be registered for an appropriate laboratory or research course, be employed by the University in a laboratory-related capacity, or have active status as a graduate student.
2. Annually pass appropriate safety quizzes provided by the EH&S.
3. Read, understand, and sign the Chemical Hygiene Plan available in your research group.
4. Attend the Safety Seminar provided by UC's Chemistry Department.
5. Read, understand, and adhere to Standard Operating Procedures (SOPs) before performing hazardous procedures and using hazardous materials.

The following policies must be adhered to at all times:

1. Do not carry chemicals onto elevators - the dumb waiter should be used to transport chemicals between floors.
2. Follow proper procedures for disposal of chemical waste.
3. Wear proper safety apparel, including eye protection, gloves, and lab coat when conducting experiments.
4. Do not work on procedures involving hazardous materials when alone in the lab.

Teaching Assistants for laboratories must adhere to safety practices and protocols and must maintain a safe environment. A violation will result in a written reprimand and repeated violations will result in the loss of the TA position.

Graduate Credits and Grading

A full time course of study in the graduate program of the Department of Chemistry consists of registration for 12 or more graduate credits each semester. Graduate credits are earned for successfully completing courses at the University of Cincinnati with course numbers of 7000 or greater. Courses at the 6000 level are considered dual level, and graduate credit may be earned for these courses, and applied to the course requirements for the M.S. or Ph.D. degrees in the Department of Chemistry, subject to restrictions outlined in Section B of this handbook.

Grades are assigned by the instructor in each course, in accordance with the accepted policies of the graduate division. Recognized grades are: A (4.00), A- (3.67), B+ (3.33), B (3.00), B-(2.67), C+ (2.33), C (2.00), F (0.00), P, U, T, I/F (0.00), W, UW (0.00), SP and UP. The grades P and U represent satisfactory and unsatisfactory performance, respectively, in certain advanced courses in the Department. T represents audit status (see above) while I/F indicates incomplete, when the student fails to complete one or more course requirements, such as the final examination. The grade of W denotes an official withdrawal, UW is an unofficial withdrawal, and SP and UP indicate satisfactory or unsatisfactory work for courses "in progress" and are generally used in the Department of Chemistry for ongoing thesis/dissertation research. In these courses, SP and

UP grades are given for all terms except the final term in which the course is to be taken. During the final term of an ongoing research course, a standard letter grade or P/F grade is given. Note that by University regulations, a student cannot graduate with an NG or F grade in a required course. The Department must request a waiver of the requirement for each course for which an NG or F grade appears.

SECTION B – Requirements for Graduate Degrees in Chemistry

Requirements for the MS Degree

A student desiring to earn the M.S. degree may do so under either of two plans. Plan A requires a research thesis, while Plan B is a non-thesis option that emphasizes more course work. The requirements for each plan are given below. The Graduate School at the University of Cincinnati requires a minimum of 30 semester graduate credits for a Master's degree. An acceptable grade for a course to be considered to satisfy a requirement for the M.S. program is C or better.

Plan A (Thesis Option)

- Complete with passing grades 22 credits of graduate course work. (Grade point requirements are given below.) The 22 credits must include the three chemistry graduate core courses (Chem 7021, 7022, and 7023); at least 3 credits of chemistry coursework at the 8000-level; the 2-credit Scientific Writing (Chem 7011) and Scientific Ethics (Chem 7012) courses; 6 credits of Chem 7071 (Introduction to Research). Two credits of Seminar (Chem 9020) are also generally required, but may be waived for part-time students unable to attend seminars on a regular basis. Three semester credits for graduate courses taken elsewhere for which a grade of "B" or better was earned is transferable toward fulfillment of the 3 credits of 8000-level course work requirement, provided the student has earned a grade average of B or better for the core courses, Chem 7021, 7022, and 7023. ("Elsewhere" may refer to other departments within the University of Cincinnati or from other colleges or universities.)
- Earn at least 6 graduate credits for Research (Chem 9010), and prepare a satisfactory thesis. Preparation of the thesis involves the following steps:
 - 1) Choosing a Research Advisor and thesis topic, and being accepted into the Research Advisor's group (see Section C).
 - 2) Having a Graduate Committee appointed by the Department Head after consultation with the Research Advisor and the Graduate Program Director.
 - 3) When the research work is completed, a formal thesis is prepared according to the regulations of the Graduate School. The M.S. thesis must be submitted to members of the Graduate Committee at least two weeks prior to the Final Evaluation. The student will present an oral presentation of the research to the committee for Final Evaluation.
- All full-time graduate students must enroll in Seminar (Chem 9020) each quarter they are in residence (consult the University Graduate Handbook for residence requirements). A maximum of two credits earned in Seminar may be used to satisfy the above graduate course credit requirement.

- In accordance with present regulations of the Graduate School, a student must maintain a B (3.00) average in order to obtain the M.S. degree. In addition, at least 2/3 of the minimum graduate credits necessary for the degree must be B (3.00) or higher.
- Final Evaluation: After all other requirements have been met, a student will appear before his/her Graduate Committee, and any members of the Graduate Faculty who may wish to attend, to defend his/her thesis and to answer general questions designed to test his/her competence in the field of his/her thesis and related fields.

The final, approved thesis shall be produced in the electronic form required by the Graduate School, and must be submitted to the Graduate School Office not later than the published deadline for the semester in which the degree will be granted. An additional copy of the thesis must be presented to the Research Advisor, in the Advisor's medium of choice. Degrees will be granted at the next regular Commencement.

Note: It is the student's responsibility to check the graduation section of the Graduate School web site, grad.uc.edu, for changes in the timing of submission of the thesis and application for graduation. These times change frequently and are not controlled by this Department, but they are absolute requirements.

Plan B (Non-thesis Option)

- Complete with a passing grade 30 semester credits of acceptable graduate course work, with a GPA of 3.00 or greater and at least 20 of the credits earned with a grade of B or better. At least 18 of these credits shall be obtained for courses taken in the chemistry department, including the three graduate core courses (Chem 7021, 7022, 7023) and the Scientific Writing and Scientific Ethics courses (Chem 7011 and 7012). Additional course work shall be completed after consultation with the graduate program director regarding a suitable program of course work. (Chemistry 7071--Introduction to Research and any other credits for research shall not be considered as suitable for course work in this non-thesis option.) A maximum of 12 credits for graduate courses taken elsewhere is transferable toward partial fulfillment of this course work under the conditions noted for Plan A, above. No more than two credits of Seminar (Chem 9020) may be applied toward the 30 semester credits needed for the degree.
- Alternatively, students formally admitted to the Ph.D. program by the department, admitted to candidacy for the Ph.D. [*vide infra*] and having accumulated sufficient research credits to reach the minimum of 30 graduate credits required for the Master's degree may be granted a non-thesis Master's degree with the approval of the Graduate Program Director.
- The Graduate Program Director becomes the student's Advisor upon the student's election of the non-thesis option (for students not in the Ph.D. program).
- Students initially admitted into the non-thesis Masters program may not engage in laboratory research until they have been formally admitted into the Ph.D. program.

Requirements for the Ph.D. Degree

Qualification

All full-time, entering graduate students will be required to take the three graduate core courses (Chem 7021, 7022, and 7023) during the Fall Semester of their first year. Scientific Ethics (Chem 7012) and eight credits of Introduction to Research (Chem 7071), described below, and one post-core course as described below are also taken during the first year. Scientific Writing (Chem 7011) will be taken during the second year. Additionally, one credit of Seminar (Chem 9020) will be taken during each Semester in residence. In order to continue in the Ph.D. program, by the end of the Spring Semester of the first year, a student must:

1. Obtain a B- or better in at least two of the three core courses (Chem 7021, 7022, 7023), earn a GPA of 3.0 or greater for the completed core courses plus one course that satisfies the post-core course requirement described below;
2. Obtain a grade of A in Chem 7071.

In order to qualify to pursue doctoral candidacy as described below, by the end of the Fall Semester of the second year, the student must have:

1. Obtained a B- or better in each of the three core courses, with a combined GPA of 3.00 or better for the core courses
2. Passed 7011 and 7012
3. Received an A in Chem 7071.

The time frame for the qualification requirements may be extended for part-time students, or in the case of extenuating circumstances, at the discretion of the Graduate Program Director.

Research Courses

Chem 7071 – Introduction to Research

This course consists of the research done by first year students to initiate their thesis or dissertation project. A written report and an oral seminar on research done for Chem 7071 will be evaluated by the student's committee by the end of the semester in which the student takes the 6th credit in the course. This is generally the Spring Semester of the first year for full time graduate students. The written report *must* be made available to the committee at least 7 calendar days prior to the oral seminar. The evaluation will include questions from the committee to determine whether the student has made satisfactory progress in initiating the research project, whether the student has an appropriate level of understanding of the project and the techniques used in the project, and whether the student has satisfactorily integrated material learned in the first year coursework into their thinking about the research. The student should be available to meet with her/his committee for at least two hours. This course will be graded P/F until the term in which the 6th credit is taken if all 6 credits are not taken in the same semester. Once the written report and oral presentation have been completed, a final grade of **A**, **C**, or **F** will be assigned by the committee. This process may only be attempted once. Failure to receive a passing grade of "A" in Chem 7071 will result in ineligibility for the Ph.D. program *and* the Thesis M.S. program. A grade of "F" makes a student ineligible to continue in the graduate program in chemistry. A grade of "C" allows the student to continue in the non-thesis M.S. track only. In this case, the student must satisfy the Graduate School requirement of a minimum GPA of 3.00 for all graduate courses taken, *including Chem 7071*.

Chem 9010 – Research

This is a continuing course taken by graduate students actively engaged in research once the Chem 7071 requirements have been fulfilled. This course is repeatable for an unlimited number of credits. This course will be graded P/F. A grade of P is not intended to reflect the quality of the work, but simply that the student pursued research and maintains standing in the department. A passing grade in no way precludes the student's committee from removing the student from the program for lack of satisfactory progress or other considerations.

Graduate Credits and Post-Core Courses

A candidate for the Ph.D. degree must complete at least 90 graduate credits of course work and research, or 60 graduate credits if a Master's degree has been obtained prior to beginning the Ph.D. program at UC. All Ph.D. students are required to complete a minimum of 9 credits of coursework beyond the credits at the 7000-level described for qualification above, with all three core courses satisfactorily completed by the second attempt, and with a Grade Point Average of 3.33 or better for the three core courses plus the 9 additional credits of coursework. This required coursework must be completed by the end of the third year in residence. An acceptable grade for a course to be considered to satisfy a requirement for the Ph.D. program is B- or better. Any 8000-level Chemistry course or any appropriate graduate course in another department that is approved in writing by the student's committee and the Graduate Program Director may be used to satisfy the additional ("post-core") 9 credits. Graduate courses already taken at other Universities may be used to satisfy up to 6 of the 9 post-core course credits required for the Ph.D., upon approval of the student's committee and the Graduate Program Director, provided the following:

1. The student has passed all three core courses (Chem 7021, 7022, 7023) on the first attempt with a GPA of 3.33 or better;
2. The student received a B+ or better grade in the course to be used;
3. The course would appropriately fulfill Chemistry Department Graduate Regulations.

Teaching Experience

Full time, first-year doctoral students receiving financial support from the University are generally assigned positions as Teaching Assistants (TAs).

Candidacy Examination

A student is eligible to begin the Candidacy Examination process once (s)he has Qualified as described in the Qualification section of Requirements for the PhD Degree, above. Part-time students may begin the Candidacy Examination process prior to completion of all Qualification requirements with approval of their committee and the Graduate Program Director, but not prior to Spring Semester of the second year. A student is accepted as a Ph.D. candidate after (s)he has successfully completed the Candidacy Examination and has completed all required course work for the degree (exclusive of research in Chem 9010). This includes passing all three core courses (Chem 7021, 7022, 7023) and an additional 9 credits of post-core courses as described above with a GPA for the core plus post-core courses of 3.33 or better, receiving an A in Chem 7071 and passing Chem 7011 and 7012. The formal acceptance into candidacy will come in a letter from the Vice Provost and Dean of the Graduate School.

The Candidacy Examination consists of two parts: (1) a Second Year Seminar that focuses on mastery of the literature related to the student's project and understanding of the context of their research project and; (2) a Third Year Seminar that focuses on demonstrating the student's creativity and originality in executing the research project. Each of these seminars, detailed below, will also provide a report on the progress made on the student's research project and must reflect the student's awareness of any safety issues associated with the research. The timing of the Seminars indicated below is for full-time students, and may be adjusted for part-time students or in the case of extenuating circumstances at the discretion of the graduate program director and the student's committee. Students should work with their committee on scheduling each Seminar during the semester prior to the target date, and at least two months in advance of it. For each part of the Candidacy Exam, the student should be available to meet with her/his committee for at least two hours.

1) *Second Year Seminar*

The purpose of the seminar is both to provide a progress report on the student's research to the student's Ph.D. Committee and to demonstrate the student's understanding of the context of his/her research project through mastery of the related literature.

Thus, the seminar will have a *strong emphasis on*:

- an in-depth knowledge of the literature that is relevant to the student's project;
- an in-depth understanding of the experimental techniques being used in the project;
- the progress to date on their dissertation research.

Students will incorporate into in the seminar a review of the pertinent literature, and should expect questions about this. The seminar will proceed in the sequence: student presentation, questions from the general audience, audience departs, then a private meeting and oral exam with the Committee.

This part of the Candidacy Examination is conducted by the student's Ph.D. Committee as a seminar prior to the end of February of the 2nd Year. If the committee feels that the student has not demonstrated appropriate development for this point in her/his career, in terms of progress on their research, mastery of the literature in their field, and ability to present their work in a professional manner, the committee has two options depending on their view of the candidate's potential. The first is to remove the student from the Ph.D. program. The second is to advise the student of her/his shortcomings and give the student until the end of the semester in which this part of the examination was first attempted to work on the areas that need improvement, seeking additional guidance from the committee as needed, and improve to a satisfactory level. For students given a second attempt by the committee, the requirement will be repeated by the end of the semester, and if the goals of this requirement are not met, the student will be removed from the Ph.D. track. Depending on the nature of the weaknesses identified by the committee, it may, at its discretion, choose to repeat only the private meeting and oral exam part of the requirement.

This requirement must be finished and passed by the end of the Spring Semester of the second year or the student will be ineligible for the Ph.D. degree and further participation in the Candidacy Exams.

2) *Third Year Seminar*

The purpose of this seminar is to provide a progress report on the student's research to the Committee and to demonstrate creative thinking and intellectual initiative on the part of the student in developing independent ideas within their research.

Each student in the Ph.D. program will present the Seminar describing the background and goals of the research undertaken and the progress achieved towards these goals. It should also express in some detail the plan for the remaining work. This seminar will place an emphasis on the creative and original ideas developed and/or proposed by the student on the implementation and direction of the research project. The student must demonstrate that (s)he has made a significant, independent, intellectual contribution to the project.

The entire seminar will proceed in the sequence: student presentation, questions from the general audience, audience departs, private meeting and oral exam with the Ph.D. Committee. The seminar examination will be scheduled as a Seminar during Fall Semester of the Third Year. If the committee feels that the student has not demonstrated appropriate development for this point in her/his career, in terms of progress on their research, original thinking and intellectual contributions to the project, and ability to present their work in a professional manner, the committee has two options depending on their view of the candidate's potential. The first is to remove the student from the Ph.D. program. The second is to advise the student of her/his shortcomings and give the student one additional semester to work on the areas that need improvement, seeking additional guidance from the committee as needed, and improve to a satisfactory level. For students given an additional semester by the committee, the requirement will be repeated during the following semester, and if the goals of this requirement are not met, the student will be removed from the Ph.D. track. Depending on the nature of the weaknesses identified by the committee, it may, at its discretion, choose to repeat only the private meeting and oral exam part of the requirement.

A student must successfully pass this requirement of the Candidacy Examination by the end of the Spring Semester of the third year in residence or (s)he will be deemed to have failed the Candidacy Examination and to be ineligible for the Ph.D. degree.

Post-candidacy Evaluations

After a student has successfully completed the Ph.D. Candidacy Examination and all required coursework, and thereby entered Candidacy, the University Graduate Regulations require that Candidates be evaluated at least annually to determine their fitness to continue in the program. The Department's evaluation takes the form of research seminars similar to the Third Year Seminar described above. Thus, the seminar proceeds in the sequence: student presentation, questions from the general audience, audience departs, private meeting and discussion with the PhD Committee. The Committee will then determine whether the candidate has demonstrated satisfactory progress to be allowed to continue toward the Ph.D.

As for the Third Year Seminar, the student will be expected to describe the background and goals of the research undertaken and the progress achieved towards these goals. Most importantly, a detailed plan for the remaining work should be presented and discussed.

The post-Candidacy seminars must take place within one year after entering Candidacy, and within one year annually thereafter. It is recommended that it be given as early in each year as the progress of the research permits. A student must successfully pass this requirement by the

end of each year of residence after obtaining Candidacy or (s)he will be deemed to have failed the Ph.D. program and to be ineligible for the Ph.D. degree.

Dissertation and Public Defense

Once the student has successfully entered Candidacy, as described above, and completed a research project that the student and his/her Advisor agree will form the basis for an acceptable dissertation, the student will take the following steps toward producing and defending a dissertation. The dissertation shall embody the results of original research, give evidence of high scholarship, and constitute a publishable contribution to knowledge.

1) When work on a chosen topic is nearing completion and before the dissertation is prepared, the student, in consultation with his/her Research Advisor, shall prepare a detailed summary (including pertinent experimental data) of his/her work. The summary shall be delivered to all members of the student's Ph.D. Committee. The student may then schedule a pre-dissertation presentation (the 'closed defense') before his/her Ph.D. committee, which shall take place no less than one week after the Committee has received the summary, and no less than six weeks before the anticipated Public Defense.

2) After the committee has approved the pre-dissertation presentation and laboratory work on the project has been completed, the student shall then prepare a complete draft of the dissertation. When this draft is completed to the satisfaction of the student and his/her Advisor, copies shall be distributed to all members of the student's graduate committee. Within two weeks each committee member shall either (a) approve the dissertation in form and content (this does not constitute final approval of the dissertation for submission) or (b) consult with the student and his/her Advisor regarding revisions. After the dissertation has been tentatively approved by all members of the student's committee, the student may begin the process of scheduling the Public Defense. The appropriate form must be signed by each member of the committee indicating that the dissertation is ready to be defended, and by the Graduate Program Director, before the Public Defense may be officially scheduled.

3) A final draft of the dissertation shall be produced in the electronic form required by the Graduate School. The student should obtain a graduation packet from the Office of the Vice Provost and Dean of the Graduate School. This contains detailed instructions for the graduation process, including all necessary forms, relevant deadlines, and the rules that govern the submission of the dissertation. These will include the form of submission, fees, and timelines. An additional copy of the dissertation must be presented to each Research Advisor in the Advisor's medium of choice.

4) When all other requirements are fulfilled, the student will present a Public Defense of his/her dissertation before his/her Committee and all others who wish to attend. Consult the University Graduate Handbook for further details on the University's requirements regarding the Public Defense.

It is highly recommended that after a student is admitted to candidacy, (s)he complete all degree requirements (including writing and obtaining final approval of the dissertation) prior to leaving the Department, i.e., discontinuing full-time status. In unusual circumstances, a student may leave the Department before completing all requirements. In this case, the student shall either obtain a "Departmental Leave of Absence" or be evaluated at least annually by the Committee. The Department recognizes that a student may encounter personal circumstances that require

interruption of his/her degree program. In such cases, the student has the right to petition the Department Head for a "Departmental Leave of Absence." After conferring with the student's committee, the Department Head may grant such a leave that would normally encompass (a) a waiver of any or all Departmental regulations for a specific period of time, and (b) an assurance to the student that Departmental degree requirements already fulfilled by the student will be accepted upon return. In the case of a Departmental Leave of Absence, the student must still register for at least 1 credit per year to maintain status as a graduate student. If a student anticipates an absence of more than 1 year, an official leave of absence should be requested from the Graduate School.

SECTION C – Research Advisor Selection and Committees

Selection of a Research Problem and Advisor

Working hard at something in which one is not really interested is a fate to be avoided if possible. For this reason, the student should be sure that his/her choice of research problem is determined, insofar as possible, by his/her fundamental interest in the subject. Since the student will be associated with the Research Advisor for a long period of arduous work this choice must be given serious consideration. During the first semester of graduate work, beginning graduate students are advised to acquaint themselves with all faculty members of the Chemistry Department and to ascertain their research interests. In addition to the required steps described below, this can be accomplished by visiting the faculty web pages, attending seminars presented by members of the various research groups, and talking to the graduate students in the research groups.

Ideally, the research problem should originate with the student. In practice, however, professors ordinarily suggest possible problems and the student selects one of them. If any student has in mind a problem on which (s)he would like to work, (s)he should discuss it with the faculty member to whose interest it is most closely related. If the problem is judged to be sufficiently well defined, and if the faculty member is willing to direct it and is accepting new students, the problem may be worked on for a thesis or dissertation. Even if (s)he has his/her own problem in mind, or has come with the expectation of working with a particular professor, the student is still required to go through all of the steps described below before making his/her decision.

Procedure

- 1) Each faculty member who is accepting new graduate students will give a brief presentation about their research group and available research problems to the first year students. These presentations are scheduled during the first part of the Fall Semester. Attendance is mandatory for all first year graduate students planning to undertake research (that is, all thesis-track M.S. and all Ph.D. students). A student whose TA or course schedule interferes with attendance should discuss options with the Graduate Program Director before the first of these faculty presentations.
- 2) Once these faculty presentations have concluded, each first year student must confer with a minimum of three faculty members to discuss the available research problems in their group. This requirement is complied with by having the faculty members, after the consultation, sign the

sheet appended to these regulations. Only faculty members who have been interviewed by the student may be requested as potential advisors in the selection process.

3) When the necessary conferences have been held, the student will select at least three preferred Research Advisors from amongst the faculty interviewed, list them in order of preference on the sheet, and return it to the Graduate Program Director. This must be completed no later than the beginning of Finals Week of the first semester of residence (generally the Fall Semester).

4) The Graduate Program Director will determine whether the faculty members are able and willing to accept the student. If so, the arrangements will be completed, and the student, the student's new Research Advisor, and all faculty members who have been consulted will be informed of the decision so that there may be no uncertainty about how matters stand. It is expected that the selection process will be completed by the first Friday of classes of the second semester of residence (generally the Spring Semester). *Failure to be admitted into a research group by the end of the student's second semester in the program is grounds for removal from the Ph.D. program.*

Students who enter with the MS degree are expected to follow this procedure. When, however, a student continues from an MS problem to a Ph.D. problem (upon approval by the Graduate Admissions Committee) without a change of Research Advisor, no consultation with other faculty members is required.

Changing Research Advisor

Students are not allowed to change research groups once they have been admitted to candidacy. A student who has not yet been admitted to candidacy and is contemplating changing research advisor must inform the Department Head of this prior to pursuing any other steps toward such a change. The student may not discuss with any faculty member the possibility of moving into that faculty member's group until the Department Head has granted permission for this discussion. The student must first discuss with the Department Head the reasons for the desired change and possible new research groups. The student must then discuss the change one-on-one with each member of her/his committee who will then meet with the Graduate Program Director to make a non-binding recommendation to the Department Head as to the appropriateness of the change in advisor. The Department Head will discuss with each potential new advisor their ability and willingness to accept the student into their group before approving any change. Students contemplating a change in advisor are reminded that the five-year limit to University funding of their stipend and tuition is not extended due to changing research groups, and that failure to be accepted into a new research group is grounds for dismissal from the program.

Graduate Committees

M.S. Degrees

All Committees for students seeking the M.S. degree shall be appointed by the Department Head and shall consist of at least two full-time members of the Faculty. For students pursuing thesis-M.S. degrees, the Advisor shall chair the Committee and a third committee member shall be appointed. If non-members of the Department are appointed, the majority of members shall still be from the Department of Chemistry. The Committee shall administer the final evaluation and, if appropriate, shall rule on approval of the thesis.

Ph.D. Degrees

Committees for Ph.D. students shall be appointed by the Department Head upon recommendation of the student's Advisor(s), who shall also chair the Committee. The Ph.D. Committee shall consist of a minimum of three full-time, tenure-track members of the Chemistry Faculty; Research faculty in the Chemistry Department may also serve as committee members or co-chairs. If faculty members of other departments are appointed, the Committee shall still have the majority of members from the Chemistry Department. Once the student has attained candidacy, the student's Ph.D. Committee will be appointed formally by the Vice Provost and Dean of the Graduate School, upon recommendation of the Department Head. The Chair of the Ph.D. Committee is the student's dissertation advisor. Adding a member from outside the Department (including outside the University) that is involved in the student's research or provides relevant expertise is encouraged.

SECTION D – Limitations on Eligibility and Support

Continuing Financial Support and Eligibility

There will be times when determination of a student's satisfactory progress will be made and thus eligibility to continue in the degree program and/or receive financial support. (Students entering the program other than at the beginning of the Fall Semester shall count their full-time residence from the beginning of the first Fall Semester in attendance.) The rules below apply to full-time students in the Ph.D. program. M.S. students are not generally offered ongoing financial support, but may receive support at the discretion of the Graduate Program Director if the need to fill a TA position should arise, or at the discretion of the student's Advisor if grant support is available. Continuing financial aid is always dependent upon satisfactory discharge of contractual obligations in both teaching and research.

- At the end of the Spring Semester of the first year in the graduate program, support for the subsequent academic year from University funds will be offered only if (s)he passes 2 of the 3 core courses (Chem 7021, 7022, 7023) with grades of B- or better, with a GPA for the completed core courses plus at least one 8000-level course of at least 3.00. A student in the Ph.D. program who fails to qualify for support based on this rule automatically becomes ineligible for the Ph.D. program.
- At the end of the Fall Semester of the second year of residence, in order to continue in the Ph.D. program and remain eligible for financial support, a full-time student will have obtained a B- or better in each of the three core courses with a combined GPA of 3.00 or better, passed 7011 and 7012, and received an A in Chem 7071.

- A student must successfully pass all requirements for Candidacy within the required time period, usually by the end of the Third Year, to remain eligible for the Ph.D. degree and financial support.
- A student who has reached candidacy must pass each annual evaluation to remain eligible for the Ph.D. program and financial support.
- If at any time a student's Committee feels that his/her ability to complete an adequate dissertation should be formally evaluated, a meeting of the Committee and the student will be scheduled for such purpose. At that meeting the student will present a report on research already done and an outline of that anticipated. The Committee shall then make a recommendation to the faculty for its action, which may include removing the student from the Ph.D. program.
- University Financial Support will not be offered to Ph.D. students beyond the fifth year of residence.

Note: A student declared ineligible for the Ph.D. program at any time may complete a thesis-M.S. program, provided (s)he has maintained eligibility for that degree as described in the Requirements for the Master's Degree section, but will not be considered for readmission to the Ph.D. program.

Time limits

There is no formal candidacy for the Master's degree (M.S.); a student becomes a candidate for the M.S. upon acceptance by the Graduate Admissions Committee and matriculation into the M.S. program of the Department. However, to maintain status as a graduate student and be eligible for the M.S., students must register for one credit each academic year during the Fall Semester. A student following either Plan A or B toward the M.S. in Chemistry must complete all requirements no later than five years from the date of matriculation into the M.S. program. Students intending to receive the M.S. from the Department of Chemistry are responsible for ensuring that all of the requirements have been met, and that the procedures of the Graduate School have been carried out properly and on time. The dates by which application for graduation must be filed are available in the main office of the Department of Chemistry and the Graduate School web page.

The doctoral degree will be granted for no less than the equivalent of three years of full-time graduate study. All doctoral students must be enrolled for at least 10 graduate credits during each of two semesters within a span of four consecutive semesters, including the summer semester. After admission into candidacy for the doctoral degree, registration and fee payment for at least one semester credit in each academic year is required if candidacy is not to lapse. All requirements for the doctoral degree must be completed within nine consecutive academic years of the date of matriculation into the program.

SECTION E – Special Rules and Provisions

The Department of Chemistry joins with the University of Cincinnati in reaffirming its policy that discrimination on the basis of race, religion, national origin, sex, sex orientation, handicap, or age will not be practiced in any of its activities. Complaints involving abridgment of this policy should be addressed to the Office of Equal Opportunity.

Students, once enrolled, have the right to review their educational records, except as excluded by law, including the student file maintained in the Department office. In order to gain a review of these records, along with appropriate explanation or interpretation, the student should first address the Department Head. Should the student encounter any difficulty in obtaining the kind of review requested, the question should be referred to the Dean of the McMicken College of Arts and Sciences, and/or to the Office of the Registrar. The student file in the Department office will be treated with confidentiality, so that the only access afforded university faculty or staff is on a need-to-know basis.

The University of Cincinnati has well-defined grievance procedures for resolving specific problems and issues. Students are referred to the University Graduate Handbook, which is available on the Graduate School web site, www.grad.uc.edu.

Academic dishonesty in any form is a serious offense and cannot be tolerated in the Chemistry Department, or the academic community. Dishonesty in any form, including cheating, plagiarism, deception of effort, falsification of data or results, or unauthorized assistance may result in a failing grade in a course and/or suspension or dismissal from the Graduate Division.

A student may be dismissed from the Graduate Program of the Department of Chemistry by action of the Faculty for professional malfeasance, or an academic record that does not meet the standards of the M.S. program.

Failure to properly carry out responsibilities associated with a TA position to which the student is assigned, or commission of dishonesty or other inappropriate behaviors regarding those responsibilities including grading and interactions with students, may result in loss of further support as a TA and/or dismissal from the program, at the discretion of the Chemistry Department's Graduate Appointments Committee. While serving as a TA, graduate students are not allowed to accept payment for tutoring UC students in Chemistry, whether those students are taking the specific course assigned to the TA or not.

Repeated or egregious safety violations may result in immediate expulsion from the graduate program in Chemistry.

It is Department policy that, consistent with the policies of most funding agencies including federal agencies, original research materials and documentation, (research notebooks, spectra, electronic files, etc.) remain with the Advisor when a student leaves that group. The student may make copies of documentation for his/her records.

Revision: August, 2015

**DEPARTMENT OF CHEMISTRY
CHANGE OF ADVISOR CLEARANCE FORM**

Name _____ Date _____

This form must be completed before a student is considered to have officially changed research advisors.

a) **Consultation with the Department Head**

Department Head

b) **Student Certification**

I understand that any funding which was available through my original research group stays with that group and does not follow me. I further understand that the time frame for eligibility for Departmental funding (5 years for a PhD) does not increase due to changing my research advisor.

Graduate Student

c) **Business Office**

1. All laboratory and office keys have been returned
2. All other borrowed equipment has been returned
3. Stockroom charge cards have been returned

Manager of Service

d) **Stockroom**

1. All tools have been returned
2. All other borrowed equipment has been returned

Storekeeper

e) **Research Lab**

1. All equipment has been returned to the original advisor
2. Original research materials and documentation such as research notebooks, spectra etc., have been turned over to the original advisor.
3. Work areas have been cleaned, glassware washed etc.
4. Hazardous materials have been turned over to the original advisor or properly disposed of.

Original Research Advisor

f) **Chemistry Graduate Program Director**

Graduate Program Director

Request for Permission to take a Course Outside of the Chemistry Department

This form is only required for courses which are NOT part of the normal curriculum.

I _____ request that I be allowed to take the
following course:

_____	_____	_____
Department	Number	Title

Reason:

Approval by Dissertation Advisor: YES NO

Signature/Date: _____

Approval by Graduate Program Director: YES NO

Signature/Date: _____

Appointment of a Dissertation Committee Alternate

Because of travel schedules it is impossible for the PhD committee of _____
_____ to meet in a timely fashion. As a result Professor _____ has been
appointed as an alternate for Professor _____.

All committee members are in agreement with this change.

Date _____

Student _____

Chair _____

Missing Member _____

Alternate Member _____

Other Member _____

Dissertation Defense Schedule

GENERAL INFORMATION:

STUDENT'S NAME

DATE

DISSERTATION TITLE:

DEFENSE INFORMATION:

COMMITTEE NAMES:

LOCATION

CHAIR

DATE

TIME

PREVIOUS DEGREES (EXCLUDING Associate Degrees)

THIS FORM NEEDS TO BE DELIVERED TO THE MAIN CHEMISTRY OFFICE TWO WEEKS BEFORE YOUR SCHEDULED PUBLIC DEFENSE TO GET THE POSTING DONE IN TIME.

Authorization to Schedule Public Defense of Dissertation

Candidate's Name _____

As a member of the above named candidate's committee, I have received and read a copy of the candidate's dissertation and approve it in form and content. There appear to be no *major* issues remaining to be addressed in the dissertation before it will be suitable for submission to the University. ***This form does NOT constitute final approval of the dissertation; it only provides authorization to schedule the Public Defense.***

Committee Chair (Dissertation Advisor) Signature _____ Date _____

Committee Member Signature _____ Date _____

Committee Member Signature _____ Date _____

Committee Member Signature *(if committee has four members)* _____ Date _____

Based on the recommendation of the candidate's committee, indicated above, the candidate is authorized to schedule the Public Defense of the dissertation.

Graduate Program Director Signature _____ Date _____

Results of the Closed Defense of Dissertation

Name _____

Date _____

Committee Members _____

Defense was _____ Successful _____ Unsuccessful

Special Instructions to the Student

Post-Candidacy Evaluation and Seminar

The Graduate School of the University of Cincinnati requires that all Ph.D. Candidates be evaluated by their committee at least annually.

_____ (Candidate's Name) presented a seminar on her/his dissertation research and met with her/his committee on _____ (Date).

The Committee listed below evaluated the Candidate and has determined that the candidate has **Passed / Failed** (circle one) the evaluation of whether (s)he is making appropriate progress to continue toward the Ph.D. degree.

Faculty Present:

_____ (Chair of Committee)

Comments:

Signature of Committee Chair _____

3rd Year Dissertation Topic Seminar

STUDENT _____

TITLE _____

Date of Defense _____

Result of Presentation

Pass _____ Fail _____

Signature of Chair _____

Faculty Present _____

Evaluation Criteria

1. Depth/breadth of background preparation for seminar

2. Progress on dissertation research

3. Depth/breadth of understanding of dissertation research

4. Extent of plans for future for dissertation research

5. Extent and quality of independent intellectual contribution to the implementation of the project so far.

6. Originality and creativity of independent ideas on the direction of the project.

7. Quality of oral presentation (e.g., organization, clarity, graphics, appropriateness of literature citation, poise, length, balance)

8. Response to questions (e.g., accuracy, appropriateness, whether convincing, defensive/combative, knowledgeable)

9. Inclusion and understanding of safety-related issues in the presentation.

Areas for Improvement:

Additional Comments:

2nd Year Research Seminar

STUDENT _____

TITLE _____

Date of Defense _____

Result of Presentation

Pass _____ Fail _____

Signature of Chair _____

Faculty Present _____

Evaluation Criteria

1. **Thoroughness of literature review**

2. **Ability to relate current thesis research to previous work in this and related fields**

3. **Appropriate context for research direction**

4. Progress on dissertation research

5. Depth/breadth of understanding

6. Extent of plans for future

7. Quality of oral presentation (e.g., organization, clarity, graphics, appropriateness of literature citation, poise, length, balance)

8. Response to questions (e.g., accuracy, appropriateness, whether convincing, defensive/combatative, knowledgeable)

9. Inclusion and understanding of safety-related issues in the presentation.

Areas for improvement:

Additional comments:

Chemistry 7071 Presentation

STUDENT

TITLE

Date of Defense

Result of Presentation

A____ C____ F____

Signature of Chair

Faculty Present

Evaluation Criteria

1. Depth/breadth of background preparation

2. Progress on dissertation research

3. Depth/breadth of understanding

4. Extent of plans for future

5. Quality of oral presentation (e.g., organization, clarity, graphics, appropriateness of literature citation, poise, length, balance)

6. Response to questions (e.g., accuracy, appropriateness, whether convincing, defensive/combative, knowledgeable)

7. Quality of written presentation (e.g., organization, clarity, focus, detail, persuasive)

8. Inclusion and understanding of safety-related issues in the presentation.

Areas for improvement:

Additional comments:

**UNIVERSITY OF CINCINNATI
DEPARTMENT OF CHEMISTRY
Report of Selection of Research Advisor**

(Student Name)

Faculty Interviews: All students must interview a minimum of three faculty members.

	Signature of Faculty Member	Date of Interview
1.	_____	_____
2.	_____	_____
3.	_____	_____
4.	_____	_____
5.	_____	_____
6.	_____	_____

On the basis of these interviews I request permission to perform research towards a

_____ PhD / _____ MS degree in the research group of

1st Choice _____

2nd Choice _____

3rd Choice _____

Signature of Accepting Faculty Member Date _____

Signature of Graduate Program Director Date _____