

THE UNIVERSITY OF CHICAGO

DEPARTMENT OF CHEMISTRY



A GUIDE

**TO THE DEPARTMENTAL ACADEMIC AND ADMINISTRATIVE
PROCEDURES AND REQUIREMENTS AS THEY PERTAIN TO THE GRADUATE
PROGRAM**

SEPTEMBER 2024

I. THE PH.D. PROGRAM

A. Requirements for Admission to Candidacy

COURSEWORK. Prior to the start of Autumn quarter of the first year, a faculty advisor and/or the Director of Graduate Studies will meet with the student regarding course selection. Students should coordinate with potential or official Research Advisors on their course selection, particularly after formally joining a research group.

The following are specific departmental requirements for the Ph.D. degree.

1. Each candidate shall satisfactorily complete nine courses selected from the graduate offerings (300, 400 and 500-level) in the Department of Chemistry and in related departments in PME or the Physical and Biological Sciences Divisions.
2. At least six of these courses shall be 300-level courses. At least four 300-level courses must be taken in Chemistry, and at least two of these four courses must be a Chemistry course designated as foundational. Up to two courses may be taken from a list of pre-approved non-chemistry courses. No undergraduate level courses can be used to satisfy the Ph.D. course requirement.
3. Up to three courses can be taken from CHEM 5000X series, or Chemistry 350 and/or 400-level chemistry research courses.
4. A 3.0 GPA in courses must be obtained.

RESEARCH GROUP. Each candidate must join the group of a Research Sponsor/Advisor by the end of the Winter quarter of their first year and maintain a Research Advisor for the duration of their thesis work (see details below).

TEACHING. The Department requires that all Ph.D. candidates acquire experience in teaching. Most students satisfy this requirement by serving as Graduate Assistants (Teaching Assistants) during each of their first three quarters of study in general or organic chemistry classes. Satisfactory performance in teaching is a program requirement. Failure to maintain satisfactory performance may result in a Fail and repercussions such as repeating teaching responsibilities as decided by the faculty teaching matters/graduate program committees and the chair of the department.

CANDIDACY EXAM. Each student must successfully pass their candidacy exam (see below).

B. Proficiency Examinations

Students may satisfy any or all course requirements by taking Proficiency Examinations. Application to take a proficiency examination should be made directly to the faculty member who will be teaching the course. Upon agreement of the course instructor, the examinations will be administered at an agreed upon time prior to the class, but no later than the first week of the quarter in which the course is offered. The faculty member will administer a written exam to the student and shall assign a letter grade to the student based on the student's performance on the written

exam. No stigma is attached to failing a proficiency examination, and students are encouraged to pursue this option if they have taken high-level courses in the corresponding content areas previously.

C. Joining a Research Group

The following details pertain to joining a research group.

1. First-year graduate students cannot formally join a research group before the official join date—Monday of the 8th week of the Autumn Quarter. Students must join a group by the end of the Winter Quarter to remain in good standing. Prior to the join date, students should attend faculty research presentations and follow up with individual meetings with faculty and their research groups. Students should meet with at least three faculty members and obtain their signature on the group joining form. Individual faculty are free to decide what is needed for a signature (such as one-on-one discussions, group meeting attendance, etc.). Once a potential Research Advisor and student reach a mutual decision on research group choice, both sign an agreement statement on the group joining form. This statement cannot be signed and submitted to the Department before the join date (Monday of the 8th week of the Autumn Quarter). Students that are joint between two advisors will require two faculty signatures. Students who are pro forma (see below) will require both advisor signatures as well.

2. If the Research Sponsor is not from the Department of Chemistry, then a Pro-forma Research Advisor from within Chemistry must be obtained. The Chemistry Pro-forma advisor must serve on the student's candidacy exam, and on all committees involving the academic progress of the advisee. The Pro-forma advisor must have an annual meeting with the student to evaluate the student's progress.

In order to obtain approval to work with a Research Sponsor outside of the Department of Chemistry, the following items must be provided to the Director of Graduate Studies to be presented at a faculty meeting:

i. The student will write a brief proposal describing the research that will be performed and indicate why they wish to work under the supervision of an advisor whose appointment is outside the Department of Chemistry.

ii. The Research Sponsor will write a brief proposal describing the research that the student will perform and will state that they will financially support the student. The Research Sponsor will also obtain the approval, via signature, of their department Chairperson.

ii. The student will provide the name of a Chemistry faculty member who has agreed to serve as a Chemistry internal (pro forma) advisor for the student.

The Pro-forma advisor must serve on the student's candidacy exam, and on all committees involving their academic progress including the thesis defense committee. The Pro-forma advisor must have an annual meeting with the student to evaluate their progress. The Pro-forma advisor is to provide a brief written summary of the student's progress to the Department Chairperson and Director of Graduate Studies by the end of January. It is the responsibility of the student to schedule a meeting with their Pro-forma advisor during the month of January each year. Along with the student's advisor, the Pro-forma advisor will also sign the student's yearly Academic Progress Report.

3. The following applies to joint mentorship where both faculty are members of the Department of Chemistry: The two faculty members will agree to the order in which their names will be listed as the advisors for the student. The student will register for the research course of the advisor whose name is listed first and the two faculty members will agree on what quarterly grade the student will receive. The two faculty will agree as to funding responsibility for the student. Neither of the two faculty can serve on the student's candidacy committee. Both faculty members must sign the student's yearly progress report. The student's thesis defense committee must be comprised of 4 faculty members including both research mentors – where at least three members of the committee must be faculty members in the Department of Chemistry at The University of Chicago.

4. Group Changing Policy

There are instances when an initial research group selection is not optimal. Graduate students may switch groups if the new Research Advisor agrees to accept and support the new student. The student should submit a new signed Student-Advisor agreement on the Group Selection Form to the Director of Graduate Studies, and a pro forma petition if necessary. During the transition, the student remains responsible for bringing their current work to a satisfactory close, i.e. leaving notebooks, transferring samples, cleaning their lab space, etc.

D. Review of First Year Performance

Each student's overall record will be reviewed at the end of Spring Quarter of the first year of study. This includes an evaluation of coursework, teaching, as well as finding and maintaining a Research Advisor. At this time a student will be advised whether they are qualified to continue studies and to prepare for the Candidacy Examination in October.

If a student begins Spring Quarter of first year with unsatisfactory performance in any of the first year requirements (course grades, teaching performance, joining a research group) they may be placed on academic probation. This means that Spring quarter may be their last quarter of support and program registration unless they meet the required milestones by the end of Spring Quarter and return to good standing. If milestones are not met by the end of Spring Quarter, the student may be asked to leave the program, potentially with a master's degree.

E. The Candidacy Examination

The Department shall administer a Candidacy Examination to all Ph.D. candidates consisting of a written research prospectus and an oral presentation. The following pertain to specific components of the candidacy examination:

1. Exam Components

The students will submit a research statement to the Department by a due date set by the DGS (typically prior to the Fall quarter). Oral examinations will then typically take place in October and November. The research statement shall be written as a proposal for the thesis work highlighting both intellectual merit and broader impacts. The research statement should explain the background and goals of the project, the impact of the proposed research, key progress to date, and proposed future plans. The research statement shall be no longer than two pages including all references, citations, charts, figures, images, and lists of publications and presentations. The format for both statements is as follows: 8.5" x 11" page size, 1" margins on all sides, Times New Roman 11-point font for all text, single spacing.

At their option, students may also supply their examination committee with a three-page Personal, Relevant Background and Future Goals Statement. This statement will not be part of the exam, but may be included to receive feedback from faculty readers.

Students applying for a fellowship may petition that the DGS approve an alternate written format aligning with any fellowship for which they are eligible.

The oral examination will cover the student's research progress to-date, their research proposal, and topics from relevant coursework. For this exam, students will prepare a presentation on their research proposal of approximately 40 minutes in duration. Students being examined will have approximately 10 minutes at the beginning of the examination without interruptions. Students will arrange any required computer/technical equipment needed for their presentation.

2. The Examining Committee

Each candidate's examining committee shall consist of three faculty members. The research sponsor will not be a member of the examining committee and will not be present at the examination. It is the responsibility of the student to submit a project title and short abstract before examining committee assignments are made. Students may also provide the name of one faculty member who is outside their sub-field area to serve on their committee and this assignment will be considered but not guaranteed. Once the individual Examination Committees have been established and the examination scheduled, all changes shall be made and directed by the Chairperson of the student's Examining Committee.

3. Grading of the Candidacy Examination

Following the candidacy exam, the exam committee will provide feedback on the exam performance and the result of the exam. If the case requires additional discussion, a student may not be notified immediately and may instead receive the results of the examination at a later date. The candidacy exam committee assigns to each student one of three results:

- Pass - Qualifying exam requirement for advancement to candidacy fulfilled.
- Conditional Pass - Advancement to candidacy is dependent on satisfactory completion of specified requirements, such as submission of a written paper or a second oral examination.
- Repeat - A 2nd oral examination will be required, after the completion of specified preparations.

Note that if the results of the 2nd oral examination are unsatisfactory, a student may not be in Good Standing in the department and may not be allowed to continue to candidacy.

4. Recommendation to Candidacy

The faculty shall review the results of the Candidacy Examination at the November faculty meeting and, after consideration of the student's overall performance, vote on whether or not to recommend that the student be admitted to candidacy for the Ph.D. degree.

5. Typical Candidacy Timeline

June – based on performance in courses, basic exams, teaching and joining a research group, students are officially informed that the faculty have qualified them to prepare for the Ph.D. Candidacy Examination

Summer quarter – students submit a title and two-sentence abstract of proposed research project
September – written portion of candidacy exam due
October-November – candidacy exams will be held
December – students will be informed of the faculty recommendation about admission to candidacy via official letter

Students are encouraged to meet personally with the Chairperson of their candidacy committee prior to the exam. Any questions that a student has regarding the candidacy exam should be addressed to the Chairperson of their committee and their Research Advisor. If any issues arise, the students are encouraged to speak to the Director of Graduate Studies.

F. The Academic Advising Committee

Prior to forming a thesis committee, which must occur no later than October 1st in the third year of residence, the student's candidacy exam committee can be used as the student's academic advisory committee and, thus, students should feel free to approach their candidacy exam committee throughout their graduate career for guidance and advice regarding their research. The candidacy exam committee may be, but does not need to be, the final thesis committee.

G. Annual Review of Academic Progress (ARAP)

During the Summer Quarter of each year, an Academic Progress Report will be sent to each student and Research Advisor. Students will fill out sections indicating accomplishments over the past academic year along with a proposed timetable for remaining degree requirements. The report also requires comments from your Advisor. After completion of this report, the student and advisor should meet to discuss all comments and both student and advisor should sign the report (if applicable, the pro forma advisor is to sign as well). The report will be reviewed by the Director of Graduate Studies and will be added to the student's file. Any unsatisfactory performance will be discussed at the October Faculty Meeting.

When unsatisfactory performance is identified during the annual review, or at any point, the student is considered to not be in good academic standing.

H. Fourth Year Meeting with Advising Committee

All graduate students are encouraged to meet with each member of their committee to discuss research progress, future goals, and career plans during their fourth year in residence. This is a mentoring meeting, not an evaluative meeting, and can take place anytime during the 4th year but it must happen before the end of the spring quarter. It can occur with all members of the committee at once, or with each of the members individually. It is up to the student to schedule this committee meeting.

I. Thesis Preparation and Defense

The following details pertain to the preparation and defense of the student's thesis.

1. Thesis Committee Selection

Students must select the members of their thesis committee at some point following the successful completion of their candidacy exam, but no later than October 1st of their third year in residence. This committee is comprised of the student's research supervisor as well as two additional members of the University of Chicago faculty, one of whom must have an appointment in the Chemistry Department. If necessary, due to changes in staffing, alterations in research direction,

or developing collaborations, the membership of the committee can be changed at any point in time with written notice provided to the Director of Graduate Studies.

Each Ph.D. Thesis Committee shall include three, but no more than four faculty members, one of which will be the student's Research Sponsor (and pro forma Advisor if applicable), and three of which must be faculty members at the University of Chicago. At least two members of the committee must be faculty members in the Department of Chemistry at The University of Chicago. The thesis committee should be approved by the student's Research Advisor (and pro forma Advisor if applicable). Once the committee is selected, the student will arrange the scheduling of the defense.

2. Thesis Preparation and Submission

A brochure describing the University-wide requirements for dissertations is available in the Office of Academic Publications and online (www.lib.uchicago.edu/e/phd/). The brochure contains detailed guidance on preparing the thesis, summarized in checklist form on the final page of the brochure. Students should seek out information about these requirements *early* in the writing process when it is most useful. The final copy of the dissertation must be uploaded to the Dissertation Office site by the deadline specified by the Dissertation Office each quarter (see <https://www.lib.uchicago.edu/research/scholar/phd/students/dissertation-deadlines/>). *Please note these deadlines, and any additional time to make revisions to the thesis after the defense, in planning a date for the defense.* Students must also upload a completed Departmental Approval Form (available from the Dissertation Office or from the Department) which is signed by the Advisor in the top right-hand corner. The Director of Graduate Studies will not be able to approve the thesis unless the Departmental Approval Form has been signed by the Research Advisor.

3. Final Public Seminar and Oral Examination

Each Ph.D. candidate shall schedule a final oral examination with his/her dissertation examining committee. This normally occurs after the dissertation is written, but prior to submitting the final copy to the Office of Academic Publications. The candidate shall provide each of their committee members a copy of their thesis two weeks prior to the defense date. It is recommended that the research advisor be provided with a copy for comment prior to distribution to the committee. At the thesis defense, each Ph.D. candidate shall discuss their dissertation in a public seminar, typically lasting one hour. This is normally done immediately prior to the final oral examination by the examining committee, which is a closed-door oral examination. At the conclusion of the oral examination the examining committee will discuss the student's performance, often in private, before notifying the student of the result. The Research Advisor will then communicate the result of the examination to the appropriate academic personnel in the department on behalf of the examining committee.

J. Yearly Review of Progress at the Beginning of the Sixth Year

Although students should aim to complete their thesis within roughly five years, this may not be possible for many reasons. In these cases, the following requirements for a sixth-year meeting must be met:

1. Any student who registers for a sixth year of residence and does not petition for graduation in the Fall Quarter of their sixth year, shall be scheduled for a yearly academic progress review.
2. This review shall be scheduled during the month of November.

3. Immediately following Autumn Quarter registration, The Director of Graduate Studies shall notify each Research Advisor of their students who will be starting their sixth year in residence. Individual students shall also be notified of the required review.
4. The faculty advisors shall provide the Chairperson of the appropriate Graduate Program Committee with a statement of their views of the student's progress. This statement shall be submitted by November 15th.
5. Between November 15 and November 30, the student's thesis committee outside of their Research Advisor will meet with the student. One of these committee members will serve as the chair of the review. The student will schedule their review by directly contacting their two committee members. Each student shall make an oral presentation which addresses (i) the status of progress to date in their thesis research and (ii) their plan for the completion of their thesis on a reasonable time scale. This review should have ~20 minutes of content, focused briefly on what has been achieved to date, but mainly centered on remaining goals and a timeline for completing the thesis.
6. No later than November 30, the Chair of each committee shall submit to the Director of Graduate Studies a paragraph regarding the results of the review. It should address (i) the student's progress to date, (ii) possible pitfalls in the remaining goals/timeline, and (iii) expectations for completing the research.
7. The recommendations of the Review Committees shall be presented and discussed at the December faculty meeting. Following this meeting, the Chair of each committee shall submit to the student and the Research Advisor the summary paragraph of the review.

II. THE M.S. PROGRAM

The following are specific departmental requirements for the Master of Science degree in Chemistry. Please note that this degree is neither a prerequisite for, nor a component of, a Ph.D. degree, although it may be acquired along the way if a student so desires. The M.S. degree is typically awarded in the Autumn quarter of the second year.

4. Each candidate shall satisfactorily complete nine courses selected from the graduate offerings (300, 400 and 500-level) in the Department of Chemistry and in related departments in PME or the Physical and Biological Sciences Divisions.
5. At least six of these shall be 300-level courses. At least four of these courses must be taken in Chemistry, and at least two of these four courses must be a Chemistry course designated as foundational. Up to two courses may be taken from a list of pre-approved non-chemistry courses. No undergraduate level courses can be used to satisfy the six graduate level course requirement.
6. Up to three courses can be taken from CHEM 5000X series, or Chemistry 350 and/or 400-level chemistry research courses.
4. A B- or better average in courses must be obtained.

III. SCIENTIFIC, ACADEMIC, FINANCIAL, AND CAREER RESOURCES

A. Departmental Seminar Attendance

All graduate students are expected to attend departmental seminars regularly. Seminars are an important part of the graduate learning experience, and our department is fortunate to have a

historied series of seminar offerings. Seminars provide students with an opportunity to meet leading scientists, to hear recent research results, and to be exposed to areas of chemistry that may not be covered in courses. *Students are strongly encouraged to ask questions and to be active participants in the seminar.*

B. Seminar Workshop (optional)

The first-year seminar workshop is an informal general interest journal club that meets once a week to discuss papers in preparation for departmental seminars. Led by senior graduate students, the discussion is a great opportunity for first year graduate students to talk science with their peers in a pressure-free atmosphere over lunch. Running during winter and spring quarters, the first-year seminar workshop also provides excellent preparation for qualifying exams.

C. Tiger Talks (optional)

Tiger Talks are designed to give senior graduate students the opportunity to present their research work prior to their final thesis defense. The audience is composed of fellow graduate students in a low pressure, collegial atmosphere.

D. Scientific Ethics Training

The Department of Chemistry and the Division of the Physical Sciences at the University of Chicago recognize that the responsible conduct of research (RCR) is critical for research excellence. Consequently, education in RCR is considered essential in the preparation of future scientists. Therefore, we require that all graduate students, regardless of funding source, must complete training in the responsible conduct of research. The University of Chicago is a member of the Collaborative Institutional Training Initiative (CITI), which provides online training for a variety of research needs. Our department has reviewed the website and has selected a set of online training modules that you must complete. This training is to be completed on-line, at the web site citiprogram.org, *before September of each year for all incoming graduate students.*

E. Career Planning Resources (optional)

Announcements of visits to be made by Industrial Recruiters to the Department will be sent via email to graduate students. The Departmental Office will work with the recruiter to find out requirements for materials such as resumes, to solicit these from those who want to interview, and to schedule and send notifications of interviews.

The University offers many resources for career planning and preparation. UChicagoGRAD (grad.uchicago.edu) is a valuable resource for career preparation and internships, as well as fellowship and writing support, training in public speaking, and networking. Chicago Center for Teaching (teaching.uchicago.edu) helps to prepare students who are interested in the Academic Job Market, as well as offering skills training in pedagogical areas. The Department encourages students to take advantage of these resources, which can be tailored to specific needs.

Web resources are also available to help both graduate and undergraduate students learn about the types of positions available outside of academia. Some of these can be accessed via the Departmental Web page. We also have a departmental LinkedIn group: “The University of Chicago Department of Chemistry Network”. Job postings will also be sent to graduate students via email. The Advanced Training for Teachers and Researchers in Chemistry course offers an integrated approach at the start of our graduate students’ career offering a global overview of skill necessary to be successful to include beginning to think about career prospects.

F. Safety Training

The Office of Safety and Environmental Affairs conducts Safety Training courses. All research personnel must complete the Chemical Hygiene Plan Training. Entering graduate students receive this safety training as part of the department's TA Training program along with training on teaching an undergraduate lab safely. Students must complete this safety training course on their own if they enter the department prior to September TA Training. Fire Safety and Evacuation Training is an annual requirement that is satisfied via an online course. It is the student's responsibility to complete this training.

A chemical laboratory contains equipment that if mishandled or used incorrectly can lead to serious consequences. All occupants of our buildings, faculty, students (both graduate and undergraduate) should conduct themselves in a way conducive to a safe environment. Running, cycling, rollerblading/skating and smoking are strictly prohibited anywhere in the Searle-Kent-Jones complex and the GCIS. The wearing of headphones in the laboratory is considered an unsafe practice and is prohibited. Conventional radios in the research labs may be allowed.

G. Students with Disabilities

The University provides reasonable and appropriate accommodation for students with properly documented disabilities. The following procedure for requesting accommodation is in place at the University and is followed by the Department:

As soon as possible before the beginning of the academic year, the student should contact the Coordinator for Student Disability Services at 702-6000 to request accommodation, discuss the issues, and to provide the requisite documentation. The web site <http://disabilities.uchicago.edu> provides information about this process. Requests are handled in as timely a manner as possible, but provision of appropriate documentation often takes several weeks. Requests during the academic year follow the same procedure. Submitted documentation is reviewed by professionals with expertise in the relevant field. Once the documentation has been reviewed, the student, the Director of Graduate Studies, the Divisional Dean of Students, the instructor, and other University officials as necessary may meet to discuss the results. Based on the request of the student, the evaluation of the documentation, the demands of a particular course, the goals of the course instructor, and other relevant factors, a reasonable and appropriate accommodation may be reached.

IV. ACADEMIC STANDING AND CONFLICT RESOLUTION

A. Good Academic Standing

A student shall be deemed to be in good academic standing only if they are making appropriate progress towards the degree as defined and communicated by the Department and as listed above in this document. In order to be in Good Standing, students are expected to complete required courses, maintain GPA minimums, maintain an advisor, adhere to deadlines, and fulfill requirements as set out by each individual program or department. If a student has any questions about relevant degree milestones for completion of requirements for a PhD or Master's program, they are encouraged to contact the Director of the Graduate Program or the Dean of Students office at any time.

Students are expected to maintain Good Standing and make academic progress toward the degree throughout their graduate career. If a student is deemed not to be in Good Standing, the student may be placed on Academic Probation upon the recommendation of the faculty in their program and approval of the department or program chair. The Department will regularly assess each

student and communicate in writing (i) if a student is not in good academic standing, (ii) what must be accomplished to achieve good academic standing, (iii) in what timeframe it must be achieved, and (iv) what the consequences are if the requirements to achieve good academic standing are not completed within the timeframe (e.g., academic probation, dismissal).

B. Academic Probation

In the event that a graduate student is not making satisfactory progress to degree, the Department will follow the Divisional Academic Probation Policy, whereby the student may be placed on Academic Probation upon the recommendation of the faculty in their program and approval by the DGS and/or the Department Chair.

To be placed on Academic Probation, the Department Chair, Director of Graduate Studies, and/or Research Advisor will inform the student in writing about the expectations for how they may return to Good Standing and give a timeline for completion of those requirements, generally a minimum of one quarter. The Director of Graduate Studies and Research Advisor will be copied. A copy of this document, along with the student's confirmation of receipt and acknowledgement of the terms of the probation letter shall be sent to the Dean of Students. The following points should be clearly articulated:

- The student's current standing in the research group
- The advisor's current expectations for returning to satisfactory standing delineated in detail
- The date for meeting those expectations.

Students who are unable to meet the expectations outlined in the Academic Probation letter may not be permitted to continue in the program. Thus, students may consider this notice before financial support is terminated to allow the student the time to make the necessary switch or make alternative plans. The Director of Graduate Studies will reach out to the student to discuss next steps and provide support resources.

At any point in the process, the student should avail themselves of all resources including: PSD Dean of Students, Dr. Bahareh Lampert; Chemistry Director of Graduate Studies, Prof. Bryan Dickinson, Chemistry Chair, Prof. Jiwoong Park.

C. Petitioning the Faculty

Students are reminded that they can petition the faculty about any requirement or decision regarding their graduate status. This can be important if there are extenuating circumstances to which the student wishes to alert the faculty. Please note the assembled faculty will ultimately decide what, if any, actions to take on submitted petitions.

D. Grievance Resolution Process

The Department follows the Grievance Resolution Process as directed by the Physical Sciences Division and UChicagoGRAD. Students with questions can address them to the PSD Dean of Students.