Revision: August 2023

Chemistry

Graduate Student Handbook

1. INTRODUCTION

This graduate student handbook describes the policies and procedures of the chemistry graduate program at the University of Miami. Use this handbook as a guide during your time in the program but note that this handbook does not cover all policies of the University of Miami Graduate School. Those policies are available on their website https://www.grad.miami.edu/. As you pursue your graduate degree you must follow the rules of both the Department of Chemistry and the Graduate School.

The Chemistry Graduate Program staff consists of:

Orlando Acevedo, Graduate Program Director
Flavia Padoveze, Graduate Program Assistant

The Graduate Program Assistant should be the first point of contact for graduate students. This person will handle the processing of all forms relating to the program and can answer questions regarding program policies and procedures. However, students should feel free to contact not only the Gradate Program Assistant, but also the Graduate Program Director or any other member of the graduate committee regarding questions and concerns relevant to the program.

This handbook summarizes the policies and procedures that were in effect on the date of the front cover. Students will be notified of changes as they occur, but this handbook is not a contract. If policies change during a student's course of study, then the student may be asked to work towards a degree under the revised policies in place of the policies that were in effect when the student was admitted into the program.

The Department of Chemistry offers the Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degrees. To receive the Ph.D. and M.S. degrees, students must fulfill a combination of requirements that consist of taking courses, presenting and attending seminars, passing an oral comprehensive examination, submitting and defending an original research proposal, and submitting and defending a thesis/dissertation based on original research.

2. PROGRAM REQUIREMENTS

2.1 English Language Speaking Proficiency

Newly admitted international students who are not native English speakers are required to pass a test of spoken English (SPEAK) prior to the end of the first academic year. Students that receive a low score may be required to retake the exam and attend an English presentation and conversation course administered by the University of Miami Intensive English Program. Failure

to pass the English exam by the end of the first academic year will result in dismissal from the graduate program.

2.2 Student Work Authorization

Please note that your teaching appointment is contingent upon proof of work authorization and/or U.S. citizenship, as required by the Immigration Reform and Control Act of 1986. This federal law requires that the University verify, for citizens and non-citizens alike, the identity and authorization to work for all new employees. The University of Miami currently participates in the E-Verify Program, which allows an employer – using the information reported on the Form I-9 – to confirm the eligibility of an employee to work in the United States. The U.S. Department of Homeland Security (DHS) in partnership with the Social Security Administration (SSA) operates the E-Verify system.

Once you have formally accepted the admission offer into the graduate program, you will receive an email from Workday (Human Resources software) with instructions for completing Section 1 of the Form I-9 via their secure web-based system. After you have completed Section 1 online, you will be required to present originals of acceptable I-9 documents in person to the Office of Graduate and Administrative Services, 304 Merrick Building, on or before your first day of employment. The Office of Graduate and Administrative Services will complete Section 2 of the I-9 form and submit this information to E-Verify for verification, to determine your eligibility to work in the United States.

Please note that you will not be able to start your employment with the University until you have completed the Form I-9 online and presented acceptable documents in person to the Office of Graduate and Administrative Services to establish your identity and work authorization. Furthermore, please be advised that continued employment with the University is contingent upon the continuation of your authorization to work, as required by the Immigration Reform and Control Act of 1986.

2.3 Placement Exams

Students must take four placement exams before classes begin in the first year. These exams are designed to test the basic knowledge of entering students in analytical, inorganic, organic and quantum chemistry with the sole scope of guiding the selection of core courses. Students that pass at least one of the four placement exams may replace the corresponding core course with an elective one. No more than one core course can be substituted.

2.4 Lecture Courses

Students must complete six chemistry graduate-level courses (4 core courses and 2 electives) by the end of their first academic year. The courses are listed below. Please note that not all elective courses are offered every year. The Graduate Program Assistant will register you for all courses during your time in the program to ensure a proper plan of study leading toward graduation.

Core Courses
CHM 620 Physical Organic Chemistry (3 credits)
CHM 641 Principles of Bonding and Reactivity in Inorganic Chemistry (3 credits)
CHM 653 Modern Quantum Chemistry (3 credits)
CHM 681 Advanced Analytical Chemistry (3 credits)

Elective Courses
CHM 622 Synthetic Organic Chemistry (3 credits)
CHM 624 Supramolecular Chemistry (3 credits)
CHM 625 Structural Organic Chemistry (3 credits)
CHM 630 Fluorescence Spectroscopy and Microscopy (3 credits)
CHM 635 Molecular and Supramolecular Photochemistry (3 credits)
CHM 655 Electrochemistry (3 credits)
CHM 665 Principles of Spectroscopic Techniques (3 credits)
CHM 675 Principles of Nuclear Magnetic Resonance and Multidimensional (3 credits)
CHM 691 Topics in Chemistry (3 credits)
CHM 693 Readings in Chemistry (3 credits)

2.5 Grade Point Average (GPA) Requirement

Students must maintain a minimum of 3.00 cumulative grade point average (GPA) throughout their entire time in the program. Students with a GPA lower than 3.00 will be placed on Academic Probation and must raise their GPA to the 3.00 minimum in the subsequent semester. Failure to increase the cumulative GPA to a minimum of 3.00 at the conclusion that semester will result in dismissal from the graduate program.

2.6 Annual Student Evaluation

TBD

3. PH.D. IN CHEMISTRY PROGRAM

3.1 Course Requirements

The Ph.D. degree requires a minimum of 60 credits. The department will provide a tuition waiver for students on assistantships and fellowships as long as the student is making adequate progress towards the degree. 18 credits must be formal lecture courses (see Section 2.4). The remaining 42 credits are broken down as follows:

Courses	*Credits*
Chemistry Seminar (CHM 779)	4
Chemistry Seminar (CHM 780)	1
Introduction to Research (CHM 785)	2
Problems in Research Planning (CHM 788)	2
Pre-candidacy Doctoral Dissertation (CHM 830)	26
Post-candidacy Doctoral Dissertation (CHM 840)	6
Doctoral Dissertation (CHM 880)	1

3.2 Ph.D. in Chemistry Plan of Study

Year One		
Fall	Courses	Credit Hours
CHM courses 600 level	Core and Elective	9
CHM 779	Chemistry Seminar	1
CHM785	Introduction to Research	2
Spring		
CHM courses 600 level	Core and Elective	9
CHM 779	Chemistry Seminar	1
Year Two		
Fall		
CHM 779	Chemistry Seminar	1
CHM 830	Pre-candidacy Dissertation	6
Spring		
CHM 779	Chemistry Seminar	1
CHM 830	Pre-candidacy Dissertation	4
Year Three		
Fall		
CHM 780	Chemistry Seminar	1
CHM 830	Pre-candidacy Dissertation	6
Spring		
CHM 788	Problems in Research Plan	2
CHM 830	Pre-candidacy Dissertation	4

Year Four		
Fall		
CHM 830	Pre-candidacy Dissertation	6
Spring		
CHM 840	Post-candidacy Dissertation	6
CHM 880	Doctoral Dissertation	1
	Total Credit Hours	60

Students that began the Ph.D. program in the Fall semester will be enrolled for courses using the plan of study provided above. For students that began the Ph.D. program in the Spring semester, please see the plan of study given in Section 6.7. Students requiring more than 4 years to graduate with the Ph.D. degree will be enrolled for 1-credit of *Research in Residence* (CHM 850) per semester until graduation. Please note that departmental support (i.e., tuition waiver and living stiped) is only guaranteed for 5 years with adequate progress being made towards the Ph.D. degree.

3.3 Chemistry Seminars (CHM 779 and 780)

Students enrolled in CHM 779 must attend all departmental seminars. An attendance sheet must be signed at every seminar. Students with excessive unexcused absences will receive a formal warning.

Students enrolled in CHM 780 will present a seminar on a literature topic not related to their research area. The choice of topic must be approved by the faculty member in charge of the seminar program, usually the Graduate Program Director. Students will prepare a one-page abstract of the talk, including literature references that must be sent to the Graduate Program Assistant at least one week before the scheduled seminar date. The abstract will be distributed to all faculty members and graduate students. Talks should be between 45 and 55 minutes in length and are followed by discussion and questions. Students enrolled in CHM 780 must attend all student seminars presented that semester.

3.4 Choosing a Research Advisor

Students must attend the *Introduction to Research* (CHM 785) seminars in the Fall semester of their first year. In these talks, faculty members will present their research directions and discuss potential projects for the students. At the end of this seminar series, students will submit their *Preceptor Interview Form* to the Graduate Program Director before December 15, indicating their proposed research advisor. Students may only select faculty members capable of accepting students into their research group. The Graduate Program Assistant will provide you with list of

faculty members accepting students. Students will be then notified of their advisor assignment no later than January 15 of the following Spring semester.

3.5 Changing a Research Advisor

Once the decision of a research advisor is made, students are strongly discouraged to change advisors and any such change is considered to be an exceptional situation. However, students wishing to change research advisors must meet with the Graduate Program Director to submit a formal request. The student should have discussed switching groups with their current research advisor prior to meeting with the Graduate Program Director, if possible. The Graduate Committee will review the request and authorize the change only if the student and/or the current research advisor can offer an adequate justification. Students deciding to change advisors should be sure to consult their prospective advisor for any specific policies and procedures that apply and be sure to ascertain if funding may change under a new advisor. A new *Preceptor Interview Form* must be completed and signed by the new research advisor.

3.6 Choosing a Ph.D. Supervisory Committee

The progress of each student is monitored by a Ph.D. supervisory committee consisting of at least three chemistry faculty members, including the research advisor serving as the chair. A fourth committee member, from within or outside the chemistry department, may be selected should the student or research advisor choose to do so. Students must select the members of the committee in consultation with the research advisor before the end of the Fall semester of their second year in the program. The committee will attend and participate in the evaluation of the student's *Oral Comprehensive Exam*, *Chemistry Seminar* (CHM 780), *Problems in Research Planning* (CHM 788), and *Doctoral Dissertation* (CHM 880). For the dissertation defense, the advising committee must be comprised of no less than four members; this includes the research advisor, at least two chemistry faculty members, and a faculty member from outside the University of Miami Department of Chemistry.

3.7 Ph.D. Candidacy Requirements

Doctoral students must complete a series of milestones prior to advancing to candidacy and obtaining their Ph.D. degree in Chemistry.

- Completed 18 credits of lecture courses
- Ph.D. Supervisory Committee Selection
- Oral Comprehensive Exam
- Chemistry Seminar (CHM 780)
- Problems in Research Planning (CHM 788)

Once all requirements have been met, the student will need to complete the "Application for Admission to Candidacy" at https://www.grad.miami.edu/policies-and-forms/forms/index.html. Students are required to complete their Admission to Candidacy form a minimum of one semester prior to defending their doctoral dissertation.

3.8 Oral Comprehensive Exam

All Ph.D. candidates must pass an oral comprehensive exam on their research project before the end of the Spring semester of their second year. Students must submit a summary of their research efforts to each member of their advisory committee by March 1 of the corresponding semester or at least one week before the date of the exam if scheduled earlier than March 1. The document must have the following format:

1. Title Page
    - Title
    - Candidate name
    - Research advisor
    - Committee members
    - Place, date, and time of the exam (if known)
    - Date submitted
    - Courses completed with dates and grades
    - Authors, titles and citations of candidate publications
2. Text (12 point Times New Roman font, double-spaced, 1.0 inch margins, 15 page limit) including:
    - Title
    - Introduction
    - Results and Discussion
    - Conclusions and Future Work
    - Experimental Section
3. References (not included in the 15-page limit)

At the time of the examination, the student will give a brief (not to exceed 15 minutes) verbal presentation of their work to date and a description of their proposed research work for the remainder of their time in the Ph.D. program. The committee may then question the student on the presentation and written summary. A majority vote of the committee is required to pass the student. Alternatively, the student may be dismissed from the Ph.D. program and switched to the M.S. (Non-Thesis) degree track (see Section 5).

3.9 Problems in Research Planning (CHM 788)

Students must write an original research proposal in chemistry before the end of the Spring semester of their third year. The topic cannot be related to their current research projects but can be connected to that of their previously presented *Chemistry Seminar* (CHM 780). The document must be submitted to the members of the advisory committee by March 1 of the corresponding semester or at least one week before the date of the exam if scheduled earlier than March 1. The document must have the following format:

1. Title Page
    - Title
    - Candidate name
    - Research advisor
    - Committee members
    - Place, date and time of the exam (if known)
    - Date submitted
    - Courses completed with dates and grades
    - Title of third year seminar
    - Authors, titles and citations of candidate publications
2. Text (12 point Times New Roman font, double-spaced, 1.0 inch margins, 15 page limit) including:
    - Title
    - Background
    - Aims and Significance
    - Research Plan
    - Alternative Plans (if research plans are unsuccessful)
3. References (not included in the 15-page limit)

At the time of the examination, the student will give a brief (not to exceed 15 minutes) verbal presentation of their original research plan. The committee may then question the student on their presentation and written proposal. A majority vote of the committee is required to pass the student. Alternatively, the student may be dismissed from the Ph.D. program and switched to the M.S. (Non-Thesis) degree track (see Section 5).

3.10 Publication Requirement

Prior to the dissertation defense, the student must have at least one publication (published or accepted) in a peer-reviewed scientific research journal.

3.11 Doctoral Dissertation and Defense

The *Doctoral Dissertation* (CHM 880) defense may only be scheduled upon approval from the student's research advisor. Please consult with your research advisor well in advance to ensure you have fulfilled all their requirements, which could include authorship of additional peer-reviewed publications and/or presentation of your research at a national scientific conference.

Students that have advanced to candidacy must produce a doctoral dissertation describing their original research in chemistry. The dissertation must be prepared in accordance with the rules and regulations of the Graduate School. https://www.grad.miami.edu/electronic-thesis-and-dissertation/formatting-the-etd/index.html

The dissertation should be submitted to the members of their Ph.D. supervisory committee at least one month before the exam date. The student must present the results of their research work in the form of a public seminar. The committee members may question the student on their presentation and written dissertation. The supervisory committee will vote, after considering the quality of the dissertation and the performance in the oral examination, to pass, fail, or re-examine the student. Failure with no possibility of re-examination must be by unanimous vote. In addition, the student may be asked to revise certain portions of the doctoral dissertation. It is the responsibility of the research advisor to verify that the requested changes have been implemented. The final, approved dissertation must be submitted to the Graduate School in accordance with current Graduate School regulations. In addition, the dissertation defense must be completed prior to the Graduate School deadline to defend.
https://www.grad.miami.edu/electronic-thesis-and-dissertation/defense-and-submission-deadlines/index.html

4. M.S. IN CHEMISTRY (THESIS) PROGRAM

4.1 Course Requirements

The Master of Science (M.S.) degree requires a minimum of 30 credits. Tuition waivers are not typically offered by the department for the M.S. degree. 18 credits must be formal lecture courses (see Section 2.4). The remaining 12 credits must be broken down as follows:

Courses	*Credits*
Chemistry Seminar (CHM 779)	2
Introduction to Research (CHM 785)	2
Master's Thesis (CHM 810)	8

4.2 M.S. in Chemistry Plan of Study

Year One		
Fall	Courses	Credit Hours
CHM courses 600 level	Core and Elective	9
CHM 779	Chemistry Seminar	1
CHM785	Introduction to Research	2
Spring		
CHM courses 600 level	Core and Elective	9
CHM 779	Chemistry Seminar	1
Year Two		
Fall		
CHM 810	Master's Thesis	4
Spring		
CHM 810	Master's Thesis	4
	Total Credit Hours	30

4.3 Choosing a Research Advisor and Advising Committee

Students must attend the *Introduction to Research* (CHM 785) seminars in the Fall semester of their first year. In these talks, faculty members will present their research directions and discuss potential projects for the students. At the end of this seminar series, students will submit their *Preceptor Interview Form* to the Graduate Program Director before December 15, indicating their proposed research advisor. Students may only select faculty members capable of accepting students into their research group. The Graduate Program Assistant will provide you with a list of faculty members accepting students. Students will be then notified of their advisor assignment no later than January 15 of the following Spring semester.

The progress of each student is monitored by an advising committee of at least three chemistry faculty members, including the research advisor serving as chair, and a fourth committee member from outside the University of Miami Department of Chemistry. Students must select the members of the advising committee in consultation with the research advisor before the end of the Fall semester of their second year in the program.

4.4 Thesis and Defense

Students must produce a thesis describing their original research in chemistry of a quality acceptable for publication in a recognized scientific journal before the end of their second year in the program. The thesis must be prepared in accordance with the rules and regulations of the

Graduate School. https://www.grad.miami.edu/electronic-thesis-and-dissertation/formatting-the-etd/index.html

The thesis should be submitted to the members of the advising committee at least one month before the exam date. The student must present the results of their research work in the form of a public seminar. The committee members may question the student on their presentation and written thesis. The advising committee will vote, after considering the quality of the thesis and the performance in the oral examination, to pass, fail, or re-examine the student. Failure with no possibility of re-examination must be by unanimous vote. In addition, the student may be asked to revise certain portions of the thesis. It is the responsibility of the research advisor to verify that the requested changes have been implemented. The final, approved thesis must be submitted to the Graduate School in accordance with current Graduate School regulations. In addition, the thesis defense must be completed prior to the Graduate School deadline to defend. https://www.grad.miami.edu/electronic-thesis-and-dissertation/defense-and-submission-deadlines/index.html

5. M.S. IN CHEMISTRY (NON-THESIS)

A student may obtain the Master of Science (M.S.) degree by examination, rather than by submitting a thesis. In such a case, thirty credits of coursework, which meet the minimum requirements set forth for the M.S. (Thesis) degree must be completed (see Section 4.1). The student must then pass a comprehensive examination administered by at least three faculty members in the Department of Chemistry. The committee will normally be appointed by the Graduate Program Director. The examination may be oral, written, or a combination of written and oral at the discretion of the committee. A majority vote of the committee is required to pass, fail, or re-examine the student.

6. ADDITIONAL PROGRAM INFORMATION

6.1 Authorship Guidelines

The co-authors of a manuscript that is submitted for publication should include all those who have made significant scientific contributions to the reported study and who share both the responsibility and accountability for the results presented. Significant contributions include (but are not limited to) the design of the work, data acquisition, analysis, and interpretation. In addition, co-authors participate in the writing and/or revision of the manuscript. All co-authors should agree that the final version of the manuscript is suitable for publication prior to submission to a journal. All co-authors are accountable for the parts of work performed and other authors on the manuscript should have confidence with the co-authors' contributions and the integrity of their findings. Accordingly, the contributions of technical staff and professionals

should be recognized. Other types of contributions should be listed in the “Acknowledgement” section or in a footnote. Credit should be given where credit is due for performing the research work. Co-authorship when someone helped write the manuscript but did not otherwise contribute to the research should be avoided. The corresponding author accepts the responsibility of including and ordering the names of all co-authors appropriately.

6.2 Financial Support

Students accepted into the graduate program can be awarded teaching or research assistantships (TA or RA). Both carry stipends sufficient for covering normal living expenses. The University of Miami policy states that all teaching assistants must be able to communicate fluently in English. To receive the full financial value of the standard stipend as teaching assistants, students from non-English speaking countries must pass the SPEAK exam. Failure to pass the English exam by the end of the first academic year will result in dismissal from the graduate program (see Section 2.1)

6.3 Credit Transfer

Any entering graduate student wishing to transfer credits from another institution must provide a written proposal to the Graduate Program Director identifying the appropriate courses and number of credits. In addition, copies of the course syllabi indicating the textbooks used and material covered must be provided. The Graduate Program Director will then decide, in consultation with the course instructors, whether the credits can be transferred. It is important to note that "credits that pertain to, and have been counted toward another degree, cannot be transferred" according to Graduate School. In addition, any transferred credit is subject to the regency of credit rules listed in Graduate Studies Bulletin.

6.4 Deferred Admission

An applicant accepted into the graduate program may request deferment of their start time if they are unable to begin graduate school on schedule. The request will be reviewed and is subject to approval from the Graduate Program Director and the Chair of the Chemistry Department. Admission into the program cannot be deferred for more than one year.

6.5 Student Employment Outside of the Department

Students are not permitted to hold employment outside the Department of Chemistry. This is not intended to prevent students from performing small, non-recurrent tasks, such as occasional tutoring.

6.6. GRE Requirement

The GRE Test (general and/or subject) is not required for admission into the graduate program. However, students may submit their official GRE scores at the time of application if desired.

6.7 Ph.D. in Chemistry Plan of Study (Spring)

For students that began the Ph.D. program in the Spring semester, please use the plan of study given below.

Year One		
Spring	Courses	Credit Hours
CHM courses 600 level	Core and Elective	9
CHM 779	Chemistry Seminar	1
Fall		
CHM courses 600 level	Core and Elective	9
CHM 779	Chemistry Seminar	1
CHM785	Introduction to Research	2
Year Two		
Spring		
CHM 779	Chemistry Seminar	1
CHM 830	Pre-candidacy Dissertation	6
Fall		
CHM 779	Chemistry Seminar	1
CHM 830	Pre-candidacy Dissertation	4
Year Three		
Spring		
CHM 830	Pre-candidacy Dissertation	6
Fall		
CHM 780	Chemistry Seminar	1
CHM 830	Pre-candidacy Dissertation	4
Year Four		
Spring		
CHM 788	Problems in Research Plan	2
CHM 830	Pre-candidacy Dissertation	6
Fall		
CHM 840	Post-candidacy Dissertation	6
CHM 880	Doctoral Dissertation	1
	Total Credit Hours	60

The *Oral Comprehensive Exam* (see Section 3.8) will be taken in the Fall of Year Two.

6.8 Responsible Conduct of Research (RCR) Training

Students must successfully complete all the Responsible Conduct of Research (RCR) introductory training modules prior to conducting any research at the University of Miami. Students will be automatically enrolled into the online course at the beginning of their first semester in the program. On average it will take between 1-2 hours to complete the course's four modules. Additional face-to-face training sessions are required and will be held throughout the year.

6.9 Vacation Time Request

Students must request time off for vacation from both (1) their research advisor and (2) the TA coordinator (if on TA assignment). Approval must be received prior to making any travel plans. The student is responsible for finding a substitute to teach any lab/recitation TA sections missed during their absence.