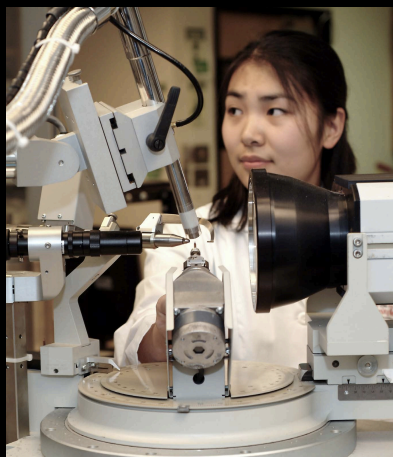


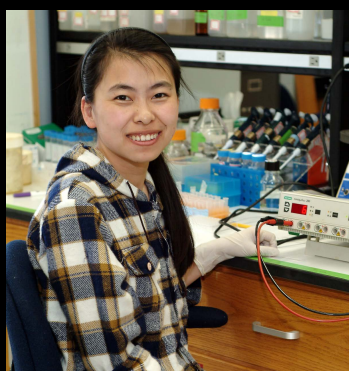
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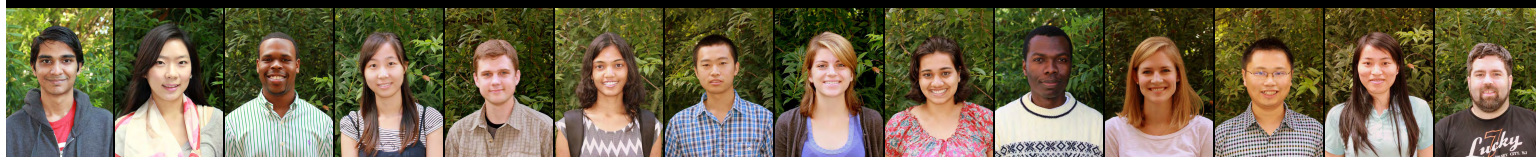
The Department of
CHEMISTRY



Graduate Program Handbook



**“To teach, to serve and to inquire into the
nature of things”
-motto of the University of Georgia**



Chemistry Graduate Student Handbook

07-25-2023

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Overview: Chemistry Graduate Student Handbook

This document summarizes the requirements for the Ph.D. and M.S. Degrees in Chemistry at the University of Georgia and provides schedules and checklists for completing these requirements. Deadlines are given in semesters, which should be interpreted as "non-summer semesters after entering graduate school at UGA," unless otherwise noted.

The primary reference for rules and regulations regarding graduate students is the University of Georgia Graduate Bulletin. This Chemistry Department handbook summarizes some of the more important rules from the Bulletin and clarifies their application for Chemistry students. Additional rules above and beyond those specified by the Graduate School are also outlined here, especially those regarding specific course requirements and deadlines. Questions regarding these requirements may be referred to the Graduate Coordinator or to the Graduate Program Administrator. If further information is required, the Graduate Coordinator or the Graduate Program Administrator will contact the Graduate School on your behalf.

When graduate program milestones are met, or applications (for instance, application for graduation) or requests (for instance, request for change of degree objective) are made, documentation is required. This entails completion and submission of the appropriate form or forms. In some instances, a hardcopy form is completed and submitted to the Chemistry Department Graduate Office. In other cases, an online form is completed and submitted. Most of these forms can be accessed at the Graduate School 'Forms' web page:

<https://grad.uga.edu/current-students/forms/>

Others, in particular Chemistry Department specific forms, are available from various pages on the Chemistry Department graduate programs web pages. Links to these are provided in the sections of this handbook below as they are encountered.

Requirements for the Ph.D. Degree

Every graduate student will be advised by the Graduate Coordinator during their first year until a research advisor is chosen. Any questions concerning these requirements should be addressed first to the research advisor (if one has been chosen) and then to the Graduate Coordinator. Students should become familiar with the Graduate School requirements in the Graduate School Bulletin.

Selection of a Research Advisor

Entering graduate students are encouraged to acquaint themselves with all the various research opportunities available in the department as soon as possible so that they can complete their selection of a research advisor (i.e. the Major Professor) by the end of the first semester in residence. Students should review the faculty research interests to gain an overview of current work in the Department of Chemistry.

During the first semester in residence, each student is required to attend at least one seminar per week. To gain exposure to the available research possibilities, students can attend a seminar in any one of the acceptable areas (analytical, inorganic, materials chemistry and nanoscience, organic, physical), or a departmental colloquium, during their first semester. Each student is required to meet with at least three faculty members before selection of a research advisor. Each of these faculty members will sign a form (see attachment) that must be turned in to the selected research advisor, who must be a member of the Graduate Faculty. The student must choose a research advisor by the end of the first semester in residence.

Selection of Research Advisor Form:

<https://www.chem.uga.edu/selection-research-advisor>

Student Advisory Committee and the Program of Study

In consultation with the research advisor, an Advisory Committee consisting of the research advisor and two additional faculty members, all of whom must be members of the Graduate Faculty, must be chosen by the end of the second semester in residence in order to develop a Program of Study for the student. The Program of Study must include: (a) at least 3 hours of 9300; (b) at least 20 hours of letter-graded courses (not including 9300) open only to graduate enrollment (i.e., 6xxx-9xxx courses that do not have duplicate undergraduate course numbers, 4xxx-5xxx); and (c) at least 6 hours of 9000. A total of 30 hours of course credit is required. The Preliminary Program of Study must be submitted to the Graduate Program Administrator by the end of the second semester in residence. Courses taken at other institutions that have similar content to UGA courses may fulfill major course requirements in Chemistry subject to approval by the Advisory Committee and the Graduate Coordinator. However, such courses do not count toward the required 30 hours of resident course credit required by the Graduate School. Doctoral students should take six graded courses of 3 credits each, plus two hours of graded seminar (1 credit each). The specific choice of classes to be included on the Program of Study is determined by the student in consultation with the research advisor and must be submitted to the student's Advisory Committee for approval. The Advisory Committee should either approve the suggested plan for graduate coursework or propose changes at the time the Preliminary Program of Study is submitted. The requirement for 30 hours of resident coursework normally includes 20 credit hours of graded coursework plus 10 more hours of 9000 plus 9300. No course with a grade below 'C' can be included on the Program of Study.

The Advisory Committee for Doctoral Candidates Form and Preliminary Doctoral Program of Study Form can be found at the Graduate School 'Forms' web page:

<https://grad.uga.edu/current-students/forms/>

Coursework Offered in the Chemistry Department

The Department of Chemistry offers a broad and diverse array of graduate courses. The descriptions of these courses are found on the departmental website:

<https://www.chem.uga.edu/courses/graduate>

Courses Offered Outside the Chemistry Department

Ph.D. students may include graduate courses outside the Chemistry Department on their Program of Study to allow for exposure to a broader base of advanced or interdisciplinary subject matter. Courses offered by departments other than Chemistry may be listed on the student's Program of Study, as long as they are approved by the student's research advisor and Advisory Committee. For the Ph.D. degree, a maximum of two of the six required graduate courses may be taken outside the Chemistry Department. The six graduate courses required for the Ph.D. degree should normally be completed by the end of the fourth semester in residence.

Seminars

Each Ph.D. student must register for one of the acceptable chemistry department seminar courses each non-summer semester in residence. In the first semester only, all new graduate students should register for CHEM 8100, which is a general seminar course for first-semester students only. Thereafter, students should register for one of the other seminar courses (CHEM 8120 – Inorganic, CHEM 8130 – Organic, CHEM 8140 – Physical, CHEM 8150 – Analytical, CHEM 8170 – Materials Chemistry and Nanoscience). In addition, each Ph.D. student must give two departmental seminars. These seminars must be presented as part of CHEM 8120, 8130, 8140, 8150, or 8170. The first of these two seminars must be on a literature topic unrelated to the student's research project or other research in the student's research group. The topic for this literature seminar must be approved in advance by the faculty member in charge of the seminar program. The second seminar is on the student's research project. This research seminar is normally given later in the student's program when a body of research that will comprise the dissertation is complete. Finally, each student's dissertation defense must include a mandatory oral presentation that is open to the public, in addition to the two departmental seminars.

The seminar courses are graded based on attendance. Student seminar presentations are evaluated by faculty in attendance independently of the attendance requirement. If a seminar presentation is determined to be unacceptable, the student will be granted the opportunity to present the seminar again at a later date. The seminar presentation must be judged to be acceptable for the student to meet the seminar requirement.

Research Prospectus

By the end of the third semester in residence, each Ph.D. student will meet with their Advisory Committee to present a "prospectus" of their research. The research prospectus should describe a specific project or projects that a student plans to undertake for his or her Ph.D. dissertation research. The prospectus presentation allows an opportunity for the Advisory Committee to become familiar with the student's research goals and plans, and to provide useful suggestions.

The research prospectus should include clear written and oral presentations of:

1. The hypothesis to be tested or the gap in knowledge to be investigated.
2. A succinct review of the background research/knowledge from the literature that forms the basis for the hypothesis/knowledge gap.
3. The experimental approach(es) to be used in testing the hypothesis/knowledge gap.

Consultation with the major professor during formulation of the prospectus is strongly encouraged.

The research prospectus must be presented both in writing (limited to 10 typed pages, double-spaced) and orally (a 20-minute planned presentation interspersed with questions from the committee) at a meeting of the Advisory Committee to be held by the end of the third semester in residence. This is typically one semester before a student would hold his/her preliminary oral exam for admission to Ph.D. candidacy. (Note that the graduate school requires both a research prospectus and a preliminary oral examination for admission to Ph.D. candidacy.) The written prospectus should be given to the members of the Advisory Committee two weeks prior to the oral prospectus presentation. Successful completion of the research prospectus requires approval by all but one member of the Advisory Committee.

Note that the prospectus is not a list of required experiments that, once performed, automatically entitles the student to a Ph.D. degree. Research is by nature exploratory and, therefore, its outcome is unpredictable. Furthermore, the quality of the research is not addressed in the research prospectus. The major professor and the Advisory Committee remain the final judges of what constitutes an acceptable Ph.D. dissertation.

Approval Form for the Prospectus:

<https://www.chem.uga.edu/sites/default/files/inline-files/PROSPECTUS%20APPROVAL%20FORM.pdf>

Preliminary Examination and Admission to Candidacy

The preliminary examination, which constitutes the written and oral comprehensive examinations, as defined by the Graduate School, should be completed and passed by the end of the fourth semester in residence. The student should select a date for the preliminary oral examination in consultation with his or her Advisory Committee. PLEASE NOTE! At least two weeks in advance of the oral preliminary examination, the student must provide the date, time, and place of the exam to the Graduate Program Administrator, who will forward this information for announcement on the Graduate School website. Students cannot do this themselves. This must be done through the Chemistry Department Graduate Program Office. An approved Advisory Committee form and an approved Final Program of Study form must be on file with the Graduate School prior to this announcement.

The written comprehensive examination consists of a progress report on the student's dissertation research and an original research proposal, not directly related to the student's research project (see Guidelines for Written Comprehensive Examination). In the oral comprehensive examination, the student presents and defends the original research proposal and may also be questioned on the research progress report and/or basic knowledge in his/her major area. Passage of the preliminary examination requires approval by at least all but one member of the Advisory Committee. Failure to pass the preliminary examination will result in a mandatory change of degree objective to M.S. Students who have failed their oral preliminary examination may not apply for readmission to the Ph. D. program after completion of the M.S. Degree. Admission to candidacy forms should be submitted to the Graduate Program Administrator immediately after the successful completion of the preliminary examination. At least 30 hours of consecutive resident coursework must be completed before a student may be admitted to candidacy.

The Final Program of Study Form can be found at the Graduate School 'Forms' web page:

<https://grad.uga.edu/current-students/forms/>

Dissertation and Final Defense (Oral Examination)

After admission to candidacy, a student must register for a combined minimum of ten hours of dissertation or other appropriate graduate credit during the completion of the degree program. Students planning to graduate the same semester they enter candidacy must be admitted to candidacy by the published deadline for candidacy during that semester and register for ten hours. The student must also meet all other deadlines for graduation in that semester. Review the "Important Dates & Deadlines" on the graduate school website:

<https://grad.uga.edu/current-students/important-dates-deadlines/>

The graduate school enforces these deadlines rigorously, so it is critical to comply with them. It is advised to review them often. An application for graduation must be filed with the Graduate School no later than Friday of the second full week (the first full week for summer) of classes in the semester of the anticipated graduation date. Following the completion of the research project, the student must submit to the Graduate School a dissertation acceptable to the Advisory Committee. The student then orally defends the dissertation before the Advisory Committee. The defense consists of a formal seminar immediately followed by questioning by the Advisory Committee. This defense is open to the public. PLEASE NOTE! At least two weeks in advance of the final defense, the student must provide the date, time, and place of the exam to the Graduate Program Administrator, who will forward this information for announcement on the Graduate School website. Students cannot do this themselves. This must be done through the Graduate Program Office. Failure to properly notify the Graduate School in advance of the date of the final defense could jeopardize the validity of the Final Defense.

Maintenance of Good Standing

The Graduate School Bulletin states: "students may be dismissed by their department at the end of any semester if they have not made sufficient academic progress to warrant continuance of study" and "A candidate for the doctoral degree who fails to complete all degree requirements within five years after passing the comprehensive examination, and being admitted to candidacy, will be required to take the comprehensive examinations again and be admitted to candidacy a second time."

The assurance of continued support via a research assistantship (RA) or teaching assistantship (TA, GLA/GTA) requires maintenance of "good standing," which includes all of the following:

1. Fulfilling all program requirements on schedule (cf. the Checklists below).
2. Maintenance of at least a 3.0 cumulative GPA overall and in graduate Chemistry classes. The Graduate School Bulletin states "Students with a cumulative graduate course average below 3.0 for two consecutive terms are placed on academic probation by the Graduate School. They then must make a 3.0 or higher semester graduate average each succeeding semester that their overall cumulative graduate average is below 3.0. These students are no longer on probation

when their cumulative graduate average is 3.0 or above. If they make below a 3.0 semester graduate average while on probation, they are dismissed."

3. Receiving "Acceptable" or better ratings in each task of each course for which GLA/GTA performance was evaluated in the most recent semester in which GLA/GTA duties were performed.
4. Receiving an "S" grade for any GRSC 7770 course taken within the last year.
5. Receiving at least one "S" grade in CHEM 7000/9000 in the previous two semesters (applies to students beyond their first year).
6. For international students, meeting the university's language requirements to be certified for teaching within one calendar year of admission.
7. Completing a degree in a timely manner. The expected time for a full-time student to complete an M.S. degree is three years, while that for a Ph.D. is five years. Unless studies are interrupted by extenuating circumstances, these degrees should be completed no later than one year beyond these expected times. The Graduate Curriculum Committee, in consultation with the Department Head, will evaluate any extenuating circumstances.
8. Adhering to UGA's academic honesty code, "A Culture of Honesty." An official finding of academic dishonesty against a chemistry graduate student by a University panel causes the student to lose their good standing.

Checklist

(For deadlines, "semester" means "non-summer semester after entering graduate school at UGA." All completed forms should be forwarded to the Graduate Program Administrator.)

First Year

1. Meet with Graduate Admissions Committee to select first-semester courses the week before the start of the first semester.
2. Meet with three or more faculty members to discuss research options; get signatures on Selection of Major Professor form during the first semester.
3. Have selected research advisor sign Selection of Major Professor form by the end of the first semester.
4. Select Advisory Committee; submit Advisory Committee for Doctoral Candidates form by the end of the second semester.
5. Submit Preliminary Doctoral Program of Study form by the end of the second semester.

Second Year

1. Schedule and present the Prospectus to the Advisory Committee. Have the Advisory Committee sign the Prospectus form by the end of the third semester.
2. Give first graded seminar by the end of the fourth semester. This should normally be the literature seminar.
3. Distribute a one-paragraph abstract summarizing the independent research proposal for the preliminary examination (i.e. the candidacy exam) to the Advisory Committee for their approval (this can be conveniently accomplished via e-mail) no later than six weeks before the exam date.

4. Submit Final Doctoral Program of Study form to the Graduate School through the Graduate Program Administrator before the preliminary examination.
5. Schedule the date for the preliminary oral examination with Advisory Committee. At least two weeks in advance of the oral preliminary examination, provide the date, time, and place to the Graduate Program Administrator, who will forward this information to the Graduate School so that an announcement can be placed on their website. An approved Advisory Committee form and an approved Final Program of Study form must be on file with the Graduate School prior to this announcement. The preliminary examination should normally be taken and passed by end of the fourth semester.
6. Distribute the written independent research proposal and research progress report for the preliminary examination to Advisory Committee at least two weeks before the oral exam.
7. When the announcement of the preliminary examination has been received by the Graduate School, the Report of the Written and Oral Comprehensive Examination form will be placed in the student's mailbox. This form should be taken to the preliminary examination for the Advisory Committee to complete. After the preliminary examination, the student should return the completed form to the Graduate Program Administrator, who will forward it to the Graduate School.
8. Submit the Application for Admission to Candidacy form after fulfilling the following criteria:
 - Final Doctoral Program of Study approved.
 - Grade Point Average of 3.0 or better.
 - Preliminary examination passed.
 - 30-hour coursework requirement met.
 - Advisory Committee confirmed and notified.

Third Year and Beyond

1. Give the second graded seminar by the end of the third year (i.e., the sixth non-summer semester after entry).
2. File the Application for Graduation form with the Graduate School no later than Friday of the second full week (the first full week for summer) of classes during the semester the student plans to graduate. The Graduate School strictly enforces this deadline!
3. Review the "Important Dates & Deadlines" on the graduate school website:

<https://grad.uga.edu/current-students/important-dates-deadlines/>

The graduate school enforces these deadlines rigorously, so it is critical to comply with them. It is advised to review them often.

4. Submit completed dissertation to the research advisor for approval before distributing this to the Advisory Committee.
5. Distribute dissertation to Advisory Committee at least two weeks in advance of the Final Oral Examination.
6. Schedule the date for the Final Oral Examination with the Advisory Committee. At least two weeks in advance of Final Oral Examination, provide the date, time, place, and title of the

dissertation to the Graduate Program Administrator who will forward this information to the Graduate School for announcement on their website. Failure to provide this information could jeopardize the validity of the Final Defense.

7. Present and defend the dissertation in the Final Oral Examination [no more than one Advisory Committee members may disapprove of dissertation].
8. Make any suggested changes to the dissertation and submit the completed Approval Form for Doctoral Dissertation and Final Oral Examination to the Graduate School through the Graduate Program Administrator immediately after Final Oral Examination or after suggested changes are made.
9. Submit the final dissertation to the Graduate School for approval. Submit this electronically as a .pdf file according to the instructions on the ETD Submission Form on the Graduate School webpage by the end of the semester in which the Final Oral Examination was taken.
10. Register for at least three hours of coursework during the semester of graduation. Complete all requirements and have all forms filed with the Graduate School at least one week prior to Graduation.

Guidelines for Written Comprehensive Exam (Preliminary Exam)

Each Ph.D. student must pass a preliminary examination to be admitted to candidacy for the Ph.D. degree. This examination consists of two distinct parts: (a) a written independent research proposal and a written research progress report; and (b) an oral defense of these documents including oral answers to questions raised by the student's Advisory Committee. These guidelines relate to part (a), which constitutes the written comprehensive examination. The written proposal and progress report should be distributed to the student's Advisory Committee at least two weeks before the scheduled preliminary examination.

Independent Research Proposal

Each Ph.D. student must write an original, independently conceived proposal for a research project not directly related to the student's dissertation research. The purpose of this exercise is to demonstrate that the student can identify a significant and timely scientific question and synthesize a research strategy designed to answer this question. The proposal will be evaluated for creativity, feasibility, and significance of the research goals. The student is also expected to be familiar with the background of the selected research topic. The topic must be approved by the Advisory Committee, as set forth in the Checklist: Ph.D. Program/second year above, at least six weeks before the exam. The research proposal should be no longer than 10 pages of double-spaced text. Figures, tables, references, and other graphical material are not included in this limit and should be used to efficiently convey information.

The format of the proposal should use the following sections in the indicated order adhering to the indicated page limits:

- Summary (0.5 pages):
 - A brief summary of the proposal stating the goals of the proposed research and the experimental approach to achieving them.
- Background and Significance (2 pages):

- A description of the current state of the chosen research area, concentrating on any gaps in current understanding that this proposal is designed to fill. The significance of the research question being addressed should also be discussed.
- Proposed Experiments (6.5 pages):
 - A detailed description of the experiments proposed, including instrumentation or procedures used, and how the results would be analyzed and interpreted.
- Chances of Success (1 page):
 - An evaluation of the experimental protocol, possible outcomes, and the overall chance of successful completion of the proposed experiments. The most difficult or challenging parts of the proposed study should be identified and discussed.

Research Progress Report

Each Ph.D. student must write a report describing the progress made to date on their dissertation research project. This allows the committee to evaluate the student's understanding of the research pursued and the student's research progress. The progress report should be no longer than 10 pages of double-spaced text. Figures, tables, references, and other graphical material are not included in this limit and should be used to efficiently convey information.

The format of the progress report should use the following sections in the indicated order adhering to the indicated maximum page limits:

- Abstract (0.5 pages):
 - A brief summary of the goals of the research project and the progress that will be discussed.
- Background (1.5 pages):
 - A description of the current state of this research area, concentrating on any gaps in current understanding that your project is designed to fill.
- Goals (1 page):
 - A summary of the specific goals of the research project and the significance of reaching these goals (i.e., how will science be advanced if these goals are achieved?)
- Experimental Approach (5 pages for this and next section):
 - A discussion of the experimental approaches being used to accomplish the research project. This should represent an "outline" of the thesis project from start to finish.
- Progress:
 - A summary of work accomplished to date on the research project, including articles published and presentations given. Included in this section should also be a discussion of the future directions of the project.

Faculty Involvement in Graduate Student Preparation of Written Comprehensive Examination

The written comprehensive examination (consisting of the research progress report and independent research proposal) is designed to evaluate the student's intellectual creativity and written communication skills. As such, direct involvement of the faculty Advisory Committee with preparation of

these documents should be minimized. The following guidelines will be enforced: Advisory Committee members may not:

- suggest the specific topic, technique, or molecular system to be considered in the independent research proposal. Suggestions about the general area of the proposal are acceptable.
- direct the development of the project in the independent research proposal. When consulted by the student, they may provide factual information only.
- see any version of the independent research proposal prior to its distribution to the entire committee (at least two weeks before the preliminary examination).
- attend an oral presentation of the contents of the written comprehensive examination before the preliminary exam.

Recommended Courses for the First Year of Study

University Mandated Coursework

GRSC 7770 (TA Training) - All first-year chemistry graduate students MUST complete the Chemistry-specific GRSC 7770 (TA training) in their first fall semester.

GradFIRST (seminar) – All first-year chemistry graduate students MUST complete one GradFIRST seminar in their first fall or first spring semester.

Analytical Chemistry

Fall		Spring	
Chem 8189 (3 hours)	NMR Spectroscopy	*Chem 8190 (3 hours)	Biomolecular NMR
Chem 8810 (3 hours)	Mass Spectrometry	*Chem 8830 (4 hours)	Electronics
Chem 8860 (3 hours)	Advanced Analytical Chem	Chem 8850 (3 hours)	Analytical Spectrometry
Chem 8880 (3 hours)	**Nanomaterials: Engineering and Characterization	Chem 8890 (3 hours)	***Special Topics in Analytical Chemistry
Chem 8890 (3 hours)	***Special Topics in Analytical Chemistry	Chem 8xx0 (3 hours)	Non-Analytical Chem Elective
Chem 8xx0 (3 hours)	Non-Analytical Chem Elective	Chem 8150 (3 hours)	Analytical Seminar
Chem 81x0 (3 hours)	Seminar		

*Spring semester, every other year

**Fall Semester, every other year (odd years), but will NOT be offered Fall, 2023 or Spring, 2024

***For Fall, the Special Topics course is Atmospheric Chemistry

***For Spring, the Special Topics course is Mass Spectrometry Omics, but it will NOT be taught Spring 2024

Inorganic Chemistry [Inorganic Track]

Fall	Spring
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Chem 8210 (3 hours)	Chemical Applications of Group Theory	Chem 8220/L (3/1 hours)	Physical Methods in Inorganic and Bioinorganic Chemistry offered odd years; take 2nd spring if necessary
Chem 8230 (3 hours)	Main Group Chemistry offered odd years; take 2nd fall if necessary	Chem 8290 (3 hours)	*Special Topics in Inorganic Chemistry
Chem 8240 (3 hours)	Transition Metal Chemistry offered even years; take 2nd fall if necessary		
Chem 8xx0 (3 hours)	Non-Inorganic Chem Elective	Chem 8xx0 (3 hours)	Non-Inorganic Chem Elective
Chem 81x0 (1 hour)	Seminar	Chem 8120 (1 hour)	Inorganic Seminar

*For Spring, 2024, the Special Topics course is Solid State Chemistry

Inorganic Chemistry [Bio-inorganic Track]

Fall		Spring	
Chem 8210 (3 hours)	Chemical Applications of Group Theory	Chem 8220/L (3/1 hours)	Physical Methods in Inorganic and Bioinorganic Chemistry offered odd years; take 2nd spring if necessary
Chem 8240 (3 hours)	Transition Metal Chemistry offered even years; take 2nd fall if necessary	Chem 8250 (3 hours)	Bioinorganic Chemistry offered even years; take 2nd spring if necessary
Chem 8290 (3 hours)	*Special Topics in Inorganic Chemistry		
Chem 8xx0 (3 hours)	Non-Inorganic Chem Elective	Chem 8xx0 (3 hours)	Non-Inorganic Chem Elective
Chem 81x0 (1 hour)	Seminar	Chem 8120 (1 hour)	Inorganic Seminar
Bcmb 6010 (3 hours)	Biochemistry and Molecular Biology		
Bcmb 8010 (4 hours)	Advanced Biochemistry and Molecular Biology one of BCMB 6010, 8010 or an equivalent Biochemistry course is a pre- or corequisite for CHEM 8250		

*For Fall, 2023, the Special Topics course is Biomedical Inorganic Chemistry

Organic Chemistry [Synthetic Track]

Fall		Spring	
Chem 8310 (3 hours)	Reaction Mechanisms in Organic Chemistry	Chem 8300 (3 hours)	Modern Physical Organic Chemistry
Chem 8340 (3 hours)	Organic Spectroscopic Analysis	Chem 8320 (3 hours)	Synthetic Organic Chemistry

		Chem 8390 (3 hours)	*Special Topics in Organic Chemistry
Chem 8xx0 (3 hours)	Organic or Non-Organic Chemistry Elective	Chem 8xx0 (3 hours)	Organic or Non-Organic Chemistry Elective
Chem 81x0 (1 hour)	Seminar	Chem 8130 (1 hour)	Organic Seminar

*For Spring, 2024, TENTATIVELY the two Special Topics courses are Organometallics, and Soft Materials

Organic Chemistry [Computational Track]

Fall		Spring	
Chem 8310 (3 hours)	Reaction Mechanisms in Organic Chemistry	Chem 8300 (3 hours)	Modern Physical Organic Chemistry
Chem 8350 (3 hours)	Physical and Biological Organic Chemistry	Chem 8330 (3 hours)	Macromolecular Simulations
Chem 8xx0 (3 hours)	Organic or Non-Organic Chemistry Elective	Chem 8xx0 (3 hours)	Organic or Non-Organic Chemistry Elective
Chem 81x0 (1 hour)	Seminar	Chem 8130 (1 hour)	Organic Seminar

Organic Chemistry [Bio-Organic Track]

Fall		Spring	
Chem 8310 (3 hours)	Reaction Mechanisms in Organic Chemistry	Chem 8300 (3 hours)	Modern Physical Organic Chemistry
Chem 8350 (3 hours)	Physical and Biological Organic Chemistry	Chem 8330 (3 hours)	Macromolecular Simulations
Chem 8xx0 (3 hours)	Organic or Non-Organic Chemistry Elective	Chem 8xx0 (3 hours)	Organic or Non-Organic Chemistry Elective
Chem 81x0 (1 hour)	Seminar	Chem 8130 (1 hour)	Organic Seminar

Physical Chemistry

Fall		Spring	
Chem 8210 (3 hours)	Chemical Applications of Group Theory Non-Physical Chem Elective	*Chem 8920 (3 hours)	Thermodynamics/Statistical Mechanics
Chem 8930 (3 hours)	Intro Quantum Chem	*Chem 8940 (3 hours)	Chemical Kinetics
Chem 8970 (3 hours)	Combustion Science	Chem 8950 (3 hours)	Advanced Quantum
Chem 8990 (3 hours)	Lasers in Chemistry	**Chem 8960 (3 hours)	Molecular Spectroscopy
Chem 81x0 (1 hour)	Seminar	Chem 8xx0 (3 hours)	Non-Physical Chem Elective
		Chem 8140 (1 hour)	Physical Seminar

*CHEM 8920 and 8940 are offered alternate spring semesters

**Requires 8210 and 8930 as prerequisite

Requirements for the M.S. Degree

Every graduate student will be advised by the Graduate Coordinator during their first year until a research advisor is chosen. Any questions concerning these requirements should be addressed first to the research advisor (if one has been chosen), then to the Graduate Coordinator. Students should become familiar with the Graduate School requirements in the Graduate School Bulletin.

Selection of a Research Advisor

The guidelines are the same as those for the Ph.D. program.

Student Advisory Committee and Program of Study

In consultation with the research advisor, an Advisory Committee consisting of the research advisor and two additional faculty members, all of whom must be members of the Graduate Faculty, must be chosen by the end of the second semester in residence to develop a Program of Study for the student. The Program of Study must contain at least 30 semester hours of resident coursework, including at least 3 semester hours of CHEM 7300, Master's Thesis, no more than 6 hours of thesis research, CHEM 7000, 1 hour of graded seminar (CHEM 81X0) and at least 12 hours of graded (non-S/U) coursework not including research. This Program of Study must be submitted to the Graduate Program Administrator by the end of the third semester in residence. The specific choice of classes to be included on the Program of Study is determined by the student in consultation with the research advisor and must be submitted to the student's Advisory Committee for approval. The graded coursework must be in classes open only to graduate students. Students can thus fulfill the 30-hour resident coursework requirement by taking four 3-hour graded (non-S/U) graduate courses + 1 hour of seminar (CHEM 81X0) (= 13 hours of graded coursework) plus 6 hours of CHEM 7000 and 11 hours of CHEM 7300. Students in consultation with their Advisory Committee may substitute graded graduate coursework beyond the required 12-hour minimum or S/U-graded seminar coursework (CHEM 81X0) for up to 8 hours of CHEM 7300 provided that the 30-hour resident coursework requirement is maintained. No course with a grade below 'C' can be included on the Program of Study.

Coursework Offered in the Chemistry Department

The graduate course options for the M.S. program are the same as those for the Ph. D. program. The Department of Chemistry offers a broad and diverse array of graduate courses. The descriptions of these courses are found on the departmental website:

<https://www.chem.uga.edu/courses/graduate>

Courses Offered Outside the Chemistry Department

Each M.S. student may include a graduate course outside the Chemistry Department on his or her Program of Study to allow for exposure to a broader base of advanced or interdisciplinary subject matter. A course offered by departments other than Chemistry may be listed on the student's Program of Study, as long as it is approved by the student's research advisor and Advisory Committee. For the

M.S. degree, a maximum of one of the four required graduate courses may be taken outside the Chemistry Department.

Seminars

Each M.S. student must register for one of the acceptable chemistry department seminar courses each non-summer semester in residence. In the first semester only, all new graduate students should register for CHEM 8100, which is a general seminar course for first-semester students only. Thereafter, students should register for one of the other seminar courses (CHEM 8120 – Inorganic, CHEM 8130 – Organic, CHEM 8140 – Physical, CHEM 8150 – Analytical, CHEM 8170 – Materials Chemistry and Nanoscience). In addition, each M.S. student must give one departmental seminar.

The seminar courses are graded based on attendance. Student seminar presentations are evaluated by faculty in attendance independently of the attendance requirement. If a seminar presentation is determined to be unacceptable, the student will be granted the opportunity to present the seminar again at a later date. The seminar presentation must be judged to be acceptable for the student to meet the seminar requirement.

Thesis and Final Defense (Oral Examination)

An application for graduation must be filed at least two semesters before the expected date of graduation. Review the “Important Dates & Deadlines” on the graduate school website:

<https://grad.uga.edu/current-students/important-dates-deadlines/>

The graduate school enforces these deadlines rigorously, so it is critical to comply with them. It is advised to review them often. Following the completion of the research project, the student must submit to the Graduate School a thesis acceptable to the Advisory Committee. The student then orally defends the thesis before the Advisory Committee. All degree requirements must be completed within six calendar years of the date of admission.

Maintenance of Good Standing

The assurance of continued support via a research assistantship (RA) or teaching assistantship (TA, GLA/GTA) requires maintenance of "good standing," which includes all of the following:

1. Fulfilling all program requirements on schedule (cf. the Checklists below).
2. Maintenance of at least a 3.0 cumulative GPA overall and in graduate Chemistry classes. The Graduate School Bulletin states "Students with a cumulative graduate course average below 3.0 for two consecutive terms are placed on academic probation by the Graduate School. They then must make a 3.0 or higher semester graduate average each succeeding semester that their overall cumulative graduate average is below 3.0. These students are no longer on probation when their cumulative graduate average is 3.0 or above. If they make below a 3.0 semester graduate average while on probation, they are dismissed."
3. Receiving "Acceptable" (or better) ratings in each task of each course for which GLA/GTA performance was evaluated in the most recent semester in which GLA/GTA duties were performed.

4. Receiving an "S" grade for any GRSC 7770 course taken within the last year.
5. Receiving at least one "S" grade in CHEM 7000/9000 in the previous two semesters (applies to students beyond their first year).
6. For international students, meeting the university's language requirements to be certified for teaching within one calendar year of admission.
7. Completing a degree in a timely manner. The expected time for a full-time student to complete an M.S. degree is three years, while that for a Ph.D. is five years. Unless studies are interrupted by extenuating circumstances, these degrees should be completed no later than one year beyond these expected times. The Graduate Curriculum Committee, in consultation with the Department Head, will evaluate any extenuating circumstances.
8. Adhering to UGA's academic honesty code, "A Culture of Honesty." An official finding of academic dishonesty against a chemistry graduate student by a University panel causes the student to lose their good standing.

Change of Degree Objective to PhD

Students admitted initially to the M.S. program may appeal to be promoted to the Ph.D. Program after at least four graduate Chemistry courses not graded S/U have been completed in the M.S. Program. The petition for promotion will be considered by the Admissions Committee in the same way that the initial application to the degree program is handled for new students. A student desiring promotion should submit a completed Request for Change of Degree Objective form signed by the major professor (but not by the Graduate Coordinator) to the Graduate Program Administrator. The Graduate Program Administrator will assemble an up-to-date file with transcripts and letter of recommendation from his/her major advisor. The Admissions Committee will review the file and make a recommendation to the Graduate School.

The Change of Degree Objective Form can be found at the Graduate School 'Forms' web page:

<https://grad.uga.edu/current-students/forms/>

Checklist

(For deadlines, "semester" means "non-summer semester after entering graduate school at UGA." All completed forms should be forwarded to the Graduate Program Administrator.)

First Year

1. Meet with the Graduate Admissions Committee to select first-semester courses the week before the start of the first semester.
2. Meet with three or more faculty members to discuss research options; get signatures on the Major Professor Selection form during the first semester.
3. Have selected research advisor sign the Major Professor Selection form by the end of the first semester.
4. Select the Advisory Committee; submit the Advisory Committee for Master of Arts and Master of Science Candidates form by the end of the second semester.

Second Year and Beyond

1. Submit the Program of Study for Master of Arts and Master of Science Candidates form to the Graduate Program Administrator by the end of the third semester. The following criteria must be fulfilled before submitting a program of study:
2. Final Program of Study approved.
3. Grade Point Average of 3.0 or better.
4. 30-hour coursework requirement met.
5. Advisory Committee confirmed and notified.
6. Give graded seminar; variable timing.
7. File the Application for Graduation form through the Graduate Program Administrator at least two full semesters before the graduation date.
8. Review the "Important Dates & Deadlines" on the graduate school website:

<https://grad.uga.edu/current-students/important-dates-deadlines/>

The graduate school enforces these deadlines rigorously, so it is critical to comply with them. It is advised to review them often.

9. Submit the completed thesis to the research advisor. Once approved, submit the approved thesis to the Advisory Committee.
10. Distribute the thesis to the Advisory Committee. At least two weeks in advance of the Final Oral Examination, provide the date, time, place, and title of the dissertation to the Graduate Program Administrator who will forward this information to the Graduate School for posting on their website. Failure to provide this information could jeopardize the validity of the Final Defense.
11. Take the Final Oral Examination and make any suggested changes to the thesis.
12. Submit signed and completed Approval Form for Master's Thesis, Defense, and Final Examination Master of Arts and Master of Science Candidates to the Graduate School through the Graduate Program Administrator immediately after Final Oral Exam or after suggested changes are made.
13. Submit final thesis to the Graduate School for approval electronically as .pdf file according to instructions on ETD Submission Form on the Graduate School web page by the end of the semester following the Final Oral Examination.
14. Register for at least three hours of coursework (CHEM 7300) during the semester in which you will graduate. Complete all requirements and have all forms filed with the Graduate School at least one week prior to Graduation.

Guidelines for Designing an M.S. Program of Study

The following is a summary of the rules discussed in the UGA Graduate Bulletin regarding residency and the Program of Study. Special attention is given to how these rules affect Chemistry graduate students.

1. A Final Program of Study must include a minimum of 30 hours of resident coursework at the University of Georgia.

2. A Final Program of Study must include a minimum of 12 hours of letter-graded courses open only to graduate enrollment (i.e., 6xxx-9xxx courses that do not have duplicate undergraduate course numbers, 4xxx-5xxx).
3. M.S. chemistry students must include on their Final Program of Study:
 - a. Four 3-credit letter-graded graduate courses; a maximum of one of these may be taken outside the chemistry department.
 - b. One 1-credit letter-graded seminar course (i.e., CHEM 8120, 8130, 8140, or 8150).
 - c. A minimum of 3 hours and a maximum of 6 hours of CHEM 7000 (Master's Research).
 - d. A minimum of 3 hours of CHEM 7300 (Master's Thesis).
4. The detailed Graduate School rules and procedures for correctly submitting a Chemistry M.S. Program of Study form are available as a pdf download.