



UNIVERSITY OF CENTRAL FLORIDA

Graduate Program Handbook - 2023/24

Chemistry PhD

Reference this handbook to learn about the unique policies, requirements, procedures, resources, and norms for graduate students in the *Chemistry PhD graduate program*.

DEPARTMENT OF CHEMISTRY • Fall 2023 • COLLEGE OF SCIENCE

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UNIVERSITY OF CENTRAL FLORIDA

Department of Chemistry

P.O. Box 162366
Orlando, FL 32816-2366

Welcome to the Ph.D. in Chemistry program here at the University of Central Florida (UCF). The department has a dynamic environment in which the opportunities for graduate research in chemistry are constantly growing. The Ph.D. program is flexible and designed to give students the opportunity to participate in educational and research programs with national and international recognition. The goal of our program is to enable you to realize your full potential as a graduate student and scientist while developing the professional skills needed to work in industry or the academy. The program will provide visibility not only in important areas of basic and applied sciences but also in interdisciplinary fields of biological sciences, optics, environmental science, forensic science, materials science, and chemistry education.

UCF has the resources to sustain an aggressive expansion across the spectrum of modern scientific disciplines. These include major research efforts in nanoscience, the life sciences, optics and photonics, energy-related sciences, forensic science and chemistry education. Such efforts have made the focus of research efforts increasingly interdisciplinary. Research interests in UCF chemistry focus on problems at the chemical biology interface, optical science, nanotechnology and materials science, environmental, forensic science, and STEM education. UCF's current academic strengths support strong partnerships, one of our university's goals, not only with high tech industries but also with educational institutions, research centers, health care organization, law enforcement agencies, and environmental agencies. Thus, our doctoral program, which has special areas of concentration in materials chemistry, environmental chemistry, biochemistry, forensic science, and chemistry education, will help facilitate the education and training of the next generation of chemical scientists.

Careful, individual attention is given to each student's preparation, interests, and goals in designing a graduate program of study and research. Our goal is to be on the cutting-edge of graduate education in this country. The UCF Department of Chemistry represents the ideal—we are large enough to provide you with exciting research opportunities, yet small enough to treat you as an individual. This allows us to design graduate programs consistent with your professional goals.

Welcome to the Ph.D. Chemistry program. We all look forward to working with you in your intellectual and professional development.

Sincerely,

Dr. Michael D. Hampton
Professor and Chair
Michael.Hampton@ucf.edu

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How to Use This Handbook

This handbook contains instructions, requirements, and policies related to the program. Students should read the entire handbook upon joining the program, and refer to the handbook for specific information whenever needed. This handbook is updated once a year. Please use the most recent version for accurate information.

Who to Contact for Questions

Many of your questions about how to meet expectations and thrive as a graduate student will be answered by the various sources of policies, procedures, requirements, resources, and norms listed in this document. Several key positions in this department and on campus are ready to answer your remaining questions:

Graduate Program Staff

Email: chemgrad@ucf.edu

Tel: 407-823-5728

PSB 255

Graduate Program Coordinator

Dr. Qun Treen Huo (Professor)

Email: Qun.Huo@ucf.edu

Tel: 407-882-2845

PVL 0422

Graduate School Services

For general inquiries and graduate student services from the Graduate School, please review the [College of Graduate Studies](#) website as an additional resource.

Onboarding

Newly admitted students are required to complete the following two steps:

- To register a UCF email account upon accepting the admission offer. All UCF communications will be delivered to your UCF email account only.
- To attend new student orientation and training. The departmental orientation and training take place 1-2 weeks before classes begin in the new semester (Spring or Fall semester only). Orientation schedule will be sent to the student's UCF email address only.

Program Information

Name of Degree

Chemistry PhD

College

College of Science

Department

Chemistry

Program Type

Doctoral

Program Website

<https://sciences.ucf.edu/chemistry/>

Year of Program Inception

2004

Program Accreditation/Certification

University of Central Florida is accredited by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) to award associate, baccalaureate, masters, and doctorate degrees.

Program Description

The Chemistry PhD program focuses on all areas of modern chemistry with faculty actively engaged in research in the often-interdisciplinary fields of Materials Chemistry, Environmental Chemistry, Forensic Science, Biochemistry and Chemistry Education Research. The training prepares future scientists and educators for research within contemporary subjects which yield graduates that are very competitive when entering the workforce in industry, government, and academic positions.

The PhD program in Chemistry provides a doctoral education in the following technical focal areas: Materials Chemistry, Environmental Chemistry, Forensic Science, Biochemistry and Chemistry Education Research, drawing upon the strengths of the Department of Chemistry and other units, such as the College of Optics and Photonics, Advanced Materials Processing and Analysis Center, National Center of Forensic Science, Nanoscience and Technology Center, College of Medicine, College of Engineering and Computer Science, and the College of Community Innovation and Education. These areas meet the ever-pressing demand for the development of new materials, the increasing urgency of addressing crucial environmental and security problems, and new methods and understanding for STEM education. The curriculum has been formulated in collaboration with industrial, government, and academic scientists and represents a response to current and projected competencies needed by industry and the scientific community. The purpose of the program is to develop scientists and educators capable of conducting research to solve important problems in contemporary fields of the chemical sciences while preparing a highly skilled work force to ensure the technological/economic health and competitiveness in Florida and the nation.

The Chemistry PhD program requires 72 credit hours beyond the bachelor's degree with a minimum 18 credit hours of electives in the chosen sub-discipline, an original research project, and dissertation presentation. At least 27 hours of formal course work, exclusive of independent study, are required in order to fulfill degree requirements. This includes four core courses and four electives, three of which must be taken from Chemistry. Six credit hours of directed research are also required; additional courses may be specified by the student's research adviser.

Advising and Mentoring

Incoming students will be advised by the graduate program coordinator until they have selected a research advisor. All students need to select a research advisor before the end of the first semester in the program. After the student finds a research advisor, most academic advising responsibilities will be taken over by the research advisor. Advising relationships are a central part of academia, important to both the experience and development of students and faculty members alike.

Your advisor has two main roles: 1) To assist you in acquiring the highest possible level of knowledge and competence in the field, and 2) to chair the committee that will determine whether you have performed at an acceptable level in each of your degree milestones. Other roles of your advisor may include tracking your progress in completing your degree, assisting with course selection and planning your academic path, and helping you identify possible research mentors, committee members, and research opportunities.

Both the student and advisor are responsible for making their expectations clear to each other. Be sure to discuss this with your advisor.

Finding and Selecting an Advisor

Students should take the following steps to find and select a research advisor:

1. Select a minimum of 3 sub-disciplines (analytical, inorganic, physical, environmental, biochemistry, polymer, nano/advanced materials, forensic, chemistry education) of their interest;
2. Meet with at least one faculty member in each of these sub-disciplines to discuss their research programs;
3. Select an academic advisor (the student research advisor will also be the advisor for the student's coursework from the second semester to completion of all requirements for the degree);
4. Turn in the selection sheet to the Graduate Program Coordinator.

Your advisor should be a faculty member in the program whose expertise and project/research interests match closely with those that you intend to acquire. To learn more about the faculty in your program, consider consulting the following sources:

- Courses and seminars you attend
- Our program website (<https://sciences.ucf.edu/chemistry/>)
- Faculty publications
- Students currently in a prospective advisor's group/lab

Additionally, you may wish to have a discussion with a prospective advisor. Below are some questions to consider asking in this discussion, though it is not a complete list. You should spend

some time identifying what is most important to you in your graduate training and ask questions accordingly.

Questions to Ask of Prospective Advisors

- What thesis projects would be available to me if I were to join your group?
- Would these projects expose me to a variety of different approaches?
- In general, how available will you be to answer questions I might have?
- What is your philosophy regarding the amount of guidance the advisor should provide to a student during preparation of the thesis proposal, literature seminars, thesis writing, etc.?
- What are your expectations for the amount of time I should spend each day/week in your group/lab?
- What regularly scheduled activities (e.g., group meetings, joint group meetings, research clubs) does your group participate in that provide an opportunity to get outside input on my research project and to hear about the work of other students and postdocs?
- Do you encourage your students to attend seminars and journal clubs, including those that may be outside of their narrow field of interest/research?
- Do students in your group/lab have the opportunity to attend professional meetings where they can interact with colleagues/researchers from other institutions?
- Do you include your graduate students in professional activities that will familiarize them with their field of interest/research, such as reviewing manuscripts and meeting with visiting speakers?
- How long do you think it should take me to get my degree?
- What are your former graduate students (if any) doing now?
- What is your general philosophy of graduate training and what goals do you have for your graduate students?

No faculty member is obligated to accept a student's request to serve as advisor, though invitations are often accepted unless the faculty member judges that a different advisor would serve your needs better.

Changing Your Advisor

As the advisor-student relationship is one of mutual agreement, it may be terminated by either party. If you decide that you would prefer working with a different advisor, discuss this with your prospective advisor to seek the change. Once you and your new advisor reach an agreement, you should inform the graduate program coordinator about this change. You should also file a thesis committee member change if you have already formed a thesis committee. Your most current research advisor shall serve as the chair of your thesis committee.

If your research advisor decides to terminate the advisor-student relationship with you, the advisor shall present the decision to the department chair and the graduate program coordinator for consideration. While reasons for a faculty to terminate the advisor-student can vary from case to case, the most common reason is that the faculty advisor is not satisfied by the student's research progress and believes the student's performance cannot be improved to a sufficient level

within a reasonable amount of time. The department chair, in consultation with the graduate program coordinator, may decide the following two outcomes for the student depending on the reasons presented by the faculty advisor for termination: (1) dismiss the student from the program if the department chair agrees with the original advisor's assessment that the student's research performance is unsatisfactory; (2) allow the student to choose another faculty advisor within the program and complete the degree. If the student is given the option to identify another faculty advisor, the student has 30 days to find a new advisor. If no faculty accepts to serve as the new advisor for the student, the student will be placed in the non-thesis master's degree track and his/her eligibility to continue in the Ph.D. program will end at the end of the current term. The student will not be eligible for department support following this term.

Communication between the Students, the Department and Advisor

For curriculum and administration-related questions and concerns, the Graduate Program Support staff (chemgrad@ucf.edu) and the Graduate Program Coordinator are the primary contacts for the students to reach out to. Students may also reach out directly to the department chair at any time for questions, information, and concerns. During the first semester in the program, the Graduate Program Coordinator will serve as the academic advisor to all students. Once a student joins a research group, the student's research advisor also becomes the primary academic advisor for the student. Academic advisor provides help and advise to the student on how to select courses, monitors the student's progress in classes, help answer and address any other questions and concerns students may have related to the curriculum.

Students and their research advisors should communicate routinely to discuss research projects, expectations, research plan and progresses. Many faculty advisors conduct weekly group meetings, require students to make progress presentations, write research summary and reports on monthly or per semester basis. It is highly encouraged that faculty advisor and student develop a specific evaluation criteria and schedule to review student's research progress, provide timely feedback to the student.

Curriculum Section

Required Milestones to Completion

- Proficiency Exams (complete by year 1)
- Prepare and submit a Program Plan of Study (complete by year 1)
- Core Coursework and Electives (complete by year 2)
- Form a dissertation committee (before Candidacy Exam)
- Candidacy Exam (prepare and present a dissertation research progress report and original research to the Committee by the Fifth semester)
- Dissertation research (two-three years after passing Candidacy Exam)
- Publish at least one peer-reviewed original research paper and make at least one conference presentation before dissertation defense
- Dissertation writing and defense

Course Requirements

The program requires a minimum of 72 hours beyond the bachelor's degree (or at least 52 hours beyond the master's degree) specified according to the list below. A maximum of 30 credit hours may be transferred from a recognized M.S. degree program in chemistry or a closely related field. Transfer credits, for core and elective courses, and the program of study will be determined on an individual basis and must be approved by the graduate program coordinator.

Core Courses – 12 Total Credits

Complete at least 4 of the following:

- CHM6710 - Applied Analytical Chemistry (3)
- CHM6440 - Kinetics and Catalysis (3)
- CHS6251 - Applied Organic Synthesis (3)
- CHS6240 - Chemical Thermodynamics (3)
- BCH6740 - Advanced Biochemistry (3)

Seminar- 7 Total Credits

Complete all of the following

- Earn at least 7 credits from the following:
 - CHM6936 - Graduate Chemistry Seminar (1)

CHM 6936 - Graduate Chemistry Seminar: Six seminar credits must be taken consecutively through the first 3 years in the program (excluding summer); the seventh seminar credit will be taken one semester before anticipated dissertation defense.

Directed Research – 6 Total Credits

Earn at least 6 credits from the following:

- CHM6918 - Research Report (1 - 99)

Required Elective Courses – 12 Total Credits

All students who enter the program need to take four elective courses (12 credit hours). All 12 credits must come from one of the following concentrations listed below:

- Materials Chemistry Concentration
- Environmental Chemistry Concentration
- Forensic Science Concentration
- Biochemistry Concentration
- Chemistry Education Research Concentration

Student may choose four courses from the departmental offerings (Courses beginning with CHM or CHS) or three courses from the departmental offerings and one from outside of the department (Non CHM/CHS Courses). Directed research will always be within the department.

Chemistry Education Research Elective Courses: 12 Credit Hours with an option of an additional 0-20 credit hours of electives for students without masters from the approved list of electives for this concentration. Students will discuss electives with their PI to determine the best courses to prepare them for their research specialization.

Materials Chemistry Concentration

Earn at least 12 credits from the following types of courses:

- CHS 5110 – Radiochemistry 3 Credit Hours
- CHM 5785 – Green and Sustainable Chemistry 3 Credit Hours
- CHM 5735 – Chemical Synthesis of Nanomaterials 3 Credit Hours
- CHM 5937 – Bioinorganic Chemistry 3 Credit Hours
- CHM 5305 – Bioconjugate Chemistry 3 Credit Hours
- CHM 5225 – Advanced Organic Chemistry 3 Credit Hours
- CHM 5580 – Advanced Physical Chemistry 3 Credit Hours
- CHM 6711 – Chemistry of Materials 3 Credit Hours
- CHM 6620 – Solid State Inorganic Chemistry 3 Credit Hours
- CHM 5450 – Polymer Chemistry 3 Credit Hours
- CHM 5451C – Techniques in Polymer Science 3 Credit Hours
- CHM 6938 – Special Topics 3 Credit Hours
- CHM 5235 – Applied Molecular Spectroscopy 3 Credit Hours
- CHM 6134 – Advanced Instrumental Analysis 3 Credit Hours
- CHM 7938 – Frontiers in Chemistry 1 Credit Hours (three semesters, 1 credit hour each semester)
- CHM 7919 – Directed Research in Materials Chemistry 6 Credit Hours

Courses from outside the Chemistry Department

- IDS 6252 – Biomedical Nanotechnology 3 Credit Hours
- IDS 6254 – Nanofabrication and Characterization 3 Credit Hours
- IDS 6255 – Nanotechnology in Energy and Sustainability 3 Credit Hours
- IDS 6261 – Nanotechnology for Sustainable Agriculture 3 Credit Hours

- OSE 5203 – Geometrical Optics 3 Credit Hours
- OSE 6313 – Materials for Optical Systems 3 Credit Hours
- OSE 5414 – Fundamentals of Optoelectronic Devices 3 Credit Hours
- EMA 5504 – Modern Characterization of Materials 3 Credit Hours
- EMA 6518 – Transmission Electron Microscopy 3 Credit Hours
- EMA 5108 – Surface Science 3 Credit Hours
- EMA 6129 – Solidification and Microstructure Evolution 3 Credit Hours
- EMA 6130 – Advanced Phase Transformations in Materials 3 Credit Hours
- EMA 6136 – Diffusion in Solids 3 Credit Hours
- EMA 6516 – X-ray Diffraction and Crystallography 3 Credit Hours
- PHY 5933 – Selected topics in biophysics of macromolecules 3 Credit Hours
- PCB 5527 – Genetic Engineering and Biotechnology 3 Credit Hours
- BSC 5408L – Advanced Biology Laboratory Techniques 3 Credit Hours

Chemistry Education Research Concentration

Earn at least 12 credits from the following types of courses:

- CHM 5225 - Advanced Organic Chemistry 3 Credit Hours
- CHM 5580 - Advanced Physical Chemistry 3 Credit Hours
- CHM 6711 - Chemistry of Materials 3 Credit Hours
- CHM 6620 - Solid State Inorganic Chemistry 3 Credit Hours
- CHM 5450 - Polymer Chemistry 3 Credit Hours
- CHM 5451C - Techniques in Polymer Science 3 Credit Hours
- CHM 5715C - Optical Materials Processing and Characterization Techniques 3 Credit Hours
- CHM 6449 - Photochemistry 3 Credit Hours
- CHM 5305 - Bioconjugate Chemistry 3 Credit Hours
- CHM 6938 - Special Topics 3 Credit Hours
- CHM 5235 - Applied Molecular Spectroscopy 3 Credit Hours
- CHM 6134 - Advanced Instrumental Analysis 3 Credit Hours
- CHS 7938 - Frontiers in Chemistry 1 Credit Hours (three semesters, 1 credit hour each semester)
- CHM 7919 - Directed Research in Chemistry Education 6 Credit Hour

Courses from outside the Chemistry Department:

- ISC 5404 - Fundamentals of Discipline Based Education Research in STEM Disciplines 3 credit hours
- EDF 7410 - Non-parametric Data Analysis
- EDF 6401 - Statistics for Education
- STA 5206 - Statistical Analysis
- EDA 7474 - Multilevel Data Analysis
- EDF 7475 - Qualitative Research in Education 1
- EDF 7473 - Qualitative Research in Education 2
- IDS 7502 - Case Studies in Research
- EDF 6481 - Fundamentals of Graduate Research in Education
- EDF 7403 - Quantitative Foundations of Education Research
- EDF 7463 - Analysis of Survey, Record and other Qualitative Data

- PAD 6307 - Public Policy Analysis and Management
- SCE 7242 - Assessment in Science Teaching and Learning
- SCE 7146 - Professional Issues in Science Education
- SCE 7935 - Professional Writing/Grant Writing in Science Education
- SCE 7746 - Teaching Theory and Research in Science Education
- SCE 7145 - Design of Post Secondary Science Curriculum
- SCE 7864 - Science, Technology and Society

Environmental Chemistry Concentration

Earn at least 12 credits from the following types of courses:

- CHS 5110 – Radiochemistry 3 Credit Hours
- CHS 6613 – Current Topics in Environmental Chemistry 3 Credit Hours
- CHS 6508 – Advanced Mass Spectrometry for Forensic Science 3 Credit Hours
- CHM 5235 – Applied Molecular Spectroscopy 3 Credit Hours
- CHM 5580 – Advanced Physical Chemistry 3 Credit Hours
- CHM 6134 – Advanced Instrumental Analysis 3 Credit Hours

Courses from outside the Chemistry Department

- IDS 6253 – Bioanalytical Technology 3 Credit Hours
- IDS 6255 – Nanotechnology in Energy and Sustainability 3 Credit Hours
- IDS 6261 – Nanotechnology for Sustainable Agriculture 3 Credit Hours
- ENV 5410 – Water Treatment 3 Credit Hours
- ENV 6046 – Membrane Mass Transfer 3 Credit Hours
- ENV 6055 – Fate and Transport of Subsurface Contaminants 3 Credit Hours
- ENV 6106 – Theory and Practice of Atmospheric Dispersion Modeling 3 Credit Hours
- ENV 6126 – Design of Air Pollution Controls 3 Credit Hours
- ENV 6336 – Site Remediation and Hazardous Waste Treatment 3 Credit Hours
- ENV 6519 – Aquatic Chemical Processes 3 Credit Hours
- ENV 6558 – Industrial Waste Treatment 3 Credit Hours

Forensic Science Concentration

Earn at least 12 credits from the following types of courses:

- CHS 5110 – Radiochemistry 3 Credit Hours
- CHS 6545 – Forensic Analysis of Explosives 3 Credit Hours
- CHS 6546 – Forensic Analysis of Ignitable Liquids 3 Credit Hours
- CHM 6134 – Advanced Instrumental Analysis 3 Credit Hours
- CHM 5451C – Techniques in Polymer Science 3 Credit Hours
- CHM 6938 – Special Topics 3 Credit Hours
- CHS 6535 – Forensic Molecular Biology 3 Credit Hours
- CHS 6535L – Forensic Analysis of Biological Materials 3 Credit Hours
- CHS 6536 – Population Genetics and Genetic Data 3 Credit Hours
- CHM 7938 – Frontiers in Chemistry 1 Credit Hours (three semesters, 1 credit hour each semester)
- CHM 7919 – Directed Research in Forensic Science 6 Credit Hours

Courses from outside the Chemistry Department

- IDS 6253 – Bioanalytical Technology 3 Credit Hours

Biochemistry Concentration

Earn at least 12 credits from the following types of courses:

- CHS 5110 – Radiochemistry 3 Credit Hours
- CHM 5937 – Bioinorganic Chemistry 3 Credit Hours
- CHM 5305 – Bioconjugate Chemistry 3 Credit Hours
- CHM 5235 – Applied Molecular Spectroscopy 3 Credit Hours
- CHM 5225 – Advanced Organic Chemistry 3 Credit Hours
- CHM 5580 – Advanced Physical Chemistry 3 Credit Hours
- CHS 6535 – Forensic Molecular Biology 3 Credit Hours
- CHS 6535L – Forensic Analysis of Biological Materials 3 Credit Hours
- CHS 6536 – Population Genetics and Genetic Data 3 Credit Hours
- CHM 7938 – Frontiers in Chemistry 1 Credit Hours (three semesters, 1 credit hour each semester)
- CHM 7919 – Directed Research in Biochemistry 3 Credit Hours

Courses from outside the Chemistry Department.

- IDS 6252 – Biomedical Nanotechnology 3 Credit Hours
- IDS 6253 – Bioanalytical Technology 3 Credit Hours
- IDS 6261 – Nanotechnology for Sustainable Agriculture 3 Credit Hours
- PHY 5933 – Selected topics in biophysics of macromolecules 3 Credit Hours
- MCB 5654 – Applied Microbiology 3 Credit Hours
- MCB 6417C – Microbial Metabolism 3 Credit Hours
- BSC 6407C – Laboratory Methods in Molecular Biology 3 Credit Hours
- IDS 5127 – Foundation of Bio-Imaging Science 3 Credit Hours
- PCB 5236 – Cancer Biology 3 Credit Hours
- PCB 5527 – Genetic Engineering and Biotechnology 3 Credit Hours
- EMA 6516 – X-ray Diffraction and Crystallography 3 Credit Hours
- EMA 6518 – Transmission Electron Microscopy 3 Credit Hours

Additional Electives – 20 Total Credits

Earn at least 20 credits from the following types of courses:

Students who enter the program without a master's degree will be required to take 20 additional hours. These 20 hours must be in the same Concentration as the other 12 Required Electives selected above. Students and advisers need to be careful about how elective courses are selected so that at least 12 credit hours of electives must be formal course work, exclusive of independent study. Doctoral research, dissertation research, independent study and directed research may also be used to satisfy additional hours in the concentration.

Dissertation – 15 Total Credits

Earn at least 15 credits from the following types of courses:

CHM 7980 – Doctoral Dissertation Within three months before defending the dissertation, the student will present a dissertation research seminar to the Department of Chemistry, registering for one credit hour of seminar.

Proficiency Exams

Students will be expected to satisfy qualifying (proficiency) requirements (analytical chemistry, biochemistry, inorganic chemistry, organic chemistry and physical chemistry) during the first year by passing exams in four of these five areas. These exams may be waived if the entering student possesses an MS degree in the Chemical Sciences. Satisfaction of this requirement will help ensure that students are adequately prepared for the core courses. If a student does not satisfy the proficiency exam requirements within the first year, the student will be subject to dismissal from the program.

Candidacy Examination

As part of the degree requirement, all graduate students pursuing a doctoral degree in chemistry must pass a candidacy exam before the sixth semester from the start of their study in the program. The candidacy examination consists of writing and orally defending a dissertation research progress and an original research proposal to the student's faculty advisory committee. Every doctoral student must demonstrate proficiency in his/her dissertation research area, the ability to independently develop an original research topic, and the ability to communicate these ideas effectively using concise scientific writing and presentation skills. Students are required to take the candidacy exam no later than the end of the fifth semester (excluding summer) from the start of their study in the program. If a student fails to pass the exam at the first attempt, the student must retake and pass the exam before the end of the sixth semester (excluding summer) of their study. Failure to pass the PhD candidacy exam will result in dismissal from the program.

Admission to Candidacy

The following are required to be admitted to candidacy and enroll in dissertation hours:

- Completion of all required and formal elective course work, except for seminar credit hours and dissertation hours.
- The dissertation advisory committee is formed, consisting of approved graduate faculty and graduate faculty scholars.
- Successful completion of the candidacy examination.
- Submittal of an approved program of study.

Dissertation Defense

The final requirement for the PhD degree is completion of a satisfactory written dissertation of the student's research, along with successful presentation and defense of the dissertation to the advisory committee, including one doctorate-holding non-program faculty member.

Independent Learning

The grounding in scientific research methodology provided by the dissertation requirement is a central focus of the proposed program. Students will conduct research either on site or at the professional laboratories where they work. In either case, a member of the UCF Chemistry Department graduate faculty will act as research adviser and approve the research topic. This research culminates in the writing and presentation of the dissertation. The student will present his/her dissertation for examination by a committee consisting of a minimum of five members including the research adviser. One of the committee members will be from outside the Chemistry department. A majority of the program committee members will hold tenure-earning faculty appointments in the Chemistry Department. The committee has to be approved by the Graduate Coordinator of the Chemistry program and the department Chair. The dissertation must be judged worthy of publication by the dissertation committee and may not be submitted for examination until so deemed. For students performing their dissertation research off campus, the dissertation adviser will visit the student's laboratory, where their research is to be performed, before the research begins and on a regular basis until the work is complete.

Equipment Fee

Full-time students in the Chemistry PhD program pay a \$90 equipment fee each semester that they are enrolled. Part-time students pay \$45 per semester.

Student in Good Standing Requirements

A Graduate student must remain in Good Standing during their Ph.D. program. A “Good Standing” means the student completes all required course work on time, pass required exams (Proficiency Tests and Candidacy Exam) within the expected term, and any other steps and milestones at a satisfactory level as required by the program and described in this entire Handbook. A student given “Not in Good Standing” (unsatisfactory, marginal) status in any category must address the deficiencies within one semester or will be evaluated by the Department for immediate dismissal and/or termination of graduate assistantship.

Planned Program of Study (POS)

Each student is required to prepare and submit a Planned Program of Study (POS) before the end of year 1 in the program. A POS is prepared and developed for each student based on the student’s background, research interest, choice of concentration, and future career goal. The POS form and instructions are sent to all graduate students from the program assistant or coordinator at the beginning of each semester. Student must consult with their research advisor to complete a draft and submit the draft plan to the Graduate Program Coordinator for review. If a student wishes to seek a Master’s Degree Enroute, this request should be included in the first POS. Upon review and approval by the program coordinator, the final approved POS will be submitted to the Graduate Plan of Study (GPS) system in the College of Graduate Studies for record keeping. The POS will be reviewed and updated at least once a year by the student, student’s research advisor and the program coordinator or assistant until the student graduates from the program. The POS will serve as a guide to the student, as well as a record for the advisor and the department to monitor the academic progress of the student.

Special requirements from the program

1. All doctoral students are required to complete the following two laboratory safety training courses sponsored by the UCF Environmental Health and Safety (EHS) office (<https://ehs.ucf.edu/researchsafety>).
 - EHS201 Laboratory Safety Orientation
 - EHS202 Laboratory Safety Practical
2. All doctoral students should attend and complete the following four of the core Pathway to Success workshops sponsored by the College of Graduate Studies (www.students.graduate.edu/pathways)
 - Authorship, Credit and Collaborative Scholarship – CORE
 - Data Management: Perils of Fabrication, Falsification, and Confidentiality – CORE
 - Doing the Right Thing: What Every Graduate Student Should Know About Research Misconduct – CORE
 - Ethics: Personal Integrity as a Graduate Student – CORE

Transfer Coursework

All transfer coursework must be approved by the program's graduate coordinator. Transfer coursework is limited to 30 hours from a completed Master's degree in chemistry or a very closely related field. The 7-year rule is not applied if the coursework is transferred in from a completed Master's degree. Transfer credits, for core and elective courses, and the program of study will be determined on an individual basis and must be approved by the graduate program coordinator

Full Time and Continuous Enrollment

Full-time graduate status is nine (9) hours during the Fall and Spring Semesters and six (6) hours during the summer semesters, until regular graduate course work is completed. There are two exceptions to this requirement:

- a. Students in their last semester who need less than 9 hours to complete their program, unless they are receiving federal loans. These students are considered full-time for fellowship, employment and tuition waiver purposes if they enroll into the hours required for program completion and file an intent to graduate.
- b. Doctoral students who have finished all of their coursework and passed their candidacy exam. These students are considered full-time for fellowship, employment and tuition waiver purposes if they enroll in 3 hours of dissertation research (CHM7980) for each term until degree requirements are completed, unless they are receiving federal loans.

Once a student starts to enroll in dissertation hours, the student must be continuously enrolled in dissertation course work for a minimum of three hours each semester, excluding summer.

Doctoral students must be enrolled in full-time status, for at least two semesters following admission into the degree program.

For completion of the degree, courses older than seven years cannot be applied toward a graduate program of study. In order to allow courses older than seven years to be applied towards the program of study, the student must file a petition.

A student may be held to other enrollment requirements, as defined by financial awards, veteran status, employment, or other outside agencies.

Satisfactory Academic Performance

Satisfactory performance involves maintaining the standards of academic progress and professional integrity expected in a particular discipline or program and the department policy. Failure to maintain these standards may result in termination of the student from the program.

Students are required to maintain a 3.00 GPA in all coursework included in the program of study. Be aware that a B- (2.75) does negatively impact a GPA. While students are allowed to have six hours C (2.00) grades or lower (including U and I) in their program of study, this is the limit.

Grades of C- and lower cannot be used toward completion of a degree requirement. However, all earned grades including those of C- and lower will be included in calculation of the GPA. If a student received two U grades for research credits (Research Reports, Independent Study, Doctoral Research, Doctoral Dissertation Research), the student's graduate assistantship (teaching or research assistantship) will be terminated and the student may be dismissed from the program.

A program GPA below 3.00 at the end of any semester will result in a student being placed on "academic probation" status. In this status, a student is not eligible for tuition waiver support or employment in a graduate position. The student is given the next nine hours of their program coursework to improve their GPA to 3.00 or better. Further, exceeding 6 hours of C or lower grades or a program GPA of 2.00 or lower will result in removal from the program.

Students who received an incomplete (I) in a course are encouraged to resolve this incomplete as soon as possible; however, it must be resolved within one calendar year or prior to graduation certification, whichever comes first. Incompletes left unresolved will be changed to F (or a U in thesis, dissertation or research report) if not resolved within the allowed time period. Incomplete grades cannot be used towards completion of the program of study.

Incomplete grades are not counted as satisfactorily completed courses and are not recognized as such by Graduate Studies for fellowship purposes nor by Financial Aid. Students on financial assistance must check with the Financial Aid office to see if the receipt of an incomplete grade will affect their financial award.

Annual Review

All doctoral students are required to conduct an annual review of their progress in the program. The effort of this requirement is to make sure students are completing the required course work, milestones including proficiency exams and candidacy exams within the expected time frame, and making satisfactory progress towards dissertation research. Students should meet with their research advisor to review their academic progress, including but not limited to the following:

- The student's Program Plan of Study (POS). Update new progresses such as newly completed courses, passing exams, and/or other changes made to the original POS.
- Review if the student has completed laboratory safety training as required by EHS, and if the student has completed the Pathway to Success core workshops.
- Review if the student has passed all proficiency exams and candidacy exam within the expected term.
- Review if the student is making satisfactory progress towards dissertation research. If the student's research requires IRB, IACUC or other institutional approval, review if the student has taken the appropriate training and received the institutional approval before starting the research.

After the meeting, the student should file an "Annual Review Report" from the student's myUCF portal. Attach an updated POS in the section that is designated for updating a student's CV (upload POS instead of CV). Once submitted, the form will be routed to the student's major research advisor for review and input, and then to the Graduate Program Coordinator for review

and approval. The final form will be routed back to the student for student's acknowledgement. The Annual Review will be maintained in the student's record.

Master's Degree Enroute

Doctoral students may apply to obtain an MS degree in Chemistry or MS degree in Forensic Science (FSMS) enroute to the doctoral degree. To qualify for this option, student must complete the following:

1. Submit request to the program coordinator no later than the end of the first year in the program and the student must specify this request on their first POS.
2. Student must complete all requirements as defined in the Master degree program catalog (MS Chemistry or MS Forensic Science). Student is allowed to obtain only one Master's degree enroute.
3. Credits transferred from another graduate program (doctoral or Master's) that the student previously attended within or outside the University of Central Florida before entering the current doctoral program cannot be used to satisfy any of the credit requirement towards the enroute Master's degree.

Filing Intent to Graduate Form

The student must file, through My.UCF.edu, an Intent to Graduate form prior to the University's Intent to Graduate deadline which is available through the UCF academic calendar.

Further, the student should be aware of the various deadlines associated with completing the dissertation and filing the final, electronic copy with the University Thesis Editor. The student should familiarize him or herself with the Thesis/Dissertation Manual that is available from the graduate studies website:

<https://sciences.ucf.edu/cosas/current-students/graduation/>

Students who submit an intent to graduate, but are missing degree requirements (with no indication of completion in process) will be either approved for graduation on a pending status or denied. It is the student's responsibility to ensure that the requirements of their degree have been met; therefore, students are encouraged to review their Graduate Plan of Study regularly. The Graduate Plan of Study can be found online at <https://my.ucf.edu> > Student Self Service > My Academics > View My Advisement Report > Chemistry PhD

Examination Section

Proficiency Tests

Students are expected to satisfy proficiency test requirements during the first year by passing the ACS standardized exams in four (4) of these five (5) areas. Administration and grading of these tests will be the responsibility of the division coordinators of each sub-discipline. The Proficiency Tests are comprised of:

- Analytical Chemistry
- Biochemistry
- Inorganic Chemistry
- Organic Chemistry
- Physical Chemistry

The exams are offered to entering students during the week before the beginning of Fall and Spring semesters. Test results are used to help design each student's plan of study in terms of the starting coursework. If a student does not successfully pass their exams upon first try, they will need to retake the exam at the beginning of the following semester (Fall/Spring). Students have a total of two (2) consecutive attempts to pass proficiency test. If a student fails to pass four of the five proficiency tests by the end of the first year, the student will be placed under probation. The student will then have one more chance to take a third and final attempt at the beginning of their third semester in the program to pass the proficiency exams. If a student fails in this last attempt, the student is subject to dismissal from the program.

In addition, each proficiency exam serves as the prerequisite to each of the core courses. The core cannot be taken without first passing the corresponding proficiency. Please see below for each proficiencies' related core:

Proficiency Prerequisite	Core Course
Analytical Chemistry	Applied Analytical Chemistry (CHM 6710)
Biochemistry Chemistry	Applied Biochemistry (BCH 6740)
Inorganic Chemistry	Kinetics & Catalysis (CHM 6440)
Organic Chemistry	Applied Organic Synthesis (CHS 6251)
Physical Chemistry	Chemical Thermodynamics (CHS 6240)

Candidacy Exam

A. Candidacy Exam Policy

As part of the degree requirement, all graduate students pursuing a doctoral degree in chemistry must pass a candidacy exam before the sixth semester from the start of their study in the program. The candidacy examination consists of writing and orally defending an original research proposal to the student's faculty advisory committee. Every doctoral student must demonstrate proficiency in his/her dissertation research area, the ability to independently develop an original research topic, and the ability to communicate these ideas effectively using concise scientific writing and presentation skills. Students are required to take the candidacy exam no later than the end of the fifth semester (excluding summer) from the start of their study in the program. If a student fails to pass the exam at the first attempt, the student must retake and pass the exam before the end of the sixth semester (excluding summer) of their study. Failure to pass the PhD candidacy exam will result in dismissal from the program.

B. Required Content and Format

1. Required content of the proposal

The candidacy proposal must include the following two-parts: 1) a progress report and summary on the student's own dissertation research; and 2) an original research project proposed and developed independently by the student and the project must substantially differ from the student's current dissertation research. The originality of the proposal will be evaluated by the faculty advisory committee. If the committee concludes that the proposed research is not original enough and not substantially different from the student's dissertation research, this will lead to the student's failure of passing the candidacy exam. Students are strongly encouraged to consult with their dissertation advisor to ensure that their proposed project meets the above criteria before they start to work and develop the candidacy proposal.

2. Format of the proposal

Font style, size and page margin: Use Times New Roman, 12 points, 1 inch margin on all sides, single spaced throughout the entire proposal

3. Organization of the proposal

- I. Progress summary of dissertation research (minimum four pages and maximum five pages). Include the following contents: (1) Significance and objectives (or aims) of the dissertation research; (2) Preliminary results; (3) Plans for the remaining dissertation research; (4) Plans for publication and conference presentation
- II. Project summary or specific aims for the new project (limited to one page only)
- III. Background and Significance – Describe the background of the proposed original research, the problems to be addressed and the significance of the research
- IV. Innovation – Describe the novel ideas and new approach, explain how the proposed research may advance the scientific knowledge/understanding, advance education, solve a scientific or medical problem, or lead to new technology development
- V. Research Plan or Strategy – Present a detailed experimental plan for your proposed research, including data analysis, interpretation, and alternative solutions.

VI. References (no page limit)

VII. A proposed budget (1 page only)

The total page limit for III-V combined should be minimum five pages, maximum six pages.

C. Procedure

The student should inform the Graduate Program Assistant on their intention to take the candidacy exam at least two months prior to the exam. The Graduate Program Assistant will conduct a review on the student's Graduate Plan of Study (GPS). The student should have completed all or the majority of their required course work, with maximum 6 credit hours of course work left to complete after taking and passing the candidacy exam.

The student must acquire approval for the research proposal topic from the Chair of the faculty advisory committee at least one month prior to the oral candidacy exam. The faculty advisory committee Chair, in consultation with other faculty advisory committee members as needed, has the discretion to decide whether the original research proposal topic is appropriate and distinct from the student's own dissertation research area. If the proposal is not found to be outside the scope of the student's previous research (including any research conducted towards a previous MS degree/thesis), the student should propose another research topic to the Chair of the faculty advisory committee. The student is permitted to submit a maximum of three research topics for evaluation. If the student fails to acquire approval after his/her 3rd topic submission, the student will automatically fail the exam.

The student should schedule the oral candidacy exam defense date, time, and location with all members of the faculty advisory committee. At least two weeks prior to the defense date, the student will provide the Graduate Program Coordinator with: 1) Complete proposal for format review; 2) Candidacy Examination Announcement to be sent out to the department (using provided template).

At least one week prior to the oral candidacy exam defense date, copies of the final written proposal must be dispersed to: 1) all members of the faculty advisory committee; 2) the Chemistry department Graduate Program Assistant, who will add it to the student's file for record-keeping purposes. The faculty advisory committee will assess the written proposal during their deliberations at the oral candidacy exam and advise the student of the result (pass/fail) by the conclusion of the oral candidacy exam.

D. Evaluation

The candidacy proposal will be evaluated based on the following three major criteria:

- (1) Student's understanding and progress made on the student's own dissertation research, a plan to publish peer-reviewed papers, and a plan to complete the program within 5 years
- (2) Student's ability to select and develop an independent, original research topic, to explain how the research proposal relates to and will advance the current status of the field, and to provide a conceivable strategy for carrying out the research.
- (3) The written document must demonstrate a proficient level of writing ability, scientific knowledge, and creative thought suitable for a student pursuing a Ph.D.

The student's faculty advisory committee shall use the following evaluation form to evaluate the student. The chair of the committee shall complete the assessment report by including and summarizing the direct input from all committee members. Each committee member should provide numerical score (please refer to the following score guide) on the dissertation progress and original research proposal, and descriptive comments on each of the three evaluation criteria as stated above. The comments should include both strength and weakness of the proposal.

Evaluation form for candidacy exam

Committee member	Dissertation progress (50%)		Original research proposal (50%)	
	Score	Descriptive evaluation	Score	Descriptive evaluation
Member 1 (Chair)				
Member 2				
Member 3				
Member 4				
Member 5				
Overall average score				
Final score	(1) Final score = $0.5 \times (\text{overall average score for dissertation progress}) + 0.5 \times (\text{overall average score for original research proposal})$ (2) Passing score: a final score ≤ 5, AND no individual committee member gives a score ≥ 7 based on the three major criteria as listed above.			

Score guide

Score	Descriptor
1	Exceptional
2	Outstanding
3	Excellent
4	Very good
5	Good
6	Satisfactory
7	Fair
8	Marginal
9	Poor

E. Reporting Results

The candidacy examination will be graded on a pass/fail basis. The pass/fail grade is determined according to criteria as set in **section D – Evaluation**. If a student receives a final score of 5 or lower from the committee's evaluation and no individual committee member gives a score ≥ 7 , the student passes the exam. If a student receives a final score of 6 from the committee, or the student receives a final score of 5 or lower, but with at least one score ≥ 7 from one committee member, the committee may give the student a conditional pass, and request specific improvements to be made by the student. The student's committee chair must inform the whole committee and the graduate program coordinator to confirm that the student has made the expected improvements before the student's Candidacy Examination Approval Form can be submitted and approved. If a student receives a final score of 7 and higher during the exam, the student must retake the exam. The evaluation form for all students will be submitted to the graduate program coordinator and the department for record keeping.

Formal notification of the exam results will be shared verbally with the student at the oral exam. The Chair of the faculty advisory committee (not the student) will then submit written record (Candidacy Examination Approval Form) to the Graduate Program Coordinator of the Chemistry department, who will add it to the student's file for record-keeping purposes and send Notification of Passing Candidacy to the College of Graduate Studies. If the student does not pass the candidacy exam, the faculty advisory committee Chair will provide written comments explaining this decision to the Graduate Program Coordinator of the Chemistry department.

The student may request additional feedback regarding the proposal from the Chair and other members of the faculty advisory committee.

F. Retake Policy

In the event that the student does not pass the candidacy examination on the first attempt, the faculty advisory committee may allow the student one additional attempt to revise and re-submit the unsatisfactory research proposal and/or its oral defense. If the committee allows a second attempt, the committee will decide an appropriate timeline for re- submission. All of the above guidelines must also be followed for the second attempt.

This second examination must be taken within six months of the first attempt. A student whose performance on the second try is also unsatisfactory, or who does not undertake a second examination within six months of the first examination, is subject to dismissal from the program.

Thesis and Dissertation Section

Doctoral Dissertation - Overview

The final requirement for any student in the graduate program to earn the Ph.D. Degree, is the completion of a satisfactory written dissertation of his/her research, along with successful presentation and defense of the dissertation to the student's dissertation advisory committee, including one committee member selected from faculty at the university exclusive of the Chemistry Department.

The graduate dissertation research represents an original and significant contribution to the discipline. The graduate research topic must be aligned in the focus area of the graduate advisor. The advisory committee must be updated on the dissertation research progress on a regular basis. It is suggested that the committee meets once a year to receive an update on the dissertation research progress. The candidate will make a formal presentation of research findings in a seminar format to the public. The candidate must have received approval from the research advisor and the advisory committee prior to the formal presentation. The dissertation must meet format specifications of the university. In a typical format, several chapters targeted for publication are included in the dissertation. The candidate must consult their adviser on the preferred dissertation structure.

University Dissertation Requirements

Students wishing to take dissertation credit hours must have successfully entered candidacy. That is they have completed all course work, taken and passed all qualifying exams, completed all university mandated workshops, and have all associated documents submitted and approved prior to the first day of classes. Students will work with their graduate advisor to enroll in the relevant dissertation course. Doctoral candidates must be enrolled continuously (including summers). Exceptions to the continuous enrollment policy may be appealed to Graduate Studies. Students may not enroll in more than nine credits in any given semester and must enroll in at least three credits; full time is three credits each semester. Candidates that have met the 15 required dissertation hours but not yet defended must remain continuously enrolled. Graduate policy states students have seven years from beginning the program to complete the degree.

The College of Graduate Studies [Thesis and Dissertation page](#) contains information on the university's requirements for dissertation formatting, format review, defenses, final submission, and more.

All university deadlines are listed in the [Academic Calendar](#). Consult with graduate director or advisor for potential earlier deadlines.

The following requirements must be met by dissertation students in their final term:

- Submit a properly formatted file for initial format review by the format review deadline
- Submit the Thesis and Dissertation Release Option form well before the defense

- Defend by the defense deadline
- Receive format approval (if not granted upon initial review)
- Submit signed approval form by final submission deadline
- Submit final dissertation document by final submission deadline

Students must format their dissertation according to the standards outlined in [Thesis and Dissertation Webcourse](#).

The College of Graduate Studies offers several thesis and dissertation [Workshops](#) each term. Students are highly encouraged to attend these workshops early in the dissertation process to fully understand the above policies and procedures.

The College of Graduate Studies thesis and dissertation office is best reached by email at editor@ucf.edu.

Dissertation Committee

A doctoral student's dissertation committee must consist of at least five members and be approved by the College's Associate Dean of Graduate Studies. This committee also evaluates the student's candidacy exam.

Four out of five committee members must hold the primary appointment with the Department of Chemistry and one member must hold the primary appointment in another UCF academic unit or outside UCF. The research advisor (i.e. the advisory committee chair) must hold an appointment (primary or approved secondary joint appointment) in the Chemistry Department and be listed with the university as graduate faculty. Further, only one adjunct, visiting faculty or courtesy appointment member of chemistry department may serve as a member of a dissertation advisory committee upon approval by the Graduate Coordinator.

An adjunct, visiting or courtesy faculty member may not serve as the chair, but may serve as a co-chair. Qualifications of the co-chair must be equivalent to that expected of UCF faculty members. UCF faculty members must form the majority of any given committee.

Doctoral Candidate

After passing the candidacy, doctoral students engaging in dissertation research must be continuously enrolled in at least three hours of CHM7980 every semester, including summer, until they successfully defend and submit their dissertation to the University Thesis Editor.

Dissertation – Format and Content

UCF College of Graduate Studies provides a Thesis and Dissertation Manual on the format and content of doctoral dissertation. The candidate must consult their adviser on the preferred dissertation structure. The Thesis and Dissertation Manual provides guidelines for preparing, formatting and submitting your dissertation. <https://graduate.ucf.edu/students/>

Dissertation – Deadlines

Students should adhere to the following deadlines and complete the following steps in preparation for and completion of dissertation defense:

- Inform the program coordinator one semester before intended defense. For example, if a student intends to defend dissertation in Spring 2023, the student should notify the program coordinator in Fall 2022 so that a degree audit can be conducted on student's graduate plan of study (GPS).
- Register 1 credit of CHM6936 – Graduate Chemistry Seminar one semester before intended defense, make a public presentation on the student's dissertation research in the department during the department seminar hour.
- Inform the program coordinator at least one month prior to the defense date, submit a public announcement that is approved by the major dissertation advisor to the coordinator for public posting. A public announcement template will be sent to the student by the program assistant or coordinator.
- Download a Dissertation Defense Approval Form from the [Thesis and Dissertation Services](#) portal prior to the defense, obtain signatures from all committee members once successfully complete the defense, and submit the approved form to the program coordinator for further processing and final approval.

Dissertation – Submission Procedures

After students have successfully defended their dissertation, follow the procedures for working with the College of Graduate Studies to have the dissertation prepared for publication and final submission.

Dissertation – IRB Approval on Human Subject Research

If the student needs to conduct research that involves human subjects (i.e. surveys, interviews, etc.), he or she must gain Institutional Review Board (IRB) approval prior to beginning the study. For access to the IRB submission form and sample consent forms, please visit the Office of Research website: <http://www.research.ucf.edu/Compliance/irb.html>

Dissertation – Additional Relevant Information

Laboratory Safety - Graduate students will not be allowed to join a research group or conduct research towards their Ph.D. prior to completion of safety trainings. Personal protective equipment (PPE) must be worn at all times while in the laboratory and the UCF Environmental Health & Safety regulations (<http://www.ehs.ucf.edu/>) must be followed and obeyed at all times.

- Approved eye protection is required to be worn in the laboratory continuously. This means eye covering which will protect against both impact and splashes. Safety glasses or goggles must be rated Z87 in order to be approved protective eyewear for lab use. Approved eyewear is available through the campus bookstore, Home Depot or Lowes. If

you should get a chemical in your eye, wash with flowing water for a minimum of 15 minutes and inform the instructor.

- Full protection for the body must be provided by a full-length lab coat with long sleeves, long pants or a long skirt, and shoes. Shoes must be closed toe; no sandals are allowed. Keep long hair confined while in the laboratory. If you wear contacts, please wear your glasses instead with safety glasses that will cover them, unless medically not advised. Both latex and nitrile gloves are available in the bookstore for your use.
- Perform no unauthorized experiments. No horseplay in laboratories. No smoking allowed. No food and drink in the laboratories. Wash your hands before leaving the laboratory.
- Do not taste anything in the laboratory. This applies to food as well as chemicals. Do not use the laboratory as an eating place, and do not eat or drink from laboratory glassware.
- Exercise great care in noting the odor of fumes and avoid breathing fumes of any kind. Use fume hoods as required with blower on and the vertical safety glass down at the appropriate level.
- Do not use mouth suction in filling pipettes with chemical reagents. Use a suction bulb.
- In case of fire or accident, call the instructor at once. Note location of the fire extinguisher, safety shower, and eyewash now, so that you can use it if needed. Wet towels are very efficient for smothering fires. When the alarm sounds evacuate the building.
- For treatment of cuts, burns, or inhalation of fumes you must go to the Student Health Center, located near the Biology building. Your instructor will arrange for transportation or an escort if needed.
- Do not force glass tubing into rubber stopper without protection for hands. Lubricate the tubing with water and use a towel to cover. Fire-polish the ends of all glass tubing.

Animal Subjects - If the student chooses to conduct research that involves animal subjects, he or she must gain Institutional Animal Care and Use Committee (IACUC) approval prior to beginning the study. For access to the IACUC submission forms, please visit the Office of Research website: http://www.research.ucf.edu/IACUC/IACUC_ReferenceMaterials.html

If you have questions regarding human or animal subjects, please contact IRB Coordinator, at (407) 882-1164.

Ethics in Research - Researchers in every discipline have a responsibility for ethical awareness as the status of the profession rests with each individual researcher. It is important to be honest and ethical in conducting research as well as in taking classes. The ethical collection and use of information includes, but is by no means limited to, the following: confidentiality, accuracy, relevance, self-responsibility, honesty, and awareness of conflict of interest. UCF Code of Research Ethics provides our students with guidelines for responsible practice in research. This code of ethics can be found here: <https://graduate.ucf.edu/graduate-guide/academic-integrity>
<http://www.rcr.ucf.edu/>

Patent and Invention Policy - UCF has three fundamental responsibilities with regard to graduate student research. They are to (1) support an academic environment that stimulates the spirit of inquiry, (2) develop the intellectual property stemming from research, and to (3)

disseminate the intellectual property to the general public. UCF owns the intellectual property developed using university resources. The graduate student, as inventor, will according to this policy share in the proceeds of the invention. The full policy is available online from the Graduate Catalog: <http://catalog.ucf.edu/content.php?catoid=4&navoid=201#proprietary-and-confidential-information>

Graduate Assistantship Support and Tuition Waiver

Graduate Teaching Assistantship (GTA) and Graduate Research Assistantship (GRA)

Doctoral students in the program are often offered with a Graduate Teaching Assistantship (GTA) or graduate Research Assistantship (GRA) upon admission to support their study in the program. The offer is made based on the students' background, qualification, and past academic performance. The Assistantship position may be renewed each year for up to 5 years. These assistantship positions include tuition waiver. Tuition waiver is also provided to students who receive university fellowships. A typical GTA or GRA contract covers two semesters (Fall and Spring). The contract for summer semester is offered separately.

GTA support is provided by the department. Students under GTA support are assigned to teach laboratory sections, lead discussions for large lecture classes, graders for laboratory or lecture classes, and potentially other duties, depending on the department needs. There are three levels of GTA: graduate teaching assistant, graduate associate, and graduate graders. Please refer to the graduate catalog to learn more about the classification of these three levels of positions.

Graduate students serving in GTA positions are important members of the academic community in the Chemistry Department. The Department expects dedication to the assigned courses and teaching performance at the highest level to serve the undergraduate student population at the University of Central Florida Chemistry Department. Failure of GTAs to provide this level of dedication to teaching and professional behavior will result in loss of the teaching assistantship, financial stipend, and tuition waiver.

GRA support is provided by individual faculty, typically from the student's faculty advisor's research funding. Students under GRA support are expected to work in the faculty's laboratory to conduct research. The renewal of GRA contract is based on the availability of the faculty's research funding and the students' performance as evaluated by the faculty advisor.

To be employed and to maintain employment in a graduate position, the student must be:

- In good academic standing
- Enrolled full time
- Meet the requirement of the department policy

To be awarded and continue receipt of a tuition waiver, the student must be:

- In good academic standing
- Enrolled full time
- Employed in a graduate position (GTA, GRA, GA) or receiving a University fellowship or (if employed off-campus) employed where payment is processed through Graduate Studies
- Meet the requirement of the department policy

GTA Training (mandatory for employment as GTA)

The College of Graduate Studies and the University accrediting body require training before graduate students are permitted to work as Associates (instructors of record), Assistants, or Graders. All three levels of employment require online training, and Associates are further required to attend a single-day training session face to face (held just prior to the start of the first day of class in every semester). Click [here](#) to read more information about Associate Training and how to self-register for the online training. You must [separately register at the Grad Studies website](#) for the in-person Associate Training. Questions should be addressed to gradassistantship@ucf.edu.

In addition to training required by the College of Graduate Studies and the University, the Department of Chemistry requires a series of face-to-face training before the students can be assigned to any teaching/grading duty. For new students, this training takes place during the New Student Orientation week, which is one week before the classes begin.

English Speaking Test Requirement for International GTAs

Students who are non-native speakers of English and do not have a degree from a U.S. institution must pass the Versant English Speaking test before they will be permitted to teach as Graduate Teaching Associates (position code 9183) or Graduate Teaching Assistants (position code 9184). The Versant test is not required for students who will be appointed as a Graduate Teaching Grader (position code 9187).

Effective Spring 2018, UCF's English Language Institute began offering the Versant English Test in place of the SPEAK Test. The Versant English Speaking test is administered by the English Language Institute and takes about 20 minutes. The College of Graduate Studies will cover the cost of your first Versant test if you take it at the beginning of the **Fall or Spring** semester (Test I).

The Versant English Test requirement applies to all students from countries where English is not the native language; however, such students will be exempt if they have completed a previous degree from a regionally accredited U.S. college or university, from a country where English is the only official language, or from a university at which English is the only official language of instruction, or they have received a score of 26 or higher on the Speak portion of the ibt TOEFL. Only exempted students and those who have attended the UCF GTA Training and satisfactorily passed the evaluation of their English-speaking skills may be assigned as GTAs.

Students who are appointed for Graduate Teaching Assistants (position code 9184) must have a minimum score of 58 on the Versant English Test and for Graduate Teaching Associates (position code 9183) a minimum score of 69.

GTA Performance Appraisal

At the completion of each semester the student is employed as a GTA, the student's performance

will be evaluated by the course instructor. These assessments will be used to review strengths and weaknesses in the student's performance in preparation for future employment. GTA performance appraisal will follow the criteria approved by the department. If a GTA receives an "unsatisfactory" appraisal, the department may terminate the student's assistantship.

Program and Institutional Policies

Absences

Students who anticipate that they may not be able to enroll continuously due to external circumstances should apply for [Special Leave of Absence](#). Specifically, students who are taking courses should apply for a Special Leave of Absence when they cannot enroll in more than two consecutive semesters. Students who are in thesis/dissertation hours should apply for a Special Leave of Absence when they cannot enroll in every semester (including summer).

To qualify for a Special Leave of Absence, the student must demonstrate good cause (e.g., illness, family issues, financial difficulties, personal circumstances, recent maternity/paternity, employment issues). The specific reason for the Leave of Absence request must be indicated by the student on the [Leave of Absence Form](#). Due to current U.S. government regulations, international students must be enrolled every fall and spring semester. For students in this category, a Special Leave of Absence is only available for documented medical reasons.

Academic Standards/Conduct/Integrity

Students must adhere to the standards of conduct and integrity as defined in the [Golden Rule](#)

Appeals/Grievances

It is the student's responsibility to be informed of graduate policies and procedures; however, should a student wish to request an exception to a university or program policy, he or she must file a petition that outlines the nature of their request. Normally, petitions are presented to the graduate program's coordinator and/or committee, the college's Director of Graduate Services and the Associate Dean for Graduate Studies, and the Graduate Council for consideration.

Should a student wish to file a grievance, he or she should first review UCF's Golden Rule (<http://www.goldenrule.sdes.ucf.edu/>) and the Academic Grievance Procedures in the Graduate Catalog (<http://www.graduate.ucf.edu/currentGradCatalog/> > Policies > General Graduate Policies > Academic Grievance Procedure)

Communication

Student Responsibility for University Communication

UCF uses email as the official means of notifying students of important university business and academic information concerning registration, deadlines, financial assistance, scholarships, student accounts (including tuition and fees), academic progress and problems, and many other critical items for satisfactory completion of a UCF degree program. The university sends all business-related and academic messages to a student's Knights Email address to ensure that there is one repository for that information. Every student must register for, and maintain a Knights

Email account at <https://extranet.cst.ucf.edu/kmailselfsvc> and check it regularly to avoid missing important and critical information from the university. Any difficulty with establishing an account or with accessing an established account must be resolved through the [UCF Computer Services Service Desk](#) so that a student receives all important messages.

Additionally, each student must have an up-to-date emergency e-mail address and cell phone number by which to be reached in case of a crisis on campus. This emergency contact information will be used only for emergency purposes. Also, both permanent and local mailing addresses must be on the record, so that any physical documents that must be mailed can be delivered.

It is critical that students maintain and regularly check their Knights Email account for official announcements and notifications. Communications sent to the Knights Email address on record will be deemed adequate notice for all university communication, include issues related to academics, finances, registration, parking, and all other matters. The University does not accept responsibility if official communication fails to reach a student who has not registered for, or maintained and checked on a regular basis, their Knights Email account. Please ensure that this information is current and that any changes in contact information are made online through the myUCF portal at <https://my.ucf.edu/>.

Continuous Enrollment

All graduate students are required to enroll in at least one class over the span of the Academic year. Failure to enroll in 3 consecutive terms results in dismissal from the program. After candidacy exam is passed for doctoral students, they are required to enroll in dissertation hours every semester until graduation.

Disability Statement

ACCESS matters

Purpose: We envision UCF to be a fully accessible campus and inclusive environment for people with disabilities. We do this by:

- Acknowledging disability as an aspect of human diversity;
- Cultivating awareness of the environment's disabling barriers;
- Collaborating on and proactively facilitating accessible environments and experiences;
- Educating faculty and staff to create and maintain access in their spheres of influence;
- Shifting to an inclusive-minded attitude;
- Supplementing with reasonable accommodations as a last resort measure to ensure access.

Dismissal/Discipline

A student may be subject to dismissal or other disciplinary actions due to the following causes:

- If a student's GPA falls below 3.0 and the student is not able to bring the GPA up to 3.0 or higher at the end of probation period, the student will be dismissed from the program,

- If a student received two or more than two “U” (Unsatisfactory) grades for research credits (Research Reports, Independent Study, Doctoral Research, Doctoral Dissertation Research), the student will be dismissed from the program,
- If a student failed to pass proficiency exams, candidacy exams within the expected term, the student will be dismissed from the program,
- If a student violated Golden Rule or committed unethical or other misconducts in course work, research, or teaching activities, the student may be subject to dismissal from the program or other disciplinary actions.

Diversity Statement

The University of Central Florida considers the diversity of its students, faculty, and staff to be a strength and critical to its educational mission. UCF expects every member of the university community to contribute to an inclusive and respectful culture for all in its classrooms, work environments, and at campus events. Dimensions of diversity can include sex, race, age, national origin, ethnicity, gender identity and expression, intellectual and physical ability, sexual orientation, income, faith and non-faith perspectives, socio-economic class, political ideology, education, primary language, family status, military experience, cognitive style, and communication style. The individual intersection of these experiences and characteristics must be valued in our community.

Title IX prohibits sex discrimination, including sexual misconduct, sexual violence, sexual harassment, and retaliation. If you or someone you know has been harassed or assaulted, you can find resources available to support the victim, including confidential resources and information concerning reporting options at <https://letsbeclear.ucf.edu> and <http://cares.sdes.ucf.edu/>. If there are aspects of the design, instruction, and/or experiences within this course that result in barriers to your inclusion or accurate assessment of achievement, please notify the instructor as soon as possible and/or contact [Student Accessibility Services](#).

For more information on diversity and inclusion, Title IX, accessibility, or UCF’s complaint processes contact:

- Title IX – OIE <http://oie.ucf.edu/> & askanadvocate@ucf.edu
- Disability Accommodation – Student Accessibility Services – <http://sas.sdes.ucf.edu/> & sas@ucf.edu
- Diversity and Inclusion Training and Events – www.diversity.ucf.edu
- Student Bias Grievances – Just Knights response team – <http://jkrt.sdes.ucf.edu/>
- UCF Compliance and Ethics Office – <http://compliance.ucf.edu/> & complianceandethics@ucf.edu
- Ombuds Office – <http://www.ombuds.ucf.edu>

Full-time and Part-time Requirements

Students can refer to the Curriculum Section for full-time requirements from the program.

Golden Rule

The Golden Rule is the university's policy regarding non-academic discipline of students and limited academic grievance procedures for graduate (grade appeals in individual courses, not including thesis and dissertation courses) and undergraduate students. Information concerning The Golden Rule can be found at www.goldenrule.sdes.ucf.edu/. Section 11, Student Academic Behavior, addresses appeals of graduate program actions or decisions.

Harassment

The University of Central Florida values diversity in the campus community. Accordingly, discrimination on the basis of race, sex, national origin, religion, age, disability, marital status, parental status, veterans status, sexual orientation, or genetic information is prohibited. Sexual harassment, a form of sex discrimination, is defined as unwelcome sexual advances, requests for sexual favors, or verbal or physical conduct of a sexual nature including any of these three situations.

1. Submission to such conduct is made either explicitly or implicitly a term or condition of an individual's employment or enrollment.
2. Submission to or rejection of such conduct by an individual is used as the basis for employment or enrollment decisions affecting such individual.
3. Such conduct has the purpose or effect of substantially interfering with an individual's work performance or enrollment, or creating an intimidating, hostile, or offensive working or academic environment.

Sexual harassment is strictly prohibited. Occurrences will be dealt with in accordance with the guidelines above and university rules. Employees, students, or applicants for employment or admission may obtain further information on this policy, including grievance procedures, from the OIE Coordinator. The Director of the Office of Institutional Equity Programs is the campus Equity Coordinator responsible for concerns in all areas of discrimination. The office is located on the main campus, in Barbara Ying CMMS Building 81, Suite 101. The phone number is (407) 823-1336. Policies and guidelines are available online at <http://www.eeo.ucf.edu>.

Plagiarism

Understanding plagiarism is essential to the academic integrity of both programs and the institution. Students are prohibited from committing plagiarism in any format in any academic work. Students should visit the College of Graduate Studies website to learn more on this topic and university policy: <https://graduate.ucf.edu/plagiarism/>

Probation

There are certain times when students may not be meeting program and institutional expectations for maintaining good academic standing. If a student failed to meet the program and institutional expectations, the student may be placed under probation. Students are strongly encouraged to read the entire [Academic Progress and Performance](#) section from the Graduate Catalog.

Time Limits to Degree Completion

Students are expected to successfully complete the doctoral program within 5 years. Beyond 5 years, there is no guarantee from the program on graduate assistantship support (GTA or GRA). Students are required to file a 7-year completion plan by the end of 5th year in the program, if the student has not completed the program by this time. Students are strongly encouraged to read the [Time Limitation and Continuous Enrollment Policy](#) in the Graduate Catalog.

Review for Original Work (iThenticate)

The university requires all students submitting a dissertation as part of their graduate degree requirements to first have their electronic documents submitted through iThenticate for advisement purposes and for review of originality. The dissertation chair is responsible for scheduling this submission to iThenticate and for reviewing the results from iThenticate with the student's advisory committee. The advisory committee uses the results appropriately to assist the student in the preparation of their dissertation.

Before the student may be approved for final submission to the university, the dissertation chair must indicate completion of the Review for Original Work through iThenticate by signing the [Dissertation Approval Form](#).

Other Resources

Professional Membership

All doctoral students are encouraged to join the American Chemical Society (ACS). ACS is one of the world's largest scientific societies and the premier home of chemistry professionals. As a graduate student, you are qualified to a special discount rate. You will receive additional, substantial discounts in registration fee when attending the ACS national annual meetings.

https://www.acs.org/content/acs/en/membership.html?sc=220315_acq_spring_ad_od&gclid=EA1aIQobChMIvbqvtKr9wIV6MmUCR0CkATHEAAYASAAEgLC5vD_BwE

Student Associations

UCF supports the reality that education should influence and improve people's lives beyond the university classroom. Since its inception, this idea has guided the university's work. One organization students should consider joining is:

Graduate Student Association

<http://www.gsa.graduate.ucf.edu/>

The Chemistry Department encourages an additional organization made up of graduate students from our own Department:

Uknighthed Chemistry Graduate Student Association (UCGSA)

<https://sciences.ucf.edu/chemistry/uknighthed/>

UCGSA provides many benefits including special speakers, financial help with attending conferences, organized study groups, regular meetings to discuss opportunities and issues pertinent to graduate students at UCF Chemistry.

Graduate Student Center

UCF is fortunate to have its own Graduate Student Center. It is a great place to relax, practice a presentation in one of our conference rooms, have your lunch, and to meet other graduate students. Visit [Graduate Student Center](#) for additional information.

Student Research Week/Student Scholar Symposium

Many of the graduate students who come to UCF will be involved in research. UCF hosts an annual poster forum called the Student Scholar Symposium to provide a conference setting for our students to showcase their work with poster presentations. Scholarships are awarded to top projects. This section can be used to describe this to students in your program. SSS is part of Student Research Week, a week long celebration of student research at UCF. The following link can be provided [Student Research Week](#).

3 Minute Thesis (3MT)

The College of Graduate Studies also hosts a 3MT competition for graduate students in both the Fall Semester. A brief description of what this is and how to be involved can be described in this field. The following link can also be provided: [3MT](#).

Forms

Several forms

Useful Links/Resources

- [Bookstore](#)
- [Campus Map](#)
- [Graduate Catalog](#)
- [Library](#)
- [Parking Services](#)
- [Shuttles](#)
- [Recreation Center](#)
- [Housing](#)
- [Counseling Center](#)
- [Writing Center](#)
- [Academic Calendar](#)

Chemistry Ph.D. Program Website: <https://www.ucf.edu/degree/chemistry-phd/>

UCF Graduate Catalog: <http://catalog.ucf.edu/index.php?catoid=3>

COS Graduate Services: <http://sciences.ucf.edu/graduate/> UCF

College of Graduate Studies: <https://graduate.ucf.edu/>

UCF Academic Calendar: <https://www.ucf.edu/services/s/academic-calendar/>

Library: <https://library.ucf.edu/>

Graduate Student Association: <https://ucfsga.com/graduate-student-association/>

University Writing Center: <https://uwc.cah.ucf.edu/>

UCF Counseling and Psychological Services: <https://caps.sdes.ucf.edu/>

Contact Information

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