**Chemistry PROGRAM**

**Master of Science (M.S.) Degree**

**DEGREE INFORMATION**

**Program Admission Deadlines:**

**Fall:** February 15

**Spring:** October 1

**Minimum Total Hours:** 30

**Program Level:** Masters

**CIP Code:** 40.0501

**Dept. Code:** CHM

**Program (Major/College):** CHM AS

**Approved:** 1965

**Concentrations:**

Analytical Chemistry (ACH), Biochemistry (BCH), Computational Chemistry (CPC), Environmental Chemistry (EVC), Inorganic Chemistry (IOG), Organic Chemistry (OCH), Physical Chemistry (PCH), Polymer Chemistry (POC)

**Also offered as a 5-year Program**

**CONTACT INFORMATION**

**College:** Arts and Sciences

**Department:** Chemistry

**Contact Information:** [www.grad.usf.edu](http://www.grad.usf.edu)

**PROGRAM INFORMATION**

The Department of Chemistry offers Doctor of Philosophy, Master of Science, and Non-thesis Master of Arts degrees. The Chemistry graduate faculty is comprised of full-time senior faculty members, all holding the Ph.D. degree. The combination of a large and strong faculty with a wide variety of courses and electives provides students with programs of study that can be tailored to fit individual needs, while maintaining a sound background in all general aspects of Chemistry. The excellent research facilities and very low student-faculty ratio combine to afford unique opportunities for advanced study in Chemistry.

**Accreditation:**

Accredited by the Commission on Colleges of the Southern Association of College and Schools.

**Major Research Areas:**

Research opportunities are available in such interdisciplinary and specialized areas as Analytical Chemistry, Chemical Education, Computer Modeling and Computational Chemistry, Drug Discovery and Delivery, Bioorganic and Bioinorganic Chemistry, Biophysical Chemistry, Electrochemistry, Environmental Chemistry, Enzymology, Inorganic Chemistry, Marine Chemistry, Medicinal Chemistry, Metal-Organic Framework Chemistry, Nanomaterials, Natural Products, Nucleic Acid Chemistry, Nuclear Magnetic Resonance, Organic Chemistry, Organocatalysis, Photochemistry, Physical Chemistry, Polymers, Spectroscopy, and Synthetic Organic Chemistry.

**ADMISSION INFORMATION**

Must meet University requirements (see Graduate Admissions) as well as requirements listed below.

**Program Admission Requirements**

Applicants must have earned a B.A. or B.S. degree in Chemistry.\* In addition, applicants must have

* a baccalaureate degree in Chemistry or a closely related discipline.
* a preferred GRE score of 149V (430/800) and 147Q (470/800) on the GRE(The Chemistry subject exam is recommended, but not required).
* a preferred minimum of a 3.00 grade point average (Based on a 4.00 scale) in all undergraduate coursework, as verified by an official transcript from the applicant’s undergraduate institution. At least three letters of recommendation from people familiar with the student’s academic background

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All applicants must submit GRE test scores taken within five years of the desired term of entry. Official scores must be submitted to USF directly from the Educational Testing Service, but applicants may provide unofficial copies of their test scores to expedite the processing of their applications. Any admission granted using unofficial scores will not be finalized until official scores from ETS are received. To send your scores via ETS, the institution code for USF is 5828.

**DEGREE PROGRAM REQUIREMENTS**

**Total Minimum Program Hours – 30 credit hours (Post-Baccalaureate)**

Twenty hours must be in formally structured courses of which sixteen hours must be at the 6000 level, as approved by the student’s Supervisory Committee

**Core Requirements- 10 Hours**

CHM 6935 4 Department Seminar\*

CHM 6973 6 Directed Research

\*M.S. Degree-seeking students must enroll in and receive satisfactory performance in four semesters (1 credit hour per semester) of CHM 6935 Department Seminar. Under exceptional circumstances, students may petition the Chemistry Graduate Studies Office for a waiver on a semester‐by‐semester basis if employment or other obligations conflict with the requirement, or if the student has completed his or her degree in less than four semesters.

**Electives - 20 hours**

Students select from the following list of 5000 or 6000 level courses in the Chemistry Department and/or related departments, such as Public Health, Education, Chemical Engineering, Physics, Biology, and Mathematics, with advisement of the student’s Supervisory Committee or the graduate coordinator.

[BCH5045](http://ugs.usf.edu/course-inventory/?output=detail&subj=BCH&num=5045) 3 [Biochemistry Core Course](http://ugs.usf.edu/course-inventory/?output=detail&subj=BCH&num=5045)

[BCH5105](http://ugs.usf.edu/course-inventory/?output=detail&subj=BCH&num=5105) 1-3 [Biochemistry Laboratory Rotations](http://ugs.usf.edu/course-inventory/?output=detail&subj=BCH&num=5105)

[CHM5225](http://ugs.usf.edu/course-inventory/?output=detail&subj=CHM&num=5225) 3 [Intermediate Organic Chemistry I](http://ugs.usf.edu/course-inventory/?output=detail&subj=CHM&num=5225)

[CHM5226](http://ugs.usf.edu/course-inventory/?output=detail&subj=CHM&num=5226) 3 [Intermediate Organic Chemistry II](http://ugs.usf.edu/course-inventory/?output=detail&subj=CHM&num=5226)

[CHM5452](http://ugs.usf.edu/course-inventory/?output=detail&subj=CHM&num=5452) 3 [Polymer Chemistry](http://ugs.usf.edu/course-inventory/?output=detail&subj=CHM&num=5452)

[CHM5621](http://ugs.usf.edu/course-inventory/?output=detail&subj=CHM&num=5621) 3 [Principles of Inorganic Chemistry](http://ugs.usf.edu/course-inventory/?output=detail&subj=CHM&num=5621)

[CHM5931](http://ugs.usf.edu/course-inventory/?output=detail&subj=CHM&num=5931) 1-3 [Selected Topics in Chemistry](http://ugs.usf.edu/course-inventory/?output=detail&subj=CHM&num=5931)

[CHM6036](http://ugs.usf.edu/course-inventory/?output=detail&subj=CHM&num=6036) 3 [Chemical Biology](http://ugs.usf.edu/course-inventory/?output=detail&subj=CHM&num=6036)

[CHM6150](http://ugs.usf.edu/course-inventory/?output=detail&subj=CHM&num=6150) 3 [Advanced Analytical Chemistry](http://ugs.usf.edu/course-inventory/?output=detail&subj=CHM&num=6150)

[CHM6235](http://ugs.usf.edu/course-inventory/?output=detail&subj=CHM&num=6235) 3 [Spectroscopic Analysis of Organic Compounds](http://ugs.usf.edu/course-inventory/?output=detail&subj=CHM&num=6235)

[CHM6250](http://ugs.usf.edu/course-inventory/?output=detail&subj=CHM&num=6250) 3 [Advanced Organic Chemistry I: Synthesis](http://ugs.usf.edu/course-inventory/?output=detail&subj=CHM&num=6250)

[CHM6263](http://ugs.usf.edu/course-inventory/?output=detail&subj=CHM&num=6263) 3 [Advanced Organic Chemistry II: Physical-Organic](http://ugs.usf.edu/course-inventory/?output=detail&subj=CHM&num=6263)

[CHM6279](http://ugs.usf.edu/course-inventory/?output=detail&subj=CHM&num=6279) 3 [Introduction to Drug Discovery](http://ugs.usf.edu/course-inventory/?output=detail&subj=CHM&num=6279)

[CHM6936](http://ugs.usf.edu/course-inventory/?output=detail&subj=CHM&num=6936) 1 [Chemistry Colloquium](http://ugs.usf.edu/course-inventory/?output=detail&subj=CHM&num=6936)

[CHM6938](http://ugs.usf.edu/course-inventory/?output=detail&subj=CHM&num=6938) 1-3 [Selected Topics in Chemistry](http://ugs.usf.edu/course-inventory/?output=detail&subj=CHM&num=6938)

[CHM6945](http://ugs.usf.edu/course-inventory/?output=detail&subj=CHM&num=6945) 3 [Investigating Chemical Education Research in the United States](http://ugs.usf.edu/course-inventory/?output=detail&subj=CHM&num=6945)

**Comprehensive Exam**

**Thesis**

**CHM 6971/6973 Thesis**

M.S. students must register in course CHM 6971 or CHM 6973 when engaged in research, data collection, or writing activities relevant to the M.S. thesis. In addition, the student must submit a written thesis based on original research in an area approved by the student’s Supervisory Committee. The student must present and defend the final thesis before the Supervisory Committee, and this will serve as the final comprehensive examination required by the USF Office of Graduate Studies. All members of the student’s Supervisory Committee must sign the approval form for the student to pass the examination, and the completed approval form must be submitted to the Chemistry Graduate Studies Office within five business days.

**Oral Defense of the M.S. Thesis**

The oral defense of the M.S. thesis must be scheduled through the Chemistry Graduate Studies Office at least two weeks in advance. The Chemistry Graduate Studies Office will then announce the defense to the entire Chemistry department, and the defense is open to the public. *Students should check with the USF Office of Graduate Studies prior to setting a defense date as there are set deadlines pertaining to theses each semester. Students should plan to leave several weeks after the final oral defense to make necessary corrections to the dissertation, at the advisement of the Supervisory Committee.* It is advisable that the student submit to the research advisor a draft of the written thesis at least eight weeks in advance of the desired oral defense date, and no later than one month prior, as the advisor will need sufficient time to review the draft prior to approving it for distribution to the other members of the Supervisory Committee. All committee members should receive final drafts of the thesis to review at least two weeks prior to the oral defense. It is the student’s responsibility to check with the Supervisory Committee as to deadlines for receiving the written thesis to review and in scheduling the oral defense. Thesis defenses are not normally scheduled during final exam week or during the weeks between regularly scheduled sessions. As not all committee members may be available during the summer months, the student should obtain approval from all committee members well in advance if a summer defense date is desired. *All members of the committee must be present at the oral defense, unless an exemption is approved in advance by the Chemistry Graduate Council*. Upon successful completion of the oral defense and acceptance of the final corrected thesis, all committee members must sign the appropriate forms for submission to the Chemistry Graduate Studies Office within five business days.

**Other Program Requirements**

**Demonstration of Proficiency in Undergraduate Chemistry**

Upon entering the program, M.S. degree-seeking students will be administered proficiency examinations in the areas of Organic Chemistry, Inorganic Chemistry, Physical Chemistry, Analytical Chemistry, and Biochemistry. Based on the student’s performance on these examinations, appropriate coursework will be selected for the first semester in consultation with the graduate coordinator or the student’s advisor and Supervisory Committee. Students may be exempted from taking one or more of these exams if documentation can be provided that proficiency has been demonstrated at another institution.

**Selection of the Research Advisor and Supervisory Committee**

Selection of a research advisor and members of the Supervisory Committee is one of the most important decisions a student will make during the graduate career. The research advisor will provide mentorship and serve as chair of the student’s Supervisory Committee that will assist the student in selection of coursework and evaluate progress in research. M.S. students are required to choose a research advisor by the beginning of the second semester. All members of the Supervisory Committee must hold a Ph.D. degree, and at least two members must be tenured or tenure-track in the Chemistry department. Upon selecting an advisor and Supervisory Committee, the student will submit to the Chemistry Graduate Studies Office a completed Committee Selection form bearing the signatures of all the committee members. Changes to the membership of the committee can be made by submitting a Change of Committee form to the Chemistry Graduate Studies Office.

**Annual Committee Meetings**

All graduate students are required to meet with their Supervisory Committee at least once each year, to update the committee members on their progress in coursework, research, and other related activities. *Following each committee meeting, the student must present to the Chemistry Graduate Studies Office within five business days the appropriate meeting form signed by all the committee members, and containing their recommendations, concerns or commentary on the student’s performance.*

**Laboratory Safety Training**

All graduate students who conduct research in a Chemistry department laboratory that handles hazardous substances, or who serve as a graduate teaching assistant in an undergraduate teaching laboratory, must receive annual laboratory safety training and certification from the USF Environmental Health and Safety office. Students may also elect to take *Safety in the Laboratory* for additional training.

**Compliance with Program Requirements**

All students must remain in compliance with all program requirements, and provide the requisite documentation to the Chemistry Graduate Studies Office within five business days of any committee meeting or committee action. The Graduate Council will periodically review the standing of each student with regard to grade point average (GPA), scholarly progress, and teaching performance (in the case of teaching assistants). Appropriate disciplinary action may be required to correct deficiencies in the student’s performance or compliance, in concert with the student’s research advisor and Supervisory Committee.

**Appeals**

In actions involving departmental requirements, petitions and appeals by the student will be directed to the Chemistry Graduate Council through the student’s research advisor. In case a student has not selected a research advisor, the appeal may be carried out through the graduate coordinator or through a chemistry faculty member selected by the student.

**COURSES**

See <http://www.ugs.usf.edu/course-inventory/>