



Graduate Curriculum Approval Form

Changes to Graduate Majors

Degree Program CIP Code	40.0501
Degree (i.e. M.A., Ph.D., etc.):	Ph.D.
Name of Major (e.g. Biology)	Chemistry
Name of affected Concentration(s) (e.g. Botany)	N/A
Proposed Effective Term (e.g. Fall 2017)	Fall 2018
Faculty Contact	Jennifer Lewis
Email	jennifer@usf.edu

APPROVALS	Name	Signature	Action	Date
Dept. Chair	Wayne Guida		<input checked="" type="checkbox"/> Approve <input type="checkbox"/> Not approved <input type="checkbox"/> Comments attached	1/23/18
School Committee Chair (if applicable)			<input type="checkbox"/> Approve <input type="checkbox"/> Not approved <input type="checkbox"/> Comments attached	
College Committee Chair			<input type="checkbox"/> Approve <input type="checkbox"/> Not approved <input type="checkbox"/> Comments attached	
College Dean/ Associate Dean	Robert Potter		<input checked="" type="checkbox"/> Approve <input type="checkbox"/> Not approved <input type="checkbox"/> Comments attached	1/23/18
Concurrence <input type="checkbox"/> N/A <input type="checkbox"/> Needed	Dept: Chair:		<input type="checkbox"/> Concur <input type="checkbox"/> Doesn't concur <input type="checkbox"/> Comments attached	
Grad Council	<input type="checkbox"/> Approve <input type="checkbox"/> Not approved <input type="checkbox"/> Tabled <input type="checkbox"/> Comments	Graduate Studies	<input type="checkbox"/> Approve <input type="checkbox"/> Disapprove	

Summary of Changes – Select all that apply:

Admissions Section:

- Change Priority Admission Deadlines
 - Fall: Dec 5
 - Spring: _____
 - Summer: _____
 - To "fall admissions only"
- From Regular to Direct Receipt Admissions
- From Direct Receipt to Regular Admission
- Admission Requirements

Curriculum Requirements

- Current Curriculum Requirements
 - Core
 - Add New Concentration, Specialization, or Track*
 - Delete Concentration, Specialization, or Track
 - Thesis/Dissertation
 - Comprehensive/Qualifying Exam
- Other: add courses and fix minor errors in text

*Requires submission to APAC for comment/clearance

Why are these changes necessary?

These course list changes are needed to include courses that have been formally approved through the university process. Other small changes address typographical errors and improve clarity and readability. The Fall priority admission deadline change improves our business processes by allowing an additional 10 days for staff and committee work.

Attach the current Catalog Copy, with the requested revisions shown using Track Changes. Catalog copy is not required for changes to the Admission Deadline. All other changes require Catalog Copy. To obtain the most current catalog, email cdh@usf.edu.

Once College has approved, scan and email this Approval Form, and the revised Catalog Copy in Word to Graduate Studies by the deadline posted online <http://www.grad.usf.edu/graduate-council.php>. For questions, contact cdh@usf.edu

CHEMISTRY

Doctor of Philosophy (Ph.D.) Degree

DEGREE INFORMATION

Priority Admission Application Deadlines:~~Fall: December 15~~~~Spring: August 15~~~~Fall: February 15~~~~Spring: October 1~~**International applicant deadlines:**<http://www.grad.usf.edu/majors>**Minimum Total Hours:** ~~72 (Post-Baccalaureate)~~~~42 (Post-Master's)~~72**Level:** Doctoral**CIP Code:** 40.0501**Dept. Code:** CHM**Major/College Codes:** CHM AS**Approved:** 1971

CONTACT INFORMATION

College: Arts and Sciences**Department:** Chemistry**Contact Information:** www.grad.usf.edu**Other Resources:** <http://chemistry.usf.edu/graduate/>

Formatted: Indent: First line: 0.5"

MAJOR 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~~ ~~(better wording)~~ ~~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.

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.

Formatted: Tab stops: 1.25", Left

ADMISSION INFORMATION

Must meet University requirements (see Graduate Admissions), as well as requirements for admission to the major, listed below. ~~Must meet University requirements (see Graduate Admissions), as well as requirements for admission to the major, listed below.~~

- A ~~B.A.~~ ~~achelor of Arts~~ or ~~B.S.~~ ~~achelor of Science~~ degree in Chemistry. Applicants with other degrees are considered on a case-by-case basis.
- ~~A~~ preferred minimum score of 149 V (430/800, 47th percentile) and 147 Q (470/800, 28th percentile) on the GRE (the Chemistry subject exam is not required, ~~but recommended~~).

- ~~a~~ A 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~~ At least three letters of recommendation from people familiar with the student's academic background.
- Applicants whose native language is not English must obtain at least a score of 79 on the Internet-based Test of English as a Foreign Language (TOEFL).

CURRICULUM REQUIREMENTS

Total Minimum Hours – 72 credit hours (Post-Baccalaureate) 42 credit hours (Post-Master's)

Core requirements – 9 credit-hours minimum

Additional Coursework – 61 (post-Baccalaureate) or 31 (post-masters) hours minimum

Dissertation – 2 credit-hours minimum

Core Requirements – 9 ~~credit~~ Credit-h ~~Hours~~ minimum

CHM 6935 6 Graduate Seminars in Chemistry

CHM 6978 3 Advanced Research in Chemistry

Dissertation – 2 Credit Hours (minimum)

CHM 7980 2 credits Dissertation

Students who take more dissertation hours may apply these toward the additional course requirements.

Formatted: Font: Bold

Electives Additional Course Requirements - 61 (Post-Baccalaureate) or 31 (post-masters)

Students may select from graduate 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. Courses include, but are not limited to, the following:

Students may select from the following list of 5000-, 6000-, or 7000-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.

BCH 5045 3 credits Biochemistry Core Course

BCH 5105 1-3 credits Biochemistry Laboratory Rotations

CHM 5225 3 credits Intermediate Organic Chemistry I

CHM 5226 3 credits Intermediate Organic Chemistry II

CHM 5452 3 credits Polymer Chemistry

CHM 5621 3 credits Principles of Inorganic Chemistry

CHM 5931 1-3 credit(s) Selected Topics in Chemistry

CHM 6036 3 credits Chemical Biology

CHM 6150 3 credits Advanced Analytical Chemistry

CHM 6235 3 credits Spectroscopic Analysis of Organic Compounds

CHM 6250 3 credits Advanced Organic Chemistry I: Synthesis

CHM 6263 3 credits Advanced Organic Chemistry II: Physical-Organic

CHM 6279 3 credits Introduction to Drug Discovery

CHM 6480 3 credits Advanced Quantum Mechanics I

CHM 6810 3 credits Methods of Instruction in Higher Ed Chemistry

CHM 6811 3 credits Classroom Assessment Practices in Chemistry

CHM 6907 1-19 credit(s) Independent Study

CHM 6936 1 credit Chemistry Colloquium

CHM 6938 1-3 credit(s) Selected Topics in Chemistry

CHM 6945 3 credits Investigating Chemical Education Research in the United States

CHM 6946 1-4 credit(s) Graduate Instruction Methods

BCH5045 3 Biochemistry Core Course

BCH5105 1-3 Biochemistry Laboratory Rotations

CHM5225 3 Intermediate Organic Chemistry I

CHM5226 3 Intermediate Organic Chemistry II

CHM5452 3 Polymer Chemistry

CHM5621	3	Principles of Inorganic Chemistry
CHM5931	1-3	Selected Topics in Chemistry
CHM6026	3	Chemical Biology
CHM6150	3	Advanced Analytical Chemistry
CHM6235	3	Spectroscopic Analysis of Organic Compounds
CHM6250	3	Advanced Organic Chemistry I: Synthesis
CHM6263	3	Advanced Organic Chemistry II: Physical-Organic
CHM6279	3	Introduction to Drug Discovery
CHM6926	1	Chemistry Colloquium
CHM6938	1-3	Selected Topics in Chemistry
CHM6945	3	Investigating Chemical Education Research in the United States
CHM 7820	varies	Directed Research
CHM 7980	varies	Dissertation

Formatted: Font: Not Bold

Other Requirements:**Qualifying Exam**

Students must successfully pass at least three of the five ACS undergraduate Chemistry proficiency exams in the subject areas of Analytical Chemistry, Biochemistry, Inorganic Chemistry, Organic Chemistry, and Physical Chemistry. A student may attempt each area exam three times and must score above the ^{50th} percentile of national norms.

Formatted: Superscript

Promotion to Candidacy

Before the end of the third ~~academic~~ semester (~~excluding summers not counting the summer~~), the student should present to the Supervisory Committee a written document outlining the student's research progress and future plans. This research summary is also to be presented orally to the committee, ~~and a~~ successful defense results in the student being promoted to candidacy for the Ph.D. degree.

Original Research Proposal (ORP) Examination

An original research proposal must be written and defended ~~by before~~ the end of the ~~student's~~ fifth semester (excluding summers), and after the student has already obtained Ph.D. candidacy.

Research Data Presentation

The student must give a research data presentation to his or her Dissertation Committee, preferably by the end of the fourth year (eight semesters, excluding summers), and at least one semester prior to the final oral thesis defense.

Publication and Presentation Requirements

The student must publish at least one peer-reviewed manuscript on his or her doctoral research topic, and make at least two presentations at a scientific meeting.

Oral Defense of the Ph.D. Dissertation

Upon completing all the research and other program requirements, the student will schedule a final oral defense of the written dissertation. This presentation is open to the public and will serve as the final comprehensive examination required by the *USF Office of Graduate Studies*.

Dissertation (2-Credit Hours minimum)

~~CHM 7980~~ ~~2 credits~~ ~~Dissertation~~

~~Students who take more dissertation hours may apply these toward the additional course requirements.~~

Formatted: Indent: Left: 0"

COURSES

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