CHEMISTRY

For further information:
ChemistryGrad@southernct.edu
COCA, ADIEL, Associate Professor and Chairperson
BARNES, ERICKA, C., Associate Professor and Graduate Coordinator
KEARNS, JAMES K., Associate Professor
KOWALCZYK, GREGORY S., Associate Professor
LESLEY, M.J. GERALD, Professor
PANG, JIONGDONG, Associate Professor
RYDER, TODD., Associate Professor
WEBB, JEFFREY A., Associate Professor
Chemistry, M.S.
Chemistry, M.S., Professional Science Masters
Chemistry, B.S./M.S., Accelerated
CHEMISTRY, B.S./M.S., ACCELERATED

For further information: ChemistryGrad@southernct.edu

Application Deadline

March 13

CHEMISTRY, B.S./M.S. ACCELERATED

The Accelerated B.S./M.S. in Chemistry provides high-achieving students with an opportunity to finish their graduate degree in one year following successful completion of the B.S. in Chemistry (Concentration: B.S. to M.S. Accelerated Pathway) at Southern Connecticut State University.

Application Deadline

Undergraduate Students at Southern Connecticut State University are encouraged to apply for graduate admission no later than the spring semester of their senior year in collaboration with a faculty advisor. All materials should be submitted to the Office of Graduate Admissions the Friday prior to the start of spring break. Students will select the Accelerated M.S. in Chemistry degree. Please consult the admission requirements below and within the Admissions section of the graduate catalog for more information.

Admission Requirements

Students interested in applying for admissions to the Accelerated M.S. in Chemistry should apply online through the Office of Graduate Admissions website: www.southernct.edu/gradadmissions. The applicant’s current SCSU transcript will be automatically added to the application. Students must fill out the online application form, provide a personal statement, and a letter of recommendation from a faculty member indicating that they are willing to supervise the student's thesis research.

Candidates seeking admission are expected to have completed their bachelor's degree requirements and attained a minimum grade point average (GPA) of 3.0 (out of 4.0). Students will be granted early acceptance to the School of Graduate and Professional Studies through the Office of Graduate Admissions, which is conditional upon meeting the requirements listed above. A final transcript noting the degree and date awarded must be received by the Office of Graduate Admissions prior to the beginning of the first semester of graduate enrollment. Upon final approval of the application and planned program by the Office of Graduate Admissions, those accepted into the program will receive a letter of acceptance from the Office of Graduate Admissions verifying their status as a matriculated graduate student.
International applicants should refer to the Admission of International Students subsection of the Application and Admissions section of this catalog for the additional application requirements.

**Program Sequence - 30 Credits**

*As sequencing changes, it is highly recommended that students meet with their program advisor to finalize a list of requirements for graduation. 12 credits of graduate coursework will be completed within the B.S. in Chemistry (Concentration: B.S. to M.S. Accelerated Pathway) and the student will have 18 credits of graduate coursework remaining.*

**Senior Year**

CZE 586 – Chemistry Research – 3 credits  
CZE 587 – Chemistry Research II – 3 credits  
CZE 500-999 – 3 credits  
CZE 500-999 – 3 credits

**Fifth Year**

Complete twelve (12) credits from:  
CZE 500-999

Required six (6) credits:  
CZE 590 – Research – 3 credits  
CZE 591 – Research Thesis – 3 credits
CHEMISTRY, M.S.

For further information: ChemistryGrad@southernct.edu

Application Deadline

Rolling Admissions

Master of Science Degree in Chemistry

The Master of Science program in chemistry offers students the opportunity to complete graduate studies in analytical chemistry, biochemistry, inorganic chemistry, environmental chemistry, organic chemistry, or physical chemistry. Course work in the program, except in unusual circumstances, cannot begin until the student has an undergraduate grade point average of 3.0 or higher. The Master of Science degree in chemistry requires completion of a total of 30 credits (or approximately 10 courses) with a "B" or better average.

Master's Thesis Track

The thesis track requires the completion of the six graduate chemistry courses (18 credits) and a thesis (CHE 588, CHE 589, CHE 590, CHE 591) based on experimental research acceptable to the department. Students must complete the thesis courses in sequence. A student must apply to the department for the thesis defense and provide a final draft of the completed thesis at least two weeks prior to the defense date.

Comprehensive Examination Track

Students are required to complete 30 graduate credits (ten courses) and pass a comprehensive examination. The comprehensive examination is designed to test the student's knowledge of the various areas of chemistry studied while pursuing the master's program. The comprehensive examination is given once or twice a year depending on need.

Program Sequence - 30 Credits

As sequencing changes, it is highly recommended that students meet with their program advisor to finalize a list of requirements for graduation.

Choose One of the Following:

Master Thesis Track

A total of 18 credits in graduate level Chemistry required, in addition to the thesis track courses listed below.

CHE 588 – Scientific Writing and Research Methods – 3 credits
CHE 589 – Research Thesis Proposal – 3 credits
CHE 590 – Research – 3 credits
CHE 591 – Research Thesis – 3 credits

Comprehensive Examination Track
A total of 30 credits in graduate level Chemistry required.

*A comprehensive exam is also required.
CHEMISTRY, M.S. - PROFESSIONAL SCIENCE MASTER'S

For further information: ChemistryGrad@southernct.edu

Application Deadline

Rolling Admissions

Program Overview

The Master of Science program in chemistry offers students the opportunity to complete graduate studies in chemistry while also developing skills in business administration in order for students to prepare for facets of their career that may involve managerial and administrative work. Course work in the program, except in unusual circumstances, cannot begin until the student has an undergraduate grade point average of 3.0 or higher. The Professional Master of Science concentration in chemistry requires completion of a total of 36 credits with a "B" or better average. All students in the program must complete any six graduate chemistry courses of the following six courses with a "B" or better average.

Program Sequence –36 Credits

As sequencing changes, it is highly recommended that students meet with their program advisor to finalize a list of requirements for graduation.

Program Requirements

18 credits in graduate Chemistry courses. In addition, students take the following 18 credits in Masters of Business Administration courses.

MBA 500 – Management Process – 3 credits
MBA 502 – Statistical Decision Making – 3 credits
MBA 505 – Marketing Management – 3 credits
MBA 537 – Product Management – 3 credits
MBA 548 – Operations Management – 3 credits
MBA 551 – Business Ecological Sustainability – 3 credits

Students are required to complete 36 graduate credits (six graduate chemistry courses and six MBA courses) and pass a comprehensive examination. The comprehensive examination is designed to test the student's knowledge of the various areas of chemistry studied while pursuing the master's program. The comprehensive examination is given once or twice a year depending on need.
COURSES

CHE 500 - Advanced Organic Chemistry I
The theoretical basis of the mechanistic pathways followed by the common organic reactions is given in the first part. The second part organizes the variety of organic reactions into logical patterns and applies these to synthetic pathways and methods of synthesizing other organic compounds.
Prerequisite(s): CHE 261.
Last Offered: Spring 2019
3 credits

CHE 501 - Advanced Organic Chemistry II
This second part organizes the variety of organic reactions into logical patterns and applies these to synthetic pathways and methods of synthesizing other organic compounds.
Prerequisite(s): CHE 261.
Last Offered: Fall 2018
3 credits

CHE 510 - Polymer Chemistry I
Systematic study of the nature and properties of polymers. Scheduled irregularly.
Prerequisite(s): CHE 261
Last Offered: Spring 2019
3 credits

CHE 520 - Advanced Physical Chemistry
Elementary principles of quantum and statistical mechanics as applied to chemical systems. Applications of group theory to molecular symmetry and molecular spectroscopy.
Prerequisite(s): CHE 370, CHE 371, and MAT 252.
Last Offered: Fall 2019
3 credits

CHE 532 - Advanced Inorganic Chemistry I
Presentation of the theoretical and descriptive aspects of the chemical elements given at an advanced level. Particular emphasis is placed on the theoretical basis for physical and chemical properties of the elements.
Prerequisite(s): CHE 435.
Last Offered: Spring 2020
3 credits

CHE 540 - Advanced Analytical Chemistry
An advanced course in the use of modern instrumentation involving both spectroscopic and chromatographic techniques for the solution of chemical problems. The emphasis will be on the applications of each instrumental method.
Prerequisite(s): CHE 240.
Last Offered: Spring 2020
3 credits

CHE 550 - Advanced Biochemistry I
Structure and functioning of organisms, tissues, and cells from a chemical point of view. The physical-chemical basis for modern understanding of the structure of nucleic acids, proteins, carbohydrates, and lipids, and the general metabolism of biological compounds.
Prerequisite(s): CHE 261.
Last Offered: Fall 2018
3 credits

CHE 555 - Advanced Medicinal Chemistry
An advanced survey of the main classes of drugs with emphasis upon their origins, structures, targets, structure-activity relationships, effects, side effects, routes of absorption, distributions, metabolisms and excretions.
Prerequisite(s): CHE 261
Last Offered: Winter Session 2019
3 credits
CHE 556 - Pharmacology
No Description Available
Last Offered: Summer 2019
3 credits

CHE 560 - Advanced Environmental Chemistry
Study of natural and anthropogenic sources of chemicals on the aquatic, atmospheric, and soil chemistry in the environment.
Prerequisite(s): CHE 240.
Last Offered: Fall 2019
3 credits

CHE 586 - Chemistry Research I
Experimental Research supervised by a member of the chemistry department.
Prerequisite(s): Senior status in B.S. in Chemistry (Concentration: M.S. Pathway Program) and permission of research adviser.
Last Offered: Fall 2019
3 credits

CHE 587 - Chemistry Research II
Experimental research supervised by a member of the chemistry department.
Prerequisite(s): CHE 586, Senior status in B.S. in Chemistry (Concentration: M.S. Pathway Program), and permission of research adviser.
Last Offered: Spring 2020
3 credits

CHE 588 - Scientific Writing and Research Methods
Developing research methods and skills for the interpretation of the chemical literature for the preparation of scientific documents and presentations. Hands-on computer training using current online literature resources and recent discipline-specific computer programs.
Last Offered: Fall 2019
3 credits

CHE 589 - Research Thesis Proposal
Develop a thesis proposal according to accepted style guidelines including a current literature review of the thesis topic and a description of the experimental design.
Prerequisite(s): CHE 588. Special conditions: completion in one semester.
Last Offered: Spring 2020
3 credits

CHE 590 - Research
Laboratory investigation conducted under the supervision of a member of the chemistry department.
Prerequisite(s): departmental permission.
Last Offered: Fall 2019
3 credits

CHE 591 - Research Thesis
Completion of the written thesis and an oral defense of the research completed in the thesis.
Prerequisite(s): CHE 590.
Last Offered: Spring 2020
3 credits

CHE 592 - Chemical Education
This class will discuss various issues, activities, and research in chemical education, including history of curricula, student and teacher knowledge and beliefs, epistemological and cognitive bases of science learning, and related instructional approaches. This class will involve extensive reading, writing, discussion, and reflection on the current issues and trends in chemical education.
Prerequisite(s): CHE 121.
Last Offered: Winter 2019-20
3 credits

CHE 600 - Independent Study in Chemistry
Independent research under faculty supervision.
Prerequisite(s): departmental permission.
Last Offered: Spring 2019
1 to 3 credits