

Chemistry (CHE)

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- Major: 63-65 credit hours
- Pre-professional Track: 76-78 credit hours
- Minor: 29 credit hours
- Major/Minor GPA required for graduation: 2.5
- All courses for the major and minor must be completed with a grade of C- or better.

PROGRAM REQUIREMENTS:

- Capstone: Junior Seminar in Chemistry (W) (CHE 491)
- Research: Senior Research in Chemistry (CHE 493A and CHE 493B)

Mission: The mission of this program is to prepare students with complete core knowledge and skills in chemistry and with supplementary applicable skills in mathematics and physics for success in graduate school, professional school, or an employment in chemical industry or technology.

Description of Major: Courses in the program are designed to make students competent in the areas of content, critical thinking, laboratory work, and research. Chemistry content courses span the four major fields of general chemistry, organic chemistry, analytical chemistry, and physical chemistry.

Supplementary courses establish a strong background in physics and mathematics. Content mastery is practiced in the senior year by conducting an original research project in chemistry as a capstone experience. Students are encouraged to communicate their results to broader scientific community at the national conferences.

Student Learning Outcomes

Students will

- Mastery the core concepts of chemistry and integrate them across the major areas of chemistry.
- Develop and practice critical thinking skills in scientific problem solving.
- Comprehend the process of scientific inquiry and develop the ability to conduct original research in chemistry.
- Promote appreciation of the role of chemistry in our society.

Degree Preparation: The degree prepares students to enter graduate school in specialized fields of chemistry such as organic chemistry, physical chemistry, analytical chemistry, biochemistry, materials chemistry, computational chemistry, polymer chemistry, environmental chemistry, atmospheric chemistry, medicinal chemistry, and nuclear chemistry. Chemistry majors may also choose employment in chemical and biochemical research and technology upon graduation. The pre-professional track prepares students interested in pursuing professional studies in fields such as medicine, pharmacy, dentistry, optometry, or veterinary science upon graduation.

Students majoring in chemistry may elect a minor in biochemistry.
(See the description of this minor under biochemistry.)

CHEMISTRY MAJOR REQUIREMENTS

63-65 crs.

CHE 105	COLLEGE CHEMISTRY I	(5)
CHE 106	COLLEGE CHEMISTRY II	(5)
CHE 205	ORGANIC CHEMISTRY I	(5)
CHE 206	ORGANIC CHEMISTRY II	(5)
CHE 300	ANALYTICAL CHEMISTRY/CHEMICAL ANALYSIS	(5)
CHE 305	PHYSICAL CHEMISTRY I	(5)
CHE 306	PHYSICAL CHEMISTRY II	(5)
CHE 491	JUNIOR SEMINAR IN CHEMISTRY (W)	(3)
CHE 493A	SENIOR RESEARCH IN CHEMISTRY A	(3)
CHE 493B	SENIOR RESEARCH IN CHEMISTRY B (W)	(2-4)
MTH 210	CALCULUS I	(4)
MTH 211	CALCULUS II	(4)
MTH 212	CALCULUS III	(4)
PHY 211	GENERAL PHYSICS I	(4)
PHY 212	GENERAL PHYSICS II	(4)

RECOMMENDED ELECTIVES

BCH 303	PRINCIPLES OF BIOCHEMISTRY	(4)
BCH 310	INTRODUCTION TO MOLECULAR MODELING AND BIOINFORMATICS	(2)
CHE 380-389	SPECIAL TOPICS IN CHEMISTRY	(1-3)

CHEMISTRY MAJOR REQUIREMENTS: PRE-PROFESSIONAL TRACK

Students who are interested in pursuing professional studies in fields such as medicine, pharmacy, dentistry, optometry, or veterinary science upon graduation are strongly advised to enroll in the pre-professional track program. Students majoring in chemistry who are enrolled in the pre-professional track program should complete the required courses listed below. Students majoring in biology should refer to the pre-professional track program of study in the biology section of this catalog.

PRE-PROFESSIONAL TRACK MAJOR REQUIREMENTS**(SAME AS CHEMISTRY MAJOR REQUIREMENTS)****76-78 crs.**

BIO 110	PRINCIPLES OF CELLULAR AND MOLECULAR BIOLOGY	(4)
BIO 111	PRINCIPLES OF ORGANISMAL AND POPULATION BIOLOGY	(4)
BCH 303	PRINCIPLES OF BIOCHEMISTRY	(4)
BCH 313L	CELLULAR BIOLOGY LAB	(1)

PRE-PROFESSIONAL TRACK**RECOMMENDED ELECTIVES**

BCH 310	INTRODUCTION TO MOLECULAR MODELING AND BIOINFORMATICS	(2)
BCH 380	SPECIAL TOPICS IN BIOCHEMISTRY	(2-3)
BIO 410	ANIMAL PHYSIOLOGY	(4)

To complete a minor in chemistry, students must complete the requirements listed below. The same

requirements regarding minimum cumulative grade point average that apply to the major apply to the minor.

CHEMISTRY MINOR REQUIREMENTS **29 crs.**

CHE 105	COLLEGE CHEMISTRY I	(5)
CHE 106	COLLEGE CHEMISTRY II	(5)
CHE 205	ORGANIC CHEMISTRY I	(5)
CHE 206	ORGANIC CHEMISTRY II	(5)
CHE 300	ANALYTICAL CHEMISTRY/CHEMICAL ANALYSIS	(5)

ONE COURSE FROM THE FOLLOWING

BCH 303	PRINCIPLES OF BIOCHEMISTRY	(4)
CHE 303	PRINCIPLES OF PHYSICAL CHEMISTRY	(4)

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