

American Chemical Society-Certified Concentration

This program leads to a B.S. degree and is designed for the student who wishes to pursue an advanced degree or a career as a professional chemist.

Below is a suggested schedule of courses. This information is provided as a guide and does not supersede information provided by advisors or the Undergraduate Catalog. Each student will develop a specific course schedule in consultation with their departmental advisor. For details of all the University, College and Departmental requirements for graduation, students should consult the Catalog.

69 hours is required (not including Foundational Studies requirements). (F, S and Sum indicate that this course is usually offered in Fall, Spring and Summer semesters.)

Freshman Year:

CHEM 105 (General Chem I; 3 hr; F, S and Sum)
CHEM 105L (General Chem I Lab; 1 hr; F, S and Sum)
CHEM 106 (General Chem II; 3 hr; S and Sum)
CHEM 106L (General Chem II Lab; 1 hr; S and Sum)
MATH 131 (Calculus I; 4 hr; F, S and Sum)
MATH 132 (Calculus II; 4 hr; F, S and Sum)

Sophomore Year:

CHEM 321 (Analytical Chem I; 3 hr; S)
CHEM 321L (Analytical Chem I Lab; 1 hr; S)
CHEM 351 (Organic Chem I; 3 hr; F and Sum)
CHEM 351L (Organic Chem I Lab; 1 hr; F and Sum)
CHEM 352 (Organic Chem II; 3 hr; S and Sum)
CHEM 352L (Organic Chem II Lab; 1 hr; S and Sum)
PHYS 115 (University Phys I; 4 hr; F)
PHYS 115L (University Phys I Lab; 1 hr; F)
PHYS 116 (University Phys II; 4 hr; S)
PHYS 116L (University Phys II Lab; 1 hr; S)

Junior Year:

CHEM 340 – or Senior year - (Techniques in Inorganic Chem; 2 hr; F, *offered alternate years*)
CHEM 341 (Inorganic Chem; 3 hr; S)
CHEM 355 – or Senior year - (Organic Chem Lab Techniques; 2 hr; S, *offered alternate years*)
CHEM 431 (Biochemistry I; 3 hr; F)
CHEM 461 (Physical Chem I; 4 hr; F)
CHEM 461L (Physical Chem I Lab; 1 hr; F)
CHEM 462 (Physical Chem II, 4 hr; S)
CHEM 462L (Physical Chem II Lab; 1 hr; S)

Senior Year:

CHEM 405 (Senior Seminar in Chemistry; 1 hr; F)
CHEM 421 (Analytical Chem II; 3 hr; F)
CHEM 421L (Analytical Chem II Lab; 1 hr; F)

Advanced Electives (6 hr required):

Choose approved advanced courses with at least three credits in chemistry and three in chemistry or related areas (e.g., mathematics, physics, or biology); consult the Catalog or MySAM for specific approved courses. CHEM 495 (Internship in Chemistry) or 499 (Introduction to Research) can be taken for variable credit, but a maximum of 4 credits may be counted. CHEM 330 and 399 cannot be used as advanced electives.

ACS-Certified Concentration Curriculum

The degree courses are in boldface. The plan below is only a suggested sequence, but courses must be taken with observance of prerequisites. Prerequisites are indicated in brackets.

	Fall	Spring
Freshman	CHEM 105 <i>[see catalog for</i> 3 CHEM 105L <i>math recommend.]</i> 1 MATH 131* <i>[Maple score of 21 or</i> 4 <i>MATH 112 and 115]</i> English course* 3 Found. Stud. courses (2) 6 17	CHEM 106 <i>[CHEM 105/105L]</i> 3 CHEM 106L 1 MATH 132 <i>[MATH 131]</i> 4 COMM 101 3 Found. Stud. course 3 14
Sophomore	CHEM 351 <i>[CHEM 105/L]</i> 3 CHEM 351L 1 PHYS 115 <i>[MATH 131]</i> 4 PHYS 115L 1 Found. Stud. courses (2) 6 15	CHEM 352 <i>[CHEM 351]</i> 3 CHEM 352L <i>[CHEM 351L]</i> 1 PHYS 116 <i>[PHYS 115, MATH 132]</i> 4 PHYS 116L 1 CHEM 321 <i>[CHEM 106/L]</i> 3 CHEM 321L 1 Found. Stud. course 3 16
Junior	CHEM 431 <i>[CHEM 352]</i> 3 CHEM 461 <i>[CHEM 321/L; MATH 132;</i> 4 <i>PHYS 106/L or 116/L]</i> CHEM 461L 1 CHEM 340 <i>[CHEM 352/L]</i> 2 <i>(offered alternate years)</i> Found. Stud. course 3 ENG 305T 3 16	CHEM 462 <i>[CHEM 461]</i> 4 CHEM 462L <i>[CHEM 461L]</i> 1 CHEM 341 <i>[CHEM 352]</i> 3 CHEM 355 <i>[CHEM 352/L]</i> 2 <i>(offered alternate years)</i> Found. Stud. courses (2) 6 16
Senior	CHEM 421/421L <i>[CHEM 321/L]</i> 4 CHEM 405 1 Advanced elective** 3 Found. Stud. courses (2) 6 14	Advanced elective** 3 General electives* 9 12

[Prerequisite]

[Pre- or Co-requisite]

* Specific requirements are determined by proficiencies met upon entering. You may need to start with a lower-level math course before MATH 131 (Calculus I), but calculus should be started in your first semester if you place into it. You may need to add a basic skills course. You may need one semester of English (107) or two (101 & 105). You may or may not need to take language courses as part of the Foundational Studies curriculum. Additional courses reduce the number of “general elective” courses later in the curriculum. One Foundational Studies UDIE course may be replaced by completion of a minor, second major, or certificate. Completion of the Honors Program may reduce the number of Foundational Studies courses required. Completion of 120 total credits is a University requirement.

** A total of 6 credits approved advanced electives is required, with at least 3 credits in chemistry.