

College of Arts and Sciences
Department of Chemistry & Biochemistry
Catalog Year: 2017-2018

This course plan is a recommended sequence for this major. Courses designated as critical (!) may have a deadline for completion and/or affect time to graduation. Please see the Program Notes section for details regarding "critical courses" for this particular Program of Study.

| Course Subject and Title | graill IN | otes section for details regarding "critical courses" for this part | | | | | | |
|---|---------------|---|-----|-----------|---|---------|---|-------|
| ENGL 101 Critical Reading and Composition | Critical | , | | | | | Prerequisites | Notes |
| MATH 141 Calculus 13 | | | | | | | | |
| GHEM 111 General Chemistry 1 | ! | | | С | | | | |
| CHEM 111L General Chemistry Lab | | | | | | CC-ARP | | |
| C. PR | | CHEM 111 General Chemistry I ⁴ | 3 | С | | PR | | |
| Foreign language of other Carolina Gore Requirement 3-4 CG-GIT. | | CHEM 111L General Chemistry I Lab | 1 | С | | PR | | |
| UNIV 101 The Student in the University of Carolina Core Requirement* | | Foreign language ⁵ or other Carolina Core Requirement ⁶ | 3-4 | | | CC-GFL | 1 | |
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| NATH 142 Calculus II | | | 3 | С | | | | |
| CHEM 112 General Chemistry II 4 | | DEA/THE 4.40 C 1 1 TE | | | | | 35 277 1 4 44 | |
| higher math, Preceg or Concy: MATH 122, 141 or higher & CHEM 112. | | | | | | | | |
| PHYS 211L Essentials of Physics I Lab | ! | CHEM 112 General Chemistry II ⁴ | 3 | C | | PR | higher math; Prereq or Coreq: MATH 122, | |
| PHYS 211L Essentials of Physics I Lab | | CHEM 112L General Chemistry II Lab | 1 | С | | PR | Coreq: CHEM 112 | |
| PHYS 211L Essentials of Physics I Lab | | | 3 | С | | | | |
| Forcign language* or other Carolina Core Requirement* MATH 241 Vector Calculus* 3 | | | | | | | | |
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| Semester Eight (12 Credit Hours) | | | | | | |
|---|---|-----------|--|-------|--|--|
| Minor Course ⁷ or Approved Elective ¹¹ | 3 | C (minor) | | PR | | |
| Minor Course ⁷ or Approved Elective ¹¹ | 3 | C (minor) | | PR | | |
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| Carolina Core Requirement ⁶ or Approved Elective ¹¹ | 3 | | | CC/PR | | |
| Approved Elective ¹¹ | 3 | | | PR | | |

Graduation Requirements Summary

| Minimum Total Hours | Major Requirements Hours | | Carolina Core Hours | Minimum Overall GPA |
|------------------------|--------------------------|-------|---------------------|------------------------|
| 120 | 27 | 47-59 | 34-46 | 2.000 |

- 1. Regardless of individual course grades, students must maintain a minimum 2.000 cumulative GPA.
- 2. Some colleges require a minimum GPA for major courses. Courses indicated in this column are included in the major GPA for this program of study.
- 3. Students who do not place into MATH 141 will be required to successfully complete MATH 112, 115, or 116 before taking MATH 141.
- 4. CHEM 141 may be taken in place of CHEM 111 and CHEM 111L, and CHEM 142 may be taken in place of CHEM 112 and CHEM 112L.
- 5. Students in the College of Arts and Sciences are required to demonstrate proficiency in one foreign language equivalent to the 122 course through course credit or the corresponding foreign language placement score.
- 6. The Carolina Core provides the common core of knowledge, skill and academic experience for all Carolina undergraduate students.
- 7. The cognate is intended to support the course work in the major. The cognate must consist of twelve hours of courses at the advanced level, outside of, but related to the major. In place of a cognate, a student may choose a minor consisting of at least 18 credit hours of courses concentrated in one area that follow a structured sequence. A second major eliminates the minor/cognate requirement. Students may use MATH 241, STAT 509/515, and PHYS 212 and 212L toward the cognate requirement, but would need to complete additional electives to meet hours to graduate.
- 8. If CHEM 111, 112, 322, and 322L (or CHEM 141, 142, 322 and 322L) are all completed at USC, STAT 509 or 515 is not required. Also, if CHEM 621 and 621L are completed, STAT 509 or 515 is not required. Students who exempt STAT 509 or 515 through this process will be required to take an approved elective to reach minimum hours for graduation.
- 9. The College of Arts and Sciences requires one U.S. History and one non-U.S. History course, both of which must be chosen from the approved Carolina Core GHS courses. Whichever is not fulfilled through the Carolina Core GHS requirement must be fulfilled through this college requirement.

10. CHEM Electives (3-4 hours)

| Choose one from the following: | | | | | |
|---|--|--|--|--|--|
| CHEM 511 Inorganic Chemistry (3) | CHEM 621 Instrumental Analysis (3) (and CHEM 621L) | | | | |
| CHEM 533 Comprehensive Organic Chemistry III (3) | CHEM 623 Introductory Environmental Chemistry (3) | | | | |
| CHEM 545 Physical Biochemistry (3) | CHEM 624 Aquatic Chemistry (3) –cross-listed: MSCI 624 | | | | |
| CHEM 550 Biochemistry (3) -cross-listed: BIOL 541 | CHEM 633 Introduction to Polymer Synthesis (3) | | | | |
| CHEM 555 Biochemistry/Molecular Biology I (3) -cross-listed: BIOL 545 | CHEM 644 Materials Chemistry (3) | | | | |

- 11. No courses of a remedial, developmental, skill-acquiring, or vocational nature may apply as credit toward degrees in the College of Arts and Sciences. The College of Arts and Sciences allows the use of the Pass-Fail option on elective courses. Further clarification on inapplicable courses can be obtained from the College of Arts and Sciences.
- 12. Students are encouraged to start undergraduate research as early as possible to allow participation in long-term projects. Three credits of undergraduate research are required, but additional research experience is recommended. Extramural Research opportunities, such as REU's may qualify for CHEM 496-499 credit; however, a request form must be submitted and preapproved by the Department of Chemistry.

Program Notes:

- ENGL 101 and ENGL 102 must be completed in the student's first 60 semester hours of work in order for these courses to be credited toward graduation. CHEM 112 is a prerequisite for subsequent required courses and may delay progression if not taken in a timely manner.
- Any Chemistry or Biochemistry and Molecular Biology major can qualify for ACS certification by taking additional courses as listed: CHEM 511, CHEM 621, CHEM 621L, CHEM 550 or CHEM 555, and 6 credits of undergraduate research, CHEM 496-499.
- CHEM 401 Industrial Chemistry Capstone Experience is a recommended elective that prepares students for future roles in chemistry.
- Chemistry majors may enroll in a chemistry course a maximum of twice to earn the required grade of C or higher.
- A Chemistry major must receive a grade of C or higher in any chemistry course in order for it to be used to satisfy a major requirement.
- The last 30 credit hours toward your degree must be earned in residence at the University of South Carolina-Columbia.

University Requirements: Bachelor's degree-seeking students must meet Carolina Core (general education) requirements. For more information regarding these requirements, please visit the <u>Carolina Core</u> page on the University website.

| Codes: | | | | | |
|--------|--|--------|---|--|--|
| CC | Carolina Core | CC-INF | Carolina Core – Information Literacy | | |
| CC-AIU | Carolina Core-Aesthetic and Interpretive Understanding | CC-INT | Carolina Core – Integrative Course | | |
| CC-ARP | Carolina Core-Analytical Reasoning and Problem-Solving | CC-SCI | Carolina Core – Scientific Literacy | | |
| CC-CMS | Carolina Core-Effective, Engaged, and Persuasive Communication: Spoken Component | CC-VSR | Carolina Core - Values, Ethics, and Social Responsibility | | |
| CC-CMW | Effective, Engaged, and Persuasive Communication: Written Component | CR | College Requirement | | |
| CC-GFL | Carolina Core-Global Citizenship and Multicultural Understanding: Foreign Language | MR | Major Requirement | | |
| CC-GHS | Carolina Core – Historical Thinking | PR | Program Requirement | | |
| CC-GSS | Carolina Core – Social Sciences | | | | |

Disclaimer: Major maps are only a suggested or recommended sequence of courses required in a program of study. Please contact your academic advisor for assistance in the application of specific coursework to a program of study and course selection and planning for upcoming semesters.