

College of SCIENCE
Department of CHEMISTRY
Bachelor of Arts (BA) in CHEMISTRY
Major in CHEMISTRY
For Student Date of Entry Under UG Catalog 2022–2023

A dagger (†) indicates a course with prerequisites or co-requisites.

I. Pathways General Education Requirements (47 credits)

Concept 1 Discourse (9 credits)

(1f): 6 credits in foundational courses ENGL 1105–1106 is recommended

	3			3	
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(1a): 3 credits in advanced or applied writing or speaking courses

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Concept 2 Critical Thinking in the Humanities (6 credits)

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Concept 3 Reasoning in the Social Sciences (6 credits). PSYC 1004 and SOC 1004 are recommended for students contemplating careers in health sciences.

	3			3	
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Concept 4 Reasoning in the Natural Sciences (8 credits). The following four-course sequence is required of all students majoring in Chemistry within the B.A. Degree in Chemistry.

† PHYS 2205–2206 General Physics ^{1,2}	3		3	
† PHYS 2215–2216 General Physics Laboratory ^{1,2}	1		1	

Concept 5 Quantitative and Computational Thinking (9 credits)

(5f): 6 credits in foundational courses. The following course sequence is required of all students majoring in Chemistry within the B.A. Degree in Chemistry.

† MATH 1025–1026 Elementary Calculus ^{3,4}	3		3	
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(5a): 3 credits in advanced or applied courses. Students majoring in Chemistry within the B.A. Degree in Chemistry must select either STAT 3005 (†) or STAT 3615 (†).

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Concept 6 Critique and Practice in Design and the Arts (6 credits = 3 in design + 3 in arts, or 6 in integrated design and arts)

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Concept 7 Critical Analysis of Identity and Equity in the United States (3 credits)

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II. Chemistry Bachelor of Arts Core Courses (22 credits)

CHEM 1004 Chemistry First Year Experience	1			
† CHEM 1055–1056 General Chemistry for Majors	4		4	
† CHEM 1065–1066 General Chemistry for Major Laboratory ^{5,6}	1		1	
† CHEM 2565–2566 Principles of Organic Chemistry ⁷	3		3	
† CHEM 2154 Analytical Chemistry for Chemistry Majors	4			
† CHEM 2164 Analytical Chemistry for Chemistry Majors Lab	1			

III. Additional Required Courses for the Chemistry Bachelor of Arts (4 credits)

† CHEM 2545–2546 Organic Chemistry Laboratory	1		1	
† CHEM 2564 Problem-Solving in Organic Chemistry ⁷	1			
† CHEM 4014 Survey of Chemical Literature	1			

* All students completing a B.A. in Chemistry must complete either †STAT 3005 Statistical Methods or †STAT 3615 Biological Statistics. This requirement is included in Section I above.

IV. Required Courses Specific to the Major in Chemistry (13 credits)**

† CHEM 2424 Descriptive Inorganic Chemistry	3			
† CHEM 4615–4616 Physical Chemistry ^{8,9}	3		3	
† CHEM 3625 Physical Chemistry Lab	1			
† MATH 2024 Intermediate Calculus ¹⁰	3			

** MATH 1025–1026, PHYS 2205–2206 and PHYS 2215–2216 are also required of all Chemistry Majors within the B.A. Degree Program in Chemistry. They are listed in the General Education requirements (Section I) above.

V. Restricted Electives (6 credits)

Students may choose any two 3-credit, 3000- or 4000-level courses in CHEM (excluding CHEM 3054 and 4054), BCHM, or CHE for which they have met applicable prerequisites.^{11,12}

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VI. Free Electives (28 credits)

Minimum Grade Requirement: Chemistry majors must earn a grade of “C” (2.0) or better in CHEM 1055, 1056, and 2565.

- If a chemistry major fails to earn a “C” (2.0) or better in CHEM 1055, the student must either retake this class (and earn the minimum grade) **or** take CHEM 1035 *General Chemistry*, to remain in good standing for a chemistry degree. If the chemistry major elects to take CHEM 1035, a minimum grade of “B” (3.0) is required to enroll in CHEM 2565 and progress towards the B.A. degree.
- If a chemistry major fails to earn a “C” (2.0) or better in CHEM 2565, the student must either retake this class (and earn the minimum grade) **or** take CHEM 2535, *Organic Chemistry*, to remain in good standing for a chemistry degree. If the chemistry major elects to take CHEM 2535, a minimum grade of “B” (3.0) is required to count CHEM 2535 as CHEM 2565 for the CHEM degree.

Prerequisites

This checklist has no hidden prerequisites, although some of the courses listed are prerequisites for other courses. Please see your advisor or consult the Undergraduate Course Catalog for more information. Please note that Chemistry majors are expected to be “calculus-ready” upon the start of their curriculum.

Acceptable Substitutions

- ¹PHYS 2305 (MATH 1225 prerequisite) may be substituted for PHYS 2205 and PHYS 2215
- ²PHYS 2306 (MATH 1226 prerequisite) may be substituted for PHYS 2206 and PHYS 2216
- ³MATH 1225 may be substituted for MATH 1025.
- ⁴MATH 1226 (MATH 1225 prerequisite) may be substituted for MATH 1026.
- ⁵Prior credit for CHEM 1045 may be substituted for CHEM 1065.
- ⁶Prior credit for CHEM 1046 may be substituted for CHEM 1066.
- ⁷If a student has taken CHEM 2535 prior to adding a degree in chemistry, a minimum grade of “B” (3.0) or better is required to substitute CHEM 2535 as CHEM 2565. If a student has taken CHEM 2536 prior to adding a degree in chemistry, a minimum grade of “B” (3.0) or better is required to substitute CHEM 2536 as CHEM 2566. A student who is substituting CHEM 2535 for CHEM 2565 may also substitute one additional credit of free elective for CHEM 2564 for a total of 29 credits of free electives.
- ⁸CHEM 3615 may be substituted for CHEM 4615.
- ⁹CHEM 3616 may be substituted for CHEM 4616.
- ¹⁰MATH 2204 (MATH 1226 prerequisite) may be substituted for MATH 2024.
- ¹¹SBIO 3444 Sustainable Biomaterials & Bioenergy or CHEM 4424 (SBIO 4424) Polysaccharide Chemistry may substitute for the Restricted Elective.
- ¹²A biochemistry or chemical engineering student should not double-count coursework required for that major towards the chemistry upper-level (restricted) elective.

Foreign Language Requirement

Students who did not successfully complete at least two years of a single foreign, classical, or sign language during high school must successfully complete six credit hours of a single foreign, classical, or sign language at the college level. Courses taken to meet this requirement do not count toward the hours required for graduates. Please consult the Undergraduate Catalog for details.

Satisfactory Progress Towards Degree

Upon having attempted 72 credits, student must have completed CHEM 1055–1056, CHEM 1065–1066, CHEM 1004, CHEM 2565–2566, CHEM 2545–2546, PHYS 2205–2206, PHYS 2215–2216, and MATH 1025–1026.

Chemistry majors must maintain an in-major GPA of 2.0. If a chemistry major fails to meet this requirement for one academic term the student will be placed on Policy 91 (Satisfactory Progress Towards Degree) probation. Failure to meet the standard for two consecutive semesters will result in a Policy 91 suspension.

Graduation Requirements

Graduation requires completion of a minimum of 120 credit hours with a GPA of 2.0 or greater for all hours attempted. In addition, students must have an in-major GPA of 2.0 or greater counting all required chemistry courses and chemistry electives. The in-major CHEM GPA excludes Chemistry in Context (CHEM 1015, 1016, 1025, 1026), First-Year Experience (CHEM 1004), and Chemistry Problem Solving Skills (CHEM 2984 or CHEM 1014). No more than 6 hours of CHEM 2974, 4974, and 4994 will be included in a student's in-major GPA.