

Chemistry, BA

Department of Chemistry, College of Arts and Sciences

Degree Awarded: Bachelor of Arts in Chemistry

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Minors of particular interest to students majoring in Chemistry: Biology (BIO), Environmental Studies (ENS), Marine Sciences (MAR)

The Bachelor of Science program in Chemistry is designed to prepare the student for graduate study in chemistry or for industrial or other employment. It includes options in biological chemistry, chemical physics, and environmental chemistry, in addition to the traditional chemical science option. The B.S. program of the Department of Chemistry is approved by the Committee on Professional Training of the American Chemical Society.

The Bachelor of Arts program allows more flexibility in the choice of electives, accommodating the needs of pre-medical students and others whose career objectives may call for a substantial introduction to chemistry. It can also accommodate students who wish to obtain a strong undergraduate background in another science or mathematics while earning a degree in chemistry.

Students interested in combining the study of chemistry with the study of materials science should see also the Interdisciplinary Program: [Engineering Chemistry, BS](#).

Degree Requirements

The department of Chemistry offers both a Bachelor of Arts and a Bachelor of Science degree in Chemistry.

Requirements for the Major (Bachelor of Arts Degree)

All of the courses used to fulfill the requirements of the major (CHE, MAT, ESG, PHY, etc.) must be passed with a letter grade of C or higher, with the exception of three courses, for which the grade may be C-. G/P/NC grades are not acceptable in courses taken for the major. No transferred course with a grade lower than C may be used to fulfill any major requirement.

Completion of the major requires approximately 55 to 56 credits.

Study Within the Area of Chemistry

- [CHE 131 - General Chemistry IB](#) 4 credits
- [CHE 132 - General Chemistry II](#) 4 credits
- OR
- [CHE 152 - Molecular Science I](#) 4 credits

- [CHE 133 - General Chemistry Laboratory I](#) 1 credit
- [CHE 134 - General Chemistry Laboratory II](#) 1 credit
- OR
- [CHE 154 - Molecular Science Laboratory I](#) 2 credits

- [CHE 301 - Physical Chemistry I](#) 4 credits
- [CHE 302 - Physical Chemistry II](#) 4 credits

- [CHE 303 - Solution Chemistry Laboratory](#) 2 credits and one additional laboratory course ([CHE 304](#) or [CHE 384](#))

- [CHE 321 - Organic Chemistry I](#) 4 credits
- [CHE 322 - Organic Chemistry IIA](#) 4 credits
- OR
- [CHE 331 - Molecular Science II](#) 4 credits
- [CHE 332 - Molecular Science III](#) 4 credits

- [CHE 327 - Organic Chemistry Laboratory](#) 2 credits
- OR
- [CHE 383 - Introductory Synthetic and Spectroscopic Laboratory Techniques](#) 2 credits

- [CHE 375 - Inorganic Chemistry I](#) 3 credits
- [CHE 385 - Tools of Chemistry](#) 1 credit,

Courses in Related Fields

- [MAT 131 - Calculus I](#) 4 credits
- [MAT 132 - Calculus II](#) 4 credits
- [MAT 203 - Calculus III with Applications](#) 4 credits (See note 1)

- [PHY 131 - Classical Physics I](#) 3 credits
- [PHY 133 - Classical Physics Laboratory I](#) 1 credit
- [PHY 132 - Classical Physics II](#) 3 credits
- [PHY 134 - Classical Physics Laboratory II](#) 1 credit (See note 2)

Upper-Division Writing Requirement

Each student majoring in Chemistry must use [CHE 303](#), [CHE 304](#), or [CHE 384](#) to satisfy the writing requirement for the Chemistry major (a satisfactory grade is required). These courses require several papers which are evaluated for cogency, clarity, and mechanics, and satisfy the university Stony Brook Curriculum WRTD learning objective.

Notes:

1. Alternate Mathematics Sequences

The following alternate sequences may be substituted for major requirements or prerequisites: [MAT 125](#) (or [MAT 130/MAT 125](#)), [MAT 126](#), [MAT 127](#) or MAT 141, MAT 142 or MAT 171 or [AMS 151](#), [AMS 161](#) for [MAT 131](#), [MAT 132](#); [AMS 210](#) or [MAT 211](#) for [MAT 203](#). Equivalency for MAT courses as indicated by earning the appropriate score on a placement examination will be accepted as fulfillment of the requirement without the necessity of substituting other credits.

2. Alternate Physics Sequences

The following alternate sequences may be substituted for physics requirements or prerequisites: [PHY 125](#), [PHY 126/PHY 133](#), [PHY 127/PHY 134](#), or [PHY 141](#), [PHY 142](#) for [PHY 131/PHY 133](#), [PHY 132/PHY 134](#).

3. Transfer Credit

At least 12 credits of upper-division work in chemistry must be taken at Stony Brook; these must be taken in at least two of the major subdisciplines (inorganic, physical, and organic chemistry).

Chemistry Honors Program

Students who have maintained a minimum cumulative grade point average of 3.00 in science and mathematics through the junior year are eligible for departmental honors in chemistry. An additional requirement for honors is the submission of a senior thesis based on research performed during the senior year. The student will be given an oral examination in May by his or her research supervisor and the undergraduate research committee. The awarding of honors requires the recommendation of this committee and constitutes recognition of superior performance in research and scholarly endeavors. If the student has also achieved a 3.40 cumulative grade point average in chemistry courses taken in the senior year, honors will be conferred.

Chemistry Secondary Teacher Education Program

See the Education and Teacher Certification entry in the alphabetical listings of Approved Majors, Minors, and Programs.

SBC Courses

This table illustrates major courses that can also be used to fulfill [SBC requirements](#). (See Note 1 & Note 2)

SBC Category	Required Major Courses	Optional Major Courses (see Note 3)
ARTS		
GLO		
HUM		
LANG (see Note 4)		
QPS	MAT 131, MAT 132	
SBS		
SNW	PHY 131, PHY 132	CHE 131, CHE 132, CHE 152
TECH		CHE 304, CHE 384
USA		
WRT		
STAS		
EXP+		
HFA+		
SBS+		
STEM+	CHE 301, MAT 203	CHE 321, CHE 331
CER	CHE 385	
DIV (see Note 5)		
ESI	CHE 303	CHE 383
SPK	CHE 385	
WRTD	CHE 303	CHE 304, CHE 384

Note 1: Some course information may be subject to change. Please contact your [major advisor](#) for additional consultation.

Note 2: For majors that require study in a related area or completion of a minor, visit the respective program's "Major SBC Courses" page to view expanded SBC options.

Note 3: Denotes any course in which students can choose from more than one option. These may include, but are not limited to, major electives, concentration/track/specialization courses, or calculus/physics/chemistry sequences.

Note 4: CEAS majors, the Athletic Training major, the Respiratory Care major, and the Clinical Laboratory Sciences major are exempt from the LANG learning objective. Students enrolled in the major in Social Work are exempt from the LANG learning objective, but are required to enroll in and pass with a letter grade of C or higher the first semester of an elementary foreign language course numbered 111, or satisfy through alternate methods.

Note 5: Students are responsible for completing the general education requirements published in the Bulletin that was current as of the first semester of matriculation (or rematriculation). The following student groups must satisfy the DIV learning objective as part of their degree requirements:

- Freshmen who matriculate in the Fall of 2019 or later
- Transfer students who matriculate in the Spring of 2020 or later
- Students who rematriculate in the Fall of 2019 or later

Sample Course Sequence

[Sample Course Sequence for the Major in Chemistry \(B.A. Degree\)](#)