

CHEMISTRY MAJOR

Major Requirements for the B.A. Degree in Chemistry

Requirements for the major include the completion of a sequence of introductory and advanced courses in chemistry that introduce students to the main areas of study in chemistry. Coursework in the related fields of mathematics and physics is also required to prepare students for upper-level courses in chemistry. For the Bachelor of Arts in chemistry, students must complete at least 38 credit hours in chemistry, among which must be included the courses listed below.

Total Credit Hours required for A.B. degree in chemistry is 54 credits.

Code	Title	Credits
CHEM 111	Chemical Principles I	4
CHEM 112	Chemical Principles II	4
CHEM 231	Organic Chemistry I	4
CHEM 232	Organic Chemistry II	4
CHEM 239	Integrated Research Lab I	1
CHEM 241	Quantitative Analysis	2
CHEM 242	Introduction to Inorganic Chemistry	4
CHEM 337	Elements of Physical Chemistry	4
CHEM 339	Integrated Research Lab II	1
CHEM 341	Instrumental Analysis	4
CHEM 400	Chemistry Seminar	2
One upper level course ¹		
38 hours of Chemistry courses		38
Additional courses required by both the BA and BS majors		16
MATH 220	Calculus I: Differential Calculus	4
MATH 222	Calculus II: Integral Calculus	4
Select one of the following:		
PHYS 121 & PHYS 122	Classical and Modern Physics I and Classical and Modern Physics II	8
PHYS 211 & PHYS 212	College Physics I and College Physics II	8

Total credits required for A.B. degree in chemistry is 54 credits

¹ The following chemistry courses can be used to satisfy the upper level course requirement:

Code	Title	Credits
CHEM 434	Biochemistry (BIOL 434)	4
CHEM 425	Advanced Topics in Chemistry	4
CHEM 390	Internship	1-8
CHEM 460	Advanced Independent Study	1-8
CHEM 470	Senior Thesis	1-8
CHEM 490	Departmental Honors	1-8
An advanced course in chemistry or a related field approved by the Chemistry department chair		4

Majors who intend to pursue graduate study are strongly encouraged to obtain experience in computer programming at the level of Introduction to Computer Programming (CTIS 210).

Majors are strongly encouraged to participate in an industrial or governmental internship, pursue undergraduate research during the semester or summer, and/or study abroad as part of their experience at Guilford.

Scholarships. To recognize superior work in chemistry, the department annually offers a prize for outstanding achievement to a first-year student in Chemical Principles and the Harvey Ljung Scholarship to a rising senior chemistry major. In addition, the department selects a senior for the Ted Benfey Outstanding Student Award. Chemistry majors are also eligible for the GlaxoSmithKline Women in Science Scholarship, awarded annually to an outstanding rising junior woman science major.

Major Requirements for the B.S. Degree in Chemistry

Requirements for the major include the completion of a sequence of introductory and advanced courses in chemistry that introduce students to the main areas of study in chemistry. Coursework in the related fields of mathematics and physics is also required to prepare students for upper-level courses in chemistry. For the Bachelor of Arts in chemistry, students must complete at least 36 credit hours in chemistry, among which must be included the courses listed below. For the Bachelor of Science in chemistry, students must complete 43 credit hours in chemistry, among which must be included the courses listed below.

Total credit hours required for B.S. degree in Chemistry is 59 credits.

Code	Title	Credits
CHEM 111	Chemical Principles I	4
CHEM 112	Chemical Principles II	4
CHEM 231	Organic Chemistry I	4
CHEM 232	Organic Chemistry II	4
CHEM 241	Quantitative Analysis	2
CHEM 242	Introduction to Inorganic Chemistry	4
CHEM 239	Integrated Research Lab I	1
CHEM 337	Elements of Physical Chemistry	4
CHEM 338	Applications of Physical Chemistry	4
CHEM 339	Integrated Research Lab II	1
CHEM 341	Instrumental Analysis	4
CHEM 400	Chemistry Seminar	2
CHEM 439	Integrated Research Lab III	1
One upper level course ¹		
43 hours of Chemistry courses		43
Additional courses required by both the BA and BS majors		16
MATH 220	Calculus I: Differential Calculus	4
MATH 222	Calculus II: Integral Calculus	4
Select one the following:		
PHYS 211 & PHYS 212	College Physics I and College Physics II	8
PHYS 121 & PHYS 122	Classical and Modern Physics I and Classical and Modern Physics II	8

Total credits required for B.S. degree in chemistry is 59 credits.

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CHEM 490	Departmental Honors	1-8
An advanced course in chemistry or a related field approved by the Chemistry department chair		4

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