

BS in Chemistry - Chemistry Option

The curriculum for the BS in chemistry (either the chemistry or biochemistry option) is approved by the American Chemical Society for the professional training of chemists. It is strongly recommended that students interested in advanced study in chemistry or biochemistry should pursue this degree. Students completing the program receive certification from the American Chemical Society.

In agreement with the American Chemical Society Committee on Professional Training, the chemistry department strongly encourages students studying for the BS degree to select courses in computer science, economics, marketing and business, and to use every opportunity to develop competence in technical writing and oral communication.

Program Requirements

A minimum total of 120 credit hours is required for the BS in chemistry and includes the 82-88 credit hours of major courses that must be completed with a minimum grade point average of 2.000. In addition to meeting the requirements of the WSU General Education Program (<http://catalog.wichita.edu/undergraduate/general-education-program/>) and the requirements of Fairmount College of Liberal Arts and Sciences, students in the BS in chemistry must take the following courses:

Required Courses

Course	Title	Hours
CHEM 211 & CHEM 212	General Chemistry I and General Chemistry II	10
CHEM 514	Inorganic Chemistry	3
CHEM 523 & CHEM 524	Analytical Chemistry and Instrumental Methods of Chemical Analysis	8
CHEM 531 & CHEM 532	Organic Chemistry I and Organic Chemistry II	10
CHEM 545 & CHEM 546	Physical Chemistry I and Physical Chemistry II	6
CHEM 547	Physical Chemistry Lab	2
CHEM 615	Advanced Inorganic Chemistry	3
CHEM 616	Inorganic Chemistry Lab	2
Select one of the following: ¹		3, 6
CHEM 661	Principles of Biochemistry	
CHEM 662 & CHEM 663	Biochemistry I and Biochemistry II	
CHEM 690	Independent Study and Research	2
BIOL 210	General Biology I	4
PHYS 313	Physics for Scientists I	4
PHYS 314	Physics for Scientists II	4
PHYS 315	University Physics Lab I	1
PHYS 316	University Physics Lab II	1
MATH 112	Precalculus Mathematics	5
MATH 242	Calculus I	5
MATH 243	Calculus II	5
MATH 344	Calculus III	3
Professional electives as approved below ¹		1, 4
CHEM 600–799 (excluding CHEM 700 and CHEM 701)		
BIOL 419, BIOL 420 or BIOL 590 with their necessary prerequisites		
Mathematics courses with MATH 344 prerequisite, or MATH 555		
Physics courses with PHYS 314 prerequisite		
One academic year of German or French		

Other courses as approved by the Undergraduate Affairs Committee

Total Credit Hours 82-88

¹ If both CHEM 662 and CHEM 663 are taken, only 1 credit hour of professional electives is required.

Representative Course Sequence

Freshman		Credit Hours
Semester 1		
CHEM 211	General Chemistry I	5
MATH 112	Precalculus Mathematics ²	5
ENGL 101	College English I	3
COMM 111	Public Speaking	3
Credit Hours		16
Semester 2		
CHEM 212	General Chemistry II	5
MATH 242	Calculus I	5
ENGL 102	College English II	3
General Education course in fine arts, humanities or social sciences ³		3
Credit Hours		16
Sophomore		
Semester 1		
CHEM 531	Organic Chemistry I ⁴	5
MATH 243	Calculus II	5
PHYS 313	Physics for Scientists I	4
PHYS 315	University Physics Lab I	1
Credit Hours		15
Semester 2		
CHEM 532	Organic Chemistry II	5
PHYS 314	Physics for Scientists II	4
PHYS 316	University Physics Lab II	1
MATH 344	Calculus III	3
General Education course in fine arts, humanities or social sciences ³		3
Credit Hours		16
Junior		
Semester 1		
CHEM 523	Analytical Chemistry	4
CHEM 545	Physical Chemistry I	3
BIOL 210	General Biology I	4
General Education course in fine arts, humanities or social sciences ³		3
Credit Hours		14
Semester 2		
CHEM 524	Instrumental Methods of Chemical Analysis	4
CHEM 546	Physical Chemistry II	3
CHEM 661	Principles of Biochemistry	3
General Education course in fine arts, humanities or social sciences ³		3
General Education course in fine arts, humanities or social sciences ³		3
Credit Hours		16
Senior		
Semester 1		
CHEM 514	Inorganic Chemistry	3
CHEM 547	Physical Chemistry Lab	2
CHEM 690	Independent Study and Research	2-3
Professional electives		3-4
General Education course in fine arts, humanities or social sciences ³		3
Credit Hours		13-15
Semester 2		
CHEM 615	Advanced Inorganic Chemistry	3
CHEM 616	Inorganic Chemistry Lab	2
Electives		6

General Education course in fine arts, humanities or social sciences ³	3
Credit Hours	14
Total Credit Hours	120-122

² Not needed if two years of high school algebra, one year of high school geometry and one-half year of high school trigonometry taken.

³ Please see WSU general education requirements (<http://catalog.wichita.edu/undergraduate/general-education-program/>).

⁴ CHEM 531, CHEM 514 and CHEM 523 all have CHEM 212 as a prerequisite and can be taken in any order.

Applied Learning

Students in the BS in chemistry program are required to complete an applied learning or research experience to graduate from the program. The requirement can be met by completing at least one semester of undergraduate research, by enrollment in CHEM 690.