

CHEMISTRY B.S.

(American Chemical Society Certified)

The courses required for the B.S. degree provide a solid education in chemistry for the professional chemist and in preparation for graduate work in most areas of chemistry. These requirements meet the latest certification standards of the American Chemical Society.

Bachelor of Science - Chemistry

General Education Requirements

Information regarding these requirements can be found in the General Education Section (<http://catalog.umt.edu/academics/general-education-requirements/>) of the catalog.

Summary

Code	Title	Hours
Lower-Division Core Courses		52
Biology		
General Chemistry		
Organic Chemistry		
Physics		
Mathematics		
Computer Science		
Upper-Division Core Courses		30
Analytical Chemistry		
Physical Chemistry		
Inorganic Chemistry		
Biochemistry		
Advanced Electives		3
Modern & Classical Language OR Additional Advanced Electives		6-8
Total Hours		91-93

Degree Specific Credits: 91-93

Required Cumulative GPA: 2.0

Lower-Division Core Courses

Biology

Code	Title	Hours
Complete all of the following courses:		
BIOB 160N	Principles of Living Systems	3
BIOB 161N	Principles of Living Systems Lab	1
Total Hours		4

Minimum Required Grade: C-

General Chemistry

Code	Title	Hours
Complete all of the following courses:		
CHMY 141N & CHMY 142N	College Chemistry I and College Chemistry I Lab	5

CHMY 143N & CHMY 144N	College Chemistry II and College Chemistry II Lab	5
Total Hours		10

Minimum Required Grade: C-

Organic Chemistry

Code	Title	Hours
Complete all of the following courses:		
CHMY 221 & CHMY 222	Organic Chemistry I and Organic Chemistry I Lab	5
CHMY 223 & CHMY 224	Organic Chemistry II and Organic Chemistry II Lab	5
Total Hours		10

Minimum Required Grade: C-

Physics

Code	Title	Hours
Complete all of the following courses:		
PHSX 215N & PHSX 216N	Fundamentals of Physics with Calculus I and Physics Laboratory I with Calculus	5
PHSX 217N & PHSX 218N	Fundamentals of Physics with Calculus II and Physics Laboratory II with Calculus	5
Total Hours		10

Minimum Required Grade: C-

Mathematics

Code	Title	Hours
Complete all of the following courses:		
M 171	Calculus I	4
M 172	Calculus II	4
M 273	Multivariable Calculus	4
M 274	Introduction to Differential Equations	3
Total Hours		15

Minimum Required Grade: C-

Computer Science

Code	Title	Hours
Complete the following course:		
CSCI 125	Computation in the Sciences	3

Minimum Required Grade: C-

Upper-Division Core Courses

Analytical Chemistry

Code	Title	Hours
Complete all of the following courses:		
CHMY 311	Analytical Chemistry-Quantitative Analysis	4
CHMY 421	Advanced Instrument Analysis	4
Total Hours		8

Minimum Required Grade: C-

Physical Chemistry

Code	Title	Hours
Complete all of the following courses:		
CHMY 371	Physical Chemistry-Quantum Chemistry & Spectroscopy	4
CHMY 373	Physical Chemistry-Kinetics & Thermodynamics	4
Total Hours		8

Minimum Required Grade: C-

Inorganic Chemistry

Code	Title	Hours
Complete all of the following courses:		
CHMY 401	Advanced Inorganic Chemistry	3
CHMY 402	Advanced Inorganic Chemistry Lab	2
Total Hours		5

Minimum Required Grade: C-

Biochemistry

Code	Title	Hours
Complete all of the following courses:		
BCH 480	Advanced Biochemistry I	3
BCH 482	Advanced Biochemistry II	3
BCH 486	Biochemistry Research Lab	3
Total Hours		9

Minimum Required Grade: C-

Advanced Electives

Note: Other classes in Chemistry, Physics, Geology, Biochemistry, or Mathematics may be used to meet the advanced electives requirement with approval of the chemistry advisor. A maximum of 3 credits of CHMY 492 or CHMY 499 may be applied toward degree requirements.

Code	Title	Hours
Complete 3 credits in the following courses:		
CHMY 391	Special Topics/Experimental Course	3
CHMY 442	Aquatic Chemistry	
CHMY 465	Organic Spectroscopy	
CHMY 491	Special Topics/Experimental Course	
CHMY 492	Independent Study	
CHMY 499	Senior Thesis/capstone	
Total Hours		3

Minimum Required Grade: C-

Advanced College Writing Requirement

Rule: To complete the Advanced College Writing Requirement, Biochemistry students may take the following courses or any other stand-alone advanced writing course.

Code	Title	Hours
BCH 482	Advanced Biochemistry II	3
BCH 486	Biochemistry Research Lab	3

Minimum Required Grade: C-

Modern & Classical Language or Additional Advanced Electives

Note: Other classes in Chemistry, Physics, Geology, Biochemistry, or Mathematics may be used to meet the advanced electives requirement with approval of the chemistry advisor. A maximum of 3 credits of CHMY 492 or CHMY 499 may be applied toward degree requirements.

Code	Title	Hours
Complete 2 semesters of a language or 2 additional advanced elective courses of at least 3 credits each from the above list. Subject to approval of the chemistry advisor.		
Total Hours		6-8

Minimum Required Grade: C-