CHEMISTRY B.A. - CHEMISTRY EDUCATION

The courses required for the B.A. degree provide a less extensive training in chemistry than do the courses required for the American Chemical Society certified B.S. degree. This is to allow the student to supplement his or her program with courses that meet his or her specific needs. This concentration provides the core of traditional preparation in chemistry together with the Teacher Education Program. It is strongly advised that students using this degree obtain faculty advice in planning their program.

- This concentration contains additional course requirements designed to meet state standards. Those interested in teaching in K-12 schools must complete the education/teaching concentration of a major in a teaching content area plus the Teacher Education Program through the Department of Teaching and Learning. Additional teaching areas can be added through completion of the education/teaching concentration of a major or education/teaching minor in that content area.
  - Secondary Education Licensure Program (http://www.coehs.umt.edu/departments/currinst/undergradprograms/seced/default.php)
  - Licensure Degree Requirements (http://catalog.umt.edu/colleges-schools-programs/education/teaching-learning/lic-secondary-licensure/)
- To complete this education concentration , you need to contact the Teaching and Learning Department. Approvals for this track must come from the Teaching and Learning Department.

Bachelor of Arts - Chemistry; Chemistry Education Concentration

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		45
General Chemistry		
Organic Chemistry		
Physics		
Mathematics		
Computer Science		
Upper-Division Core Courses		16
Analytical Chemistry		
Physical Chemistry		
Advanced Electives		15
Chemistry Education Concentration		11
Total Hours		**87**

Degree Specific Credits: 87

Required Cumulative GPA: 2.0

Lower-Division Core Courses

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
Total Hours		**12**

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-

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-

Advanced Electives

Code	Title	Hours
Complete 9 credits of advanced electives in Chemistry or Biochemistry approved by the Chemistry adviser and 6 credits of advanced electives at the discretion of the student. 15 total credits required.		**15**

Minimum Required Grade: C-

Chemistry Education Concentration

Note: The EDU 497 course number is used for multiple courses. Students should register for EDU 497 Methods: 5-12 Science.

Code	Title	Hours
Complete all of the following courses:		
CHMY 485	Laboratory Safety	1
EDU 497	Teaching and Assessing	4
ENST 472	General Science: Conservation Education	3
STAT 216	Introduction to Statistics	4
Total Hours		**12**

Minimum Required Grade: C-

Secondary Teaching Licensure

Note: For endorsement to teach Chemistry, a student also must gain admission to the Teacher Education Program and meet all the requirements for secondary teaching licensure (http://catalog.umt.edu/colleges-schools-programs/education/teaching-learning/lic-secondary-licensure/). For more information, see the Teaching and Learning Department (http://catalog.umt.edu/colleges-schools-programs/education/teaching-learning/).