

II. Other Program Requirements

CS 213	Computer Applications in Business
or BA 365	Advanced Spreadsheet Applications*
MA 117	Difference Equations & Linear Equations
or MA 131	Calculus of Single Variable Functions
or MA 121-122	Differential and Integral Calculus
MA 207	Elementary Statistics

*Note: BA365 fulfills either a course requirement in the finance concentration or the computer requirement. It cannot be counted as both a finance course and the computer course.

Concentration courses may be double counted to fulfill CORE requirements or requirements for other academic majors and still count as a concentration course. However, each concentration requires the completion of 3 courses and a concentration course may be applied to only one area of concentration. It cannot be double counted to fulfill concentration requirements in more than one area of concentration.

Minor in Business Administration

Minor Program Requirements

Twenty-one semester credits of business and economics courses, including:

BA 203-204	Principles of Accounting
BA 306	Marketing
BA 313	Managerial Finance
BA 375	Fundamentals of Management
EC 201-202	Principles of Economics

Curriculum in Business Administration for the Associate of Arts Degree

Program Requirements

BA 203-204	Principles of Accounting
BA 306	Marketing
BA 375	Principles of Management
EC 201-202	Principles of Economics
And 1 of the following:	
BA 301	Business Law
BA 313	Managerial Finance
BA 408	Human Resource Management

Note: All degree students should review requirements for graduation as described in this catalog.

CHEMISTRY

DAN GRETCH, PH.D.
JOHN SALZSIEDER, PH.D.
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Mission and Goals

The chemistry major program is designed to provide students with the knowledge and skills needed to enter graduate or professional school or to gain employment in their field. Students completing the major program in chemistry are expected to have

- an understanding of the basic principles and concepts of the major field;
- the critical thinking skills needed for solving problems in the field;
- the abilities to evaluate and interpret data and to analyze and synthesize information from different sources;

- a working knowledge of fundamental laboratory techniques and the ability to use them to perform experiments in the field;
- the writing and speaking skills needed to communicate effectively in the field.

Major in Chemistry

I. Major Program Requirements

CH 101-102	General Chemistry
CH 205	Quantitative Analysis
CH 301-302	Organic Chemistry
CH 306	Instrumental Methods
CH 391-392	Physical Chemistry
CH 496	Senior Seminar

One additional upper-division course from the following list:

CH 353	Biochemistry
CH 405	Advanced Inorganic Chemistry
CH 406	Advanced Organic Chemistry

II. Other Program Requirements

MA 131	Calculus of Single Variable Functions
or MA 121-122	Differential and Integral Calculus
MA 233	Multivariable Calculus
PHYS 205-206	Engineering Physics I & II

Note: All chemistry majors must earn a grade of “C” or better in all major courses (Section I and II above). Students must pass prerequisites with a “C” or better to enroll in chemistry courses.

Major in Chemistry for Secondary Education

I. Major Program Requirements

CH 101-102	General Chemistry
CH 205	Quantitative Analysis
CH 301-302	Organic Chemistry
Two additional upper division Chemistry courses	

II. Other Program Requirements

MA 121	Differential Calculus
PHIL 252	Philosophy and History of Science
One additional two-semester course from the following list:	
BI 171-172	Biological Principles I & II
PHYS 201-202	Physics I and II
PHYS 205-206	Engineering Physics

III. Professional Education Requirements

AN/SO 218	Introduction to Native American Studies
CS 103	Instructional Media and Technology
ED 102	Foundations of Education
ED 205	Classroom Management
ED/PSY 229	Educational Psychology
ED 245	Diversity Field Experience
ED 318	Content Area Reading and Secondary Methods
ED 346	Teaching Science in the Secondary School
ED 405	Education Seminar
ED 410	Student Teaching
ED 412	Measurement & Assessment in Teaching
HPE 214	The School Health Program
PSY 228	Adolescent Psychology
SPED 300	Introduction to Exceptional Children
United States and contemporary world cultures course(s)—see index for page number.	

Note: All chemistry for secondary education majors must earn a grade of “C” or better in all major courses (Section I and II above).

Students must pass prerequisites with a “C” or better to enroll in chemistry courses.

IV. Acceptance into the Teacher Education Program and Student Teaching Program

- A. Teacher Education Program: Individuals pursuing academic programs that lead to teacher licensure must seek admission to the teacher education program by the end of their sophomore year.
- B. Student Teaching Program: In the spring semester of the junior year, all preservice teachers must seek admission to the student teaching program. See index for page numbers for these programs.

Note: In order to be licensed to teach in a secondary school in Montana, a student is required to have a teaching minor in a subject field acceptable for licensure endorsement as well as the teaching major. All degree students should review requirements for graduation as described in this catalog.

Minor in Chemistry

I. Minor Program Requirements

- CH 101-102 General Chemistry
- CH 205 Quantitative Analysis
- CH 301-302 Organic Chemistry
- Plus 1 additional upper-division chemistry course

Minor in Chemistry for Secondary Education

I. Minor Program Requirements

- CH 101-102 General Chemistry
- CH 205 Quantitative Analysis
- CH 301-302 Organic Chemistry

II. Other Program Requirements

- ED 346 Teaching Science in the Secondary School
- MA 121 Differential Calculus
- MA 207 Elementary Statistics
- PHIL 252 Philosophy and History of Science
- Plus 1 additional 4-credit course in biology or physics.

Note: In order to be licensed to teach in a secondary school in Montana, a student is required to have a teaching major in a subject field acceptable for licensure endorsement as well as the teaching minor. All degree students should review requirements for graduation as described in this catalog.

CIVIL ENGINEERING

GARY FISCHER, M.S.
MARY E. KEEFFE, PH.D.
TERENCE J. MULLEN, P.E.
JOHN L. SCHARE, PH.D.
ANTHONY M. SZPILKA, PH.D.
WILLIS WEIGHT, PH.D.

Mission and Goals

Consonant with the mission of the College, this department is “dedicated to providing for its students the means for their full realization of a dual goal of vocation and enlightenment.” Society requires competent professionals who can solve contemporary problems by using connections among disciplines, especially the humanities, engineering and technology, and the sciences. The Programs within this Department are designed to blend the unique characteristics of Catholic liberal arts education with preparation for productive and rewarding

professional careers. The four professional educational objectives of this department are to produce graduates who have:

- 1) The specialized knowledge and skills necessary for initiation into their chosen profession,
- 2) A broad range of skills necessary for effective communication,
- 3) An appreciation for the interrelationships among the branches of knowledge,
- 4) The ethical, social, and aesthetic perspectives necessary for values-based judgment and decision-making.

Major in Civil Engineering

The civil engineering program is accredited by the Engineering Accreditation Commission of the Accreditation Board of Engineering & Technology, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012. Telephone: 410-347-7700.

The Civil Engineering Program has adopted the philosophy and goals of the department. The four major areas of study with the Program are: structures, environmental, water resources, and transportation.

I. Major Program Requirements

- ENGR 104 Engineering Graphics and CAD Applications
- ENGR 201 Introduction to Engineering
- ENGR 202 Water Distribution Systems
- ENGR 302 Engineering Mechanics I: Statics
- ENGR 303 Engineering Mechanics II: Solids
- ENGR 305 Electrical Circuits and Electronics
- ENGR 307 Fluid Mechanics
- ENGR 308 Thermodynamics
- ENGR 309 Geotechnical Engineering
- ENGR 310 Structures I
- ENGR 313 Hydrology
- ENGR 401 Hydraulics
- ENGR 402 Environmental Engineering Principles
- ENGR 403 Structures II: Steel Design
- ENGR 405 Water and Wastewater Treatment
- ENGR 406 Structures III: Reinforced Concrete Design
- ENGR 407 Transportation Engineering
- ENGR 411-412 Senior Design Project
- ENGR 289 Construction Materials

II. Other Program Requirements

- EC 201 or 202 Principles of Economics (EC 202 preferred)
- EC 203 Project Management Economics
- CH 101-102 General Chemistry I and II
- EN 325 Technical Writing
- MA 131 Calculus of Single Variable Functions or MA 121-122 Differential and Integral Calculus
- MA 232 Differential Equations and Linear Algebra I
- MA 233 Multivariable Calculus
- MA 334 Differential Equations and Linear Algebra II
- MA 336 Probability and Statistics I
- PHIL 207 Business Ethics
- PHYS 205-206 Engineering Physics

Students must take the Fundamental of Engineering (FE) exam within nine months prior to receiving the degree.

To earn a Bachelor of Arts degree with a major in civil engineering, a student must earn a grade of “C” or better in all of the courses listed under “Major Program Requirements” and under “Other Program Requirements.” A lesser grade in any of these courses must be replaced before the Bachelor of Arts degree with a major in civil engineering