

Suggested Order of Study

Bachelor of Arts Major Code 1906 **Chemistry Major**

Freshman Year

1st Semester		Hours
Course		
Chem 101	General Chemistry I (Algebra & Trig)	5
Math 150	Calculus I	5
CORE	[Eng 101 Comp I]	3
CORE	[Kine 103 Lifetime Wellness]	2
Psy 120	College Orientation	1
		16

2nd Semester

Chem 102	General Chemistry II (Chem 101)	5
CORE	[PSc 120 Gov't:US/Sta/Loc]	3
CORE	[Eng 102 Comp II]	3
CORE	[Hist 110 U.S. History]	3
Chem 320	Computer Applications in Chemistry	2
		16

Sophomore Year

1st Semester		Hours
Chem 301	Organic Chemistry I* (Chem 102)	
OR		
Chem 201	Analytical Chemistry I (Chem 102)	5
Phys 151	Elementary College Physics I (Math 140)	5
CORE	[Kine 101 Physical Activity]	1
Electives	(Second area of concentration)	5
		16

2nd Semester

Chem 302	Organic Chemistry II* (Chem 301)	
OR		
Chem 421	Analytical Chemistry II	
OR		
Chem	[Upper Division Elective]	5
Phys 152	Elementary College Physics II (Phys 151)	4
CORE	[Econ 180 Amer Econ Sys]	3
Electives	(Second area of concentration)	5
		17

Junior Year

1st Semester		Hours
Chem 201	Analytical Chemistry I (Chem 102)	
OR		
Chem	[Upper Division Elective]	4-5
Foreign Language		3
CORE	[Comm 100 Oral Comm]	3
CORE	[Humanities and Fine Arts]	3
Electives		3
		16-17

2nd Semester

Chem 421	Analytical Chemistry II	
OR		
Chem	[Upper Division Elective]	4-5
Foreign Language		3
CORE	[Psy 100 or Soc 110]	3
CORE	[Bio 101 General Biology]	4
CORE	[Humanities and Fine Arts]	3
		17-18

Senior Year

1st Semester		Hours
CORE	[Humanities and Fine Arts]	3
Foreign Language		3
CORE	[International Cultural Stu]	3

Electives	6
	15

2nd Semester

Foreign Language	3	
CORE	[Hist 120 or 320 U.S. Hist]	3
Electives	6-7	
	12-13	

Student may elect either Chem 300 plus eight hours of upper division chemistry (excluding Chem 301 and Chem 302) or Chem 301 and Chem 302 plus three hours of upper division chemistry electives (excluding Chem 300).

(Prerequisites)

[Department Recommendations]

Bachelor of Science

Major Code 1905 **Chemistry Major**

Freshman Year

1st Semester		Hours
Course		
Chem 101	General Chemistry I (Algebra & Trig)	5
Math 150	Calculus I	5
CORE	[Eng 101 Comp I]	3
CIS 110	Programming I	3
Psy 120	College Orientation	1
		17

2nd Semester

Chem 102	General Chemistry II (Chem 101)	5
Math 250	Calculus II (Math 150)	5
Phys 250-260	General Physics I & II	5
Chem 320	Computer Applications in Chemistry	2
		17

Sophomore Year

1st Semester		Hours
Chem 301	Organic Chemistry I (Chem 102)	5
Phys 290-291	General Physics III & Lab (Math 150 & Phys 160)	5
Elective	[Math 260 Calc III] (Math 250)	5
CORE	[Kine 101 Physical Activity]	1
		16

2nd Semester

Chem 302	Organic Chemistry (Chem 301)	5
Phys 280	General Physics III (Phys 270)	5
Elective	[Math 322 Differential Equations] (Math 260)	3
CORE	[PSc 120 Gov't:US/Sta/Loc]	3
		16

Junior Year

1st Semester		Hours
Chem 401	Physical Chemistry I (Math 250, Phys 260)	
OR		
Elective	[Chem 422 Adv Inorganic Chemistry] (Chem 102, Math 250)	4
Chem 201	Analytical Chemistry I (Chem 102)	5
CORE	[Comm 100 Oral Comm]	3
CORE	[Kine 103 Lifetime Wellness]	2
CORE	[Hist 110 U.S. History]	3
		17

2nd Semester

Chem 402	Physical Chemistry II (Chem 401) (4)	
OR		
Elective	[Chem 427 Organic Instrumental Analysis] (Chem 302) (5)	4-5

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Elective	[Chem 421 Analytical Chemistry II] (Chem 210)	5
CORE	[Humanities and Fine Arts]	3
CORE	[Bio 101 General Biology]	4
		16-17

Senior Year

1st Semester

Chem 401	Physical Chemistry I (Math 250, Phys 250-260)	
OR		
Elective	[Chem 422 Adv Inorganic Chemistry] (Chem 102, Math 250)	4
Elective	[Chem 497 Research in Chemistry]	1
CORE	[Humanities and Fine Arts]	3
CORE	[Hist 120 or 320 U.S. Hist]	3
CORE	[International Cultural Studies]	3
		14

2nd Semester

Chem 402	Physical Chemistry II (Chem 401) (4)	
OR		
Elective	[Chem 472 Organic Instrumental Analysis] (Chem 302) (5)	4-5
Elective	[Chem 497 Research in Chemistry]	2
Elective	[Phys 372 Electronic Circuits] (Phys 290) (4)	4
CORE	[Humanities and Fine Arts]	3
CORE	[Psy 100 or Soc 110]	3
		16-17

(Prerequisites)

[Department Recommendations]

For additional information contact:

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Course Descriptions

Chem 100 (F, S) 5 hrs. cr.
Introductory Chemistry

Basic principles and practical applications of inorganic, organic and biochemistry which satisfies the needs of students in certain health-related programs. Four lectures, one three-hour lab per week. Prerequisite: Math 30 or satisfactory score on the Mathematics Placement Test.

Chem 101 (F, S, SS) 5 hrs. cr.
General Chemistry I

Introduction to theories of chemistry with emphasis on the relationship of structure to properties of matter and the quantitative aspect of these changes. Four lectures, one three-hour lab per week. Prerequisite or corequisite: Math 140 or higher level math course.

Chem 102 (F, S, SS) 5 hrs. cr.
General Chemistry II

Continuation of Chem 101. Emphasis on the dynamics and thermodynamics of chemical processes and on the properties and reactions of analogous groups of cations and anions. Four lectures, one three-hour lab per week. Prerequisites: Chem 101 with a minimum grade of "C" or permission of instructor and Math 140 or higher level math course.

Chem 190 (Demand) 1-2 hrs. cr.

Laboratory in Chemistry

A lower division laboratory course to be used by students who are transferring chemistry courses without a laboratory to MSSU. This will make the transferred course equivalent to the MSSU course. Class may be repeated for credit as needed.

Chem 201 (F) 5 hrs. cr.

Analytical Chemistry I

Standard first course in quantitative chemical analysis. The lecture and lab include the theory and practice of methods of analysis. While the primary emphasis in the first semester is on the interpretation of the experimental results, other aspects of the analytical process are introduced. Three lectures, two three-hour labs per week. Prerequisite: Chem 102.

Chem 297 (F, S) 1-3 hrs. cr.

Introduction to Research in Chemistry (Writing Intensive)

Introduction to research techniques; laboratory work and literature search under the supervision of an instructor on a chemical research project. Involves laboratory experimentation as well as a written report on a project from any area of chemistry. Open to students having 1) a minimum of 15 hours of chemistry, 2) freshman or sophomore standing, 3) the ability to undertake independent work and 4) permission of the instructor. Enrollment must be approved by the adviser and the department head.

Chem 298 (Demand) 1-3 hrs. cr.

Topics in Chemistry

Designed to give instruction in some area of Chemistry not covered in other courses. Prerequisite: Chem 201 or permission of instructor.

Chem 300 (F, S) 5 hrs. cr.

Introduction to Modern

Organic Chemistry

(Writing Intensive)

Principles of organic chemistry—nomenclature, structure, properties, stereochemistry, reactions—will be studied by the functional group approach. Designed for students who require a general knowledge of organic chemistry in their chosen career or as background for other courses in technical or professional training programs. Four lectures, one three-hour lab per week. Prerequisite: Chem 102.

Chem 301 (F) 5 hrs. cr.

Organic Chemistry I

Primary emphasis is on the properties, nomenclature, and reactions of aliphatic compounds. The functional group approach is used. A brief introduction to organic reaction mechanisms and spectroscopy is included. Four lectures, one three-hour lab per week. Prerequisite: Chem 102.

Chem 302 (S) 5 hrs. cr.

Organic Chemistry II

(Writing Intensive)

A continuation of Chem 301. The functional group approach is continued with the study of aromatic and aliphatic compounds. Emphasis is placed on the properties, nomenclature, reactions, and reaction mechanisms of these compounds. Organic spectroscopy is discussed in detail as related to the identification of functional groups and molecular structures. Four lectures, one three-hour lab per week. Prerequisite: Chem 301 with a grade of "C" or better.

Chem 320 (S) 2 hrs. cr.

Computer Applications in Chemistry

An introduction to computer applications and software commonly used for scientific study (and in upper-division courses). Students will become proficient in using the operating system, the local-area network, and spreadsheets and graphing applications, and will be introduced to computer data acquisition and interfacing, Internet information sources, and presentation software. This course satisfies the computer literacy requirement for chemistry, biochemistry, biology, and environmental health majors. One lecture, one three-hour lab per week. Prerequisite: Math 130 (or higher) and Chem 101.