

Program & Curriculum Approval

Executive Summary

[Home](#) | [Search](#) | [Return](#) | [Log Out](#)

Program Title: **Chemistry B.A.**

Approval Status: Proposal Not Submitted

Program Last Saved: Aug 29, 2008 11:34:08 AM

By: Carol Ford

NOTE: The sample plan below may not include all possible course options. Check the program requirements for additional courses that can work with your four-year plan.

Jump down to: [General](#) | [Narrative](#) | [Admission](#) | [Program](#) | [Sub-plans](#)

General Information

[Hide this section](#)

Campus:	University of Minnesota, Morris	<no change>
Career:	Undergraduate	<no change>
Program type:	Baccalaureate	<no change>
Program title (short):	Chemistry B.A.	<no change>
Program title (long):	Chemistry B.A.	<no change>
Program short description:	Chem	<no change>
Additional terms:	<ul style="list-style-type: none"> · This program is 8 semesters (4 years) long. · This program does not need any summer terms. 	<no change>
Stakeholder college(s):	<ul style="list-style-type: none"> · UMM-Science & Math, Div of 	<no change>
Degree-granting college(s):	<ul style="list-style-type: none"> · UMM-Science & Math, Div of 	<no change>
Approver college(s):	<ul style="list-style-type: none"> · UMM-Science & Math, Div of 	<no change>
Administrative college(s):	<ul style="list-style-type: none"> · UMM-Science & Math, Div of 	<no change>
Budgetary college(s):	<ul style="list-style-type: none"> · 'UMM-Science & Math, Div of'=100 	<no change>
Acad plan code(s):	<ul style="list-style-type: none"> · 'UMM-Science & Math, Div of'=016820227 	<no change>
Department(s):	<ul style="list-style-type: none"> · Division of Science & Mathematics - Adm 	<no change>
First term admitting students:	Fall 1960	<no change>
Effective date:	Fall 2007	Fall 2009
Degree:	Bachelor of Arts	<no change>
Catalog description:	Coursework in chemistry spans the four traditional areas of analytical, inorganic, organic, and physical chemistry. Students may also pursue a degree in chemistry with a biochemistry subfield, involving significant coursework in biology. All majors must study beginning physics and calculus. Students may also design an interdisciplinary area of concentration in chemistry-related fields, such as geochemistry or environmental science. Beginning chemistry courses satisfy the physical sciences component of the general	Coursework in chemistry spans the four traditional areas of analytical, inorganic, organic, and physical chemistry. Students may also pursue a degree in chemistry with a biochemistry subfield, involving significant coursework in biology. All majors must study beginning physics and calculus. Students may also design an interdisciplinary area of concentration in chemistry-related fields, such as geochemistry or environmental science. Beginning chemistry courses satisfy the physical sciences component of the general

education requirements.

Chemistry and biochemistry majors do hands-on work with chemical instrumentation and use computers in both software and hardware applications. The faculty prides itself on working closely with its students on undergraduate research projects, directed studies, and undergraduate teaching assistantships. In addition, chemistry majors are encouraged to complete summer research internships at university and industrial labs or at other research facilities, locally and nationally.

Study in chemistry is the prerequisite for many preprofessional programs at UMM. Students who also do work in the Division of Education can obtain licensure in secondary education. About two-thirds of UMM's chemistry majors pursue postgraduate work toward a doctoral degree—most of them in chemistry, many in medicine; but also in other health-related fields, such as veterinary medicine, pharmacy and dentistry; in biological fields related to chemistry; and in a variety of other fields. The other third enter the job market upon graduation, primarily in the chemical industry or in secondary education.

Objectives—The chemistry curriculum focuses on the structure of matter and the conditions required for material change. It is designed to prepare students for postgraduate work in a wide variety of fields, or for a career in industry or in secondary teaching.

education requirements.

Chemistry and biochemistry majors do hands-on work with chemical instrumentation and use computers in both software and hardware applications. The faculty prides itself on working closely with its students on undergraduate research projects, directed studies, and undergraduate teaching assistantships. In addition, chemistry majors are encouraged to complete summer research internships at university and industrial labs or at other research facilities, locally and nationally.

Study in chemistry is the prerequisite for many preprofessional programs at UMM. Students who also do work in the Division of Education can obtain licensure in secondary education. More than sixty percent of UMM's chemistry/biochemistry majors pursue postgraduate work toward a doctoral degree—most of them in chemistry/biochemistry, many in medicine; but also in other health-related fields, such as veterinary medicine, pharmacy and dentistry; in biological fields related to chemistry; and in a variety of other fields. The others enter the job market upon graduation, primarily in the chemical industry or in secondary education.

Objectives—The Chemistry discipline is designed to

1. serve students from other disciplines requiring knowledge of chemistry
2. advance student learning in contemporary chemistry/biochemistry at a level appropriate to undergraduates
3. advance student competence in research in chemistry/biochemistry
4. advance student skills in writing and speaking about chemistry/biochemistry
5. prepare students for postgraduate work in a variety of fields and/or for careers in industrial or clinical settings or for careers in secondary education

RIASEC codes:

Field of study:

Program contact(s):

Math, Engineering, and Science

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<no change>

<no change>

<no change>

Narrative Materials

[Hide this section](#)

Brief summary or

Submitting update to remove additional sample A more explicit statement of objectives for

overview of reason for proposed new program or rationale for changes:	plans that are incorrectly displaying on the online catalog.	purposes of assessment.
Mission, priorities and interrelatedness:	This program predates PCAS development so no information is available for this field.	<no change>
Need and demand:	This program predates PCAS development so no information is available for this field.	<no change>
Comparative advantage:	This program predates PCAS development so no information is available for this field.	<no change>
Efficiency, effectiveness, and use of resources:	This program predates PCAS development so no information is available for this field.	<no change>
Program quality and assessment:	This program predates PCAS development so no information is available for this field.	<no change>
Program development:	This program predates PCAS development so no information is available for this field.	<no change>

Admission Requirements

[Hide this section](#)

Preferred freshman writing course(s):		<no change>
Minimum courses or credits to be completed before admission:	No Courses or Credits	<no change>
Indicate students that are usually admitted to pre-major status before admission to this major:	No students	<no change>
Preferred minimum G.P.A. for college-admitted students seeking entry to the major:	No G.P.A. Requirement above 2.0.	<no change>
Preferred minimum G.P.A. for college-admitted students from another U of M college (I.U.T.s):	No G.P.A. Requirement above 2.0.	<no change>
Preferred minimum G.P.A. for college-admitted students transferring from outside the University:	No G.P.A. Requirement above 2.0.	<no change>

[^ Return to top of Admission Requirements](#)

Program Requirements

[Hide this section](#)

Program length in credits:	120 credits	<no change>
Major length in credits:	59 to 76 credits	<no change>

Number of semesters of a second language that are required: 2 <no change>

Specific language(s) required: Any Second Language <no change>

Other requirements: Courses may not be taken S-N. Up to 8 credits of coursework with a grade of D or D+ may be used to meet the major requirements if offset by an equivalent number of credits of A or B. A minimum GPA of 2.00 is required in the major to graduate. The GPA includes all, and only, University of Minnesota coursework. Grades of "F" are included in GPA calculation until they are replaced. Students should consult members of the chemistry faculty to plan programs of study appropriate to their interests and postgraduate goals. <no change>

Students may complete a major in chemistry through one of two tracks—the standard chemistry major or the chemistry major with a biochemistry subfield.

Required course(s): **Required Courses** <no change>

[CHEM 1101](#) - General Chemistry I, SCI-L (4.0 cr)
[CHEM 1102](#) - General Chemistry II, SCI-L (4.0 cr)
[CHEM 2301](#) - Organic Chemistry I, SCI (4.0 cr)
[CHEM 2302](#) - Organic Chemistry II, SCI (4.0 cr)
[CHEM 2311](#) - Organic Chemistry Lab I (1.0 cr)
[CHEM 2321](#) - Introduction to Research I (1.0 cr)
[CHEM 3101](#) - Analytical Chemistry, SCI-L (4.0 cr)
[CHEM 3501](#) - Physical Chemistry I, SCI (4.0 cr)
[CHEM 3901](#) - Chemistry Seminar I (0.5 cr)
[CHEM 4901](#) - Chemistry Seminar II (0.5 cr)
[MATH 1101](#) - Calculus I, M/SR (5.0 cr)
[MATH 1102](#) - Calculus II, M/SR (5.0 cr)
[PHYS 1101](#) - General Physics I, SCI-L (5.0 cr)
[PHYS 1102](#) - General Physics II, SCI-L (5.0 cr)
[^ Return to top of Program Requirements](#)

Sub-plans

[Hide this section](#)

Sub-plan requirement for this program: Yes <no change>

Sub-plan(s):

Title: Chemistry, Standard

Title (long) of sub-plan: Chemistry, Standard <no change>

Title (short) of sub-plan:	Chemistry, Standard	<no change>
Sub-plan code:	EDUCATION	<no change>
Description:		<no change>
Degree requirements:		<no change>
Required course(s):	<p>Standard Chemistry Required Courses</p> <p>CHEM 3502 - Physical Chemistry II, SCI (4.0 cr) CHEM 3511 - Physical Chemistry Lab (1.0 cr)</p> <p>Standard Chemistry Elective Courses <i>Take 2 or more course(s) from the following:</i></p> <ul style="list-style-type: none"> · CHEM 3111 - Instrumental Analysis, SCI-L (4.0 cr) · CHEM 3701 - Inorganic Chemistry, SCI (3.0 cr) · CHEM 3801 - History of Chemistry, SCI (3.0 cr) · CHEM 3811 - Macromolecules, SCI (3.0 cr) · CHEM 4352 - Synthesis, SCI (3.0 cr) · CHEM 4551 - Theoretical Chemistry, SCI (3.0 cr) · CHEM 4552 - Molecular Spectroscopy, SCI (3.0 cr) · CHEM 4751 - Advanced Inorganic Chemistry, SCI (3.0 cr) <p>· <i>One of the course choices can be either Chem 4351 or the combination of Biol 4211 and 4611.</i></p> <p>· CHEM 4351 - Bioorganic Chemistry, SCI (3.0 cr) <i>or Take all of the following in the same term:</i></p> <p>· BIOL 4211 - Biochemistry, SCI (4.0 cr) BIOL 4611 - Biochemistry Lab (1.0 cr)</p>	<no change>

Title: Chemistry, Subfield Biochemistry

Title (long) of sub-plan:	Chemistry, Subfield Biochemistry	<no change>
Title (short) of sub-plan:	Chemistry, Subfield Biochem	<no change>
Sub-plan code:	BIOCHEM	<no change>
Description:		<no change>
Degree requirements:		<no change>
Required course(s):	<p>Biochemistry Required Courses</p> <p>BIOL 1111 - Fundamentals of Genetics, Evolution, and Development, SCI (3.0 cr) BIOL 2111 - Cell Biology, SCI-L (4.0 cr) BIOL 3121 - Molecular Biology, SCI-L (5.0 cr) BIOL 4211 - Biochemistry, SCI (4.0 cr) BIOL 4312 - Genetics, SCI-L (4.0 cr) CHEM 4351 - Bioorganic Chemistry, SCI (3.0 cr) BIOL 4611 - Biochemistry Lab (1.0 cr)</p> <p>Biochemistry Electives <i>Take 1 or more course(s) from the following:</i></p>	<no change>

- [CHEM 3111](#) - Instrumental Analysis, SCI-L (4.0 cr)
- [CHEM 3502](#) - Physical Chemistry II, SCI (4.0 cr)
- [CHEM 3701](#) - Inorganic Chemistry, SCI (3.0 cr)
- [CHEM 3801](#) - History of Chemistry, SCI (3.0 cr)
- [CHEM 3811](#) - Macromolecules, SCI (3.0 cr)
- [CHEM 4352](#) - Synthesis, SCI (3.0 cr)
- [CHEM 4551](#) - Theoretical Chemistry, SCI (3.0 cr)
- [CHEM 4552](#) - Molecular Spectroscopy, SCI (3.0 cr)
- [CHEM 4751](#) - Advanced Inorganic Chemistry, SCI (3.0 cr)

[^ Return to top of Sub-plan](#)

[^ Return to top of page](#)