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Curriculum Committee Reports

Curriculum Committee

8-22-2012

Division of Science and Math Program Changes 08/22/2012

Curriculum Committee

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**Curriculum Committee
Form A: Discipline Summary**

Route this form to:
Appropriate
Division Office

UMM
Curriculum Committee
Form A

Rev: 05/2010

Date: 22 August 2012

Discipline/Division: Biology/Science and Math

Catalog Years (e.g., 2011-2013): 2013-2015

Statistical Summary of Proposed Changes:

(a)	(b)	(b) – (a)
Present (from current catalog)	Proposed (for new catalog)	Net Change*
18	18	0
60-61	60-61	0
7	7	0
27-28	27-28	0
11	11	0
7		
24	24	0
16		
6	22	0

The Major

Total courses required for a major*:

Total credits required for a major*:

The Minor

Total courses required for a minor*:

Total credits required for a minor*:

Entire Discipline

Total 1xxx and 2xxx courses listed in the catalog**:

Total 1xxx and 2xxx courses taught last year**:

Total 3xxx and 4xxx courses listed in the catalog**:

Total 3xxx and 4xxx courses taught last year**:

Number of courses with no General Education designator**:

*Includes required courses from other disciplines.

**Does not include Directed Studies or Senior Honors Projects. Courses with multiple sections count only once.

Please summarize the intent of the proposed changes.

There are not substantial changes to the biology major or our course offerings. There is an additional 1xxx course (a new IC). A 2xxx course has been deactivated because it is a study abroad course that has gone on hiatus. One upper level elective has been deactivated because the affiliated professor left the university. Another upper level elective has been added. The large change in # of courses without a GER designator is because of the curriculum committee request that we drop such designators from our 4xxx electives.

What are the financial or staffing implications of this proposal for the Discipline?

None

What are the financial or staffing implications of this proposal for other Disciplines?

None

Program & Curriculum Approval - Executive Summary

University of Minnesota, Morris campus

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Program Title: Biology B.A.

Approval Status: Waiting for Campus Approval

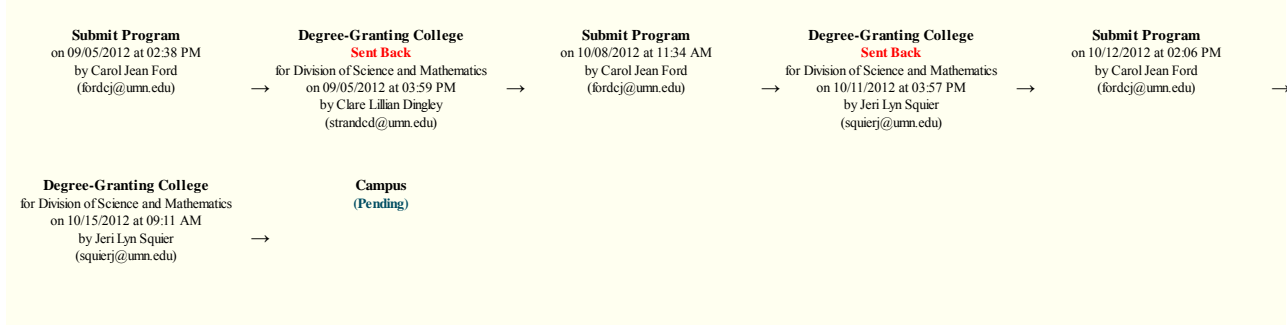
Program Last Saved: Oct 15, 2012 9:11:01 AM

By: Jeri Lyn Squier



Completed Approvals

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Approver Comments (oldest to newest)

Approval Level: Degree-Granting College **Action:** Sent Back **Approver:** Clare Lillian Dingley **Date Submitted:** 09/05/2012 at 03:59 PM

Needs division approval before submission.

Approval Level: Degree-Granting College **Action:** Sent Back **Approver:** Jeri Lyn Squier **Date Submitted:** 10/11/2012 at 03:57 PM

Send Back:
Delete Geol 3111 from 'Other Electives' as it is listed under Organismal Electives
Add Biol 4122 as an Organismal Elective

Approval Level: Degree-Granting College **Action:** Approve **Approver:** Jeri Lyn Squier **Date Submitted:** 10/15/2012 at 09:11 AM

10.11.12 - Approved by Curriculum Committee. js

General Information

[Hide Section](#)

Institution:	University of Minnesota, Morris (UMNMO)	<no change>
Campus:	Morris (UMNMO)	<no change>
Career:	Undergraduate (UGRD)	<no change>
Program type:	Baccalaureate	<no change>
Program title (short):	Biology B.A.	<no change>
Program title (long):	Biology B.A.	<no change>
Program short description:	Biol	<no change>
Additional terms:	<ul style="list-style-type: none">This program is 8 semesters (4 years) long.This program does not require 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'=013220227	<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:	2012-01-17 (Spring 2012)	2013-08-28 (Fall 2013)
Degree:	Bachelor of Arts (B A)	<no change>
Catalog description:	The biology curriculum is designed to provide students with biological knowledge and to develop scientific skills as part of their liberal arts education. Included in those skills are the abilities to conduct and interpret scientific research and to successfully communicate scientific information both verbally and in writing. The faculty believe these objectives can best be attained through a balanced core curriculum in biology and a diverse array of elective coursework, both of which include active lab and field experiences. The biology major prepares students for graduate or professional programs and for careers such as secondary biology education, government service, or private sector employment. The biology discipline also offers a variety of 10XX courses that are designed specifically for students seeking to fulfill general education requirements in science.	<no change>

RIASEC codes:		<no change>
Field of study:	Math, Engineering, and Science (MTH/ENG/SC)	<no change>
Program contact(s):	U of M internet ID: fordej Program contact's full name: Carol Jean Ford Email address: fordej@umn.edu Telephone number: 320/589-6300 Campus mailing address: UMM Div of Science and Math Room 2550 Sci M242A 600 E 4th St Morris, MN 56267	<no change>

Narrative Materials

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Brief summary or overview of reason for proposed new program or rationale for changes:	Update sample plan	Added 4103, 4122 in electives. Inactivated: 2151, 4004
Program Delivery:	<ul style="list-style-type: none"> Classroom (majority of program is face-to-face) 	<no change>
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 Diversity Goals:	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

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Minimum courses or credits to be completed before admission:	No Courses or Credits	<no change>
Are any students usually admitted to pre-major status before admission to this major?:	No students	<no change>
Is there a preferred minimum G.P.A. above 2.0 for students already admitted to the college(s) and now 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 (L.U.Ts):	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>
Required Course(s):		

Program Requirements

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Program length in credits:	120 to 120 credits	<no change>
Major length in credits:	60 to 61 credits	<no change>
Number of semesters of a second language that are required:	2 semester(s)	<no change>
Specific language(s) required:	Any Second Language	<no change>
Other requirements:	<p>Courses may not be taken S-N unless offered S-N only. Up to 5 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 in the major. A minimum GPA of 2.00 is required in the major in order to graduate. The GPA includes all, and only, University of Minnesota coursework. Grades of "F" are included in GPA calculation until they are replaced. Biology majors are advised to complete their chemistry and mathematics requirements as early as possible. All majors should have their programs approved by a biology adviser by the beginning of their junior year.</p> <p>Required Courses</p> <p>BIOL 1111 - Fundamentals of Genetics, Evolution, and Development [SCI] (3.0 cr) BIOL 2101 - Evolution of Biodiversity [SCI-L] (4.0 cr) BIOL 2111 - Cell Biology [SCI-L] (4.0 cr) BIOL 3121 - Molecular Biology [SCI-L] (5.0 cr) BIOL 3131 - Ecology [SCI-L] (4.0 cr) BIOL 3700 - Biological Communication I (1.0 cr) BIOL 3701 - Biological Communication II (1.0 cr) BIOL 4901 - Senior Seminar (1.0 cr) 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 2311 - Organic Chemistry Lab I (1.0 cr)</p> <p>Calc</p> <p>MATH 1021 - Survey of Calculus [M/SR] (4.0 cr) or MATH 1101 - Calculus I [M/SR] (5.0 cr)</p> <p>Stats</p> <p>STAT 1601 - Introduction to Statistics [M/SR] (4.0 cr) or STAT 2601 - Statistical Methods [M/SR] (4.0 cr)</p>	<no change>
Required Course(s):		

Elective Courses

Take 16 or more credits(s) from the following:

Organismal Electives

Take 1 or more course(s) from the following:

- [BIOL 4071](#) - Flora of Minnesota [SCI-L] (4.0 cr)
- [BIOL 4111](#) - Microbiology [SCI-L] (4.0 cr)
- [BIOL 4121](#) - Herpetology (4.0 cr)
- [BIOL 4131](#) - Vertebrate Natural History [SCI-L] (4.0 cr)
- [BIOL 4151](#) - Entomology [SCI-L] (4.0 cr)
- [BIOL 4161](#) - Evolution [SCI] (4.0 cr)
- [BIOL 4172](#) - Plant Systematics [SCI-L] (4.0 cr)
- [BIOL 4301](#) - Plant Biology [SCI-L] (4.0 cr)

Non-Organismal Electives

Take 0 or more course(s) from the following:

- [BIOL 4003](#) - Neurobiology [SCI-L] (4.0 cr)
- [BIOL 4004](#) - Principles of Public Health and Epidemiology [SCI] (4.0 cr)
- [BIOL 4103](#) - Cancer Biology [SCI] (4.0 cr)
- [BIOL 4181](#) - Developmental Biology [SCI-L] (4.0 cr)
- [BIOL 4191](#) - Freshwater Biology [SCI-L] (4.0 cr)
- [BIOL 4211](#) - Biochemistry [SCI] (4.0 cr)
- [BIOL 4311](#) - Conservation Genetics [SCI-L] (4.0 cr)
- [BIOL 4312](#) - Genetics [SCI-L] (4.0 cr)
- [BIOL 4321](#) - Animal Physiology (4.0 cr)
- [BIOL 4331](#) - Global Change Ecology [SCI] (4.0 cr)
- [BIOL 4351](#) - Conservation Biology [SCI-L] (4.0 cr)
- [BIOL 4611](#) - Biochemistry Lab (1.0 cr)

Other Electives

Take 0 - 1 course(s) from the following:

- [PSY 3211](#) - Biological Psychology [SCI-L] (5.0 cr)
- [PSY 3201](#) - Comparative Psychology [SCI-L] (4.0 cr)
- [GEOL 3111](#) - Introduction to Invertebrate Paleontology [SCI-L] (4.0 cr)

Elective Courses

Take 16 or more credits(s) from the following:

Organismal Electives

Take 1 or more course(s) from the following:

- [BIOL 4071](#) - Flora of Minnesota (4.0 cr)
- [BIOL 4111](#) - Microbiology (4.0 cr)
- [BIOL 4121](#) - Herpetology (4.0 cr)
- [BIOL 4131](#) - Vertebrate Natural History (4.0 cr)
- [BIOL 4151](#) - Entomology (4.0 cr)
- [BIOL 4161](#) - Evolution (4.0 cr)
- [BIOL 4172](#) - Plant Systematics (4.0 cr)
- [BIOL 4301](#) - Plant Biology (4.0 cr)
- [GEOL 3111](#) - Introduction to Paleontology [SCI-L] (4.0 cr)

Non-Organismal Electives

Take 0 or more course(s) from the following:

- [BIOL 4003](#) - Neurobiology (4.0 cr)
- [BIOL 4103](#) - Cancer Biology (4.0 cr)
- [BIOL 4122](#) - Virology (4.0 cr)
- [BIOL 4181](#) - Developmental Biology (4.0 cr)
- [BIOL 4191](#) - Freshwater Biology (4.0 cr)
- [BIOL 4211](#) - Biochemistry (4.0 cr)
- [BIOL 4311](#) - Conservation Genetics (4.0 cr)
- [BIOL 4312](#) - Genetics (4.0 cr)
- [BIOL 4321](#) - Animal Physiology (4.0 cr)
- [BIOL 4331](#) - Global Change Ecology (4.0 cr)
- [BIOL 4351](#) - Conservation Biology (4.0 cr)
- [BIOL 4611](#) - Biochemistry Lab (1.0 cr)

Other Electives

Take 0 - 1 course(s) from the following:

- [PSY 3211](#) - Biological Psychology [SCI-L] (5.0 cr)
- [PSY 3201](#) - Comparative Psychology [SCI-L] (4.0 cr)

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Sub-plans

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Sub-plan requirement for this program:

No

<no change>

Draft Online Catalog Display

To see a sample of what this program would look like on the online catalog, click the link titled 'Show Draft Catalog Display'. Please note that this is a **draft** version of the display, as the proposal must still receive the appropriate approvals.

[Show Draft Catalog Display](#) for previous version.

[Show Draft Catalog Display](#) for proposal.

Program & Curriculum Approval - Executive Summary

University of Minnesota, Morris campus

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Program Title: Biology Minor

Approval Status: Waiting for Campus Approval

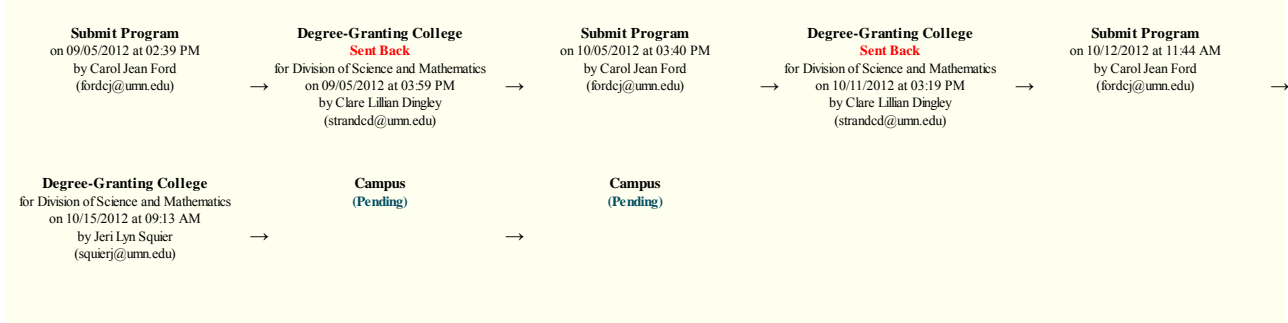
Program Last Saved: Oct 15, 2012 9:13:49 AM

By: Jeri Lyn Squier



Completed Approvals

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Approver Comments (oldest to newest)

Approval Level: Degree-Granting College **Action:** Sent Back **Approver:** Clare Lillian Dingley **Date Submitted:** 09/05/2012 at 03:59 PM

Needs division approval before submission.

Approval Level: Degree-Granting College **Action:** Sent Back **Approver:** Clare Lillian Dingley **Date Submitted:** 10/11/2012 at 03:19 PM

need to revise narrative

Approval Level: Degree-Granting College **Action:** Approve **Approver:** Jeri Lyn Squier **Date Submitted:** 10/15/2012 at 09:11 AM

10.11.12 - Approved by Curriculum Committee. js

Approval Level: Degree-Granting College **Action:** Approve **Approver:** Jeri Lyn Squier **Date Submitted:** 10/15/2012 at 09:13 AM

10.11.12 - Approved by Curriculum Committee. js

General Information

[Hide Section](#)

Institution:	University of Minnesota, Morris (UMNMO)	<no change>
Campus:	Morris (UMNMO)	<no change>
Career:	Undergraduate (UGRD)	<no change>
Program type:	Undergraduate minor related to major	<no change>
Program title (short):	Biology	<no change>
Program title (long):	Biology Minor	<no change>
Program short description:	Biol	<no change>
Additional terms:	<ul style="list-style-type: none"> This program does not require 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'=0132MIN27 	<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:	2009-08-26 (Fall 2009)	2013-08-28 (Fall 2013)
Catalog description:	<p>Objectives--The biology curriculum is designed to provide students with biological knowledge and to develop scientific skills as part of their liberal arts education. These skills include the ability to conduct and interpret scientific research and successfully communicate scientific information both verbally and in writing. The faculty believe these objectives can best be attained through a balanced core curriculum in biology and a diverse array of elective coursework, both of which include active lab and field experiences. The biology major prepares students for graduate or professional programs and for careers such as secondary biology education, government service, or private sector employment.</p>	<no change>

RIASEC codes:		<no change>
Field of study:	Math, Engineering, and Science (MTH/ENG/SC)	<no change>
Program contact(s):	U of M internet ID: fordej Program contact's full name: Carol Jean Ford Email address: fordej@umn.edu Telephone number: 320/589-6300 Campus mailing address: UMM Div of Science and Math Room 2550 Sci M242A 600 E 4th St Morris, MN 56267	<no change>

Narrative Materials

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Brief summary or overview of reason for proposed new program or rationale for changes:	Inactivating old courses and adding new courses	Deleted from electives: Biol 4004 Added to electives: 4103, 4122
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Program Delivery:	<ul style="list-style-type: none"> Classroom (majority of program is face-to-face) 	<no change>
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 Diversity Goals:	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

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Minimum courses or credits to be completed before admission:	No Courses or Credits	<no change>
Are any students usually admitted to pre-major status before admission to this major?:	No students	<no change>
Is there a preferred minimum G.P.A. above 2.0 for students already admitted to the college(s) and now 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 (L.U.Ts):	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>
Required Course(s):		

Program Requirements

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Minor length in credits:	27 to 28 credits	<no change>
Minor length in credits:	27 to 28 credits	<no change>
Number of semesters of a second language that are required:	0 semester(s)	<no change>
Specific language(s) required:	No Second Language	<no change>
Other requirements:	Courses required for the minor may not be taken S-N. Up to 5 credits of coursework with a grade of D or D+ may be used to meet the minor requirements if offset by an equivalent number of credits of A or B in the minor. The GPA in these courses must be at least 2.00.	<no change>

Minor Core Curriculum

[BIOL 1111](#) - Fundamentals of Genetics, Evolution, and Development [SCI] (3.0 cr)
[BIOL 2101](#) - Evolution of Biodiversity [SCI-L] (4.0 cr)
[BIOL 2111](#) - Cell Biology [SCI-L] (4.0 cr)
[CHEM 1101](#) - General Chemistry I [SCI-L] (4.0 cr)
[CHEM 1102](#) - General Chemistry II [SCI-L] (4.0 cr)

Elective Courses

Elective Courses

Take 2 or more course(s) from the following:

- [BIOL 3121](#) - Molecular Biology [SCI-L] (5.0 cr)
- [BIOL 3131](#) - Ecology [SCI-L] (4.0 cr)
- [BIOL 4003](#) - Neurobiology [SCI-L] (4.0 cr)
- [BIOL 4004](#) - Principles of Public Health and Epidemiology [SCI] (4.0 cr)
- [BIOL 4111](#) - Microbiology [SCI-L] (4.0 cr)
- [BIOL 4121](#) - Herpetology (4.0 cr)
- [BIOL 4131](#) - Vertebrate Natural History [SCI-L] (4.0 cr)
- [BIOL 4151](#) - Entomology [SCI-L] (4.0 cr)
- [BIOL 4161](#) - Evolution [SCI] (4.0 cr)
- [BIOL 4172](#) - Plant Systematics [SCI-L] (4.0 cr)
- [BIOL 4181](#) - Developmental Biology [SCI-L] (4.0 cr)
- [BIOL 4191](#) - Freshwater Biology [SCI-L] (4.0 cr)
- [BIOL 4211](#) - Biochemistry [SCI] (4.0 cr)
- [BIOL 4301](#) - Plant Biology [SCI-L] (4.0 cr)
- [BIOL 4311](#) - Conservation Genetics [SCI-L] (4.0 cr)
- [BIOL 4312](#) - Genetics [SCI-L] (4.0 cr)

Required Course(s):

Elective Courses

Elective Courses

Take 2 or more course(s) from the following:

- [BIOL 3121](#) - Molecular Biology [SCI-L] (5.0 cr)
- [BIOL 3131](#) - Ecology [SCI-L] (4.0 cr)
- [BIOL 4003](#) - Neurobiology (4.0 cr)
- [BIOL 4103](#) - Cancer Biology (4.0 cr)
- [BIOL 4111](#) - Microbiology (4.0 cr)
- [BIOL 4121](#) - Herpetology (4.0 cr)
- [BIOL 4122](#) - Virology (4.0 cr)
- [BIOL 4131](#) - Vertebrate Natural History (4.0 cr)
- [BIOL 4151](#) - Entomology (4.0 cr)
- [BIOL 4161](#) - Evolution (4.0 cr)
- [BIOL 4172](#) - Plant Systematics (4.0 cr)
- [BIOL 4181](#) - Developmental Biology (4.0 cr)
- [BIOL 4191](#) - Freshwater Biology (4.0 cr)
- [BIOL 4211](#) - Biochemistry (4.0 cr)
- [BIOL 4301](#) - Plant Biology (4.0 cr)
- [BIOL 4311](#) - Conservation Genetics (4.0 cr)

- [BIOL 4321](#) - Animal Physiology (4.0 cr)
- [BIOL 4331](#) - Global Change Ecology [SCI] (4.0 cr)
- [BIOL 4351](#) - Conservation Biology [SCI-L] (4.0 cr)
- [BIOL 4611](#) - Biochemistry Lab (1.0 cr)
- **Or choose one of the following**
- Or choose not more than one of the following non-biology electives:
- [PSY 3211](#) - Biological Psychology [SCI-L] (5.0 cr)
- or [PSY 3201](#) - Comparative Psychology [SCI-L] (4.0 cr)
- or [GEOL 3111](#) - Introduction to Invertebrate Paleontology [SCI-L] (4.0 cr)

- [BIOL 4312](#) - Genetics (4.0 cr)
- [BIOL 4321](#) - Animal Physiology (4.0 cr)
- [BIOL 4331](#) - Global Change Ecology (4.0 cr)
- [BIOL 4351](#) - Conservation Biology (4.0 cr)
- [BIOL 4611](#) - Biochemistry Lab (1.0 cr)
- **Or choose one of the following**
- Or choose not more than one of the following non-biology electives:
- [PSY 3211](#) - Biological Psychology [SCI-L] (5.0 cr)
- or [PSY 3201](#) - Comparative Psychology [SCI-L] (4.0 cr)
- or [GEOL 3111](#) - Introduction to Paleontology [SCI-L] (4.0 cr)

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Sub-plans

[Hide Section](#)

Sub-plan requirement for this program:

No

<no change>

Draft Online Catalog Display

To see a sample of what this program would look like on the online catalog, click the link titled 'Show Draft Catalog Display'. Please note that this is a **draft** version of the display, as the proposal must still receive the appropriate approvals.

[Show Draft Catalog Display](#) for previous version.

[Show Draft Catalog Display](#) for proposal.

Electronic Course Authorization System (ECAS)

BIOL 4122 - NEW COURSE PROPOSAL

Approvals Received:	Department on 09-26-12 by Jeri Squier (squierj@umn.edu)
Approvals Pending:	Curriculum Committee > Campus Assembly > Catalog
Effective Status:	Active
Effective Term:	New: 1139 - Fall 2013 Old: 1133 - Spring 2013
Course:	BIOL 4122
Institution/Campus:	UMNMO - Morris
Career:	UGRD
College:	MDSM - Division of Science and Mathematics
Department:	10565 - UMM-Sci & Math, Div of-Adm

General

Course Title Short:	Virology
Course Title Long:	Virology
Max-Min Credits for Course:	4.0 to 4.0 credit(s)
Catalog Description:	An overview of virus biology. Consider evolutionary origins of viruses and compare structure, genome organization, replication strategies, and other features of common and unique viruses. (two 100-min lect)
Print in Catalog?:	Yes
Additional Course Information (for catalog production):	<no text provided>
Grading Basis:	Stdnt Opt
Honors Course:	No
Delivery Mode(s):	Classroom
Years most frequently offered:	Even years only
Term(s) most frequently offered:	Spring
Component 1:	LEC (with final exam)
Auto-Enroll Course:	No

<u>Graded Component:</u>	LEC
<u>Academic Progress Units:</u>	Not allowed to bypass limits. 4.0 credit(s)
<u>Financial Aid Progress Units:</u>	Not allowed to bypass limits. 4.0 credit(s)
<u>Repetition of Course:</u>	Repetition not allowed.
<u>Course Prerequisites for Catalog:</u>	3121 or #
<u>Course Equivalency:</u>	No course equivalencies
<u>Consent Requirement:</u>	No required consent
<u>Enforced Prerequisites (course-based or non-course-based)</u>	003841 - prereq 3121
<u>Editor Comments:</u>	09.24.12 Edited for PSoft. js 09.24.12 edited for catalog NEH.
<u>Proposal Changes:</u>	<no text provided>
<u>History Information:</u>	09.24.12 - Received provisional approval. js
Assessment and Goals:	<no text provided>
<u>Rationale for Changes or Exceptions:</u>	New: SEEKING REGULAR APPROVAL. JS THIS IS A NEW COURSE PROPOSED BY A NEW FACULTY MEMBER AT UMM Old: THIS IS A NEW COURSE PROPOSED BY A NEW FACULTY MEMBER AT UMM

General Education

<u>Faculty Sponsor Name:</u>	Michael Ceballos
<u>Requirement this course fulfills:</u>	

Provisional Approval:	New: Not requested Old: Received on Sep 24, 2012
Regular Approval:	New: Requested on Sep 26, 2012 Old: Not Requested

Curriculum Committee Form A: Discipline Summary

Route this form to:
Appropriate
Division Office

UMM
Curriculum Committee
Form A

Rev: 05/2010

Date: Aug 18, 2012

Discipline/Division: Chem/Science and Math

Catalog Years (e.g., 2011-2013): 2013-2015

Statistical Summary of Proposed Changes:

The Major

Total courses required for a major*:

Total credits required for a major*:

The Minor

Total courses required for a minor*:

Total credits required for a minor*:

Entire Discipline

Total 1xxx and 2xxx courses listed in the catalog**:

Total 1xxx and 2xxx courses taught last year**:

Total 3xxx and 4xxx courses listed in the catalog**:

Total 3xxx and 4xxx courses taught last year**:

Number of courses with no General Education designator**:

(a) Present (from current catalog)	(b) Proposed (for new catalog)	(b) – (a) Net Change*
19-22	19-22	0
59-72	60-73	+1
7-8	7-8	0
23-26	24-26	+1 to 0
10	11	+1
7		
19	19	0
12		
10	17	+7

*Includes required courses from other disciplines.

**Does not include Directed Studies or Senior Honors Projects. Courses with multiple sections count only once.

Please summarize the intent of the proposed changes.

We've increased most upper level electives by 1 credit to more accurately reflect the time and work related to the courses. We've removed gen ed designators from 4XXX classes which have pre-reqs which meet the same gen ed. An IC course has been added.

What are the financial or staffing implications of this proposal for the Discipline?

None -- the only addition is the IC course which is not required for the major thus it's frequency can be adjusted relative to variables such as leaves, enrollment in lower level lab sections etc

What are the financial or staffing implications of this proposal for other Disciplines?

None

Program & Curriculum Approval - Executive Summary

University of Minnesota, Morris campus

[Close This Window](#)

Program Title: Chemistry B.A.

Approval Status: Waiting for Campus Approval

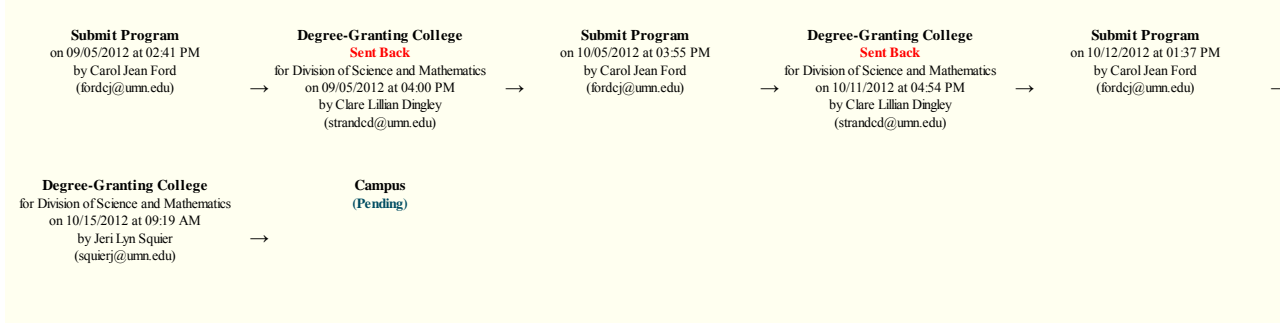
Program Last Saved: Oct 15, 2012 9:19:01 AM

By: Jeri Lyn Squier



Completed Approvals

[Hide Section](#)



Approver Comments (oldest to newest)

Approval Level: Degree-Granting College **Action:** Sent Back **Approver:** Clare Lillian Dingley **Date Submitted:** 09/05/2012 at 04:00 PM

Needs division approval before submission.

Approval Level: Degree-Granting College **Action:** Sent Back **Approver:** Clare Lillian Dingley **Date Submitted:** 10/11/2012 at 04:54 PM

Need to remove course change (ECAS) related text from summary. Not relevant to this PCAS revision. "Gen Ed designators removed from 4XXX class per request from Curriculum Committee. One IC course added"

Change includes increase of 1 credit for the major and petition alternative to physics course required.

Approval Level: Degree-Granting College **Action:** Approve **Approver:** Jeri Lyn Squier **Date Submitted:** 10/15/2012 at 09:19 AM

10.11.12 - Approved by Curriculum Committee. js

General Information

[Hide Section](#)

Institution:	University of Minnesota, Morris (UMNMO)	<no change>
Campus:	Morris (UMNMO)	<no change>
Career:	Undergraduate (UGRD)	<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 require any summer terms.	<no change>
Stakeholder college(s):	• UMM-Science & Math, Div of	<no change>
Degree-granting college(s):	• UMM-Science & Math, Div of	<no change>
Approver college(s):	• UMM-Science & Math, Div of	<no change>
Administrative college(s):	• UMM-Science & Math, Div of	<no change>
Budgetary college(s):	• UMM-Science & Math, Div of=100	<no change>
Acad plan code(s):	• UMM-Science & Math, Div of=016820227	<no change>
Department(s):	• Division of Science & Mathematics - Adm	<no change>
First term admitting students:	Fall 1960	<no change>
Effective date:	2011-08-24 (Fall 2011)	2013-08-28 (Fall 2013)
Degree:	Bachelor of Arts (B A)	<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. 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,	<no change>

chemistry/biochemistry 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. The UMM chemistry program is approved to offer American Chemical Society (ACS) Certified Degrees. "ACS promotes excellence in chemistry education for undergraduate students through approval of baccalaureate chemistry programs. ACS-approved programs offer a broad-based and rigorous chemistry education that gives students intellectual, experimental, and communication skills to become effective scientific professionals." (from ACS CPT guide) Students who wish to have their degree certified by the ACS may need to complete additional courses or work beyond the program requirements listed below. A complete description of how to complete the ACS requirements at UMM can be found on the discipline web page: <http://www.morris.umn.edu/academic/chemistry/courses.html>
 Objectives--the chemistry discipline is designed to * serve students from other disciplines requiring knowledge of chemistry; * advance student learning in contemporary chemistry/biochemistry at a level appropriate to undergraduates; * advance student competence in research in chemistry/biochemistry; * advance student skills in writing and speaking about chemistry/biochemistry; and * 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:		<no change>
Field of study:	Math, Engineering, and Science (MTH/ENG/SC)	<no change>
Program contact(s):	U of M internet ID: fordcj Program contact's full name: Carol Jean Ford Email address: fordcj@umn.edu Telephone number: 320/589-6300 Campus mailing address: UMM Div of Science and Math Room 2550 Sci M242A 600 E 4th St Morris, MN 56267	<no change>

Narrative Materials

[Hide Section](#)

Brief summary or overview of reason for proposed new program or rationale for changes:	New electives were added (Chem 3401 and 3301) and one dropped (Chem 3811). CHEM 4352 Bio Organic was also dropped as an elective in the standard chem subfield. Text was added to the description to give information on ACS (American Chemical Society) certification which we are now able to offer.	Increase of 1 credit required to the major. Upper division electives increased by 1 credit: 3301, 3401, 3801, 4351, 4352, 4551, 4701, 4751. Students can now petition to substitute Principles of Physics for General Physics.
Program Delivery:	<ul style="list-style-type: none"> Classroom (majority of program is face-to-face) 	<no change>
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 Diversity Goals:	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 Section](#)

Minimum courses or credits to be completed before admission:	No Courses or Credits	<no change>
Are any students usually admitted to pre-major status before admission to this major?:	No students	<no change>
Is there a preferred minimum G.P.A. above 2.0 for students already admitted to the college(s) and now 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 (L.U.Ts):	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>
Required Course(s):		

Program Requirements

[Hide Section](#)

Program length in credits:	120 to 120 credits	<no change>
Major length in credits:	59 to 72 credits	60 to 73 credits
Number of semesters of a second language that are required:	2 semester(s)	<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. Students may complete a major in chemistry through one of two tracks--the standard chemistry major or the chemistry major with a biochemistry subfield.

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.

General Physics (Phys 1101, 1102) is required, but Principles of Physics (Phys 1091, 1092) will be considered for substitution on a case-by-case basis via petition to the Discipline.

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 Courses

Required Courses

[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 2311](#) - Organic Chemistry Lab 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)

OChem II subgroup

[CHEM 2302](#) - Organic Chemistry II [SCI] (4.0 cr)

or [CHEM 2304](#) - Organic Chemistry II with a Biological Emphasis [SCI] (4.0 cr)

ITR

[CHEM 2321](#) - Introduction to Research I (1.0 cr)

with [CHEM 2322](#) - Introduction to Research II (1.0 cr)

Other Science Requirements

[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 Section](#)

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

Chemistry, Subfield Biochemistry

Title (long): Chemistry, Subfield Biochemistry <no change>

Title (short): Chemistry, Subfield Biochem <no change>

Sub-plan type: Sub-plan which fulfills the 'Sub-plan Required' program requirement <no change>

Type of sub-plan: Option <no change>

Sub-plan code: BIOCHEM <no change>

Sub-plan description: <no change>

Degree requirements: <no change>

Biochemistry Required Courses

[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) <no change>

[BIOL 4211](#) - Biochemistry [SCI] (4.0 cr)

[CHEM 4351](#) - Bioorganic Chemistry [SCI] (3.0 cr)

[BIOL 4611](#) - Biochemistry Lab (1.0 cr)

Biochemistry Electives

For students planning to go to graduate school in biochemistry, it is recommended that they also take BIOL 4111 - Microbiology and BIOL 4312 - Genetics.

Take 1 or more course(s) from the following:

· [CHEM 4111](#) - Instrumental Analysis [SCI-L] (4.0 cr)

· [CHEM 3301](#) - The Chemistry of Sustainable Energy [SCI] (3.0 cr)

· [CHEM 3401](#) - Polymer Chemistry and the Environment [SCI] (3.0 cr)

· [CHEM 3502](#) - Physical Chemistry II [SCI] (4.0 cr) <no change>

· [CHEM 4701](#) - Inorganic Chemistry [SCI] (3.0 cr)

· [CHEM 3801](#) - History of Chemistry [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 Subplan\(s\)](#)

Chemistry, Standard

Title (long): Chemistry, Standard <no change>

Title (short): Chemistry, Standard <no change>

Sub-plan type: Sub-plan which fulfills the 'Sub-plan Required' program requirement <no change>

Type of sub-plan: Option <no change>

Sub-plan code: EDUCATION <no change>

Sub-plan description: <no change>

Degree requirements: <no change>

Standard Chemistry Required Courses

[CHEM 3502](#) - Physical Chemistry II [SCI] (4.0 cr)

[CHEM 3511](#) - Physical Chemistry Lab (1.0 cr) <no change>

Required Course(s):

Standard Chemistry Elective Courses

Take 2 or more course(s) from the following:

- [CHEM 4111](#) - Instrumental Analysis [SCI-L] (4.0 cr)
- [CHEM 3301](#) - The Chemistry of Sustainable Energy [SCI] (3.0 cr)
- [CHEM 3401](#) - Polymer Chemistry and the Environment [SCI] (3.0 cr)
- [CHEM 4701](#) - Inorganic Chemistry [SCI] (3.0 cr)
- [CHEM 3801](#) - History of Chemistry [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)

<no change>

· Biochemistry

- [BIOL 4211](#) - Biochemistry [SCI] (4.0 cr)
- [BIOL 4611](#) - Biochemistry Lab (1.0 cr)

[^ Return to top of Subplan\(s\)](#)

Draft Online Catalog Display

To see a sample of what this program would look like on the online catalog, click the link titled 'Show Draft Catalog Display'. Please note that this is a **draft** version of the display, as the proposal must still receive the appropriate approvals.

[Show Draft Catalog Display](#) for previous version.

[Show Draft Catalog Display](#) for proposal.

**Curriculum Committee
Form A: Discipline Summary**

Route this form to:
Appropriate
Division Office

UMM
Curriculum Committee
Form A

Rev: 05/2010

Date: 8/20/2012

Discipline/Division: CSci

Catalog Years (e.g., 2011-2013): 2013-2015

Statistical Summary of Proposed Changes:

(a)	(b)	(b) – (a)
Present (from current catalog)	Proposed (for new catalog)	Net Change*
14	14	0
53	53	0
6	6	0
27	26	-1
8	9	1
7		
32	34	2
7		
1	30	+29

The Major

Total courses required for a major*:

Total credits required for a major*:

The Minor

Total courses required for a minor*:

Total credits required for a minor*:

Entire Discipline

Total 1xxx and 2xxx courses listed in the catalog**:

Total 1xxx and 2xxx courses taught last year**:

Total 3xxx and 4xxx courses listed in the catalog**:

Total 3xxx and 4xxx courses taught last year**:

Number of courses with no General Education designator**:

*Includes required courses from other disciplines.

**Does not include Directed Studies or Senior Honors Projects. Courses with multiple sections count only once.

Please summarize the intent of the proposed changes.

We raised the grade expectations for intro courses to count toward the major and updated the pre-requisites of CSci 3601 in order to increase the quality of student outcomes and experience within the major. We made the minor more flexible by allowing students to choose a 4xxx course instead of requiring two 3xxx courses. This allows for more specialized minors as well. In the time since the catalog changes in fall 2010, we have added an Intellectual Community (IC) course at the 1xxx level and two new elective choices since the last set of catalog changes. These courses have been approved already by the campus assembly, so the only catalog changes are to the program requirements and minor requirements rather than the number of courses in our repertoire. We removed GER from 4xxx courses at the request of Curr Comm.

What are the financial or staffing implications of this proposal for the Discipline?

The changes do not require extra funding or staffing.

What are the financial or staffing implications of this proposal for other Disciplines?

No implications to other disciplines.

Program & Curriculum Approval - Executive Summary

University of Minnesota, Morris campus

[Close This Window](#)

Program Title: Computer Science B.A.

Approval Status: Waiting for Campus Approval

Program Last Saved: Oct 15, 2012 9:21:51 AM

By: Jeri Lyn Squier



Completed Approvals

[Hide Section](#)

Submit Program on 09/05/2012 at 02:42 PM by Carol Jean Ford (fordcj@umn.edu)	→	Degree-Granting College Sent Back for Division of Science and Mathematics on 09/05/2012 at 04:00 PM by Clare Lillian Dingley (strandcd@umn.edu)	→	Submit Program on 10/05/2012 at 02:47 PM by Carol Jean Ford (fordcj@umn.edu)	→	Degree-Granting College for Division of Science and Mathematics on 10/15/2012 at 09:21 AM by Jeri Lyn Squier (squierj@umn.edu)	→	Campus (Pending)
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Approver Comments (oldest to newest)

Approval Level: Degree-Granting College **Action:** Sent Back **Approver:** Clare Lillian Dingley **Date Submitted:** 09/05/2012 at 04:00 PM

Needs division approval before submission.

Approval Level: Degree-Granting College **Action:** Approve **Approver:** Jeri Lyn Squier **Date Submitted:** 10/15/2012 at 09:20 AM

10.11.12 - Approved by Curriculum Committee. js

Approval Level: Degree-Granting College **Action:** Approve **Approver:** Jeri Lyn Squier **Date Submitted:** 10/15/2012 at 09:21 AM

10.11.12 - Approved by Curriculum Committee. js

General Information

[Hide Section](#)

Institution:	University of Minnesota, Morris (UMNMO)	<no change>
Campus:	Morris (UMNMO)	<no change>
Career:	Undergraduate (UGRD)	<no change>
Program type:	Baccalaureate	<no change>
Program title (short):	Computer Science B.A.	<no change>
Program title (long):	Computer Science B.A.	<no change>
Program short description:	Compt Sci	<no change>
Additional terms:	<ul style="list-style-type: none"> This program is 8 semesters (4 years) long. This program does not require any summer terms. 	<no change>
Stakeholder college(s):	• UMM-Science & Math, Div of	<no change>
Degree-granting college(s):	• UMM-Science & Math, Div of	<no change>
Approver college(s):	• UMM-Science & Math, Div of	<no change>
Administrative college(s):	• UMM-Science & Math, Div of	<no change>
Budgetary college(s):	• 'UMM-Science & Math, Div of'=100	<no change>
Acad plan code(s):	• 'UMM-Science & Math, Div of'=019620227	<no change>
Department(s):	• Division of Science & Mathematics - Adm	<no change>
First term admitting students:	Fall 1960	<no change>
Effective date:	2011-08-24 (Fall 2011)	2013-08-28 (Fall 2013)
Degree:	Bachelor of Arts (B A)	<no change>
Catalog description:	The computer science curriculum is designed to not only provide a solid background in fundamentals, but also to continuously respond to rapid changes in the field of computing by equipping our students with modern tools, approaches, and cutting-edge concepts and technologies. Coursework in computer science spans three core areas of computing, including theory, software development, and systems. Beginning computer science courses are open to non-majors and satisfy the mathematical and symbolic reasoning component of the general education requirements. All computer science majors must complete a senior seminar capstone experience, and the discipline prides itself on the high quality of students' papers and presentations in this course. The program also includes mathematics or statistics in the required coursework. Computer science majors develop software, explore hardware systems, and apply theoretical concepts. Reflecting the collaborative nature of today's world, team work is heavily integrated into computer science coursework. Students are encouraged to use and supplement their formal education through research opportunities, internship experiences, programming and robotics competitions, and student and professional organizations. Many students take advantage of the opportunity to collaborate with computer science faculty on research projects, presenting the results at international, national, and regional conferences, as well as at UMM's Undergraduate Research Symposium. Study in computer science is required for management and math majors at UMM, as well as for students pursuing a variety of pre-engineering programs. Many UMM computer	<no change>

science majors enter the job market upon graduation, primarily in the computing industry. Others pursue postgraduate work toward a masters or doctoral degree in computing, business, library science, or a variety of other fields. Objectives--the computer science discipline is designed to * serve students from other disciplines requiring knowledge of computer science; * advance student learning in computer science at a depth and breadth appropriate to undergraduates; * advance student competence in research in computer science; * advance student writing and presentation skills appropriate for the field; * advance student teamwork and collaboration skills; and * prepare students for careers in industrial settings and/or postgraduate work in computing.

RIASEC codes:		<no change>
Field of study:	Math, Engineering, and Science (MTH/ENG/SC)	<no change>
Program contact(s):	U of M internet ID: fordcj Program contact's full name: Carol Jean Ford Email address: fordcj@umn.edu Telephone number: 320/589-6300 Campus mailing address: UMM Div of Science and Math Room 2550 Sci M242A 600 E 4th St Morris, MN 56267	<no change>

Narrative Materials

[Hide Section](#)

Brief summary or overview of reason for proposed new program or rationale for changes:	Update of program description clarifies program's objectives and goals. Cancellation of CSCI 2901, substituted with IS 1091 reflects current teaching loads and provides students with an opportunity for interdisciplinary discussion.	Grade expectations were raised for intro courses to count toward the major and pre-reqs for 3601 were updated to increase quality of student outcomes and experiences in the major.
Program Delivery:	<ul style="list-style-type: none"> Classroom (majority of program is face-to-face) 	<no change>
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 Diversity Goals:	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 Section](#)

Minimum courses or credits to be completed before admission:	No Courses or Credits	<no change>
Are any students usually admitted to pre-major status before admission to this major?:	No students	<no change>
Is there a preferred minimum G.P.A. above 2.0 for students already admitted to the college(s) and now 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>
Required Course(s):		

Program Requirements

[Hide Section](#)

Program length in credits:	120 to 120 credits	<no change>
Major length in credits:	53 to 53 credits	<no change>
Number of semesters of a second language that are required:	2 semester(s)	<no change>
Specific language(s) required:	Any Second Language	<no change>
Other requirements:	No more than two courses with a grade of D or D+, offset by an equivalent number of credits of A or B grades, may be used to meet the requirements for a computer science major. Courses may not be taken S-N unless offered S-N only. 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. Elective courses: computer science major electives are divided into three areas: systems courses (CSCI 44xx), theory courses (CSCI 45xx), and programming and languages courses (CSCI 46xx). The discipline offers an array of courses in each area. The courses listed are representative of the courses offered. New courses are continually developed and added to keep up with changes in the field.	<p>Grades of D or D+ in CSCI 1201, 1301, 1302, and 2101 may not be used to meet the major requirements.</p> <p>No more than one course with a grade of D or D+, offset by an equivalent number of credits of A or B grades, may be used to meet the requirements for a computer science major.</p> <p>Courses may not be taken S-N unless offered S-N only. 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.</p> <p>Elective courses: computer science major electives are divided into three areas: systems courses (CSCI 44xx), theory courses (CSCI 45xx), and programming and languages courses (CSCI 46xx). The discipline offers an array of courses in each area. The courses listed are representative of the courses offered. New courses are</p>

continually developed and added to keep up with changes in the field.

Required Courses

- [CSCI 1302](#) - Foundations of Computer Science [M/SR] (4.0 cr)
- [CSCI 2101](#) - Data Structures [M/SR] (5.0 cr)
- [CSCI 3401](#) - Models of Computing Systems [M/SR] (5.0 cr)
- [CSCI 3501](#) - Algorithms and Computability [M/SR] (5.0 cr)
- [CSCI 3601](#) - Software Design and Development [M/SR] (5.0 cr)
- [CSCI 4901](#) - Senior Seminar (1.0 cr)
- [IS 1091](#) - Ethical and Social Implications of Technology [E/CR] (2.0 cr)

Intro course

- Take one of the following:
- [CSCI 1201](#) - Introduction to Digital Media Computation [M/SR] (4.0 cr)
- or [CSCI 1301](#) - Problem Solving and Algorithm Development [M/SR] (4.0 cr)

Elective Courses

Take 10 or more credits(s) including exactly 3 sub-requirements(s) from the following:

Computing Systems Courses (44xx):

- Take 2 - 4 credits(s) from the following:
- [CSCI 4403](#) - Systems: Data Mining [M/SR] (2.0 cr)
- [CSCI 4406](#) - Systems: Wireless Data Networks [M/SR] (2.0 cr)
- [CSCI 4408](#) - Systems: Computer Forensics [M/SR] (2.0 cr)
- [CSCI 4409](#) - Systems: Programming for Parallel Architecture [M/SR] (2.0 cr)
- [CSCI 4451](#) - Systems: Distributed Systems [M/SR] (4.0 cr)
- [CSCI 4452](#) - Systems: Computer Networks [M/SR] (4.0 cr)
- [CSCI 4453](#) - Systems: Database Systems [M/SR] (4.0 cr)
- [CSCI 4454](#) - Systems: Robotics [M/SR] (4.0 cr)
- [CSCI 4456](#) - Systems: Advanced Operating Systems [M/SR] (4.0 cr)

Theory Courses (45xx):

- Take 2 - 4 credits(s) from the following:
- [CSCI 4506](#) - Theory: Fuzzy Logic and Fuzzy Sets [M/SR] (2.0 cr)
- [CSCI 4507](#) - Theory: Data Compression [M/SR] (2.0 cr)
- [CSCI 4552](#) - Theory: Advanced Algorithms [M/SR] (4.0 cr)
- [CSCI 4553](#) - Theory: Evolutionary Computation and Artificial Intelligence [M/SR] (4.0 cr)
- [CSCI 4554](#) - Theory: Cryptography [M/SR] (4.0 cr)
- [CSCI 4555](#) - Theory: Neural Networks and Machine Learning [M/SR] (4.0 cr)
- [CSCI 4556](#) - Theory: Computer Graphics [M/SR] (4.0 cr)

<no change>

Required Course(s):

Programming and Languages Courses (46xx):

- Take 2 - 4 credits(s) from the following:
- [CSCI 4604](#) - Programming and Languages: Graphical User Interfaces [M/SR] (2.0 cr)
- [CSCI 4605](#) - Programming and Languages: Refactoring [M/SR] (2.0 cr)
- [CSCI 4651](#) - Programming and Languages: Programming Languages [M/SR] (4.0 cr)
- [CSCI 4652](#) - Programming and Languages: Compilers [M/SR] (4.0 cr)
- [CSCI 4653](#) - Programming and Languages: Software Engineering [M/SR] (4.0 cr)
- [CSCI 4654](#) - Programming and Languages: Modern Functional Programming [M/SR] (4.0 cr)
- [CSCI 4655](#) - Programming and Languages: Software Design and Development II [M/SR] (4.0 cr)
- [CSCI 4656](#) - Programming and Languages: Human-Computer Interaction and Interface Design [M/SR] (4.0 cr)
- [CSCI 4657](#) - Programming and Languages: Programming Languages for Client-Server Systems [M/SR] (4.0 cr)

Math and Statistics Electives

MATH 1101 and above, excluding MATH 2211, or STAT 2xxx and above.

Take 12 or more credits(s) from the following:

- [MATH 1101](#) - Calculus I [M/SR] (5.0 cr)
- [MATH 1102](#) - Calculus II [M/SR] (5.0 cr)
- [MATH 2101](#) - Calculus III [M/SR] (4.0 cr)
- [MATH 2111](#) - Linear Algebra [M/SR] (4.0 cr)
- [MATH 2202](#) - Mathematical Perspectives [M/SR] (4.0 cr)
- [MATH 2401](#) - Differential Equations [M/SR] (4.0 cr)
- [MATH 2501](#) - Probability and Stochastic Processes [M/SR] (4.0 cr)
- MATH 3xxx
- MATH 4xxx
- STAT 2xxx
- STAT 3xxx
- STAT 4xxx

<no change>

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

Sub-plans

Hide Section

Sub-plan requirement for this program:

No

<no change>

Draft Online Catalog Display

To see a sample of what this program would look like on the online catalog, click the link titled 'Show Draft Catalog Display'. Please note that this is a **draft** version of the display, as the proposal must still receive the appropriate approvals.

[Show Draft Catalog Display](#) for previous version.

[Show Draft Catalog Display](#) for proposal.

Program & Curriculum Approval - Executive Summary

University of Minnesota, Morris campus

[Close This Window](#)

Program Title: Computer Science Minor

Approval Status: Waiting for Campus Approval

Program Last Saved: Oct 15, 2012 9:22:49 AM

By: Jeri Lyn Squier



Completed Approvals

[Hide Section](#)

Submit Program on 09/05/2012 at 02:42 PM by Carol Jean Ford (fordcj@umn.edu)	→	Degree-Granting College Sent Back for Division of Science and Mathematics on 09/05/2012 at 04:01 PM by Clare Lillian Dingley (strandcl@umn.edu)	→	Submit Program on 10/05/2012 at 02:53 PM by Carol Jean Ford (fordcj@umn.edu)	→	Degree-Granting College for Division of Science and Mathematics on 10/15/2012 at 09:22 AM by Jeri Lyn Squier (squierj@umn.edu)	→	Campus (Pending)
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Approver Comments (oldest to newest)

Approval Level: Degree-Granting College **Action:** Sent Back **Approver:** Clare Lillian Dingley **Date Submitted:** 09/05/2012 at 04:01 PM

Needs division approval before submission.

Approval Level: Degree-Granting College **Action:** Approve **Approver:** Jeri Lyn Squier **Date Submitted:** 10/15/2012 at 09:22 AM

10.11.12 - Approved by Curriculum Committee. js

General Information

[Hide Section](#)

Institution:	University of Minnesota, Morris (UMNMO)	<no change>
Campus:	Morris (UMNMO)	<no change>
Career:	Undergraduate (UGRD)	<no change>
Program type:	Undergraduate minor related to major	<no change>
Program title (short):	Computer Science	<no change>
Program title (long):	Computer Science Minor	<no change>
Program short description:	Compt Sci	<no change>
Additional terms:	<ul style="list-style-type: none"> • • This program does not require any summer terms. 	<no change>
Stakeholder college(s):	• UMM-Science & Math, Div of	<no change>
Degree-granting college(s):	• UMM-Science & Math, Div of	<no change>
Approver college(s):	• UMM-Science & Math, Div of	<no change>
Administrative college(s):	• UMM-Science & Math, Div of	<no change>
Budgetary college(s):	• 'UMM-Science & Math, Div of'=100	<no change>
Acad plan code(s):	• 'UMM-Science & Math, Div of'=0196MIN27	<no change>
Department(s):	• Division of Science & Mathematics - Adm	<no change>
First term admitting students:	Fall 1960	<no change>
Effective date:	2009-08-26 (Fall 2009)	2013-08-28 (Fall 2013)
Catalog description:	Objectives--The computer science curriculum is designed to provide students with a strong foundation in the diverse and rapidly changing field of computing. The science of computing is emphasized with a focus on fundamental principles and the formal underpinnings of the field. Students are encouraged to use and supplement their formal education through a variety of research opportunities, participation in discipline colloquia and student/professional organizations, and pursuit of internship experiences or international studies opportunities.	<no change>
RIASEC codes:		<no change>
Field of study:	Math, Engineering, and Science (MTH/ENG/SC)	<no change>
Program contact(s):	<p>U of M internet ID: fordej</p> <p>Program contact's full name: Carol Jean Ford</p> <p>Email address: fordej@umn.edu</p> <p>Telephone number: 320/589-6300</p> <p>Campus mailing address: UMM Div of Science and Math Room 2550 Sci M242A 600 E 4th St Morris, MN 56267</p>	<no change>

Narrative Materials

[Hide Section](#)

Brief summary or overview of reason for proposed new program or rationale for changes: Assessment showed that taking 1201 is comparable to 1301. More explicit language used to define when S/N grades are acceptable

Minor was made more flexible by allowing students to choose a 4XXX course instead of requiring two 3XXX courses.

Program Delivery:	<ul style="list-style-type: none"> Classroom (majority of program is face-to-face) 	<no change>
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 Diversity Goals:	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 Section](#)

Minimum courses or credits to be completed before admission:	No Courses or Credits	<no change>
Are any students usually admitted to pre-major status before admission to this major?:	No students	<no change>
Is there a preferred minimum G.P.A. above 2.0 for students already admitted to the college(s) and now 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 (L.U.Ts):	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>
Required Course(s):		

Program Requirements

[Hide Section](#)

Minor length in credits:	27 credits	<no change>
Minor length in credits:	27 credits	<no change>
Number of semesters of a second language that are required:	0 semester(s)	<no change>
Specific language(s) required:	No Second Language	<no change>
Other requirements:	No more than two courses with a grade of D or D+, offset by an equivalent number of credits of A or B grades, may be used to meet the requirements for a computer science minor. Non-elective courses taken S-N may not be counted towards the minor. A minimum GPA of 2.00 is required in the minor in order to graduate. The GPA includes all, and only, University of Minnesota coursework. Grades of ?F? are included in GPA calculation until they are replaced.	

No more than two courses with a grade of D or D+, offset by an equivalent number of credits of A or B grades, may be used to meet the requirements for a computer science minor. Non-elective courses taken S-N may not be counted towards the minor. A minimum GPA of 2.00 is required in the minor in order to graduate. The GPA includes all, and only, University of Minnesota coursework. Grades of ?F? are included in GPA calculation until they are replaced.

Minor Required Courses

Intro course

[CSCI 1201](#) - Introduction to Digital Media Computation [M/SR] (4.0 cr)
or [CSCI 1301](#) - Problem Solving and Algorithm Development [M/SR] (4.0 cr)

Intro Courses

[CSCI 1302](#) - Foundations of Computer Science [M/SR] (4.0 cr)
[CSCI 2101](#) - Data Structures [M/SR] (5.0 cr)

Core Courses

Take 1 or more course(s) from the following:

- [CSCI 3401](#) - Models of Computing Systems [M/SR] (5.0 cr)
- [CSCI 3501](#) - Algorithms and Computability [M/SR] (5.0 cr)
- [CSCI 3601](#) - Software Design and Development [M/SR] (5.0 cr)

Sub-list 3

Take 4 or more credits(s) from the following:

- CSci 3xxx
- CSci 4xxx

Required Course(s):	<p>Minor Elective Courses</p> <p>Take 4 or more credits(s) from the following:</p> <ul style="list-style-type: none"> MATH 1021 - Survey of Calculus [M/SR] (4.0 cr) MATH 1101 - Calculus I [M/SR] (5.0 cr) MATH 1102 - Calculus II [M/SR] (5.0 cr) MATH 2101 - Calculus III [M/SR] (4.0 cr) MATH 2111 - Linear Algebra [M/SR] (4.0 cr) MATH 2202 - Mathematical Perspectives [M/SR] (4.0 cr) MATH 2401 - Differential Equations [M/SR] (4.0 cr) MATH 2501 - Probability and Stochastic Processes [M/SR] (4.0 cr) MATH 3xxx MATH 4xxx STAT 1xxx STAT 2xxx STAT 3xxx STAT 4xxx 	<no change>
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[^ Return to top of Program Requirements](#)

Sub-plans

Hide Section

Sub-plan requirement for this program:

No

<no change>

Draft Online Catalog Display

To see a sample of what this program would look like on the online catalog, click the link titled 'Show Draft Catalog Display'. Please note that this is a **draft** version of the display, as the proposal must still receive the appropriate approvals.

[Show Draft Catalog Display](#) for previous version.

[Show Draft Catalog Display](#) for proposal.

**Curriculum Committee
Form A: Discipline Summary**

Route this form to: Appropriate Division Office	UMM Curriculum Committee Form A Rev: 05/2010
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Date: 9/2/12

Discipline/Division: ESci

Catalog Years (e.g., 2011-2013): 2013-2015

Statistical Summary of Proposed Changes:

(a)	(b)	(b) – (a)
Present (from current catalog)	Proposed (for new catalog)	Net Change*
21	21	0
76	76	0
NA	NA	NA
NA	NA	NA
2	3	1
0		
4	7	3
1		
0	3	3

The Major

Total courses required for a major*:

Total credits required for a major*:

The Minor

Total courses required for a minor*:

Total credits required for a minor*:

Entire Discipline

Total 1xxx and 2xxx courses listed in the catalog**:

Total 1xxx and 2xxx courses taught last year**:

Total 3xxx and 4xxx courses listed in the catalog**:

Total 3xxx and 4xxx courses taught last year**:

Number of courses with no General Education designator**:

*Includes required courses from other disciplines.

**Does not include Directed Studies or Senior Honors Projects. Courses with multiple sections count only once.

Please summarize the intent of the proposed changes.

Changes include the addition of Elective courses to the list of allowable electives. With more choices, students will have a better chance of graduating in four years.

What are the financial or staffing implications of this proposal for the Discipline?

None

What are the financial or staffing implications of this proposal for other Disciplines?

None

Program & Curriculum Approval - Executive Summary

University of Minnesota, Morris campus

[Close This Window](#)

Program Title: Environmental Science B.A.

Approval Status: Waiting for Campus Approval

Program Last Saved: Oct 15, 2012 9:23:54 AM

By: Jeri Lyn Squier



Completed Approvals

[Hide Section](#)

Submit Program on 09/05/2012 at 02:43 PM by Carol Jean Ford (fordcj@umn.edu)	→	Degree-Granting College Sent Back for Division of Science and Mathematics on 09/05/2012 at 04:01 PM by Clare Lillian Dingley (strandcd@umn.edu)	→	Submit Program on 10/12/2012 at 10:50 AM by Carol Jean Ford (fordcj@umn.edu)	→	Degree-Granting College for Division of Science and Mathematics on 10/15/2012 at 09:23 AM by Jeri Lyn Squier (squierj@umn.edu)	→	Campus (Pending)
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Approver Comments (oldest to newest)

Approval Level: Degree-Granting College **Action:** Sent Back **Approver:** Clare Lillian Dingley **Date Submitted:** 09/05/2012 at 04:01 PM

Needs division approval before submission.

Approval Level: Degree-Granting College **Action:** Approve **Approver:** Jeri Lyn Squier **Date Submitted:** 10/15/2012 at 09:23 AM

10.11.12 - Approved by Curriculum Committee. js

General Information

[Hide Section](#)

Institution:	University of Minnesota, Morris (UMNMO)	<no change>
Campus:	Morris (UMNMO)	<no change>
Career:	Undergraduate (UGRD)	<no change>
Program type:	Baccalaureate	<no change>
Program title (short):	Environmental Science B.A.	<no change>
Program title (long):	Environmental Science B.A.	<no change>
Program short description:	Env Sci	<no change>
Additional terms:	<ul style="list-style-type: none">This program is 8 semesters (4 years) long.This program does not require 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'=027320227	<no change>
Department(s):	<ul style="list-style-type: none">Division of Science & Mathematics - Adm	<no change>
First term admitting students:	Fall 2009	<no change>
Effective date:	2011-08-24 (Fall 2011)	2013-08-28 (Fall 2013)
Degree:	Bachelor of Arts (B A)	<no change>
Catalog description:	This major is for students interested in an interdisciplinary science education that prepares them to deal with environmental challenges. The basic natural resources of land, air, and water are studied in the context of protecting and sustaining the environment. Students become knowledgeable about environmental issues and applied environmental science. The environmental science curriculum draws courses predominantly from the disciplines of the Division of Science and Mathematics.	<no change>
RIASEC codes:		<no change>
Program contact(s):	U of M internet ID: fordcj Program contact's full name: Carol Jean Ford Email address: fordcj@umn.edu Telephone number: 320/589-6300 Campus mailing address: UMM Div of Science and Math Room 2550 Sci M242A 600 E 4th St Morris, MN 56267	<no change>

Narrative Materials

[Hide Section](#)

Brief summary or overview of reason for proposed new program or rationale for changes: Add Stat 1601 option, Add a new course CHEM/ESCI 3401 to the list of electives; Changes will improve 4 year graduation rates by providing majors more course choices.

ESci advisory board added courses to the electives for this major to give students more options and better enable them to graduate in four years.

Program Delivery:	<ul style="list-style-type: none"> Classroom (majority of program is face-to-face) 	<no change>
Mission, Priorities and Interrelatedness:	The Environmental Science major complements UMM's liberal arts mission and supports the 2007 UMM Strategic Plan that calls for a broad integration of liberal learning outcomes and integration of green initiatives into the curriculum. Based on this mission, the Environmental Science major prioritizes a science based interdisciplinary acquisition of knowledge and practice. A 2007 NSF STEP Grant supports creation of an Environmental Science major.	<no change>
Need and Demand:	UMM has placed increasing emphasis on "re-inventing a 'green' learning environment." As a result, many of the high school students considering UMM have an interest in environmental issues. For those students who self identify as having an interest in both sciences and the environment, the Environmental Science major will both validate those interests and facilitate an interdisciplinary program to achieve their academic goals. The Environmental Science major will also add a STEM curriculum that will complement UMM's institutional curricular direction.	<no change>
Comparative Advantage:	UMM is well positioned to offer an interdisciplinary science major taking advantage of our strong science programs and our liberal arts tradition. UMM has placed in the 98th percentile among all higher education institutions in the percentage of Bachelor of Arts Degrees awarded in science and mathematics. Additionally, UMM students are recognized for their "activist nature" and their commitment to green initiatives. Up to forty percent of the incoming freshmen have identified themselves as Science or Math majors. Thus the Environmental Science major will serve those students who self-select a career aspiration in both the sciences and environmental fields. Additionally, the UMM campus with its wind turbine, new biomass facility, and sustainability initiatives provides a model of "campus as classroom" learning.	<no change>
Efficiency, Effectiveness, and use of Resources:	Much science faculty expertise and interest in environmental fields already exists at UMM. Faculty members whose teaching and research interests are focused on the environment include all four of the current members of Geology, five in Biology and additional faculty from Physics and Chemistry. UMM has recently obtained a grant from the NSF Science Talent Enhancement Program (STEP) to support the establishment of the Environmental Science major. Most of the courses in this major serve other major programs.	<no change>
Program Quality and Diversity Goals:	Objective: Students will demonstrate knowledge of the physical environment and how human activities impact the physical environment. Assessment: exams and papers from EnSt 2101, Geol 1101 and electives. Objective: students will demonstrate ability to identify, analyze, and solve environmental problems. Assessment: assignments, discussion and presentations for ESci 3196, ESci 4901 and ESci 4902	<no change>
Program Development:	The Environmental Science major will require no new resources. It will draw predominantly on existing UMM courses. Other courses in the major will include a two-credit capstone experience (senior seminar), a field course offered by other institutions and new interdisciplinary science courses to be developed with funding from a grant from the NSF STEP program. These courses will be added to the curriculum as they become available. The "other courses" referred to are all electives. No required courses have yet to be developed. Funds are in hand (from the National Science Foundation STEP program) to develop five new courses over the next three years but the program is not dependent on any of these. The program description includes a list of already existing elective courses for students to choose from. Some existing geology courses will be offered less often in order to make it possible for faculty to teach the new courses, ESci 3196, 4901, and 4902. Students can satisfy the "required practicum" requirement with ESci 3196 at UMM, through a research or internship either onsite or offsite, or through a field camp offered by other universities such as: Environmental Science Field Camp: Lehigh University, University of Buffalo and Indiana University Environmental Geology Field Camp: South Dakota School of mines, Northern Illinois University and Illinois State University Environmental Biology Field Camp: Guelph University, Carleton University and University of Toronto Hydrology Field Camp: University of Minnesota, Clemson, Southern Oregon and University of Arizona. The practicum is intended to allow a wide variety of mechanisms for fulfillment because the program will likely attract students with a wide variety of interests and backgrounds. The practicum requirement was not phrased as a particular course requirement (e.g. ESci 3196) so there is no need to define equivalencies.	<no change>

Admission Requirements

[Hide Section](#)

Minimum courses or credits to be completed before admission:	No Courses or Credits	<no change>
Are any students usually admitted to pre-major status before admission to this major?:	No students	<no change>
Is there a preferred minimum G.P.A. above 2.0 for students already admitted to the college(s) and now 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.Ts):	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>
Required Course(s):		

Program Requirements

[Hide Section](#)

Program length in credits:	120 to 120 credits	<no change>
Major length in credits:	67 to 72 credits	<no change>
Number of semesters of a second language that are required:	2 semester(s)	<no change>
Specific language(s) required:	Any Second Language	<no change>

Other requirements:

Students are encouraged to fulfill distribution requirements with courses that complement the environmental science major (e.g., ECON 1111 - Microeconomics, ECON 3007 - Environmental and Natural Resource Economics I, and ECON 3008 - Environmental and Natural Resource Economics II). Selection of electives must be done in consultation with an environmental science adviser. By the beginning of their junior year students should submit a clearly articulated educational plan and a list of selected electives, to be reviewed and approved by the Environmental Science Advisory Group. Courses in the Division of Science and Math other than those listed below may be used to fulfill the "Elective Science Courses" with the prior approval of the Environmental Science Advisory Group. Required courses may not be taken S-N unless offered S-N only. Up to 4 credits of coursework with a grade of D or D+ may be used to meet the major requirements. 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.

<no change>

Required Courses**Basic Sciences**

[CHEM 1101](#) - General Chemistry I [SCI-L] (4.0 cr)
[CHEM 1102](#) - General Chemistry II [SCI-L] (4.0 cr)

Math options

[MATH 1101](#) - Calculus I [M/SR] (5.0 cr)
 or [MATH 1021](#) - Survey of Calculus [M/SR] (4.0 cr)

physics options

[PHYS 1101](#) - General Physics I [SCI-L] (5.0 cr)
 or [PHYS 1091](#) - Principles of Physics I [SCI-L] (5.0 cr)

statistics option

[STAT 1601](#) - Introduction to Statistics [M/SR] (4.0 cr)
 or [STAT 2601](#) - Statistical Methods [M/SR] (4.0 cr)

Applied Sciences

[BIOL 3131](#) - Ecology [SCI-L] (4.0 cr)
[GEOL 1101](#) - Physical Geology [SCI-L] (4.0 cr)
[GEOL 2161](#) - GIS and Remote Sensing [SCI] (4.0 cr)
[GEOL 3501](#) - Hydrology [SCI] (4.0 cr)
[ENST 1101](#) - Environmental Problems and Policy [ENVT] (4.0 cr)
[ESCI 4901](#) - Environmental Science Senior Seminar I (1.0 cr)
[ESCI 4902](#) - Environmental Science Senior Seminar II (1.0 cr)

<no change>

Biology options

[ENST 2101](#) - Environmental Biology [SCI-L] (4.0 cr)
 or **subgroup biology**
[BIOL 1111](#) - Fundamentals of Genetics, Evolution, and Development [SCI] (3.0 cr)
[BIOL 2101](#) - Evolution of Biodiversity [SCI-L] (4.0 cr)

Required Practicum

Completion of an applied educational experience in environmental science. An approved educational experience in a work, research, and/or field setting that provides a practical complement to the student's classroom learning experiences. Educational experiences are approved by the Environmental Science Advisory Group. A wide variety of experiences are possible, ESCI 3196 - Environmental Science Field Camp is one example.
[ESCI 3196](#) - Environmental Science Field Camp [SCI] (2.0-4.0 cr)
 or Completion of an applied educational experience in environmental science.

<no change>

Required Course(s):**Elective Science Courses**

Courses from at least two disciplines must be included. No more than 8 credits from 2xxx courses may be used to meet this requirement. If a second major is sought in the Division Science and Mathematics, at least 12 elective credits for the environmental science major must come from a discipline outside the second major (e.g., a geology major cannot apply more than 8 GEOL elective credits toward the environmental science major).

Electives

Take 20 or more credits(s) from the following:

· [BIOL 4121](#) - Herpetology (4.0 cr)
 · [BIOL 4131](#) - Vertebrate Natural History [SCI-L] (4.0 cr)
 · [BIOL 4151](#) - Entomology [SCI-L] (4.0 cr)
 · [BIOL 4172](#) - Plant Systematics [SCI-L] (4.0 cr)
 · [BIOL 4191](#) - Freshwater Biology [SCI-L] (4.0 cr)
 · [BIOL 4331](#) - Global Change Ecology [SCI] (4.0 cr)
 · [BIOL 4351](#) - Conservation Biology [SCI-L] (4.0 cr)
 · [CHEM 2301](#) - Organic Chemistry I [SCI] (4.0 cr)
 · [CHEM 2302](#) - Organic Chemistry II [SCI] (4.0 cr)
 · [CHEM 3101](#) - Analytical Chemistry [SCI-L] (4.0 cr)
 · [CHEM 3501](#) - Physical Chemistry I [SCI] (4.0 cr)
 · [GEOL 2001](#) - Natural and Unnatural Geologic Hazards [ENVT] (4.0 cr)
 · [GEOL 2121](#) - Sedimentology and Stratigraphy [SCI-L] (4.0 cr)
 · [GEOL 2131](#) - Geomorphology [SCI] (4.0 cr)
 · [GEOL 2141](#) - Glacial and Quaternary Geology [SCI] (4.0 cr)
 · [PHYS 2301](#) - Atmospheric Physics [ENVT] (4.0 cr)
 · [STAT 4601](#) - Biostatistics [M/SR] (4.0 cr)

Polymer Chemistry options

· [ESCI 3401](#) - Polymer Chemistry and the Environment [SCI] (3.0 cr)
 or [CHEM 3401](#) - Polymer Chemistry and the Environment [SCI] (3.0 cr)

Elective Science Courses

Courses from at least two disciplines must be included. No more than 8 credits from 2xxx courses may be used to meet this requirement. If a second major is sought in the Division Science and Mathematics, at least 12 elective credits for the environmental science major must come from a discipline outside the second major (e.g., a geology major cannot apply more than 8 GEOL elective credits toward the environmental science major).

Electives

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· [BIOL 4121](#) - Herpetology (4.0 cr)
 · [BIOL 4131](#) - Vertebrate Natural History (4.0 cr)
 · [BIOL 4151](#) - Entomology (4.0 cr)
 · [BIOL 4172](#) - Plant Systematics (4.0 cr)
 · [BIOL 4191](#) - Freshwater Biology (4.0 cr)
 · [BIOL 4301](#) - Plant Biology (4.0 cr)
 · [BIOL 4331](#) - Global Change Ecology (4.0 cr)
 · [BIOL 4351](#) - Conservation Biology (4.0 cr)
 · [CHEM 2301](#) - Organic Chemistry I [SCI] (4.0 cr)
 · [CHEM 2302](#) - Organic Chemistry II [SCI] (4.0 cr)
 · [CHEM 2304](#) - Organic Chemistry II with a Biological Emphasis [SCI] (4.0 cr)
 · [CHEM 3101](#) - Analytical Chemistry [SCI-L] (4.0 cr)
 · [CHEM 3301](#) - The Chemistry of Sustainable Energy [SCI] (4.0 cr)
 · [CHEM 3501](#) - Physical Chemistry I [SCI] (4.0 cr)
 · [ESCI 3111](#) - Evolution of the Minnesota Prairie [SCI-L] (4.0 cr)
 · [ESCI 3301](#) - The Chemistry of Sustainable Energy [SCI] (3.0 cr)
 · [GEOL 2001](#) - Natural and Unnatural Geologic Hazards [ENVT] (4.0 cr)
 · [GEOL 2121](#) - Sedimentology and Stratigraphy [SCI-L] (4.0 cr)
 · [GEOL 2131](#) - Geomorphology [SCI] (4.0 cr)
 · [GEOL 2141](#) - Glacial and Quaternary Geology [SCI] (4.0 cr)
 · [GEOL 3111](#) - Introduction to Paleontology [SCI-L] (4.0 cr)
 · [GEOL 3502](#) - Groundwater [ENVT] (4.0 cr)
 · [PHYS 2301](#) - Atmospheric Physics [ENVT] (4.0 cr)
 · [STAT 4601](#) - Biostatistics (4.0 cr)

Polymer Chemistry options

· [ESCI 3401](#) - Polymer Chemistry and the Environment [SCI] (4.0 cr)
 or [CHEM 3401](#) - Polymer Chemistry and the Environment [SCI] (4.0 cr)

^ Return to top of Program Requirements

Sub-plans

Hide Section

Sub-plan requirement for this program:

No

<no change>

Draft Online Catalog Display

**Curriculum Committee
Form A: Discipline Summary**

Route this form to: Appropriate Division Office	UMM Curriculum Committee Form A Rev: 05/2010
---	---

Date: 9/1/12
Discipline/Division: Geology
Catalog Years (e.g., 2011-2013): 2013-2015

Statistical Summary of Proposed Changes:

(a) Present (from current catalog)	(b) Proposed (for new catalog)	(b) – (a) Net Change*
15	15	0
58	58	0
8	8	0
32	32	0
13	13	0
7		
14	12	-1
6		
3	5	2

The Major

Total courses required for a major*:

Total credits required for a major*:

The Minor

Total courses required for a minor*:

Total credits required for a minor*:

Entire Discipline

Total 1xxx and 2xxx courses listed in the catalog**:

Total 1xxx and 2xxx courses taught last year**:

Total 3xxx and 4xxx courses listed in the catalog**:

Total 3xxx and 4xxx courses taught last year**:

Number of courses with no General Education designator**:

*Includes required courses from other disciplines.

**Does not include Directed Studies or Senior Honors Projects. Courses with multiple sections count only once.

Please summarize the intent of the proposed changes.

Two changes were made. The first is to allow students to choose ESci courses for the 7 credit cognate science requirement. The second was to deactivate upper level courses taught by a now retired faculty member. And to remove GER from 4xxx courses with the same GER.

What are the financial or staffing implications of this proposal for the Discipline?

None

What are the financial or staffing implications of this proposal for other Disciplines?

None

Program & Curriculum Approval - Executive Summary

University of Minnesota, Morris campus

[Close This Window](#)

Program Title: Geology B.A.

Approval Status: Waiting for Campus Approval
Program Last Saved: Oct 15, 2012 9:24:21 AM

By: Jeri Lyn Squier

 Delete Proposal

Completed Approvals

[Hide Section](#)

Submit Program on 09/05/2012 at 02:44 PM by Carol Jean Ford (fordcj@umn.edu)	→	Degree-Granting College Sent Back for Division of Science and Mathematics on 09/05/2012 at 04:01 PM by Clare Lillian Dingley (strandcd@umn.edu)	→	Submit Program on 10/08/2012 at 11:54 AM by Carol Jean Ford (fordcj@umn.edu)	→	Degree-Granting College for Division of Science and Mathematics on 10/15/2012 at 09:24 AM by Jeri Lyn Squier (squierj@umn.edu)	→	Campus (Pending)
--	---	--	---	--	---	---	---	-----------------------------------

Approver Comments (oldest to newest)

Approval Level: Degree-Granting College **Action:** Sent Back **Approver:** Clare Lillian Dingley **Date Submitted:** 09/05/2012 at 04:01 PM

Needs division approval before submission.

Approval Level: Degree-Granting College **Action:** Approve **Approver:** Jeri Lyn Squier **Date Submitted:** 10/15/2012 at 09:24 AM

10.11.12 - Approved by Curriculum Committee. js

General Information

[Hide Section](#)

Institution:	University of Minnesota, Morris (UMNMO)	<no change>
Campus:	Morris (UMNMO)	<no change>
Career:	Undergraduate (UGRD)	<no change>
Program type:	Baccalaureate	<no change>
Program title (short):	Geology B.A.	<no change>
Program title (long):	Geology B.A.	<no change>
Program short description:	Geol	<no change>
Additional terms:	<ul style="list-style-type: none">This program is 8 semesters (4 years) long.This program requires 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'=035620227	<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:	2011-08-24 (Fall 2011)	2013-08-28 (Fall 2013)
Degree:	Bachelor of Arts (B A)	<no change>
Catalog description:	Geology offers courses that satisfy a variety of requirements as well as a curriculum leading to a bachelor of arts degree in geology. Objectives--The geology curriculum serves those interested in a broader knowledge of their natural environment and the geological sciences as part of their liberal arts education; provides a firm foundation in geology, related sciences, and mathematics for students interested in the investigation and solution of geologic problems; prepares students for graduate study in the geosciences and related areas; provides the necessary background in earth science for those who plan to teach in this field at the secondary level; and serves those in other professional or interdisciplinary programs who need geology as a related subject.	<no change>
RIASEC codes:		<no change>
Field of study:	Math, Engineering, and Science (MTH/ENG/SC)	<no change>
Program contact(s):	U of M internet ID: fordcj Program contact's full name: Carol Jean Ford Email address: fordcj@umn.edu Telephone number: 320/589-6300 Campus mailing address: UMM Div of Science and Math Room 2550 Sci M242A 600 E 4th St Morris, MN 56267	<no change>

Narrative Materials

[Hide Section](#)

Brief summary or overview of reason for proposed new program or rationale for changes:	We are allowing Survey of Calculus as alternative to Calculus I and are removing one inactivated courses from the list of major electives. Modify the requirement for field camp so it is more clear to students that it is not a UMM course but rather an extended field experience at an off-campus site.	Addition of new environmental science courses into Geology curriculum
Program Delivery:	<ul style="list-style-type: none"> Classroom (majority of program is face-to-face) 	<no change>
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 Diversity Goals:	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 Section](#)

Minimum courses or credits to be completed before admission:	No Courses or Credits	<no change>
Are any students usually admitted to pre-major status before admission to this major?:	No students	<no change>
Is there a preferred minimum G.P.A. above 2.0 for students already admitted to the college(s) and now 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.Ts):	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>
Required Course(s):		

Program Requirements

[Hide Section](#)

Program length in credits:	120 to 120 credits	<no change>
Major length in credits:	58 to 58 credits	<no change>
Number of semesters of a second language that are required:	2 semester(s)	<no change>
Specific language(s) required:	Any Second Language	<no change>
Other requirements:	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. Courses may not be taken S-N unless offered S-N only. 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 intending to pursue graduate studies in the geological sciences should take CSCI 1301, GEOL 2151, MATH 1102, and PHYS 1101.	<no change>

Required Courses

[CHEM 1101](#) - General Chemistry I [SCI-L] (4.0 cr)
[CHEM 1102](#) - General Chemistry II [SCI-L] (4.0 cr)
[GEOL 1101](#) - Physical Geology [SCI-L] (4.0 cr)
[GEOL 2101](#) - Mineralogy and Crystallography [SCI-L] (4.0 cr)
[GEOL 2111](#) - Igneous and Metamorphic Petrology [SCI-L] (4.0 cr)
[GEOL 2121](#) - Sedimentology and Stratigraphy [SCI-L] (4.0 cr)
[GEOL 3101](#) - Structural Geology [SCI-L] (4.0 cr)
[GEOL 4901](#) - Geology Senior Seminar (1.0 cr)
[GEOL 4902](#) - Geology Senior Seminar Presentations (1.0 cr)

Math requirement

[MATH 1021](#) - Survey of Calculus [M/SR] (4.0 cr)
 or [MATH 1101](#) - Calculus I [M/SR] (5.0 cr)

Geology Field Camp Requirement

Completion of approved Geology Field Camp (6 cr)

Elective Courses

Take 10 or more credits(s) from the following:

- [GEOL 2131](#) - Geomorphology [SCI] (4.0 cr)
- [GEOL 2141](#) - Glacial and Quaternary Geology [SCI] (4.0 cr)
- [GEOL 2161](#) - GIS and Remote Sensing [SCI] (4.0 cr)
- [GEOL 3001](#) - Global Tectonics [SCI] (4.0 cr)
- [GEOL 3111](#) - Introduction to Invertebrate Paleontology [SCI-L] (4.0 cr)
- [GEOL 3401](#) - Geophysics [SCI] (4.0 cr)
- [GEOL 3411](#) - Advanced Stratigraphy: Subsurface Methods [SCI] (4.0 cr)
- [GEOL 3421](#) - Airphoto Interpretation [SCI] (4.0 cr)
- [GEOL 3501](#) - Hydrology [SCI] (4.0 cr)
- [GEOL 4130](#) - Advanced Geomorphology [SCI] (4.0 cr)
- [GEOL 4140](#) - Advanced Glacial and Quaternary Geology [SCI] (4.0 cr)
- Directed Research**
 - [GEOL 3993](#) - Directed Study (1.0-5.0 cr)
 - or [GEOL 4993](#) - Directed Study (1.0-5.0 cr)
- Recommended for Graduate Studies**
 - Recommended for graduate studies:
 - [GEOL 2151](#) - Historical Geology: Earth History and Changing Scientific Perspectives [SCI-L] (4.0 cr)

Elective Courses

Take 10 or more credits(s) from the following:

- [GEOL 2131](#) - Geomorphology [SCI] (4.0 cr)
- [GEOL 2141](#) - Glacial and Quaternary Geology [SCI] (4.0 cr)
- [GEOL 2161](#) - GIS and Remote Sensing [SCI] (4.0 cr)
- [GEOL 3001](#) - Global Tectonics [SCI] (4.0 cr)
- [GEOL 3111](#) - Introduction to Paleontology [SCI-L] (4.0 cr)
- [GEOL 3401](#) - Geophysics [SCI] (4.0 cr)
- [GEOL 3501](#) - Hydrology [SCI] (4.0 cr)
- [GEOL 4130](#) - Advanced Geomorphology (4.0 cr)
- [GEOL 4140](#) - Advanced Glacial and Quaternary Geology (4.0 cr)
- Directed Research**
 - [GEOL 3993](#) - Directed Study (1.0-5.0 cr)
 - or [GEOL 4993](#) - Directed Study (1.0-5.0 cr)
- Recommended for Graduate Studies**
 - Recommended for graduate studies:
 - [GEOL 2151](#) - Historical Geology: Earth History and Changing Scientific Perspectives [SCI-L] (4.0 cr)

Required Course(s):

Additional Electives

Courses must be chosen in consultation with a geology adviser.
Take 7 or more credits(s) from the following:

- BIOL 1xxx
- BIOL 2xxx
- BIOL 3xxx
- BIOL 4xxx
- CHEM 1xxx
- CHEM 2xxx
- CHEM 3xxx
- CHEM 4xxx
- CSCI 1xxx
- CSCI 2xxx
- CSCI 3xxx
- CSCI 4xxx
- MATH 1xxx
- MATH 2xxx
- MATH 3xxx
- MATH 4xxx
- NSCI 1xxx
- NSCI 2xxx
- NSCI 3xxx
- NSCI 4xxx
- PHYS 1xxx
- PHYS 2xxx
- PHYS 3xxx
- PHYS 4xxx
- STAT 1xxx
- STAT 2xxx
- STAT 3xxx
- STAT 4xxx

Additional Electives

Courses must be chosen in consultation with a geology adviser.
Take 7 or more credits(s) from the following:

- BIOL 1xxx
- BIOL 2xxx
- BIOL 3xxx
- BIOL 4xxx
- CHEM 1xxx
- CHEM 2xxx
- CHEM 3xxx
- CHEM 4xxx
- CSCI 1xxx
- CSCI 2xxx
- CSCI 3xxx
- CSCI 4xxx
- MATH 1xxx
- MATH 2xxx
- MATH 3xxx
- MATH 4xxx
- NSCI 1xxx
- NSCI 2xxx
- NSCI 3xxx
- NSCI 4xxx
- PHYS 1xxx
- PHYS 2xxx
- PHYS 3xxx
- PHYS 4xxx
- STAT 1xxx
- STAT 2xxx
- STAT 3xxx
- STAT 4xxx
- ESCI 2xxx
- ESCI 3xxx

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Sub-plans

[Hide Section](#)

Sub-plan requirement for this program:

No

<no change>

Draft Online Catalog Display

To see a sample of what this program would look like on the online catalog, click the link titled 'Show Draft Catalog Display'. Please note that this is a **draft** version of the display, as the proposal must still receive the appropriate approvals.

[Show Draft Catalog Display for previous version.](#)

[Show Draft Catalog Display for proposal.](#)

Program & Curriculum Approval - Executive Summary

University of Minnesota, Morris campus

[Close This Window](#)

Program Title: Geology Minor

Approval Status: Waiting for Campus Approval

Program Last Saved: Oct 15, 2012 9:26:42 AM

By: Jeri Lyn Squier



Completed Approvals

[Hide Section](#)

Submit Program on 10/08/2012 at 12:00 PM by Carol Jean Ford (fordcj@umn.edu)	→	Degree-Granting College Sent Back for Division of Science and Mathematics on 10/11/2012 at 05:10 PM by Clare Lillian Dingley (strandcd@umn.edu)	→	Submit Program on 10/12/2012 at 08:56 AM by Carol Jean Ford (fordcj@umn.edu)	→	Degree-Granting College for Division of Science and Mathematics on 10/15/2012 at 09:26 AM by Jeri Lyn Squier (squierj@umn.edu)	→	Campus (Pending)
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Approver Comments (oldest to newest)

Approval Level: Degree-Granting College **Action:** Sent Back **Approver:** Clare Lillian Dingley **Date Submitted:** 10/11/2012 at 05:10 PM

Summary needs to be revised because there actually are changes to PCAS - these courses were eliminated:

· GEOL 3411 - Advanced Stratigraphy: Subsurface Methods [SCI] (4.0 cr)

· GEOL 3421 - Airphoto Interpretation [SCI] (4.0 cr)

If the reason is that they are inactive then the summary states something like, "Inactivated courses removed from electives"

Approval Level: Degree-Granting College **Action:** Approve **Approver:** Jeri Lyn Squier **Date Submitted:** 10/15/2012 at 09:26 AM

10.11.12 - Approved by Curriculum Committee. js

General Information

[Hide Section](#)

Institution:	University of Minnesota, Morris (UMNMO)	<no change>
Campus:	Morris (UMNMO)	<no change>
Career:	Undergraduate (UGRD)	<no change>
Program type:	Undergraduate minor related to major	<no change>
Program title (short):	Geology	<no change>
Program title (long):	Geology Minor	<no change>
Program short description:	Geol	<no change>
Additional terms:	<ul style="list-style-type: none">• This program does not require any summer terms.	<no change>
Stakeholder college(s):	• UMM-Science & Math, Div of	<no change>
Degree-granting college(s):	• UMM-Science & Math, Div of	<no change>
Approver college(s):	• UMM-Science & Math, Div of	<no change>
Administrative college(s):	• UMM-Science & Math, Div of	<no change>
Budgetary college(s):	• 'UMM-Science & Math, Div of'=100	<no change>
Acad plan code(s):	• 'UMM-Science & Math, Div of'=0356MIN27	<no change>
Department(s):	• Division of Science & Mathematics - Adm	<no change>
First term admitting students:	Fall 1960	<no change>
Effective date:	2011-08-24 (Fall 2011)	2013-08-28 (Fall 2013)
Catalog description:	Objectives-- The geology curriculum serves those interested in broadening their knowledge of the natural environment and the geological sciences as part of their liberal arts education. It provides a firm foundation in geology, related sciences, and mathematics for students interested in the investigation and solution of geologic problems; provides background in earth science for those who plan to teach in this field at the secondary level, and serves those in other professional or interdisciplinary programs who need geology as a related subject.	<no change>
RIASEC codes:		<no change>
Field of study:	Math, Engineering, and Science (MTH/ENG/SC)	<no change>
Program contact(s):	U of M internet ID: fordcj Program contact's full name: Carol Jean Ford Email address: fordcj@umn.edu Telephone number: 320/589-6300 Campus mailing address: UMM Div of Science and Math Room 2550 Sci M242A 600 E 4th St Morris, MN 56267	<no change>

Narrative Materials

[Hide Section](#)

Brief summary or overview of reason Geol 3004 was previously deactivated and must be removed from the list of electives

for proposed new program or rationale for changes:

in the minor.

Inactivated courses removed from electives.

Program Delivery:	<ul style="list-style-type: none">Classroom (majority of program is face-to-face)	<no change>
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 Diversity Goals:	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 Section](#)

Minimum courses or credits to be completed before admission:	No Courses or Credits	<no change>
Are any students usually admitted to pre-major status before admission to this major?:	No students	<no change>
Is there a preferred minimum G.P.A. above 2.0 for students already admitted to the college(s) and now 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 (L.U.Ts):	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>
Required Course(s):		

Program Requirements

[Hide Section](#)

Minor length in credits:	32 credits	<no change>
Minor length in credits:	32 credits	<no change>
Number of semesters of a second language that are required:	0 semester(s)	<no change>
Specific language(s) required:	No Second Language	<no change>
Other requirements:	Up to 8 credits of coursework with a grade of D or D+ may be used to meet the minor requirements if offset by an equivalent number of credits earning a grade of A or B. The GPA in these courses must be at least 2.00.	<no change>

Minor Required Courses

[GEOL 1101](#) - Physical Geology [SCI-L] (4.0 cr)
[GEOL 2101](#) - Mineralogy and Crystallography [SCI-L] (4.0 cr)
[GEOL 2111](#) - Igneous and Metamorphic Petrology [SCI-L] (4.0 cr)
[GEOL 2121](#) - Sedimentology and Stratigraphy [SCI-L] (4.0 cr)
[CHEM 1101](#) - General Chemistry I [SCI-L] (4.0 cr)
[CHEM 1102](#) - General Chemistry II [SCI-L] (4.0 cr)

<no change>

Elective Courses

Take 8 or more credits(s) from the following:
· [GEOL 2131](#) - Geomorphology [SCI] (4.0 cr)
· [GEOL 2141](#) - Glacial and Quaternary Geology [SCI] (4.0 cr)
· [GEOL 2151](#) - Historical Geology: Earth History and Changing Scientific Perspectives [SCI-L] (4.0 cr)
· [GEOL 2161](#) - GIS and Remote Sensing [SCI] (4.0 cr)
· [GEOL 3001](#) - Global Tectonics [SCI] (4.0 cr)
· [GEOL 3101](#) - Structural Geology [SCI-L] (4.0 cr)
· [GEOL 3111](#) - Introduction to Invertebrate Paleontology [SCI-L] (4.0 cr)
· [GEOL 3401](#) - Geophysics [SCI] (4.0 cr)
· [GEOL 3411](#) - Advanced Stratigraphy: Subsurface Methods [SCI] (4.0 cr)
· [GEOL 3421](#) - Airphoto Interpretation [SCI] (4.0 cr)
· [GEOL 3501](#) - Hydrology [SCI] (4.0 cr)
· [GEOL 4130](#) - Advanced Geomorphology [SCI] (4.0 cr)
· [GEOL 4140](#) - Advanced Glacial and Quaternary Geology [SCI] (4.0 cr)
· **Directed Research**
· Take at most 3 credits(s) from the following:
· [GEOL 1993](#) - Directed Study (1.0-5.0 cr)
· [GEOL 2993](#) - Directed Study (1.0-5.0 cr)
· [GEOL 3993](#) - Directed Study (1.0-5.0 cr)
· [GEOL 4993](#) - Directed Study (1.0-5.0 cr)

Required Course(s):

Elective Courses

Take 8 or more credits(s) from the following:
· [GEOL 2131](#) - Geomorphology [SCI] (4.0 cr)
· [GEOL 2141](#) - Glacial and Quaternary Geology [SCI] (4.0 cr)
· [GEOL 2151](#) - Historical Geology: Earth History and Changing Scientific Perspectives [SCI-L] (4.0 cr)
· [GEOL 2161](#) - GIS and Remote Sensing [SCI] (4.0 cr)
· [GEOL 3001](#) - Global Tectonics [SCI] (4.0 cr)
· [GEOL 3101](#) - Structural Geology [SCI-L] (4.0 cr)
· [GEOL 3111](#) - Introduction to Paleontology [SCI-L] (4.0 cr)
· [GEOL 3401](#) - Geophysics [SCI] (4.0 cr)
· [GEOL 3501](#) - Hydrology [SCI] (4.0 cr)
· [GEOL 4130](#) - Advanced Geomorphology (4.0 cr)
· [GEOL 4140](#) - Advanced Glacial and Quaternary Geology (4.0 cr)
· **Directed Research**
· Take at most 3 credits(s) from the following:
· [GEOL 1993](#) - Directed Study (1.0-5.0 cr)
· [GEOL 2993](#) - Directed Study (1.0-5.0 cr)
· [GEOL 3993](#) - Directed Study (1.0-5.0 cr)
· [GEOL 4993](#) - Directed Study (1.0-5.0 cr)

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Sub-plans

[Hide Section](#)

Sub-plan requirement for this program:	No	<no change>
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Draft Online Catalog Display

To see a sample of what this program would look like on the online catalog, click the link titled 'Show Draft Catalog Display'. Please note that this is a **draft** version of the display, as the proposal must still receive the appropriate approvals.

**Curriculum Committee
Form A: Discipline Summary**

Route this form to: Appropriate Division Office	UMM Curriculum Committee Form A Rev: 05/2010
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Date: Aug 17, 2012
Discipline/Division: Math/Science and Math
Catalog Years (e.g., 2011-2013): 2013-2015

Statistical Summary of Proposed Changes:

(a)	(b)	(b) – (a)
Present (from current catalog)	Proposed (for new catalog)	Net Change*
14	14	0
52	52	0
6	6	0
26	26	0
13	13	0
13	13	0
16	16	0
8	8	0
3	13	+10

The Major

Total courses required for a major*:

Total credits required for a major*:

The Minor

Total courses required for a minor*:

Total credits required for a minor*:

Entire Discipline

Total 1xxx and 2xxx courses listed in the catalog**:

Total 1xxx and 2xxx courses taught last year**:

Total 3xxx and 4xxx courses listed in the catalog**:

Total 3xxx and 4xxx courses taught last year**:

Number of courses with no General Education designator**:

*Includes required courses from other disciplines.

**Does not include Directed Studies or Senior Honors Projects. Courses with multiple sections count only once.

Please summarize the intent of the proposed changes.

General Education designator M/SR was removed from all 4xxx courses since it is met by a prerequisite course.

What are the financial or staffing implications of this proposal for the Discipline?

None

What are the financial or staffing implications of this proposal for other Disciplines?

None

Program & Curriculum Approval - Executive Summary

University of Minnesota, Morris campus

[Close This Window](#)

Program Title: Mathematics B.A.

Approval Status: Waiting for Campus Approval

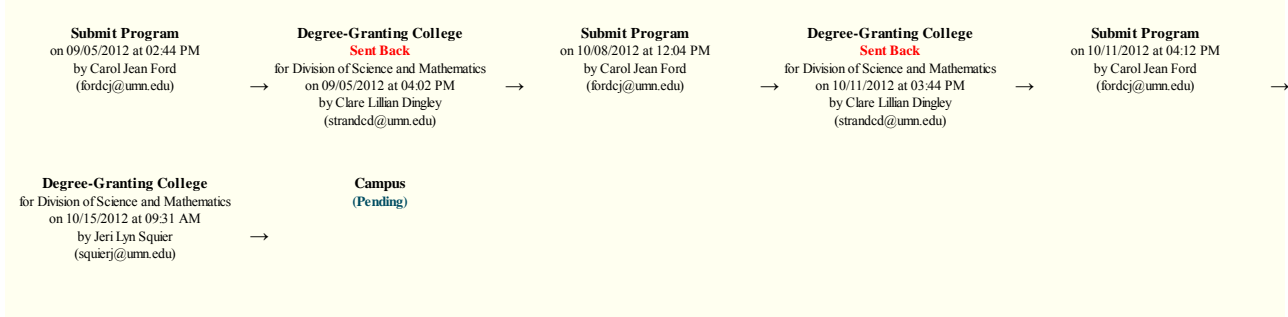
Program Last Saved: Oct 15, 2012 9:31:29 AM

By: Jeri Lyn Squier



Completed Approvals

[Hide Section](#)



Approver Comments (oldest to newest)

Approval Level: Degree-Granting College **Action:** Sent Back **Approver:** Clare Lillian Dingley **Date Submitted:** 09/05/2012 at 04:02 PM

Needs division approval before submission.

Approval Level: Degree-Granting College **Action:** Sent Back **Approver:** Clare Lillian Dingley **Date Submitted:** 10/11/2012 at 03:44 PM

DID THE MAJOR CHANGE? SHOULD THIS GO BACK TO CURR. COMMITTEE? Peh said in committee there were no changes, narrative says "change in major requirement", looks like this csci option has been eliminated: Subgroup 4
 · OR take both of the following
 · CSCI 1001 - Introduction to the Computing World [M/SR] (2.0 cr)
 CSCI 1101 - Dynamic Web Programming [M/SR] (2.0 cr)

Approval Level: Degree-Granting College **Action:** Approve **Approver:** Jeri Lyn Squier **Date Submitted:** 10/15/2012 at 09:31 AM

10.11.12 - Approved by Curriculum Committee. (PCAS document approved at the Curriculum Committee had the subgroup removed). js

General Information

[Hide Section](#)

Institution:	University of Minnesota, Morris (UMNMO)	<no change>
Campus:	Morris (UMNMO)	<no change>
Career:	Undergraduate (UGRD)	<no change>
Program type:	Baccalaureate	<no change>
Program title (short):	Mathematics B.A.	<no change>
Program title (long):	Mathematics B.A.	<no change>
Program short description:	Math	<no change>
Additional terms:	<ul style="list-style-type: none"> This program is 8 semesters (4 years) long. This program does not require any summer terms. 	<no change>
Stakeholder college(s):	• UMM-Science & Math, Div of	<no change>
Degree-granting college(s):	• UMM-Science & Math, Div of	<no change>
Approver college(s):	• UMM-Science & Math, Div of	<no change>
Administrative college(s):	• UMM-Science & Math, Div of	<no change>
Budgetary college(s):	• 'UMM-Science & Math, Div of'=100	<no change>
Acad plan code(s):	• 'UMM-Science & Math, Div of'=052020227	<no change>
Department(s):	• Division of Science & Mathematics - Adm	<no change>
First term admitting students:	Fall 1960	<no change>
Effective date:	2011-08-24 (Fall 2011)	2013-08-28 (Fall 2013)
Degree:	Bachelor of Arts (B A)	<no change>
Catalog description:	Objectives--The mission of the discipline is to advance knowledge of mathematics: by teaching mathematics and its processes, by research in mathematics and mathematical pedagogy, and by dissemination of this knowledge to students and the community we serve. Historically, the study of mathematics has been central to a liberal arts education. The mathematics curriculum serves as an integral part of students' active pursuit of a liberal arts education. The mathematics program serves students who major or minor in mathematics, seek secondary mathematics teaching licensure, major or minor in programs that require a mathematical background, or wish to fulfill components of a general education. The mathematics curriculum is	<no change>

designed to help students develop competence in mathematical techniques and methods; to sharpen students' mathematical intuition and abstract reasoning as well as their reasoning from numerical data; to encourage and stimulate the type of independent thinking required for research beyond the confines of the textbook; and to provide students with the basic knowledge and skills to make mathematical contributions to modern society. The program seeks to enable students to see and communicate how the development of mathematics has been part of the development of several civilizations and is intimately interwoven with the cultural and scientific development of these societies. The curriculum prepares students to enter graduate school, pursue careers in applied mathematics, or teach mathematics.

RIASEC codes:		<no change>
Field of study:	Math, Engineering, and Science (MTH/ENG/SC)	<no change>
Program contact(s):	U of M internet ID: fordcj Program contact's full name: Carol Jean Ford Email address: fordcj@umn.edu Telephone number: 320/589-6300 Campus mailing address: UMM Div of Science and Math Room 2550 Sci M242A 600 E 4th St Morris, MN 56267	<no change>

Narrative Materials

[Hide Section](#)

Brief summary or overview of reason for proposed new program or rationale for changes:	Need to update sample plans to effectively assist advisors	CSci 1001, 1101 removed from CSci requirement because CSci intends to deactivate one of these courses.
Program Delivery:	<ul style="list-style-type: none"> Classroom (majority of program is face-to-face) 	<no change>
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 Diversity Goals:	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 Section](#)

Minimum courses or credits to be completed before admission:	No Courses or Credits	<no change>
Are any students usually admitted to pre-major status before admission to this major?:	No students	<no change>
Is there a preferred minimum G.P.A. above 2.0 for students already admitted to the college(s) and now 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.Ts):	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>
Required Course(s):		

Program Requirements

[Hide Section](#)

Program length in credits:	120 to 120 credits	<no change>
Major length in credits:	52 to 52 credits	<no change>
Number of semesters of a second language that are required:	2 semester(s)	<no change>
Specific language(s) required:	Any Second Language	<no change>
Other requirements:	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. Courses may not be taken S-N unless offered S-N only. Up to 5 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 B- or above in courses at or above 2xxx. Exceptions to requirements may be granted on an individual basis, after consulting with the math faculty. Majors should begin with MATH 1012 - PreCalculus I or MATH 1013 - PreCalculus II or MATH 1101 - Calculus I. Students with questions about placement are encouraged to discuss them with members of the mathematics faculty. Recommended electives for students planning to pursue graduate work in pure mathematics: MATH 4201 - Complex Analysis MATH 4211 - Real Analysis MATH 4221 - Topology MATH 4231 - Abstract Algebra II MATH 4241 - Number Theory MATH 4252 - Differential Geometry MATH 4253 - Combinatorics Recommended electives for students planning to work or pursue graduate work in applied mathematics or related fields: MATH 2401 - Differential Equations MATH 3401 - Operations Research MATH 3411 - Discrete and Combinatorial Mathematics MATH 4401 - Numerical Methods With Applications in Mathematical Modeling MATH 4452 - Mathematical Modeling	

Required Courses

- [MATH 1101](#) - Calculus I [M/SR] (5.0 cr)
- [MATH 1102](#) - Calculus II [M/SR] (5.0 cr)
- [MATH 2101](#) - Calculus III [M/SR] (4.0 cr)
- [MATH 2111](#) - Linear Algebra [M/SR] (4.0 cr)
- [MATH 2202](#) - Mathematical Perspectives [M/SR] (4.0 cr)
- [MATH 3221](#) - Analysis [M/SR] (4.0 cr)
- [MATH 3231](#) - Abstract Algebra I [M/SR] (4.0 cr)
- [MATH 4901](#) - Senior Seminar [M/SR] (2.0 cr)
- [STAT 2611](#) - Mathematical Statistics [M/SR] (4.0 cr)

An X4XX Mathematics course

- Take 1 or more course(s) from the following:
 - [MATH 2401](#) - Differential Equations [M/SR] (4.0 cr)
 - [MATH 3401](#) - Operations Research [M/SR] (4.0 cr)
 - [MATH 3411](#) - Discrete and Combinatorial Mathematics [M/SR] (4.0 cr)
 - [MATH 4401](#) - Numerical Methods with Applications in Mathematical Modeling [M/SR] (4.0 cr)
 - [MATH 4452](#) - Mathematical Modeling [M/SR] (4.0 cr)

Math Electives

- Take 4 or more credits(s) from the following:
 - MATH 2xxx
 - MATH 3xxx
 - MATH 4xxx

Computing requirements

- Take 1 or more course(s) from the following:
 - [CSCI 1201](#) - Introduction to Digital Media Computation [M/SR] (4.0 cr)
 - [CSCI 1301](#) - Problem Solving and Algorithm Development [M/SR] (4.0 cr)
- **Subgroup 4**
 - OR take both of the following
 - [CSCI 1001](#) - Introduction to the Computing World [M/SR] (2.0 cr)
 - [CSCI 1101](#) - Dynamic Web Programming [M/SR] (2.0 cr)

Required Course(s):

Mathematical Applications Course

- Take 1 or more course(s) from the following:
 - [CHEM 3501](#) - Physical Chemistry I [SCI] (4.0 cr)
 - [ECON 3201](#) - Microeconomic Theory [SS] (4.0 cr)
 - [ECON 3202](#) - Macroeconomic Theory [SS] (4.0 cr)
 - [ECON 3501](#) - Introduction to Econometrics [M/SR] (4.0 cr)
 - [ECON 4111](#) - Mathematical Economics I [M/SR] (2.0 cr)
 - [ECON 4112](#) - Mathematical Economics II [M/SR] (2.0 cr)
 - [GEOL 3401](#) - Geophysics [SCI] (4.0 cr)
 - [GEOL 3501](#) - Hydrology [SCI] (4.0 cr)
 - [MATH 3501](#) - Applied Deterministic Modeling for Management Science [M/SR] (2.0 cr)
 - [MATH 3502](#) - Applied Probabilistic Modeling for Management Science [M/SR] (2.0 cr)
 - [NSCI 3201](#) - Relativity and Cosmology [SCI] (4.0 cr)
 - [PHYS 1101](#) - General Physics I [SCI-L] (5.0 cr)
 - [PHYS 1102](#) - General Physics II [SCI-L] (5.0 cr)
 - [PHYS 2101](#) - Modern Physics [SCI-L] (5.0 cr)
 - [PHYS 3101](#) - Classical Mechanics [SCI] (4.0 cr)
 - [PHYS 2401](#) - Optics [SCI-L] (4.0 cr)
 - [PHYS 4101](#) - Electromagnetism [SCI] (4.0 cr)
 - [PHYS 4201](#) - Quantum Mechanics [SCI] (4.0 cr)
 - [STAT 2601](#) - Statistical Methods [M/SR] (4.0 cr)
 - [CSCI 2101](#) - Data Structures [M/SR] (5.0 cr)
 - [CSCI 3401](#) - Models of Computing Systems [M/SR] (5.0 cr)
 - [CSCI 3501](#) - Algorithms and Computability [M/SR] (5.0 cr)
 - [CSCI 3601](#) - Software Design and Development [M/SR] (5.0 cr)
 - [PHIL 2101](#) - Introduction to Symbolic Logic [M/SR] (4.0 cr)
 - [STAT 3601](#) - Data Analysis [M/SR] (4.0 cr)
 - [STAT 3611](#) - Multivariate Statistical Analysis [M/SR] (4.0 cr)
 - [STAT 4601](#) - Biostatistics [M/SR] (4.0 cr)

Required Courses

- [MATH 1101](#) - Calculus I [M/SR] (5.0 cr)
- [MATH 1102](#) - Calculus II [M/SR] (5.0 cr)
- [MATH 2101](#) - Calculus III [M/SR] (4.0 cr)
- [MATH 2111](#) - Linear Algebra [M/SR] (4.0 cr)
- [MATH 2202](#) - Mathematical Perspectives [M/SR] (4.0 cr)
- [MATH 3221](#) - Analysis [M/SR] (4.0 cr)
- [MATH 3231](#) - Abstract Algebra I [M/SR] (4.0 cr)
- [MATH 4901](#) - Senior Seminar (2.0 cr)
- [STAT 2611](#) - Mathematical Statistics [M/SR] (4.0 cr)

An X4XX Mathematics course

- Take 1 or more course(s) from the following:
 - [MATH 2401](#) - Differential Equations [M/SR] (4.0 cr)
 - [MATH 3401](#) - Operations Research [M/SR] (4.0 cr)
 - [MATH 3411](#) - Discrete and Combinatorial Mathematics [M/SR] (4.0 cr)
 - [MATH 4401](#) - Numerical Methods with Applications in Mathematical Modeling (4.0 cr)
 - [MATH 4452](#) - Mathematical Modeling (4.0 cr)

Math Electives

- Take 4 or more credits(s) from the following:
 - MATH 2xxx
 - MATH 3xxx
 - MATH 4xxx

Computing requirements

- Take 1 or more course(s) from the following:
 - [CSCI 1201](#) - Introduction to Digital Media Computation [M/SR] (4.0 cr)
 - [CSCI 1301](#) - Problem Solving and Algorithm Development [M/SR] (4.0 cr)

<no change>

[^ Return to top of Program Requirements](#)**Sub-plans**

Hide Section

Sub-plan requirement for this program:

No

<no change>

Draft Online Catalog Display

To see a sample of what this program would look like on the online catalog, click the link titled 'Show Draft Catalog Display'. Please note that this is a **draft** version of the display, as the proposal must still receive the appropriate approvals.

[Show Draft Catalog Display](#) for previous version.[Show Draft Catalog Display](#) for proposal.

**Curriculum Committee
Form A: Discipline Summary****Date:****August 14, 2012****Discipline/Division: Physics/Division of Science & Mathematics****Catalog Years (e.g., 2011-2013): 2013-2015****Statistical Summary of Proposed Changes:**The Major

Total courses required for a major*:

Total credits required for a major*:

The Minor

Total courses required for a minor*:

Total credits required for a minor*:

Entire Discipline

Total 1xxx and 2xxx courses listed in the catalog**:

Total 1xxx and 2xxx courses taught last year**:

Total 3xxx and 4xxx courses listed in the catalog**:

Total 3xxx and 4xxx courses taught last year**:

Number of courses with no General Education designator**:

(a) Present (from current catalog)	(b) Proposed (for new catalog)	(b) – (a) Net Change*
14	15	+1
58	58	0
7	7	0
33	33	0
15	14	-1
13		
9	10	+1
4		
3	7	+4

*Includes required courses from other disciplines.

**Does not include Directed Studies or Senior Honors Projects. Courses with multiple sections count only once.

Please summarize the intent of the proposed changes.

The major changes in the physics curriculum are driven by three factors: personnel change, increasing enrollments in 1xxx lab courses, and the need for a broader coverage of topics in the major.

We are eliminating three courses that were developed by a faculty member who left. Those are Phys 2302 The Physics of Sustainable Energy (4 cr), Phys 3002 Biological and Medical Physics (4 cr), and Phys 3005 Journal Club II (1 cr). We are also eliminating Phys 1061 Physics of Sound and Music (4 cr). The demands of larger enrollments in the 1xxx lab courses together with the introduction of IC courses leave no room for this course at current staffing levels.

To increase the breadth of course offerings while also increasing the discipline's ability to respond to increasing enrollments in Phys 1xxx courses, we are adopting a two-credit module for upper-level electives. Phys 3003 Computer Modeling of Materials was changed from 4 cr to 2 cr last year. Now we are proposing three new 2 cr courses to round out the electives plan. The new courses are Phys 3151 Solid State Physics, Phys 3152 Particle and Nuclear Physics, and Phys 3153 Cosmology. The elimination of Phys 2302 and Phys 3002 plus the shift from every-year offering to every-other-year offering of Phys 2101 Circuits and Electronic Devices frees enough faculty resources to offer the new courses as well as to add more lab sections to the 1xxx courses.

The added course in the major requirements is a second (one-credit) semester of senior thesis. Because another required course, Modern Physics, was reduced by one credit, the added course does not result in any increase in the credits required for the major.

We are also removing the GER designator from a couple of advanced courses in response to a request from the Curriculum Committee. We did not propose GER designators for the new 315x courses in light of this.

**What are the financial or staffing implications of this proposal for the Discipline?
The proposal is built on the assumption of no change in the number of physics faculty.**

**What are the financial or staffing implications of this proposal for other Disciplines?
The proposal does not impact staffing levels in any other discipline.**

Program & Curriculum Approval - Executive Summary

University of Minnesota, Morris campus

[Close This Window](#)

Program Title: Physics B.A.

Approval Status: Waiting for Campus Approval
Program Last Saved: Oct 15, 2012 9:32:38 AM

By: Jeri Lyn Squier



Completed Approvals

[Hide Section](#)

Submit Program	Degree-Granting College	Campus
on 10/08/2012 at 01:59 PM by Carol Jean Ford (fordcj@umn.edu)	for Division of Science and Mathematics on 10/15/2012 at 09:32 AM by Jeri Lyn Squier (squierj@umn.edu)	(Pending)

Approver Comments (oldest to newest)

Approval Level: Degree-Granting College Action: Approve Approver: Jeri Lyn Squier Date Submitted: 10/15/2012 at 09:32 AM

10.11.12 - Approved by Curriculum Committee. js

General Information

[Hide Section](#)

Institution:	University of Minnesota, Morris (UMNMO)	<no change>
Campus:	Morris (UMNMO)	<no change>
Career:	Undergraduate (UGRD)	<no change>
Program type:	Baccalaureate	<no change>
Program title (short):	Physics B.A.	<no change>
Program title (long):	Physics B.A.	<no change>
Program short description:	Phys	<no change>
Additional terms:	<ul style="list-style-type: none">This program is 8 semesters (4 years) long.This program does not require any summer terms.	<no change>
Stakeholder college(s):	• UMM-Science & Math, Div of	<no change>
Degree-granting college(s):	• UMM-Science & Math, Div of	<no change>
Approver college(s):	• UMM-Science & Math, Div of	<no change>
Administrative college(s):	• UMM-Science & Math, Div of	<no change>
Budgetary college(s):	• UMM-Science & Math, Div of=100	<no change>
Acad plan code(s):	• UMM-Science & Math, Div of=067620227	<no change>
Department(s):	• Division of Science & Mathematics - Adm	<no change>
First term admitting students:	Fall 1960	<no change>
Effective date:	2011-08-24 (Fall 2011)	2013-08-28 (Fall 2013)
Degree:	Bachelor of Arts (B A)	<no change>
Catalog description:	Objectives--The physics program is designed to help students understand the concepts of classical and modern physics while also developing their ability to solve quantitative problems in these areas. It provides the opportunity for students to acquire the skills necessary to perform experimental work. The program develops students' ability to communicate, in form and content, both orally and in writing, the results of scientific work. The physics program offers a background suitable for students planning to pursue graduate study or careers in industry, research, or teaching. It also provides a solid foundation for any career requiring analytical reasoning.	<no change>
RIASEC codes:		<no change>
Field of study:	Math, Engineering, and Science (MTH/ENG/SC)	<no change>
Program contact(s):	U of M internet ID: fordcj Program contact's full name: Carol Jean Ford Email address: fordcj@umn.edu Telephone number: 320/589-6300 Campus mailing address: UMM Div of Science and Math Room 2550 Sci M242A 600 E 4th St Morris, MN 56267	<no change>

Narrative Materials

[Hide Section](#)

Brief summary or overview of reason for proposed new program or rationale for changes: We are deactivating a few courses we are no longer able to offer. This and the creation of a new course last year require that we update the list of electives allowable in the major and minor.

Three courses eliminated due to faculty member leaving. One other eliminated to free up current faculty to teach more 1XXX and IC courses. Change in elective requirements. Added Phys 4902 to major. Five total new courses proposed. Four

made inactive.

Program Delivery:	• Classroom (majority of program is face-to-face)	<no change>
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 Diversity Goals:	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 Section](#)

Minimum courses or credits to be completed before admission:	No Courses or Credits	<no change>
Are any students usually admitted to pre-major status before admission to this major?:	No students	<no change>
Is there a preferred minimum G.P.A. above 2.0 for students already admitted to the college(s) and now 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 (L.U.Ts):	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>
Required Course(s):		

Program Requirements

[Hide Section](#)

Program length in credits:	120 to 120 credits	<no change>
Major length in credits:	58 to 58 credits	<no change>
Number of semesters of a second language that are required:	2 semester(s)	<no change>
Specific language(s) required:	Any Second Language	<no change>
Other requirements:	Courses may not be taken S-N. 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. No grades below C- are allowed.	<no change>

Required Courses

- [PHYS 1101](#) - General Physics I [SCI-L] (5.0 cr)
- [PHYS 1102](#) - General Physics II [SCI-L] (5.0 cr)
- [PHYS 2101](#) - Modern Physics [SCI-L] (5.0 cr)
- [PHYS 3101](#) - Classical Mechanics [SCI] (4.0 cr)
- [PHYS 4101](#) - Electromagnetism [SCI] (4.0 cr)
- [PHYS 4201](#) - Quantum Mechanics [SCI] (4.0 cr)
- [PHYS 4901](#) - Senior Thesis (1.0 cr)
- [MATH 1101](#) - Calculus I [M/SR] (5.0 cr)
- [MATH 1102](#) - Calculus II [M/SR] (5.0 cr)
- [MATH 2101](#) - Calculus III [M/SR] (4.0 cr)
- [MATH 2401](#) - Differential Equations [M/SR] (4.0 cr)

Required Courses

- [MATH 1101](#) - Calculus I [M/SR] (5.0 cr)
- [MATH 1102](#) - Calculus II [M/SR] (5.0 cr)
- [MATH 2101](#) - Calculus III [M/SR] (4.0 cr)
- [MATH 2401](#) - Differential Equations [M/SR] (4.0 cr)
- [PHYS 1101](#) - General Physics I [SCI-L] (5.0 cr)
- [PHYS 1102](#) - General Physics II [SCI-L] (5.0 cr)
- [PHYS 2101](#) - Modern Physics [SCI-L] (5.0 cr)
- [PHYS 3101](#) - Classical Mechanics [SCI] (4.0 cr)
- [PHYS 4101](#) - Electromagnetism [SCI] (4.0 cr)
- [PHYS 4201](#) - Quantum Mechanics [SCI] (4.0 cr)
- [PHYS 4901](#) - Senior Thesis (1.0 cr)
- [PHYS 4902](#) - Senior Thesis II (1.0 cr)

Elective Courses

Take 12 or more credits(s) from the following:

- **Group 1 Electives**
 - Take 6 or more credits(s) from the following:
 - [PHYS 3003](#) - Computer Modeling of Materials [SCI] (2.0 cr)
 - [PHYS 3151](#) - Solid State Physics (2.0 cr)
 - [PHYS 3152](#) - Particle and Nuclear Physics (2.0 cr)
 - [PHYS 3153](#) - Cosmology (2.0 cr)
 - [PHYS 3401](#) - Experimental Physics [SCI-L] (4.0 cr)
 - [PHYS 3501](#) - Statistical Physics [SCI] (4.0 cr)
- **Group 2 Electives**
 - Take 0 or more credits(s) from the following:
 - [PHYS 2201](#) - Circuits and Electronic Devices [SCI-L] (4.0 cr)
 - [PHYS 2301](#) - Atmospheric Physics [ENVT] (4.0 cr)
 - [PHYS 2401](#) - Optics [SCI-L] (4.0 cr)
 - [PHYS 3993](#) - Directed Study (1.0-5.0 cr)
 - [PHYS 4993](#) - Directed Study (1.0-5.0 cr)

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Sub-plans

[Hide Section](#)

Sub-plan requirement for this program:	No	<no change>
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Draft Online Catalog Display

Program & Curriculum Approval - Executive Summary

University of Minnesota, Morris campus

[Close This Window](#)

Program Title: Physics Minor

Approval Status: Waiting for Campus Approval

Program Last Saved: Oct 15, 2012 9:33:06 AM

By: Jeri Lyn Squier



Completed Approvals

[Hide Section](#)

Submit Program on 10/08/2012 at 02:00 PM by Carol Jean Ford (fordcj@umn.edu)	→	Degree-Granting College for Division of Science and Mathematics on 10/15/2012 at 09:33 AM by Jeri Lyn Squier (squierj@umn.edu)	→	Campus (Pending)
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Approver Comments (oldest to newest)

Approval Level: Degree-Granting College **Action:** Approve **Approver:** Jeri Lyn Squier **Date Submitted:** 10/15/2012 at 09:33 AM

10.11.12 - Approved by Curriculum Committee. js

General Information

[Hide Section](#)

Institution:	University of Minnesota, Morris (UMNMO)	<no change>
Campus:	Morris (UMNMO)	<no change>
Career:	Undergraduate (UGRD)	<no change>
Program type:	Undergraduate minor related to major	<no change>
Program title (short):	Physics	<no change>
Program title (long):	Physics Minor	<no change>
Program short description:	Phys	<no change>
Additional terms:	<ul style="list-style-type: none"> • • This program does not require any summer terms. 	<no change>
Stakeholder college(s):	• UMM-Science & Math, Div of	<no change>
Degree-granting college(s):	• UMM-Science & Math, Div of	<no change>
Approver college(s):	• UMM-Science & Math, Div of	<no change>
Administrative college(s):	• UMM-Science & Math, Div of	<no change>
Budgetary college(s):	• 'UMM-Science & Math, Div of'=100	<no change>
Acad plan code(s):	• 'UMM-Science & Math, Div of'=0676MIN27	<no change>
Department(s):	• Division of Science & Mathematics - Adm	<no change>
First term admitting students:	Fall 1960	<no change>
Effective date:	2011-08-24 (Fall 2011)	2013-08-28 (Fall 2013)
Catalog description:	Objectives--The physics program is designed to help students understand the concepts of classical and modern physics while also developing their ability to solve quantitative problems in these areas. It provides the opportunity for students to acquire the skills necessary to perform experimental work, and develops students' ability to communicate, in form and content, both orally and in writing, the results of scientific work.	<no change>
RIASEC codes:		<no change>
Field of study:	Math, Engineering, and Science (MTH/ENG/SC)	<no change>
Program contact(s):	U of M internet ID: fordcj Program contact's full name: Carol Jean Ford Email address: fordcj@umn.edu Telephone number: 320/589-6300 Campus mailing address: UMM Div of Science and Math Room 2550 Sci M242A 600 E 4th St Morris, MN 56267	<no change>

Narrative Materials

[Hide Section](#)

Brief summary or overview of reason for proposed new program or rationale for changes: We are deactivating a few courses we are no longer able to offer. This and the creation of a new course last year require that we update the list of electives allowable in the major and minor.

Courses are being dropped and courses are being added due to personnel changes.

Program Delivery:

- Classroom (majority of program is face-to-face)

 <no change>

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 Diversity Goals:	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 Section](#)

Minimum courses or credits to be completed before admission:	No Courses or Credits	<no change>
Are any students usually admitted to pre-major status before admission to this major?:	No students	<no change>
Is there a preferred minimum G.P.A. above 2.0 for students already admitted to the college(s) and now 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 (L.U.Ts):	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>
Required Course(s):		

Program Requirements

[Hide Section](#)

Minor length in credits:	33 credits	<no change>
Minor length in credits:	33 credits	<no change>
Number of semesters of a second language that are required:	0 semester(s)	<no change>
Specific language(s) required:	No Second Language	<no change>
Other requirements:	Courses may not be taken S-N. The GPA in these courses must be at least 2.00. Courses with a grade lower than C- may not be used to meet the minor requirements.	<no change>

Minor Requirements

[PHYS 1101](#) - General Physics I [SCI-L] (5.0 cr)
[PHYS 1102](#) - General Physics II [SCI-L] (5.0 cr)
[PHYS 2101](#) - Modern Physics [SCI-L] (5.0 cr)
[MATH 1101](#) - Calculus I [M/SR] (5.0 cr)
[MATH 1102](#) - Calculus II [M/SR] (5.0 cr)
[MATH 2101](#) - Calculus III [M/SR] (4.0 cr)

Elective Courses

Take 4 or more credits(s) from the following:

- [PHYS 2201](#) - Circuits and Electronic Devices [SCI-L] (4.0 cr)
- [PHYS 2301](#) - Atmospheric Physics [ENVT] (4.0 cr)
- [PHYS 2302](#) - The Physics of Sustainable Energy [ENVT] (4.0 cr)
- [PHYS 2401](#) - Optics [SCI-L] (4.0 cr)
- [PHYS 2993](#) - Directed Study (1.0-5.0 cr)
- [PHYS 3002](#) - Biological and Medical Physics [SCI] (4.0 cr)
- [PHYS 3101](#) - Classical Mechanics [SCI] (4.0 cr)
- [PHYS 3401](#) - Experimental Physics [SCI-L] (4.0 cr)
- [PHYS 3501](#) - Statistical Physics [SCI] (4.0 cr)
- [PHYS 3993](#) - Directed Study (1.0-5.0 cr)
- [PHYS 4101](#) - Electromagnetism [SCI] (4.0 cr)
- [PHYS 4201](#) - Quantum Mechanics [SCI] (4.0 cr)
- [PHYS 4993](#) - Directed Study (1.0-5.0 cr)

Take 4 or more credits(s) from the following:

- [PHYS 2201](#) - Circuits and Electronic Devices [SCI-L] (4.0 cr)
- [PHYS 2301](#) - Atmospheric Physics [ENVT] (4.0 cr)
- [PHYS 2401](#) - Optics [SCI-L] (4.0 cr)
- [PHYS 2993](#) - Directed Study (1.0-5.0 cr)
- [PHYS 3101](#) - Classical Mechanics [SCI] (4.0 cr)
- [PHYS 3401](#) - Experimental Physics [SCI-L] (4.0 cr)
- [PHYS 3501](#) - Statistical Physics [SCI] (4.0 cr)
- [PHYS 3993](#) - Directed Study (1.0-5.0 cr)
- [PHYS 4101](#) - Electromagnetism [SCI] (4.0 cr)
- [PHYS 4201](#) - Quantum Mechanics [SCI] (4.0 cr)
- [PHYS 4993](#) - Directed Study (1.0-5.0 cr)
- [PHYS 3151](#) - Solid State Physics (2.0 cr)
- [PHYS 3152](#) - Particle and Nuclear Physics (2.0 cr)
- [PHYS 3153](#) - Cosmology (2.0 cr)

Required Course(s):

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

Sub-plans

[Hide Section](#)

Sub-plan requirement for this program:	No	<no change>
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Draft Online Catalog Display

To see a sample of what this program would look like on the online catalog, click the link titled 'Show Draft Catalog Display'. Please note that this is a **draft** version of the display, as the proposal must still receive the appropriate approvals.

[Show Draft Catalog Display](#) for previous version.

[Show Draft Catalog Display](#) for proposal.

**Curriculum Committee
Form A: Discipline Summary**

Route this form to: Appropriate Division Office	UMM Curriculum Committee Form A Rev: 05/2010
---	--

Date: 10/1/12
Discipline/Division: Statistics
Catalog Years (e.g., 2011-2013): 2013-2015

Statistical Summary of Proposed Changes:

(a)	(b)	(b) – (a)
Present (from current catalog)	Proposed (for new catalog)	Net Change*
10	10	0
43	43	0
6	6	0
24	24	0
4	4	0
4		
9	10	1
7		
0	7	7

The Major

Total courses required for a major*:

Total credits required for a major*:

The Minor

Total courses required for a minor*:

Total credits required for a minor*:

Entire Discipline

Total 1xxx and 2xxx courses listed in the catalog**:

Total 1xxx and 2xxx courses taught last year**:

Total 3xxx and 4xxx courses listed in the catalog**:

Total 3xxx and 4xxx courses taught last year**:

Number of courses with no General Education designator**:

*Includes required courses from other disciplines.

**Does not include Directed Studies or Senior Honors Projects. Courses with multiple sections count only once.

Please summarize the intent of the proposed changes.

By the request of the curriculum committee, we removed General Education notation for STAT 4000's level courses for the new catalog. STAT 4681 new course are added for the new catalog.

What are the financial or staffing implications of this proposal for the Discipline?

None

What are the financial or staffing implications of this proposal for other Disciplines?

None

Program & Curriculum Approval - Executive Summary

University of Minnesota, Morris campus

[Close This Window](#)

Program Title: Statistics B.A.

Approval Status: Waiting for Campus Approval

Program Last Saved: Oct 15, 2012 9:33:30 AM

By: Jeri Lyn Squier



Completed Approvals

[Hide Section](#)

Submit Program	Degree-Granting College	Campus
on 10/08/2012 at 02:03 PM by Carol Jean Ford (fordcj@umn.edu)	for Division of Science and Mathematics on 10/15/2012 at 09:33 AM by Jeri Lyn Squier (squierj@umn.edu)	(Pending)

Approver Comments (oldest to newest)

Approval Level: Degree-Granting College Action: Approve Approver: Jeri Lyn Squier Date Submitted: 10/15/2012 at 09:33 AM

10.11.12 - Approved by Curriculum Committee. js

General Information

[Hide Section](#)

Institution:	University of Minnesota, Morris (UMNMO)	<no change>
Campus:	Morris (UMNMO)	<no change>
Career:	Undergraduate (UGRD)	<no change>
Program type:	Baccalaureate	<no change>
Program title (short):	Statistics B.A.	<no change>
Program title (long):	Statistics B.A.	<no change>
Program short description:	Statistics	<no change>
Additional terms:	<ul style="list-style-type: none">This program is 8 semesters (4 years) long.This program does not require any summer terms.	<no change>
Stakeholder college(s):	• UMM-Science & Math, Div of	<no change>
Degree-granting college(s):	• UMM-Science & Math, Div of	<no change>
Approver college(s):	• UMM-Science & Math, Div of	<no change>
Administrative college(s):	• UMM-Science & Math, Div of	<no change>
Budgetary college(s):	• 'UMM-Science & Math, Div of'=100	<no change>
Acad plan code(s):	• 'UMM-Science & Math, Div of'=090020227	<no change>
Department(s):	• Division of Science & Mathematics - Adm	<no change>
First term admitting students:	Spring 2002	<no change>
Effective date:	2012-05-14 (Summer 2012)	2013-08-28 (Fall 2013)
Degree:	Bachelor of Arts (B A)	<no change>
Catalog description:	The mission of the discipline is to create and apply statistical methods/techniques for collecting, exploring, analyzing, and communicating qualitative/quantitative information and to disseminate this knowledge through teaching, scholarly activity, and outreach. Statistics is the science and art of enhancing knowledge in the face of uncertainty by modeling, predictions, and decisions. It is central to solutions of problems in the environment, medicine, law, industry, technology, finance, business, public policy, computing, and science in general. The need for statistics applies to almost every area of our lives. Objectives--The statistics program provides an effective operational knowledge of the theory and methods of statistics and the application of statistical methods in a liberal arts environment. It seeks to enhance students' critical thinking in making judgments based on data and provides students with the basic knowledge and skills to make contributions to modern society. Students learn to communicate and collaborate effectively with people in other fields and, in the process, to understand the substance of these fields. The curriculum prepares students to enter graduate school or pursue careers in statistical fields at research institutions and industry.	<no change>
RIASEC codes:		<no change>
Field of study:	Math, Engineering, and Science (MTH/ENG/SC)	<no change>
Program contact(s):	U of M internet ID: fordcj Program contact's full name: Carol Jean Ford Email address: fordcj@umn.edu Telephone number: 320/589-6300 Campus mailing address: UMM Div of Science and Math Room 2550 Sci M242A 600 E 4th St Morris, MN 56267	<no change>

Narrative Materials

Hide Section

Brief summary or overview of reason for proposed new program or rationale for changes: add stat 4681 to electives per Dr. Jon Anderson

5 new courses added to electives, 1 course removed from electives

Program Delivery:	<ul style="list-style-type: none">Classroom (majority of program is face-to-face)	<no change>
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 Diversity Goals:	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 Section

Minimum courses or credits to be completed before admission:	No Courses or Credits	<no change>
Are any students usually admitted to pre-major status before admission to this major?:	No students	<no change>
Is there a preferred minimum G.P.A. above 2.0 for students already admitted to the college(s) and now 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.Ts):	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>
Required Course(s):		

Program Requirements

Hide Section

Program length in credits:	120 to 120 credits	<no change>
Major length in credits:	39 to 39 credits	<no change>
Number of semesters of a second language that are required:	2 semester(s)	<no change>
Specific language(s) required:	Any Second Language	<no change>
Other requirements:	The GPA in these courses must be at least 2.00. Courses may not be taken S-N unless offered S-N only. Students planning to pursue graduate work in statistics or biostatistics should complete MATH 2101--Calculus III and consider taking MATH 2202--Mathematical Perspectives and MATH 3211--Analysis for Ph.D. preparation.	<no change>

Required Courses

[MATH 1101](#) - Calculus I [M/SR] (5.0 cr)
[MATH 1102](#) - Calculus II [M/SR] (5.0 cr)
[STAT 2501](#) - Probability and Stochastic Processes [M/SR] (4.0 cr)
[STAT 2611](#) - Mathematical Statistics [M/SR] (4.0 cr)
[STAT 3601](#) - Data Analysis [M/SR] (4.0 cr)
[STAT 4901](#) - Senior Seminar [M/SR] (1.0 cr)

Statistics

[STAT 1601](#) - Introduction to Statistics [M/SR] (4.0 cr)
or [STAT 2601](#) - Statistical Methods [M/SR] (4.0 cr)

Elective Courses

Take 8 or more credits(s) from the following:
· [STAT 1993](#) - Directed Study (1.0-5.0 cr)
· [STAT 2993](#) - Directed Study (1.0-5.0 cr)
· [STAT 3501](#) - Survey Sampling [M/SR] (4.0 cr)
· [STAT 3611](#) - Multivariate Statistical Analysis [M/SR] (4.0 cr)
· [STAT 3993](#) - Directed Study (1.0-5.0 cr)
· [STAT 4601](#) - Biostatistics [M/SR] (4.0 cr)
· [STAT 4631](#) - Design and Analysis of Experiments [M/SR] (4.0 cr)
· [STAT 4651](#) - Applied Nonparametric Statistics [M/SR] (4.0 cr)
· [STAT 4671](#) - Statistical Computing [M/SR] (4.0 cr)
· [STAT 4681](#) - Introduction to Time Series Analysis [M/SR] (4.0 cr)
· [STAT 4993](#) - Directed Study (1.0-5.0 cr)

Additional Elective Courses

Choose from the list below or from courses with faculty approval.
Take 4 or more credits(s) from the following:
· [BIOL 4004](#) - Principles of Public Health and Epidemiology [SCI] (4.0 cr)
· [CSCI 1201](#) - Introduction to Digital Media Computation [M/SR] (4.0 cr)
· [CSCI 1251](#) - Computational Data Management and Manipulation [M/SR] (4.0 cr)
· [CSCI 1301](#) - Problem Solving and Algorithm Development [M/SR] (4.0 cr)
· [CSCI 1302](#) - Foundations of Computer Science [M/SR] (4.0 cr)
· [CSCI 4403](#) - Systems: Data Mining [M/SR] (2.0 cr)
· [CSCI 4455](#) - Theory: Neural Networks and Machine Learning [M/SR] (4.0 cr)
· [ECON 3501](#) - Introduction to Econometrics [M/SR] (4.0 cr)
· [MATH 2101](#) - Calculus III [M/SR] (4.0 cr)
· [MATH 2111](#) - Linear Algebra [M/SR] (4.0 cr)

Elective Courses

Take 8 or more credits(s) from the following:
· [STAT 1993](#) - Directed Study (1.0-5.0 cr)
· [STAT 2993](#) - Directed Study (1.0-5.0 cr)
· [STAT 3501](#) - Survey Sampling [M/SR] (4.0 cr)
· [STAT 3611](#) - Multivariate Statistical Analysis [M/SR] (4.0 cr)
· [STAT 3993](#) - Directed Study (1.0-5.0 cr)
· [STAT 4601](#) - Biostatistics (4.0 cr)
· [STAT 4611](#) - Statistical Consulting (4.0 cr)
· [STAT 4631](#) - Design and Analysis of Experiments (4.0 cr)
· [STAT 4651](#) - Applied Nonparametric Statistics (4.0 cr)
· [STAT 4671](#) - Statistical Computing (4.0 cr)
· [STAT 4681](#) - Introduction to Time Series Analysis (4.0 cr)
· [STAT 4993](#) - Directed Study (1.0-5.0 cr)

Additional Elective Courses

Choose from the list below or from courses with faculty approval.
Take 4 or more credits(s) from the following:
· [CSCI 1201](#) - Introduction to Digital Media Computation [M/SR] (4.0 cr)
· [CSCI 1251](#) - Computational Data Management and Manipulation [M/SR] (4.0 cr)
· [CSCI 1301](#) - Problem Solving and Algorithm Development [M/SR] (4.0 cr)
· [CSCI 1302](#) - Foundations of Computer Science [M/SR] (4.0 cr)
· [CSCI 4403](#) - Systems: Data Mining (2.0 cr)
· [CSCI 4458](#) - Systems: Bioinformatic Systems (4.0 cr)
· [CSCI 4555](#) - Theory: Neural Networks and Machine Learning (4.0 cr)
· [ECON 3501](#) - Introduction to Econometrics [M/SR] (4.0 cr)
· [MATH 2101](#) - Calculus III [M/SR] (4.0 cr)
· [MATH 2111](#) - Linear Algebra [M/SR] (4.0 cr)

Required Course(s):

- [MATH 2202](#) - Mathematical Perspectives [M/SR] (4.0 cr)
- [MATH 3221](#) - Analysis [M/SR] (4.0 cr)
- [MATH 3401](#) - Operations Research [M/SR] (4.0 cr)
- [MATH 3501](#) - Applied Deterministic Modeling for Management Science [M/SR] (2.0 cr)
- [MATH 3502](#) - Applied Probabilistic Modeling for Management Science [M/SR] (2.0 cr)
- [PSY 2001](#) - Research Methods in Psychology [SS] (4.0 cr)

- [MATH 2202](#) - Mathematical Perspectives [M/SR] (4.0 cr)
- [MATH 3221](#) - Analysis [M/SR] (4.0 cr)
- [MATH 3401](#) - Operations Research [M/SR] (4.0 cr)
- [MATH 3501](#) - Applied Deterministic Modeling for Management Science [M/SR] (2.0 cr)
- [MATH 3502](#) - Applied Probabilistic Modeling for Management Science [M/SR] (2.0 cr)
- [POL 2001](#) - Political Science Research Methods [SS] (4.0 cr)
- [PSY 2001](#) - Research Methods in Psychology [SS] (4.0 cr)
- [SOC 3103](#) - Research Methodology in Sociology [SS] (4.0 cr)
- [SOC 3131](#) - World Population [ENVT] (4.0 cr)

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Sub-plans
[Hide Section](#)

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

Draft Online Catalog Display

To see a sample of what this program would look like on the online catalog, click the link titled 'Show Draft Catalog Display'. Please note that this is a **draft** version of the display, as the proposal must still receive the appropriate approvals.

[Show Draft Catalog Display for previous version.](#)

[Show Draft Catalog Display for proposal.](#)

Program & Curriculum Approval - Executive Summary

University of Minnesota, Morris campus

[Close This Window](#)

Program Title: Statistics Minor

Approval Status: Waiting for Campus Approval

Program Last Saved: Oct 15, 2012 9:33:52 AM

By: Jeri Lyn Squier



Completed Approvals

[Hide Section](#)

<p>Submit Program on 10/08/2012 at 02:05 PM by Carol Jean Ford (fordcj@umn.edu)</p>	→	<p>Degree-Granting College for Division of Science and Mathematics on 10/15/2012 at 09:33 AM by Jeri Lyn Squier (squierj@umn.edu)</p>	→	<p>Campus (Pending)</p>
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Approver Comments (oldest to newest)

Approval Level: Degree-Granting College **Action:** Approve **Approver:** Jeri Lyn Squier **Date Submitted:** 10/15/2012 at 09:33 AM

10.11.12 - Approved by Curriculum Committee. js

General Information

[Hide Section](#)

Institution:	University of Minnesota, Morris (UMNMO)	<no change>
Campus:	Morris (UMNMO)	<no change>
Career:	Undergraduate (UGRD)	<no change>
Program type:	Undergraduate minor related to major	<no change>
Program title (short):	Statistics	<no change>
Program title (long):	Statistics Minor	<no change>
Program short description:	Statistics	<no change>
Additional terms:	<ul style="list-style-type: none"> • • This program does not require any summer terms. 	<no change>
Stakeholder college(s):	• UMM-Science & Math, Div of	<no change>
Degree-granting college(s):	• UMM-Science & Math, Div of	<no change>
Approver college(s):	• UMM-Science & Math, Div of	<no change>
Administrative college(s):	• UMM-Science & Math, Div of	<no change>
Budgetary college(s):	• 'UMM-Science & Math, Div of'=100	<no change>
Acad plan code(s):	• 'UMM-Science & Math, Div of'=0900MIN27	<no change>
Department(s):	• Division of Science & Mathematics - Adm	<no change>
First term admitting students:	Spring 2002	<no change>
Effective date:	2011-08-24 (Fall 2011)	2013-08-28 (Fall 2013)
Catalog description:	Objectives--The statistics program provides an effective operational knowledge of the theory and methods of statistics and the application of statistical methods in a liberal arts environment. It seeks to enhance students' critical thinking in making judgments based on data and provides them with the basic knowledge and skills necessary to make contributions to modern society. Students learn to communicate and collaborate effectively with people in other fields and, in the process, understand the substance of these fields. The curriculum prepares students to enter graduate school or pursue careers in statistical fields at research institutions and industry.	<no change>
RIASEC codes:		<no change>
Field of study:	Math, Engineering, and Science (MTH/ENG/SC)	<no change>
Program contact(s):	<p>U of M internet ID: fordcj Program contact's full name: Carol Jean Ford Email address: fordcj@umn.edu Telephone number: 320/589-6300 Campus mailing address: UMM Div of Science and Math Room 2550 Sci M242A 600 E 4th St Morris, MN 56267</p>	<no change>

Narrative Materials

[Hide Section](#)

Brief summary or overview of reason for proposed new program or rationale for changes: Removal of deactivated courses from the list of electives.

Three new stats electives added. Five new CSci electives added

Program Delivery:

- Classroom (majority of program is face-to-face)

<no change>

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 Diversity Goals:	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 Section](#)

Minimum courses or credits to be completed before admission:	No Courses or Credits	<no change>
Are any students usually admitted to pre-major status before admission to this major?:	No students	<no change>
Is there a preferred minimum G.P.A. above 2.0 for students already admitted to the college(s) and now 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 (L.U.Ts):	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>
Required Course(s):		

Program Requirements

[Hide Section](#)

Minor length in credits:	24 credits	<no change>
Minor length in credits:	24 credits	<no change>
Number of semesters of a second language that are required:	0 semester(s)	<no change>
Specific language(s) required:	No Second Language	<no change>
Other requirements:	The GPA in these courses must be at least 2.00.	<no change>

Minor Requirements

[STAT 3601](#) - Data Analysis [M/SR] (4.0 cr)

Intro or Methods

[STAT 1601](#) - Introduction to Statistics [M/SR] (4.0 cr)

or [STAT 2601](#) - Statistical Methods [M/SR] (4.0 cr)

Minor Elective Courses

Take 16 or more credits(s) from the following:

Stat Courses

· Stat courses

· Take 1 or more course(s) from the following:

- [STAT 1993](#) - Directed Study (1.0-5.0 cr)
- [STAT 2501](#) - Probability and Stochastic Processes [M/SR] (4.0 cr)
- [STAT 2611](#) - Mathematical Statistics [M/SR] (4.0 cr)
- [STAT 2993](#) - Directed Study (1.0-5.0 cr)
- [STAT 3501](#) - Survey Sampling [M/SR] (4.0 cr)
- [STAT 3611](#) - Multivariate Statistical Analysis [M/SR] (4.0 cr)
- [STAT 3993](#) - Directed Study (1.0-5.0 cr)
- [STAT 4601](#) - Biostatistics (4.0 cr)
- [STAT 4611](#) - Statistical Consulting (4.0 cr)
- [STAT 4631](#) - Design and Analysis of Experiments (4.0 cr)
- [STAT 4651](#) - Applied Nonparametric Statistics (4.0 cr)
- [STAT 4671](#) - Statistical Computing (4.0 cr)
- [STAT 4681](#) - Introduction to Time Series Analysis (4.0 cr)
- [STAT 4993](#) - Directed Study (1.0-5.0 cr)

Other Courses

· Non-stat courses

· Take 0 or more course(s) from the following:

- [CSCI 1201](#) - Introduction to Digital Media Computation [M/SR] (4.0 cr)
- [CSCI 1251](#) - Computational Data Management and Manipulation [M/SR] (4.0 cr)
- [CSCI 1301](#) - Problem Solving and Algorithm Development [M/SR] (4.0 cr)
- [CSCI 1302](#) - Foundations of Computer Science [M/SR] (4.0 cr)
- [CSCI 4403](#) - Systems: Data Mining (2.0 cr)
- [CSCI 4458](#) - Systems: Bioinformatic Systems (4.0 cr)
- [CSCI 4555](#) - Theory: Neural Networks and Machine Learning (4.0 cr)
- [ECON 3501](#) - Introduction to Econometrics [M/SR] (4.0 cr)
- [MATH 2101](#) - Calculus III [M/SR] (4.0 cr)
- [MATH 2111](#) - Linear Algebra [M/SR] (4.0 cr)
- [MATH 2202](#) - Mathematical Perspectives [M/SR] (4.0 cr)
- [MATH 3221](#) - Analysis [M/SR] (4.0 cr)
- [MATH 3401](#) - Operations Research [M/SR] (4.0 cr)
- [MATH 3501](#) - Applied Deterministic Modeling for Management Science [M/SR] (2.0 cr)
- [MATH 3502](#) - Applied Probabilistic Modeling for Management Science [M/SR] (2.0 cr)

Required Course(s):

Minor Elective Courses

Take 16 or more credits(s) from the following:

Stat Courses

· Stat courses

· Take 1 or more course(s) from the following:

- [STAT 2501](#) - Probability and Stochastic Processes [M/SR] (4.0 cr)
- [STAT 2611](#) - Mathematical Statistics [M/SR] (4.0 cr)
- [STAT 3611](#) - Multivariate Statistical Analysis [M/SR] (4.0 cr)
- [STAT 4601](#) - Biostatistics [M/SR] (4.0 cr)
- [STAT 4611](#) - Statistical Consulting [M/SR] (4.0 cr)
- [STAT 4631](#) - Design and Analysis of Experiments [M/SR] (4.0 cr)
- [STAT 4651](#) - Applied Nonparametric Statistics [M/SR] (4.0 cr)
- [STAT 1993](#) - Directed Study (1.0-5.0 cr)
- [STAT 2993](#) - Directed Study (1.0-5.0 cr)
- [STAT 3993](#) - Directed Study (1.0-5.0 cr)
- [STAT 4993](#) - Directed Study (1.0-5.0 cr)

Other Courses

· Non-stat courses

· Take 0 or more course(s) from the following:

- [CSCI 1301](#) - Problem Solving and Algorithm Development [M/SR] (4.0 cr)
- [CSCI 1302](#) - Foundations of Computer Science [M/SR] (4.0 cr)
- [ECON 3501](#) - Introduction to Econometrics [M/SR] (4.0 cr)
- [MATH 2101](#) - Calculus III [M/SR] (4.0 cr)
- [MATH 2111](#) - Linear Algebra [M/SR] (4.0 cr)
- [MATH 2202](#) - Mathematical Perspectives [M/SR] (4.0 cr)
- [MATH 3221](#) - Analysis [M/SR] (4.0 cr)
- [MATH 3401](#) - Operations Research [M/SR] (4.0 cr)
- [MATH 3501](#) - Applied Deterministic Modeling for Management Science [M/SR] (2.0 cr)
- [MATH 3502](#) - Applied Probabilistic Modeling for Management Science [M/SR] (2.0 cr)

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Sub-plans

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Sub-plan requirement for this	No	<no change>
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