



Minnesota State University, Mankato HOLD and CLEAR buttons only compatible with Acrobat V. 4 and 5
Curriculum Proposal

08-44

Please type or select the requested information. Print completed forms, add appropriate paper attachments, and route through MSU's curricular process for recommendations and decisions.

(Check all that apply):		Proposal # <u>200</u>						
College: <u>Science, Engineering and Technology</u>	<input type="checkbox"/> Undergraduate	Effective Date of Change:						
Department: <u>Chemistry and Geology</u>	<input type="checkbox"/> Graduate	Academic Year <u>07-08</u>						
Program: <u>Chemistry BS Option II (ACS)</u>	CIP #	(For Office Use Only)						
Type of Change: <u>PROGRAM PROPOSALS</u>		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="width: 60%;">Course Designator and Number</th> <th style="width: 40%;">Number of Credits</th> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </table>	Course Designator and Number	Number of Credits				
Course Designator and Number	Number of Credits							
Proposed: <u>Change in Requirements-Course(s) Added</u>		(if applicable)						
Title Current:								
Title Proposed:								
24-Char. Abbrev:								

Include a course or program description for the Bulletin (30-40 words maximum for courses, 100 for programs):

Same

Rationale or Justification for change:

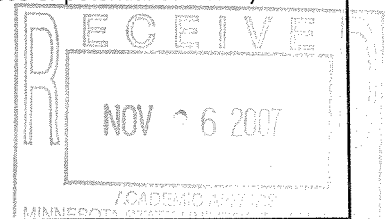
Contingent on 3 semester Physics (221,222,223) Proposal, see attached

*****For General Education or Cultural Diversity Courses Only*****

<p align="center">General Education Course:</p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="width: 15%;">GE Category #</th> <th>GE Category Name (Maximum of 3 Categories)</th> </tr> <tr> <td align="center">N/A</td> <td> </td> </tr> <tr> <td align="center">N/A</td> <td> </td> </tr> <tr> <td align="center">N/A</td> <td> </td> </tr> </table> <p> <input type="checkbox"/> For Writing Intensive Courses, attach a description of the kind and quantity of writing. <input type="checkbox"/> For Upper Division Courses, include a description of the respects in which it is broad and general rather than narrow and specific, and so suitable as GE. </p> <p>Attach paper copies of the following:</p> <ol style="list-style-type: none"> Syllabus or course outline. Course's student learning outcomes associated with each GE competency or CD designation. List of strategies to be used to assess students' achievement of each GE competency or CD designation. 	GE Category #	GE Category Name (Maximum of 3 Categories)	N/A		N/A		N/A		<p align="center">Cultural Diversity Course:</p> <p align="center">(Please check one.)</p> <p><input type="checkbox"/> Core (At least 75% devoted to topics of race, gender, sexual orientation, age, class, and disabilities as they occur in United States Society.)</p> <p><input type="checkbox"/> Related (At least 25% devoted to the above topics or to a global perspective on topics related to African American, Asian, Hispanic, and Native American inhabitants of the United States.)</p>
GE Category #	GE Category Name (Maximum of 3 Categories)								
N/A									
N/A									
N/A									

*****For New Courses*****

<p>(Check all that apply):</p> <p><input type="checkbox"/> Course is an elective.</p> <p><input type="checkbox"/> Course is required for program</p> <p><input type="checkbox"/> Pre- or Co-requisites:</p> <p><input type="checkbox"/> Other courses are being changed or eliminated. (Explain.)</p>	<p>Instructional Type: <u>Lecture</u></p> <p>Grading Format: <input type="checkbox"/> Grade <input type="checkbox"/> P/N</p>	<p>Course will be offered:</p> <p><input type="checkbox"/> Fall Semester</p> <p><input type="checkbox"/> Spring Semester</p> <p><input type="checkbox"/> Summer Session</p>
<p><input type="checkbox"/> Course content or title is similar to courses in other departments. (Attach copy of letter of agreement with other program(s) contacted. Indicate the nature of the discussions and/or resolution of differences or potential conflicts.)</p> <p>Attach paper copies of the following:</p> <ol style="list-style-type: none"> Syllabus or course outline. Course's student learning outcomes. A list of resources required to offer and support this course. A description of how teaching this course will affect department staffing. If 400/500 level course, an explanation of added expectations of graduate students. 		





Minnesota State University, Mankato
Curriculum Proposal

Signature Page

Department

Recommended (Category/ies _____)
 Not Recommended (Category/ies _____)

B. Groh
Department Chair

10-19-07
Date

Comments:

College Curriculum Committee

Recommended (Category/ies _____)
 Not Recommended (Category/ies _____)

[Signature]
Committee Chair

11-15/07
Date

Comments:

College Dean

Recommended (Category/ies _____)
 Not Recommended (Category/ies _____)

[Signature]
Dean

11/19/07
Date

Comments:

General Education Subcommittee

Recommended (Category/ies _____)
 Not Recommended (Category/ies _____)

General Education Subcommittee Chair

Date

Comments:

Undergraduate Curriculum and Academic Policy Committee

Recommended (Category/ies _____)
 Not Recommended (Category/ies _____)

[Signature]
UCAP Faculty Chair

12/11/07
Date

Comments:

Faculty Association Graduate Committee

Recommended
 Not Recommended

Faculty Association Graduate Chair

Date

Comments:

Graduate Dean

Recommended
 Not Recommended

Graduate Dean

Date

Comments:

Academic Affairs Council

Recommended (Category/ies _____)
 Not Recommended (Category/ies _____)

[Signature]
Assistant Vice President

3/14/08
Date

Comments:

Senior Vice President and Vice President for Academic Affairs

Approved (Category/ies _____)
 Not Approved (Category/ies _____)

[Signature]
Sr. Vice President / Vice Pres. Academic Affairs

3/14/08
Date

Comments:

Chemistry BS Option II (ACS) Major Revision Proposal

10/16/07

This proposal accommodates changes proposed by the 3 semester Physics (221,222,223) proposal, and is contingent thereon.

Current:

Required General Education (9 credits):

MATH 121 Calculus I (4)
PHYS 221 General Physics I (5)

Required Support Courses (9 credits):

MATH 122 Calculus II (4)
PHYS 222 General Physics II (5)

Required for Major (Core, 50-51 credits):

CHEM 201 General Chemistry I (5)
CHEM 202 General Chemistry II (5)
CHEM 305 Analytical Chemistry (4)
CHEM 320 Organic Chemistry I w/ lab (5)
CHEM 321 Organic Chemistry II (3)
CHEM 331 Organic Chemistry II Lab (1)
CHEM 381 Introduction to Research (2)
CHEM 413 Advanced Inorganic (3)
CHEM 415 Inorganic Preparations (2)
CHEM 423 Chemical Spectroscopy (4)
CHEM 440 Physical Chemistry I (3)
CHEM 441 Physical Chemistry II (3)
CHEM 450 Physical Chemistry I Lab (1)
CHEM 451 Physical Chemistry II Lab (1)
CHEM 475 Instrumental Analysis (4)
CHEM 495 Senior Seminar (1)
CHEM 360 Principles of Biochemistry (4) **OR**
CHEM 460 Biochemistry I (3)

Required Electives for Major (CHEM, 1 credit):

Students opting for CHEM 460 must choose at least 1 credit from the following:

CHEM 407	CHEM 312	CHEM 424
CHEM 434	CHEM 461	CHEM 465
CHEM 474	CHEM 485	CHEM 496
CHEM 497	CHEM 498	CHEM 499

Required Electives (3-4 credits):

Choose a minimum of 3 credits from the following courses

PHYS 441	PHYS 447	PHYS 453
PHYS 473	MATH 321	MATH 455

Total Credits: 72 – 73

Contingent Proposal:

Required General Education (8 credits):

MATH 121 Calculus I (4)
PHYS 221 General Physics I (4)

Required Support Courses (8 credits):

MATH 122 Calculus II (4)
PHYS 223 General Physics III (3)
PHYS 233 General Physics III Lab (1)

Required for Major (Core, 50-51 credits):

CHEM 201 General Chemistry I (5)
CHEM 202 General Chemistry II (5)
CHEM 305 Analytical Chemistry (4)
CHEM 320 Organic Chemistry I w/ lab (5)
CHEM 321 Organic Chemistry II (3)
CHEM 331 Organic Chemistry II Lab (1)
CHEM 381 Introduction to Research (2)
CHEM 413 Advanced Inorganic (3)
CHEM 415 Inorganic Preparations (2)
CHEM 423 Chemical Spectroscopy (4)
CHEM 440 Physical Chemistry I (3)
CHEM 441 Physical Chemistry II (3)
CHEM 450 Physical Chemistry I Lab (1)
CHEM 451 Physical Chemistry II Lab (1)
CHEM 475 Instrumental Analysis (4)
CHEM 495 Senior Seminar (1)
CHEM 360 Principles of Biochemistry (4) **OR**
CHEM 460 Biochemistry I (3)

Required Electives for Major (CHEM, 1 credit):

Students opting for CHEM 460 must choose at least 1 credit from the following:

CHEM 407	CHEM 312	CHEM 424
CHEM 434	CHEM 461	CHEM 465
CHEM 474	CHEM 485	CHEM 496
CHEM 497	CHEM 498	CHEM 499

Required Electives (3-4 credits):

Choose a minimum of 3 credits from the following courses

PHYS 441	PHYS 447	PHYS 453
PHYS 473	MATH 321	MATH 455

Total Credits: 70 - 71

Department of Chemistry and Geology

Minutes

Thursday, April 19, 2007

Present: Boyd, Carrison, Groh, Hadley, Losh, Lusch, Quirk Dorr, Rambo, Rife, Salerno, Swart, Thoemke, Vorlicek

Minutes: Minutes of April 12, 2007 (Pribyl) were approved

Announcements:

1. Distinguished Alumni Jena Thompson, ('96) will be on campus tomorrow - Friday, April 20
2. The deadline to submit Student Learning Outcomes and Assessment Data to the Assessment Committee for the 2006-2007 report is Monday, April 23 at 5 pm.

Physics Course Proposal Response: The departmental response to the physics course proposal was distributed. After discussion, revisions were recommended. The response was approved as amended and will be forwarded.

3M Equipment: The equipment that 3M is considering donating was discussed. A request was made for faculty that is interested in traveling to 3M to notify Dr. Groh soon.

Fixed Term Sabbatical Replacement Search: The timeline was discussed in regard to phone interviews and on campus interviews.

Teaching Schedule Draft: The draft was distributed and discussed.

Committee Assignments: Committee suggestions have been received. Next week the committee assignments will be discussed in detail.

Goals for 2007 – 2008: The department will formulate a draft for the 2007-2008 departmental goals. The draft will be modified in the fall. A committee may be assigned to assist the department in meeting areas that may be identified as areas of improvement.

Submitted

Danaè R. Quirk Dorr

Approved, April 26, 2007

REDESIGN: Change Program and/or Emphasis Credit Length

Part A: General Information

Institution	MINNESOTA STATE UNIVERSITY MANKATO	
Award	B.S., Chemistry	
ISRS Program ID		
Full Program Name	Chemistry BS Option II (ACS)	
Current 8-digit CIP Code <small>Inventory</small>	40.050100	
Full Emphasis Name		
Current Emphasis 8-digit CIP Code <small>Inventory</small>		
Rationale for program credit length change if policy limit is exceeded	Change in credits in required support cou	
Effective Term/Year	2008-2009	

3-28-08

Ken,
This one
doesn't need to
go to MnSCU.

Thanks,
Brenda

Part B: Proposed Changes

Attribute	Current Length	Proposed Length
Program	107-108	106-107
Emphasis		

Part C: Evidence Required (Attachments)

Curriculum committee minutes documenting recommendation; include committee membership
 Consortial programs require verification (below) by all member institutions.

Part D: Verification

	Name	Email	Phone
Application Author	Dan Swart	daniel.swart@mnsu.edu	507-389-6454
Contact Person	Dan Swart	daniel.swart@mnsu.edu	507-389-6454
	Name	Signature	Date
Chief Academic Officer	Scott Olson	<i>[Signature]</i>	3/19/08
President	Richard Davenport	<i>[Signature]</i>	3/21/08

NOTE: Please review and update articulation agreements that may apply to this program.

Dept of Chemistry and Geology
Assessment Plan For Chemistry BS option II (ACS certified)

Student Learning Outcomes (performance, knowledge, attitudes)	Related Univ. Goals	Related College Goals	Method(s) of Assessment (What is the assessment?)	Who Assessed (Students from what courses - population)	When Assessed (dates)	Standard of Mastery/ Criterion of Achievement	What is Hoped to Be Learned?
1. Students will demonstrate their knowledge of the basic principles of chemistry (kinetics, thermodynamics, quantum mechanics and equilibria) and apply these to chemically relevant problems.	MSUM 2	CSET 1, 2, 3, 4, 5, 6, 14, 16	in class problems homework problems examinations laboratory experiments and reports use of ACS generalized exams	<u>kinetics</u> : students enrolled in chem 202, 320, 321, 360, 413, 441, 451, 460 <u>thermo</u> : students enrolled in chem 201, 202, 360, 413, 440, 450, 460 <u>quantum</u> : students enrolled in chem 201, 413, 450, 451, 475 <u>equilibria</u> : students enrolled in chem 201, 202, 305, 360, 413, 440, 441, 450, 451, 460, 475.	<u>kinetics</u> 07-08 09-10 <u>thermo</u> 06-07 08-09 <u>quantum</u> 07-08 09-10 <u>equilib</u> 06-07 08-09	mastery standards are based on course level. 2xx level: ave score on ACS standardized gen chemistry exam is statistically same as national ave. 3xx -4xx level: score on homework probs and exams average 70%, lab experiments and reports average 75%	a. if students are able to use their knowledge from prerequisite courses to build on in upper division courses. b. if our students can apply fundamentals to different situations. c. if students are able to identify the common themes in the various courses. d. how well our students retain and use their knowledge compared to other programs.
2. Students will demonstrate their understanding of the chemist's use of numbers by applying their knowledge to make quantifiable comparisons (stoichiometry), to report data and to determine uncertainty and error.	MSUM 2	CSET 1, 2, 3, 6, 14, 16	in class problems homework problems examinations laboratory experiments and reports use of ACS generalized exams	students enrolled in chem 201, 202, 305, 320, 321, 331, 360, 415, 423, 440, 441, 450, 451, 460, 475.	every other year 04-05 06-07	mastery standards are based on course level. 2xx level: ave score on ACS standardized gen chemistry exam is statistically same as national ave. 3xx -4xx level: score on homework probs and exams average 70%, lab experiments and reports average 75%, ave score on ACS standardized organic exam is statistically same as national ave.	a. if students are able to use their knowledge from prerequisite courses to build on in upper division courses. b. if our students are able to quantify basic relationships in our courses and laboratories. c. if our students understand the importance of data collection, the proper recording of and reporting of data.

Student Learning Outcomes (performance, knowledge, attitudes)	Related Univ. Goals	Related College Goals	Method(s) of Assessment (What is the assessment?)	Who Assessed (Students from what courses - population)	When Assessed (dates)	Standard of Mastery/ Criterion of Achievement	What is Hoped to Be Learned?
3. Students will demonstrate their understanding of descriptive chemistry (physical properties, bonding, reactivity patterns, redox, and characterization) by applying these ideas to relevant problems.	MSUM 2	CSET 1, 2, 3, 4, 5, 6, 14, 16	in class problems homework problems examinations laboratory experiments and reports use of ACS generalized exams	students enrolled in chem 201, 202, 320, 321, 331, 360, 413, 415, 423, 440, 441, 450, 451, 460, 475.	every other year 05-06 07-08	mastery standards are based on course level. 2xx level: score on ACS standardized general chemistry exam is statistically same as national ave. 3xx -4xx level: score on homework probs and examinations average 70%, lab experiments and reports average 75%, score on ACS standardized organic exam is statistically same as national ave.	a. if students are able to use their knowledge from prerequisite courses to build on in upper division courses. b. if students are able to identify the common themes in the various courses. c. how well our students retain and use their knowledge compared to other programs.
4. Students will demonstrate their communication skills by reading scientific works and utilizing appropriate terminology in effective written, oral and pictorial presentations.	MSUM 1, 2, 6	CSET 1, 2, 3, 4, 5, 6, 9, 14, 16	in class discussions examinations homework problems laboratory reports writing projects posters oral presentations	students enrolled in chem 201, 202, 305, 320, 321, 331, 360, 381, 413, 415, 423, 440, 441, 450, 451, 460, 475, 495.	every third year 06-07	mastery standards are based on course level. 2xx level: scores on writing assignments ave 70 % 3xx level: scores on written lab reports ave 75 %, scores on writing assignments ave 70 % 381: grant proposals average 75 % on rubric 4xx level: scores on written lab reports ave 75 %, scores on writing assignments ave 70 % 495: all students present oral and poster presentations with a passing grade.	a. if our students are able to communicate effectively as chemists. b. if spreading writing out among various courses is effective. c. how well our students can use these skills after graduation.