Curriculum Proposal

CHEM 18-19 #16

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BSU Curriculum Forms

Form 1

Curriculum Modification Summary

College: Business, Mathematics, and Sciences (CBMS)
Department: Chemistry
Proposer: Keith A. Marek
Proposer’s position: Chair, Chemistry Department

Describe the modification(s) you propose, and how it (they) will work to students’ advantage. (This description and explanation will be included in Curriculum Report packets forwarded to the Faculty Senate.):

CHEM 4472 (Biochem Lab II) is currently required for the Biochemistry/Biotechnology emphasis within the Chemistry BS Major. This proposal allows for CHEM/BCMB 3076 (Biochemical Techniques) or CHEM 4472 to be taken to fulfill the requirements of the major. This course was added as part of the BCMB Proposal (18-03-05-17.BIOL) and is currently being offered by our department instead of CHEM 4472 during spring semesters. In addition, we are removing a cap on the number of research/internship credits that are allowed to satisfy the elective credits within this emphasis. These changes will allow students pursuing this emphasis more flexibility when choosing their courses.

Modifications proposed (specify number of each):

_____ Course Modification(s) (form 2)
_____ New Course(s) (form 3)
_____ Course Drop(s) (form 4)
_____ Program Modification(s) (form 5)
_____ New Program(s) (form 6)
_____ Program Drop(s) (form 7)

The modifications affect (check):

_____ Liberal Education
_____ Undergraduate Curriculum
X_____ Graduate Curriculum
_____ Teacher Licensure Program(s)
BSU Curriculum Forms

Form 5

Program Modification Form

Program to be modified: Chemistry, B.S. Major, Biochemistry/Biotechnology Emphasis

List all proposed change(s):

- Replace CHEM 4472 Biochemistry II Lab, in Required Emphasis Courses, with choice of taking CHEM/BCMB 3076 (Biochemical Techniques, 2 Cr.) or CHEM 4472 (Biochemistry II Lab, 1 Cr.)
- Remove restriction on number of research/internship credits that can be applied to electives

Reason(s) for the change(s):

The recent BCMB curriculum proposal added CHEM/BCMB 3076 as a new course that is required for the BCMB major. As a result, we have started offering this course instead of CHEM 4472 in our Spring schedules. These two courses have different learning outcomes, but both meet the curricular requirements for the Biochemistry/Biotechnology emphasis within our major. We would like to keep the option open to offer CHEM 4472 in the future if needed.

In addition, the department does not see any reason why the number of research/internship credits should be capped within the electives of this major. We have no such restriction on these credits within other emphases of the Chemistry major.

Note: In order to avoid hidden prerequisites, if a course is being dropped from this program (but not from the entire curriculum), please check for which remaining courses may include this dropped course as a prerequisite. Course prerequisites may be found in the online catalog (http://www.bemidjistate.edu/academics/catalog/). Remedies for hidden prerequisites may be found under Curriculum Forms at (http://www.bemidjistate.edu/faculty_staff/faculty_association/forms/).

Note: If a course from another department/program was either added to or dropped from this program, please notify the chair/coordinator of that course's department/program and indicate the following: The course’s home department/program was notified of the addition or dropping of their course(s) on __________ (date) by __________________ (mail, email, or phone).
Please check one of the items below:

**N/A no other programs or departments are affected with this proposal**

______ No comments were received from other programs or departments within one week of the notification.

______ Comments were received within one week of the notification, and are attached.

**Note:** If this is a joint program, the signatures of both department chairs (and both deans, if different colleges) must be provided.

**Alert:** Attach a copy of the current program showing the marked changes. Please copy the current program from the online catalog (http://www.bemidjistate.edu/academics/catalog/) and paste it into Word. Then use either the Track Changes feature under Tools, or the underline and strikethrough Font feature under Format. (Please note that the Track Changes feature may be easily switched on and off by holding down the Ctrl+Shift+E keys.)
Current Catalog Version

Chemistry, B.S. major
Biochemistry/ Biotechnology Emphasis

Required Credits: 64
Required GPA: 2.25

I REQUIRED COURSES

SELECT 1 OF THE FOLLOWING COURSES:

- CHEM 1111 General Chemistry I (4 credits)
- CHEM 2211 Principles of Chemistry I (4 credits)

COMPLETE THE FOLLOWING COURSES:

- CHEM 2212 Principles of Chemistry II (4 credits)
- CHEM 3100 Journal Club (1 credit)
- CHEM 3311 Organic Chemistry I (3 credits)
- CHEM 3312 Organic Chemistry II (3 credits)
- CHEM 3371 Organic Chemistry Laboratory I (1 credit)
- CHEM 3372 Organic Chemistry Laboratory II (1 credit)
- CHEM 3507 Analytical Chemistry (3 credits)
- CHEM 3570 Analytical Chemistry Laboratory (1 credit)
- CHEM 4510 Instrumental Methods of Analysis (3 credits)
- CHEM 4571 Instrumental Analysis Laboratory I (1 credit)
- CHEM 4572 Instrumental Analysis Laboratory II (1 credit)
- MATH 2471 Calculus I (5 credits)
- PHYS 2101 Physics I (5 credits)

II REQUIRED EMPHASIS

COMPLETE THE FOLLOWING COURSES:

- BIOL 1211 Introductory Biology I (4 credits)
- BIOL 1212 Introductory Biology II (4 credits)
- CHEM 4411 Biochemistry I (3 credits)
- CHEM 4412 Biochemistry II (3 credits)
- CHEM 4471 Biochemistry Laboratory I (1 credit)
- CHEM 4472 Biochemistry Laboratory II (1 credit)

SELECT 2 OF THE FOLLOWING COURSES:

- BIOL 2110 Human Anatomy and Physiology (5 credits)
- BIOL 2360 Genetics (4 credits)
- BIOL 3580 Immunology (3 credits)
- BIOL 3590 Cell Biology (3 credits)
- BIOL 3710 Microbiology (4 credits)

II REQUIRED EMPHASIS

Select 6 semester credits from CHEM 3100 or above. Up to 3 semester credits of research (CHEM 3980 or 4980) and internship (CHEM 3970 or 4970) may be used in this area. CHEM 3100 may be repeated with 1 credit applying to this area.
Proposed Changes

Chemistry, B.S. major
Biochemistry/ Biotechnology Emphasis

Required Credits: 64
Required GPA: 2.25

I REQUIRED COURSES

SELECT 1 OF THE FOLLOWING COURSES:

- CHEM 1111 General Chemistry I (4 credits)
- CHEM 2211 Principles of Chemistry I (4 credits)

COMPLETE THE FOLLOWING COURSES:

- CHEM 2212 Principles of Chemistry II (4 credits)
- CHEM 3100 Journal Club (1 credit)
- CHEM 3311 Organic Chemistry I (3 credits)
- CHEM 3312 Organic Chemistry II (3 credits)
- CHEM 3371 Organic Chemistry Laboratory I (1 credit)
- CHEM 3372 Organic Chemistry Laboratory II (1 credit)
- CHEM 3507 Analytical Chemistry (3 credits)
- CHEM 3570 Analytical Chemistry Laboratory (1 credit)
- CHEM 4510 Instrumental Methods of Analysis (3 credits)
- CHEM 4571 Instrumental Analysis Laboratory I (1 credit)
- CHEM 4572 Instrumental Analysis Laboratory II (1 credit)
- MATH 2471 Calculus I (5 credits)
- PHYS 2101 Physics I (5 credits)

II REQUIRED EMPHASIS

COMPLETE THE FOLLOWING COURSES:

- BIOL 1211 Introductory Biology I (4 credits)
- BIOL 1212 Introductory Biology II (4 credits)
- CHEM 4411 Biochemistry I (3 credits)
- CHEM 4412 Biochemistry II (3 credits)
- CHEM 4471 Biochemistry Laboratory I (1 credit)
- CHEM 4472 Biochemistry Laboratory II (1 credit)

SELECT ONE OF THE FOLLOWING COURSES:

- CHEM 3076 Biochemical Techniques (2 credits)
  or BCMB 3076 Biochemical Techniques (2 credits)
  or CHEM 4472 Biochemistry Laboratory II (1 credit)
SELECT 2 OF THE FOLLOWING COURSES:

- BIOL 2110 Human Anatomy and Physiology (5 credits)
- BIOL 2360 Genetics (4 credits)
- BIOL 3580 Immunology (3 credits)
- BIOL 3590 Cell Biology (3 credits)
- BIOL 3710 Microbiology (4 credits)

II REQUIRED EMPHASIS

Select 6 semester credits from CHEM 3100 or above.
Up to 3 semester credits of research (CHEM 3980 or 4980) and internship (CHEM 3970 or 4970) may be used in this area. CHEM 3100 may be repeated with 1 credit applying to this area.
Proposed Catalog Version with changes:

Chemistry, B.S. **major**
Biochemistry/ Biotechnology Emphasis

Required Credits: 64
Required GPA: 2.25

I REQUIRED COURSES

SELECT 1 OF THE FOLLOWING COURSES:

- CHEM 1111 General Chemistry I (4 credits)
- CHEM 2211 Principles of Chemistry I (4 credits)

COMPLETE THE FOLLOWING COURSES:

- CHEM 2212 Principles of Chemistry II (4 credits)
- CHEM 3100 Journal Club (1 credit)
- CHEM 3311 Organic Chemistry I (3 credits)
- CHEM 3312 Organic Chemistry II (3 credits)
- CHEM 3371 Organic Chemistry Laboratory I (1 credit)
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- CHEM 4571 Instrumental Analysis Laboratory I (1 credit)
- CHEM 4572 Instrumental Analysis Laboratory II (1 credit)
- MATH 2471 Calculus I (5 credits)
- PHYS 2101 Physics I (5 credits)

II REQUIRED EMPHASIS

COMPLETE THE FOLLOWING COURSES:

- BIOL 1211 Introductory Biology I (4 credits)
- BIOL 1212 Introductory Biology II (4 credits)
- CHEM 4411 Biochemistry I (3 credits)
- CHEM 4412 Biochemistry II (3 credits)
- CHEM 4471 Biochemistry Laboratory I (1 credit)

SELECT ONE OF THE FOLLOWING COURSES:

- CHEM 3076 Biochemical Techniques (2 credits)
  *or* BCMB 3076 Biochemical Techniques (2 credits)
  *or* CHEM 4472 Biochemistry Laboratory II (1 credit)
SELECT 2 OF THE FOLLOWING COURSES:

- BIOL 2110 Human Anatomy and Physiology (5 credits)
- BIOL 2360 Genetics (4 credits)
- BIOL 3580 Immunology (3 credits)
- BIOL 3590 Cell Biology (3 credits)
- BIOL 3710 Microbiology (4 credits)

II REQUIRED EMPHASIS

Select 6 semester credits from CHEM 3100 or above. CHEM 3100 may be repeated with 1 credit applying to this area.
BSU Curriculum Forms

Form 8
Updated: 09.18.15

Signatures

Keith A Marek / Chemistry Chair / 11.05.18 _____________________________
Proposer / Title / Date

Keith A Marek / Chemistry / 11.05.18 _____________________________
Chair or Director / Department or Program / Date
Note: "All departmental recommendations [on curriculum] must be reviewed and
approved by the department's faculty."--IFO/MnSCU Master Agreement

At this point, packet goes to Records Office/Curriculum Coordinator to be logged in
to the Curriculum Proposal Progress Grid.

Bonnie S Higgins / Business, Mathematics and Science / 11.05.18 __________
Dean / College / Date

Note: If proposal is sent back to the Proposer, please notify the Curriculum
Coordinator. If approved, packet goes to Academic Affairs Office.