## BIOL 18-19 #3

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BSU Curriculum Forms

Form 1

Curriculum Modification Summary

College: Arts and Sciences
Department: Biology
Proposer: Elizabeth Rave
Proposer’s position: Professor

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.):

Modify prerequisites for BIOL 4620 to include “or consent of instructor.”

Drop BIOL 2620 from the Life Science curriculum and replace with either BIOL 4894 or BIOL 4895, both capstone research courses that will allow students to obtain their research, data analysis, and graphing competencies.

Modifications proposed (specify number of each):
___1___Course Modification(s) (form 2)
_____New Course(s) (form 3)
___1___Course Drop(s) (form 4)
___1___Program Modification(s) (form 5)
_____New Program(s) (form 6)
_____Program Drop(s) (form 7)

The modifications affect (check):
_____Liberal Education
__X___Undergraduate Curriculum
_____Graduate Curriculum
__X___Teacher Licensure Program(s)
BSU Curriculum Forms

Form 2
Updated 9.19.15

Course Modification Form

Current Course Number(s):
   Undergraduate: **BIOL 4620**
   Graduate: 
Proposed Course Number(s), if different:
   Undergraduate: 
   Graduate: 

Current Course Title: **Evolution**
Proposed Course Title, if different:

*Note: Only change is to the prerequisites.*

Current Course Description: Patterns and processes of biological evolution. Topics include phylogenies, speciation, extinctions, biogeography, adaptations, sexual selection, and behavior, with an emphasis on vertebrates and invertebrates. Prerequisite: BIOL 2360.

Proposed Course Description, if different: Patterns and processes of biological evolution. Topics include phylogenies, speciation, extinctions, biogeography, adaptations, sexual selection, and behavior, with an emphasis on vertebrates and invertebrates. Prerequisite(s): BIOL 2360 or consent of instructor.

Current Credits: 3 credits
Proposed Credits, if different:

Current Prerequisite(s):
   Undergraduate: BIOL 2360
   Graduate:
Proposed Prerequisite(s), if different:
   Undergraduate: BIOL 2360 OR consent of instructor.
   Graduate:

1) Reason(s) for change(s): Some students will have the appropriate background for BIOL 4620 without having taken BIOL 2360, since some of the material in BIOL 2360 is covered in other Biology courses.

2) May this modified course replace the current course for students remaining in the old curriculum? Yes __X__ No ______ If not, please drop the current course and submit a new course form for the modification.

3) Do these modifications change any of the following? For all Yes answers, please provide updated information on the next page.
3.BIOL_18-19

Student Learning Outcomes      Yes _____  No __X__
Major Content Areas             Yes _____  No __X__
Projected Maximum Class Size (Cap) Yes _____  No __X__

4) Current Course fee(s) per student: $15 per credit per student differential tuition for: Course reading materials and supplies.
Proposed Course fee(s) per student, if different: $ for:

5) Service Areas:
This course is a requirement or an elective in the programs/areas listed below. To locate where this course appears please search the online catalog, as follows:
   a) go to http://www.bemidjistate.edu/academics/catalog/ and choose the most recent catalog(s),
   b) click on “Areas of Study, and Course Descriptions,”
   c) click on “PDF of Entire Catalog” in upper right,
   d) press Ctrl F, and enter the prefix and number of the course(s) from this form.

   Non-licensure programs:

   Teacher Licensure programs: Science Education, B.S. Life Science Specialty

   Liberal Education:

The above “service area” programs/departments were notified of this modification on _2/21/18_______ (date) by ___email__________________ (mail, email, or phone).

Please check one of the items below:

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

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

No concerns from Ed.
Tim
BSU Curriculum Forms

Form 4

Course Drop Form
(Use this form to drop a course from the university curriculum file.
To drop a course from a program only, use Form 5 Program Modification Form)

Course Number:
   Undergraduate: BIOL 2620
   Graduate:

Course Title: Field and Laboratory Projects in Ecological Research

New or current courses that will universally replace this dropped course for students
remaining in the old curriculum: BIOL 4894 or BIOL 4895

This dropped course is a requirement or an elective in the programs/areas listed below. To
locate where this course appears please search the online catalog, as follows:
   1) go to http://www.bemidjistate.edu/academics/catalog/ and choose the most recent
catalog(s),
   2) click on “Areas of Study, and Course Descriptions,”
   3) click on “PDF of Entire Catalog” in upper right,
   4) press Ctrl F, and enter the prefix and number of the course(s) from this form.

   Non-licensure programs: Chemistry, B.S. Environmental Chemistry Emphasis

   Teacher Licensure programs: Science Education, B.S. Life Science Specialty

   Liberal Education:

The above “service area” programs/departments were notified of this modification on
_1/19/18____ (date) by ___email___________ (mail, email, or phone).

Please check one of the items below:

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

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

Elizabeth,

Chemistry doesn’t have any concerns with that change.

KAM
Should work then.
Thanks, Tim

From: Elizabeth Rave  
Sent: Thursday, January 25, 2018 11:49 AM  
To: Timothy Goodwin <TGoodwin@bemidjistate.edu>; Keith Marek  
<KMarek@bemidjistate.edu>  
Cc: Michael Urban <MUrban@bemidjistate.edu> 
Subject: RE: Course drop

The nature of the research course is individualized enough for each student, so taking the upper level research course shouldn’t be a problem.

Elizabeth Rave, Ph.D. 
Dept. of Biology 
Bemidji State University 
Bemidji, MN 56601 
(218) 755-2785

From: Timothy Goodwin  
Sent: Friday, January 19, 2018 2:43 PM  
To: Elizabeth Rave <ERave@bemidjistate.edu>; Keith Marek <KMarek@bemidjistate.edu>  
Cc: Michael Urban <MUrban@bemidjistate.edu> 
Subject: RE: Course drop

My question is will students completing the required courses for the Life Science Education degree have adequate coursework and experience to be successful in an advanced research project course. Will they have had the necessary introductory research project experience?

Or, will the nature of this research course be individualized enough that the student can properly build on their prior coursework and experience to complete research that will aid them as a high school biology teacher?

If the answer to either of these questions is yes, then I have no concerns.

I’ve cc’d Mike Urban for his input as he works directly with all of the secondary life science students in SCI 3100 and ED 3410.

Reason(s) for dropping this course: The course is no longer relevant to the Biology curriculum. Similar student learning outcomes are found in its replacement – either BIOL 4894 or BIOL 4895.
BSU Curriculum Forms

Form 5

Program Modification Form

Program to be modified: Science Education, B.S. major Life Science Specialty (Teacher Licensure)

List all proposed change(s): Drop the course BIOL 2620 Field and Laboratory Projects in Ecological Research and replace with BIOL 4894 Advanced Research Project I OR BIOL 4895 Advanced Research Project II.

Reason(s) for the change(s): Biology no longer teaches BIOL 2620. In order for Life Science students to obtain the same competencies (research, data analysis, and graphing), BIOL 4894 or BIOL 4895 will be required instead.

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 _1/19/18_____ (date) by ___email_________ (mail, email, or phone).

Please check one of the items below:

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

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

Should work then.
Thanks, Tim

From: Elizabeth Rave
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My question is will students completing the required courses for the Life Science Education degree have adequate coursework and experience to be successful in an advanced research project course. Will they have had the necessary introductory research project experience?

Or, will the nature of this research course be individualized enough that the student can properly build on their prior coursework and experience to complete research that will aid them as a high school biology teacher?

If the answer to either of these questions is yes, then I have no concerns.

I’ve cc’d Mike Urban for his input as he works directly with all of the secondary life science students in SCI 3100 and ED 3410.

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.)
Science Education, B.S. major

Required Credits: 83
Required GPA: 2.50

Core Courses for Science Teaching in Grades 5-8

COMPLETE THE FOLLOWING COURSES:

- BIOL 1211 Introductory Biology I (4 credits)
  or BIOL 1110 Human Biology (4 credits)
- BIOL 1212 Introductory Biology II (4 credits)
  or BIOL 1120 General Biology: Evolution And Ecology (3 credits)
- CHEM 2211 Principles of Chemistry I (4 credits)
  or CHEM 1111 General Chemistry I (4 credits)
- CHEM 2212 Principles of Chemistry II (4 credits)
  or CHEM 1112 General Chemistry II (4 credits)
- GEOL 1110 Physical Geology (4 credits)
- SCI 3100 Integrative Science for Teachers (4 credits)
- SCI 3450 Science Methods For Grades 5-8 (4 credits)
  or ED 3410 Middle School Science Methods (4 credits)

REQUIRED PROFESSIONAL EDUCATION COURSES

COMPLETE THE FOLLOWING COURSES:

- ED 3100 Introduction to the Foundations of Public School Education (3 credits)
- ED 3110 Educational Psychology (3 credits)
- ED 3140 Human Relations In Education (3 credits)
- ED 3350 Pedagogy: Planning for Instruction (3 credits)
- ED 3780 Adaptation and Management: Designing the Learning Environment (3 credits)
- ED 4737 Content Area Reading (3 credits)
- ED 4799 The Professional Teacher (1 credit)
- HLTH 3400 Health and Drugs in Society (2 credits)

Complete 12 credits of student teaching:

- ED 4830 Student Teaching - Secondary (1-12 credits)

LIFE SCIENCE SPECIALTY

A. REQUIRED BIOLOGY COURSES

COMPLETE THE FOLLOWING COURSES:
• BIOL 2360 Genetics (4 credits)
• BIOL 2610 General Ecology (3 credits)
• BIOL 2620 Field and Laboratory Projects in Ecological Research (2 credits)
• BIOL 3710 Microbiology (4 credits)
• BIOL 4620 Evolution (3 credits)
• BIOL 3720 Plant Form and Function (4 credits)
  or BIOL 3830 Aquatic Plants and Algae (4 credits)
• BIOL 4894 Advanced Research Project I (2 credits)
  or BIOL 4895 Advanced Research Project II (2 credits)

B. REQUIRED BIOLOGY ELECTIVE
SELECT 1 OF THE FOLLOWING COURSES:

• BIOL 3150 Animal Behavior (3 credits)
• BIOL 3310 Entomology (4 credits)
• BIOL 4510 Ornithology (4 credits)
• BIOL 4520 Mammalogy (4 credits)
• BIOL 4534 Ichthyology (4 credits)

SUGGESTED SEMESTER SCHEDULE FOR LIFE SCIENCE SPECIALTY,
SCIENCE EDUCATION MAJOR, B.S. (TEACHER LICENSURE)

The following is a list of required Science (Life Science) Major, B.S. courses arranged by year. This schedule is intended to assist students in planning their courses. There is some flexibility in this schedule, but graduation within four years will require close adherence to the specified sequence of courses. Always consult your Biology academic advisor as to the proper courses and sequence of courses needed for graduation. It is possible, in some circumstances, that courses in a student's Liberal Education program may be used in his or her academic major.

Freshman

• BIOL 1211 Introductory Biology I (4 credits)
• BIOL 1212 Introductory Biology II (4 credits)
• CHEM 2211 Principles of Chemistry I (4 credits)
• Liberal Education requirements

Sophomore

• BIOL 2360 Genetics (4 credits)
• BIOL 2610 General Ecology (3 credits)
• BIOL 2620 Field and Laboratory Projects in Ecological Research (2 credits)
• BIOL 3720 Plant Form and Function (4 credits)
• GEOL 1110 Physical Geology (4 credits)
• PHYS 1101 General Physics I (4 credits)
  or PHYS 2101 Physics I (5 credits)
• Consider starting Professional Education sequence
• Liberal Education requirements

Junior

• BIOL 3710 Microbiology (4 credits)
• SCI 3100 Integrative Science for Teachers (4 credits)
• SCI 3450 Science Methods For Grades 5-8 (4 credits)
• Other Professional Education requirements
• Liberal Education requirements

Senior

• Biology Elective (BIOL 3150, 3310, 3510, 4520, or 4534)
• BIOL 4620 Evolution (3 credits)
• BIOL 4894 Advanced Research Project I
  or BIOL 4895 Advanced Research Project II

• Complete Professional Education requirements, including one semester of student teaching
• Complete liberal education requirements
BSU Curriculum Forms

Form 8
Updated: 09.18.15

Signatures

Elizabeth Rave / Biology / 2.21.18
Proposer / Title / Date

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 2009-2011, 20.A.3 (p. 80).

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

Colleen Greer / Arts & Sciences / 2.28.18
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.