Curriculum Proposal

**BIOL 19-20 #31**

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BSU Curriculum Forms

Form 1

Curriculum Modification Summary

College: Business, Mathematics and Sciences
Department: Biology
Proposer: Debbie Guelda
Proposer’s position: Professor of Biology and Aquatic Biology faculty

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.):

Summary:
1) We wish to create two (2) new minors:
   - Fisheries Biology Minor
   - Aquatic Systems Minor
2) We would like to add ‘consent of instructor’ to the existing prerequisites for 3 courses
3) We would like to modify prerequisites and add ‘consent of instructor’ on 1 course.

-------------------------------------------

1) The Fisheries Biology and Aquatic Systems minors are designed to meet the needs of students wishing to increase their knowledge in the diversity of aquatic and aquatic-related ecosystems (Aquatic Systems minor) and to those who wish to specialize in the area of fisheries (Fisheries minor). We believe that these minors will be especially attractive to Wildlife Biology, Environmental Studies, and Criminal Justice majors to be competitive in natural resources employment positions.

2) We would like to add “consent of instructor” on 3 courses. We feel that this would better allow students to complete the Aquatic Biology Major, existing Wetlands Ecology minor, and (newly proposed) minors. Courses to be modified:
   - BIOL3362 – Streams and River Ecology
   - BIOL 3840 – Wetlands Ecology
   - BIOL 4534 – Ichthyology

3) BIOL 4545 – Fisheries Management - We would like to remove BIOL 1211, BIOL 1212, BIOL 3362, STAT 2610 as prerequisites and “BIOL 4534 is strongly recommended”. We would like to add BIOL 3361, BIOL 3362, or consent of instructor. By adding consent of instructor students who have only taken BIOL 3361 or BIOL 3362 will still be able to complete BIOL 4545 as part of the proposed Aquatic Biology Minors. Additionally, the new proposed prerequisites are much simpler to understand and better match the current requirement of the Fisheries Biology emphasis within the Aquatic Biology major.
4) BIOL 3362/5362 major content areas and student learning outcomes were reviewed and updated to reflect accurate information.

Modifications proposed (specify number of each):
__4__Course Modification(s) (form 2)
_____New Course(s) (form 3)
_____Course Drop(s) (form 4)
_____Program Modification(s) (form 5)
__2__New Program(s) (form 6)
_____Program Drop(s) (form 7)

The modifications affect (check):
_____Liberal Education
__X__Undergraduate Curriculum
__X__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 3362
  Graduate: BIOL 5362
Proposed Course Number(s), if different:
  Undergraduate:
  Graduate:

Current Course Title: Streams and Rivers
Proposed Course Title, if different:

Current Course Description: An introduction to the physical characteristics, chemistry, and biology of lotic systems such as streams and rivers. Includes information on morphology, hydrology, and alteration of these natural systems. Includes laboratory simulations and field exercises. Lecture and laboratory.
Proposed Course Description, if different:

Current Credits: 4
Proposed Credits, if different:

Current Prerequisite(s):
  Undergraduate: Prerequisites: BIOL 1211 and BIOL 1212.
  Graduate: BIOL 1211 and BIOL 1212
Proposed Prerequisite(s), if different:
  Undergraduate: BIOL 1211 and BIOL 1212, or consent of instructor. (Note: Beginning F20 will be BIOL 1400 and BIOL 1500, or consent of instructor.)
  Graduate: None

1) Reason(s) for change(s): By adding consent of instructor students who have only taken BIOL 1212 will still be able to complete BIOL 3362 as part of the proposed Aquatic Biology Minors.

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.
   Student Learning Outcomes   Yes _X___ No _____
   Major Content Areas         Yes _X___ No _____
   Projected Maximum Class Size (Cap) Yes _____ No __X__
Current SLO’s and major content areas:

C. OUTLINE OF MAJOR CONTENT AREAS
1. Bacteria
2. Fish
3. Insects
4. Intro, Physical/chemical
5. Lakes (Great lakes, Baikal, etc.)
6. Macrophytes
7. Mollusca
8. Phytoplankton
9. Protozoa
10. Rivers (Mississippi, Amazon, etc.)
11. Streams
12. Zooplankton

D. LEARNING OUTCOMES (General)
1. understand how organisms interact via experimentation in lab.
2. learn characteristics of major aquatic systems (lakes, rivers, streams) as well as iconic aquatic systems (Lake Baikal, the Great Lakes, the Amazon River).
3. will have a better understanding of the interactions between organisms and the aquatic systems in which they reside.

Updated/Proposed SLO’s and major content areas:

Outline of major content areas:
1. Physical and chemical properties of water
2. Overview of lotic systems
3. Stream and river structure
4. Hydrology
5. River theory
6. River age
7. River features
8. Channel formation
9. Pattern changes
10. Regime and non-regime rivers
11. Erosion
12. Water law
13. River impoundments and removal
14. Hoover dam
15. Hydroelectric power
16. Mississippi river watershed
17. Amazon river watershed

Course objectives:
- Students will predict riverine attributes created by water movement and constraint
- Students will categorize riverine systems
- Student will compare and contrast riverine theories
- Students will create riverine attributes using stream tables
• Students will **identify**, **research**, and **develop** a presentation on an applicable topic
• Students will **explore** the history, formation, and management of iconic aquatic systems

4) Current Course fee(s) per student: $ 15
   for: Differential tuition required for all BIOL courses
   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/](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:
   Aquatic Biology, B.S. major Fisheries Biology Emphasis
   Aquatic Biology, B.S. major Wetlands Ecology Emphasis
   Aquatic Biology, B.S. Aquatic Systems Emphasis

   Teacher Licensure programs:

   Liberal Education:

The above “service area” programs/departments were notified of this modification on ____23 September 2019____ (date) by ___email__________ (mail, email, or phone).

Please check one of the items below:

_____X____ 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.
BSU Curriculum Forms

Form 2
Updated 9.19.15

Course Modification Form

Current Course Number(s):
Undergraduate: BIOL/ENVR 3840
Graduate: BIOL/ENVR 5840
Proposed Course Number(s), if different:
Undergraduate: 
Graduate: 

Current Course Title: Wetlands Ecology
Proposed Course Title, if different:

Current Course Description: Survey course develops a basic understanding of the terminology, classification, ecology, values, and conservation of wetlands. Covers wetland systems from around the world, with emphasis on wetlands in North America.
Proposed Course Description, if different:

Current Credits: 3
Proposed Credits, if different:

Current Prerequisite(s):
Undergraduate: Prerequisites: BIOL 1211 and 1212.
Graduate: None
Proposed Prerequisite(s), if different:
Undergraduate: BIOL 1211 and 1212, or consent of instructor. (Note: Beginning F20 will be BIOL 1400 and BIOL 1500, or consent of instructor.)
Graduate: None

1) Reason(s) for change(s): By adding consent of instructor students who have only taken BIOL 1212 will still be able to complete BIOL 3840 as part of the proposed Aquatic Biology Minors.

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.
   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
for: Differential tuition required for all BIOL courses
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:
   Aquatic Biology, B.S. major Wetlands Ecology Emphasis
   Wetlands Ecology minor
   Environmental Studies, B.S. major Geohydrology Emphasis
   Environmental Studies, B.S. major Environmental Health and Toxicology
   Emphasis
   Geography, B.S. major Earth Science Emphasis

   Teacher Licensure programs:

   Liberal Education:

The above “service area” programs/departments were notified of this modification on __23
September 2019________ (date) by _____email______________ (mail, email, or phone).

- Center for Sustainability Studies

Please check one of the items below:

___X___ 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.
BSU Curriculum Forms

Form 2
Updated 9.19.15

Course Modification Form

Current Course Number(s):
Undergraduate: BIOL 4534
Graduate: BIOL 5534
Proposed Course Number(s), if different:
Undergraduate:
Graduate:

Current Course Title: Ichthyology
Proposed Course Title, if different:

Current Course Description: An overview of morphology, physiology, behavior, taxonomy, systematics, and ecology of fishes. This course emphasizes the evolution of ecological adaptations and the origin and conservation of biodiversity. Lecture, laboratory, and field work.
Proposed Course Description, if different:

Current Credits: 4
Proposed Credits, if different:

Current Prerequisite(s):
Undergraduate: BIOL 1211 and BIOL 1212.
Graduate: None
Proposed Prerequisite(s), if different:
Undergraduate: BIOL 1211 and BIOL 1212, or consent of instructor. (Note: Beginning F20 will be BIOL 1400 and BIOL 1500, or consent of instructor.)
Graduate: None

1) Reason(s) for change(s): By adding consent of instructor students who have only taken BIOL 1212 will still be able to complete BIOL 4534 as part of the proposed Aquatic Biology Minors.

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.
   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
   for: Differential tuition required for all BIOL courses
   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:
   Aquatic Biology, B.S. major Fisheries Biology Emphasis
   Aquatic Biology, B.S. major Wetlands Ecology Emphasis
   Aquatic Biology, B.S. major Aquatic Systems Emphasis
   Wildlife Biology, B.S. major
   Biology minor

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

   Liberal Education:

The above “service area” programs/departments were notified of this modification on __23
September 2019_____ (date) by ____email_______________ (mail, email, or phone).

Please check one of the items below:

_____X___ 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.

BSU Curriculum Forms

Course Modification Form

Current Course Number(s):
  Undergraduate: BIOL 4545
  Graduate: BIOL 5545
Proposed Course Number(s), if different:
  Undergraduate:
  Graduate:

Current Course Title: Fisheries Management
Proposed Course Title, if different:

Current Course Description: Theory and methods of fisheries management with an emphasis on quantitative methods and ecosystem management. Lecture and extensive field and laboratory work.
Proposed Course Description, if different:

Current Credits: 4
Proposed Credits, if different:

Current Prerequisite(s):
  Undergraduate: Prerequisites: BIOL 1211, BIOL 1212, BIOL 3362, and STAT 2610. BIOL 4534 strongly recommended.
  Graduate: None
Proposed Prerequisite(s), if different:
  Undergraduate: BIOL 3361 and BIOL 3362, or consent of instructor.
  Graduate: None

1) Reason(s) for change(s): By adding consent of instructor students who have only taken BIOL 3361 or BIOL 3362 will still be able to complete BIOL 4545 as part of the proposed Aquatic Biology Minors. Additionally, the new proposed prerequisites are much simpler to understand and better match the current requirement of the Fisheries Biology emphasis within the Aquatic Biology major.

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.
   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
   for: Differential tuition required for all BIOL courses
   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:
   Aquatic Biology, B.S. major Fisheries Biology Emphasis
   Mathematics and Computer Science

   Teacher Licensure programs:

   Liberal Education:

   The above “service area” programs/departments were notified of this modification on __23
   September 2019_/ 2.19.2020_____ (date) by ____email___________ (mail, email, or
   phone).

   Please check one of the items below:

   __X____  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.
New Program Form

Type of Program to be established:
_____M.S.*
_____M.A.*
_____Applied Masters**
_____B.S.
_____B.S./T.L.
_____B.A.
__X___Minor
_____Field of Emphasis: Stand Alone
_____Field of Emphasis in:
_____Other:

Program name:  **Aquatic Systems Minor**

Reason(s) for new program:  **To meet the needs of students wishing to obtain a degree in Aquatic Biology but not complete the major.** This degree will be especially attractive to our growing number of Wildlife Biology, Environmental Studies, and Geography majors to be competitive in natural resources employment positions.

Student learning outcomes for the program (please use the same format as for other programs in the department):

**Aquatic Biology Mission:**  To foster creative, intellectual, analytical, personal, and professional development for students and faculty in Aquatic Biology.

**Students will:**

1. **Understand ecological relationships among organisms and between organisms and the environment.**
2. **Develop skills in the use of laboratory and field techniques commonly used in biology.**
3. **Develop the skills and broad knowledge base necessary to make complex decisions when assessing aquatic systems.** (e.g., assessing basic water chemistries, bioassessments)
4. **Demonstrate the ability to read, understand, and critique scientific papers.**

How will the student learning outcomes be assessed (e.g., major field test, student portfolio, departmental rubric, department-developed examination questions, etc.)?
Students will complete department-developed examination questions in the form of an exit exam. This assessment methodology is currently used within our major.

Note: If courses from other departments are required for this program, please notify the chairs of those departments. N/A

The home department/program was notified that this new program will require courses from their area: __________ (date) by __________ (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.

______ 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.

Alerts:
- Attach draft catalog copy of proposed program.
- Contact the Assistant Vice-President for Academic Affairs regarding approval downstate (required for all of the above except for a minor where there is an existing major).

* MS/MA Curriculum proposals for graduate programs must indicate how the program addresses these requirements (in the draft catalog copy or elsewhere):

  a. MnSCU 50% rule: At least one-half of the required credits in a master's degree, exclusive of a thesis, capstone, or similar culminating project, shall be credits restricted exclusively to graduate student enrollment.

  b. Competency Requirement

  c. Written Examination Requirement

**Applied Master’s Degree must address items a-c above, as well as:

  d. How the proposed capstone experience meets the capstone requirements/standards listed in the catalog.

For more information on each of these requirements refer to the current graduate catalog.
Aquatic Systems *minor*

Required Credits: 25  
Required GPA: 2.25

**I REQUIRED BIOLOGY CORE COURSES**

COMPLETE THE FOLLOWING COURSES:

- BIOL 1212 Diversity of Life (4 credits)  
- BIOL 2610 General Ecology (3 credits)

**II REQUIRED AQUATIC BIOLOGY CORE COURSES**

COMPLETE THE FOLLOWING COURSES:

- BIOL 3361 Limnology (4 credits)  
- BIOL 3362 Stream and Rivers (4 credits)  
- BIOL 3840 Wetlands Ecology (3 credits)  
  or ENVR 3840 Wetlands Ecology (3 credits)  
- BIOL 3844 Wetlands Ecology Lab (1 credit)  
- BIOL 3850 Marine Biology (3 credits)  
- BIOL 3723 Ecosystem Ecology (3 credits)
BSU Curriculum Forms

Form 6
(Updated: 9.15.15)

New Program Form

Type of Program to be established:
_____M.S.*
_____M.A.*
_____Applied Masters**
_____B.S.
_____B.S./T.L.
_____B.A.
__X___Minor
_____Field of Emphasis: Stand Alone
_____Field of Emphasis in:
_____Other:

Program name: Fisheries Biology Minor

Reason(s) for new program: To meet the needs of students wishing to obtain a degree in Aquatic Biology but not complete the major. This degree will be especially attractive to our growing number of Wildlife Biology majors as well as Environmental Studies, and Criminal Justice majors to be competitive in natural resources employment positions.

Student learning outcomes for the program (please use the same format as for other programs in the department):

Aquatic Biology Mission: To foster creative, intellectual, analytical, personal, and professional development for students and faculty in Aquatic Biology.

Students will:
1. Identify the fundamental characteristics of organismal structure and function within the kingdoms of life and select phyla within those kingdoms.
2. Understand ecological relationships among organisms and between organisms and the environment.
3. Develop skills in the use of laboratory and field techniques commonly used in biology.
4. Develop the skills and broad knowledge base necessary to make complex decisions when assessing aquatic systems.
5. Evaluate the outcomes of scientific experiments and surveys via mathematical and statistical analyses.
6. Demonstrate the ability to read, understand, and critique scientific papers.
How will the student learning outcomes be assessed (e.g., major field test, student portfolio, departmental rubric, department-developed examination questions, etc.)?

**Students will complete department-developed examination questions in the form of an exit exam. This assessment methodology is currently used within our major.**

**Note:** If courses from other departments are required for this program, please notify the chairs of those departments.

The home department/program was notified that this new program will require courses from their area: **9.23.2019** (date) by **email** (mail, email, or phone).

Please check one of the items below:

- X 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.

**Alerts:**
- Attach draft catalog copy of proposed program.
- Contact the Assistant Vice-President for Academic Affairs regarding approval downstate (required for all of the above except for a minor where there is an existing major).

* MS/MA Curriculum proposals for graduate programs must indicate how the program addresses these requirements (in the draft catalog copy or elsewhere):

  a. MnSCU 50% rule: At least one-half of the required credits in a master's degree, exclusive of a thesis, capstone, or similar culminating project, shall be credits restricted exclusively to graduate student enrollment.
  b. Competency Requirement
  c. Written Examination Requirement

**Applied Master's Degree must address items a-c above, as well as:**

  d. How the proposed capstone experience meets the capstone requirements/standards listed in the catalog.

For more information on each of these requirements refer to the current graduate catalog.
Fisheries Biology minor

Required Credits: 26
Required GPA: 2.25

I REQUIRED BIOLOGY CORE COURSES

COMPLETE THE FOLLOWING COURSES:

- BIOL 1212 Diversity of Life (4 credits)
- BIOL 2610 General Ecology (3 credits)

II REQUIRED FISHERIES BIOLOGY CORE COURSES

COMPLETE THE FOLLOWING COURSES:

- BIOL 3361 Limnology (4 credits)
- BIOL 3362 Stream and Rivers (4 credits)
- BIOL 4534 Ichthyology (4 credits)
- BIOL 4545 Fisheries Management (4 credits)

III REQUIRED FISHERIES BIOLOGY ELECTIVES

SELECT ONE OF THE FOLLOWING COURSES:

- BIOL 2339 Ethics of Fish and Wildlife Management (3 credits)
- BIOL 3400 Fish & Wildlife Law and Administration (3 credits)
- BIOL 3420 Human Dimensions of Wildlife and Fisheries Management (3 credits)
- ENVR 3040 Environmental Economics (3 credits)
  Or ECON 3040 Environmental Economics (3 credits)
- ENVR 3600 Environmental Justice and Sustainability (3 credits)
- ENVR 4210 Environmental Law and Policy (3 credits)
- POL 3230 Environmental Politics (3 credits)
BSU Curriculum Forms

Form 8
Updated: 09.18.15

Signatures

___________________________
Debbie Guelda / Professor of Biology / 10.16.2019
Proposer / Title / Date

___________________________
Mark Wallert / Biology / 10.17.2019
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.

___________________________
Marilyn Yoder / Business, Mathematics and Sciences / 10.17.2019
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.
The faculty involved with development of the Aquatic Biology Program are planning on changing the prerequisites for the courses below. These changes are needed to avoid issues with two new minors we are currently developing. Please let me know if you have any comments or concerns.

**BIOL 3362 Streams and Rivers**
Current - BIOL 1211 and BIOL 1212
Proposed - BIOL 1211 and BIOL 1212, or consent of instructor

**BIOL 3840 Wetlands Ecology**
Current - BIOL 1211 and BIOL 1212
Proposed - BIOL 1211 and BIOL 1212, or consent of instructor

**BIOL 4534 Ichthyology**
Current - BIOL 1211 and BIOL 1212
Proposed - BIOL 1211 and BIOL 1212, or consent of instructor

**BIOL 4545 Fisheries Management**
Current - BIOL 1211, BIOL 1212, BIOL 3362, and STAT 2610. BIOL 4534 strongly recommended
Proposed - BIOL 3361 and BIOL 3362, or consent of instructor.
From: Hafs, Andrew W <Andrew.Hafs@bemidjistate.edu>  
Sent: Wednesday, February 19, 2020 10:20 AM  
To: Webb, Derek <Derek.Webb@bemidjistate.edu>; Gullickson, Robin S <Robin.Gullickson@bemidjistate.edu>; Guelda, Debbie <Debbie.Guelda@bemidjistate.edu>  
Subject: Curriculum change

Dr. Derek Webb,

As part of a current curriculum request the Biology Department would like to remove several of the prerequisites from BIOL 4545 Fisheries Management. One of the prerequisites we would like to remove is STAT 2610. The BSUFA Curriculum Committee correctly noticed that the Biology Department had not asked for feedback from your department related to this change. I am sorry for this oversight. STAT 2610 is still an option in the Fisheries Biology emphasis but there are other Math/Stat/Geog options the students can take, so this prerequisite can be problematic. See the section below for details.

SELECT 2 OF THE FOLLOWING COURSES:

- GEOG 4265 Spatial Analysis (3 credits)
- MATH 2471 Calculus I (5 credits)
- PSY 3401 Basic Statistics for Research (4 credits)
- PSY 4403 Advanced Statistics and Research Design (4 credits)
- STAT 2610 Applied Statistics (4 credits)
- STAT 3610 Time Series Analysis (3 credits)

Please let me know if you any questions or concerns related to this proposed prerequisite change.

Andy

Andrew W. Hafs, Ph.D.  
Professor of Biology  
Aquatic Biology Program  
Sattgast 218A  
Bemidji State University  
Bemidji, MN 56601  
ahafs@bemidjistate.edu  
(218) 755-2789
Hi Carl, Pat, and Mike,
We are adding a Fisheries Minor to the Aquatic Biology Major and wanted to notify you of courses that we would like to include:

III REQUIRED ELECTIVES

SELECT ONE OF THE FOLLOWING COURSES:

- BIOL 2339 Ethics of Fish and Wildlife Management (3 credits)
- BIOL 3400 Fish & Wildlife Law and Administration (3 credits)
- BIOL 3420 Human Dimensions of Wildlife and Fisheries Management (3 credits)
- ENVR 3040 Environmental Economics (3 credits)  
  or ECON 3040 Environmental Economics (3 credits)
- ENVR 3600 Environmental Justice and Sustainability (3 credits)
- ENVR 4210 Environmental Law and Policy (3 credits)
- POL 3230 Environmental Politics (3 credits)

The complete catalog draft copy is attached. Please let me know if you have any concerns at all. Thanks so much!

Debbie

Debbie L. Guelda, MS, PhD
Director – Center for Professional Development
Director – Community Engagement Council
Co-director – Teaching and Learning Center
Department of Biology
Bemidji State University
218G Sattgast Hall
Bemidji, MN 56601
218.755.2786
dguelda@bemidjistate.edu