Curriculum Proposal

**BIOL 18-19 #1**

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**New Course**

| 1.2 BIOL 3170 Dendrology (2 credits) |

| 1.6 Signatures |

1.6 Signatures
BSU Curriculum Forms

Form 1

Curriculum Modification Summary

College: Arts and Sciences
Department: Biology
Proposer: Dr. Mark Fulton
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):

New course: Dendrology (woody plant identification and general ecology). This course has been created to support students interested in ecology and wildlife biology. The course will partially satisfy requirements for plant taxonomy in the wildlife biology major and the TWS (Wildlife Society) professional certification.

Modifications proposed (specify number of each):

_____ Course Modification(s) (form 2)
__x__ 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
__x__ Undergraduate Curriculum
_____ Graduate Curriculum
_____ Teacher Licensure Program(s)
BSU Curriculum Forms

Form 3
Updated: 9.19.15

New Course Form

Course Number:
   Undergraduate: 3170

Course Title: Dendrology

Course Description: The main function of a dendrology class is to learn the identification and basic ecology of woody plants (trees, shrubs, woody vines) for a region, along with the basic vocabulary used to describe woody plants. Prerequisite(s): (BIOL 1211, 1212, and 2610) or consent of instructor.

Credits: 2 credits

Prerequisite(s):
   Undergraduate: Introductory Biology sequence or equivalent (BIOL 1211, 1212); General Ecology (BIOL 2610) or permission of instructor.

1. Reason(s) for creating this course: The course was created specifically to support students interested in ecology and wildlife biology. Woody plants are particularly significant for natural resource managers (the biology department trains many future resource managers) because they dominate a wide range of ecosystems, and with training they can be identified throughout the year. The course will partially satisfy the requirements for plant taxonomy courses in the wildlife biology major and the TWS (Wildlife Society) certification.

2. How often will this course be offered? Once per year in the Winter/Spring semester.

3. What are the student learning outcomes for the course (please precede each outcome with "Students will...")?
   1) Be able to identify the trees, and most of the shrubs and woody vines of northern & central Minnesota.
   2) Know the general ecology of these species – their habitat requirements, organization into communities, and uses by wildlife and humans. Interpret a set of species from a community in terms of the habitat conditions they reflect.
   3) Know how to use keys, technical descriptions, and other tools of formal plant taxonomy.
   4) Be familiar with the basic vocabulary used to describe plants. Apply knowledge of these terms and technical tools such as keys to identify unfamiliar plant species.

4. What are the major content areas for the course? Hands-on identification of woody plant species in winter and summer condition; combined with recognizing plants, plant
communities, and site conditions in the field. The emphasis is on practical knowledge useful to a wide range of natural resource management professions.

5. Is this course repeatable for credit, and if so, what is the maximum number of credits that can be earned? Not repeatable for credit.

6. If this course is intended primarily for off-campus delivery (not offered on campus), what delivery mechanism will be used? The course does not lend itself to off-campus delivery.

7. What is the projected maximum class size (cap)? 24 students.

8. What qualified faculty will be available to teach this course? Dr. Mark Fulton and Dr. Brian Hiller both have the requisite background; the course will generally be taught by Dr. Fulton.

NOTE WELL: Department and dean, in approving this proposal, attest both to the adequacy of the qualifications of faculty here named, and to their availability to teach the course at the frequency specified above, without excessive overload or disruption to other curriculum.

9. What additional library and other resources need or should be provided for this course, that are not already available? n/a

10. What special personal property or service fee(s) would be charged to students taking this course? These charges would be for 1) items that are retained by the student and have an educational or personal value beyond the classroom, or 2) services that are on the student’s behalf (see MnSCU Board Policy 5.11).
   Amount per student: $30 ($15/student/credit)
   For: Van rental for field trips, hand lenses and other field supplies

11. Attach a sample syllabus for the course. Note: if this course is double-numbered (undergrad/grad), the syllabus must include an additional component for graduate students. Attached.
Syllabus  BIOL 3170 – Dendrology  Winter/Spring 2018

Dr. Mark Fulton  291 Sattgast  755-2787  mfulton@bemidjistate.edu

Course Objectives:
The main function of a dendrology class is to learn the identification and basic ecology of woody plants (trees, shrubs, woody vines) for a region, along with the basic vocabulary used to describe woody plants. Prerequisite(s): (BIOL 1211, 1212, and 2610) or consent of instructor.

More specifically, by the end of the course you should:
1) Be able to identify the trees, and most of the shrubs and woody vines of northern & central Minnesota.
2) Know the general ecology of these species – their habitat requirements, organization into communities, and uses by wildlife and humans. Interpret a set of species from a community in terms of the habitat conditions they reflect.
3) Know how to use keys, technical descriptions, and other tools of formal plant taxonomy.
4) Be familiar with the basic vocabulary used to describe plants. Apply knowledge of these terms and technical tools such as keys to identify unfamiliar plant species.

At the end of the course: You will not know all North American woody plant species, but you will know the important species of the northern and central Minnesota region, and you will have the general knowledge to get up to speed on woody plants in other parts of North America.

Texts:
Required:
Trees and Shrubs of Minnesota, by Welby Smith. Minnesota. THE reference for this. Big heavy hardback, but excellent.

Recommended:
Minnesota Flora, by Steven Chadde. Technical flora. Some rough edges, but comprehensive for the state and reasonably up-to-date.
Plant Identification Terminology (2nd ed.) by Harris & Harris. A good companion for any technical flora, and the best available reference of its kind. Clear pictures and definitions, two ways to access terms (by category and alphabetic by term).

Structure of the class:
The exact day-to-day sequence of classes and activities will be somewhat weather-dependent; in the last few weeks we will go outside as much as possible.

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic(s) introduced</th>
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<tbody>
<tr>
<td>9-Jan</td>
<td>Tree anatomy basics, common forest trees</td>
</tr>
<tr>
<td>16-Jan</td>
<td>Common shrubs, more trees</td>
</tr>
<tr>
<td>23-Jan</td>
<td>Winter ID basics, review</td>
</tr>
<tr>
<td>30-Jan</td>
<td>Exam 1</td>
</tr>
<tr>
<td>6-Feb</td>
<td>No class (MF at workshop)</td>
</tr>
<tr>
<td>13-Feb</td>
<td>Plant community basics, more winter ID</td>
</tr>
<tr>
<td>20-Feb</td>
<td>More on plant communities</td>
</tr>
<tr>
<td>27-Feb</td>
<td>--Field trip</td>
</tr>
<tr>
<td>6-Mar</td>
<td>Exam 2</td>
</tr>
<tr>
<td></td>
<td>Spring break</td>
</tr>
<tr>
<td>20-Mar</td>
<td>Flowers and fruits, ID’s with incomplete evidence</td>
</tr>
<tr>
<td>27-Mar</td>
<td>Review and consolidation</td>
</tr>
<tr>
<td>3-Apr</td>
<td>Review and consolidation</td>
</tr>
<tr>
<td>10-Apr</td>
<td>--Field trip</td>
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</tbody>
</table>
17-Apr  | Exam 3  
24-Apr  | No class (no day classes BSU) 
27-Apr  | Optional Final exam

**Grading:** Exams are cumulative: Exam 1: 20%, Exam 2: 25%, Exam 3: 35%. Exams are mostly in the form of lab practicals in which students identify plant specimens, correctly apply terminology to them, or interpret an assemblage of species as a coherent plant community. An optional final exam may be taken by students who wish to improve their grade; this will replace the lowest midterm exam. Two species description pages (more on this later) 10%. Class participation (incl. short field trip reports) 10%.

**This is a taxonomy class: expect to spend time outside of class, and to take in a lot of material.**

**Time expectations:**
[State the number of hours a student should expect to work outside of class.]

<table>
<thead>
<tr>
<th>Instruction Delivery Mode</th>
<th>Hours of in class “Seat Time” per credit</th>
<th>Expected hours of course work outside of class per credit</th>
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<tbody>
<tr>
<td>Lab</td>
<td>2 hours/credit/week for 15 weeks</td>
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**Academic Integrity:**
BSU students are expected to practice the highest standards of ethics, honesty and integrity in all of their academic work. Any form of academic dishonesty (e.g., plagiarism, cheating and misrepresentation) may result in disciplinary action. Possible disciplinary actions may include failure for part or an entire course as well as suspension from the University. It is suggested that students review BSU’s statement on academic integrity found within the Student Code of Conduct.

**Accessibility Services:**
BSU is committed to making all educational programs, course materials, services and activities sponsored by the University accessible to individuals with disabilities. Students requesting accommodations due to a disability or other need for access should contact Accessibility Services as soon as possible. Accessibility Services is located at Decker Hall 202. PH: 218.755.3883 or email: disabilityservices@bemidjistate.edu. This information is also available through Minnesota Relay Services at 800.627.3529.

**Mental Health and Counseling:**
Students may experience mental health concerns or stressful events that may lead to diminished academic performance. The Student Center for Health & Counseling is available to assist you with concerns and can include stress relief services. They can be reached in Cedar Hall, First Floor. Phone: (218) 755-2053.
BSU Curriculum Forms

Form 8
Updated: 09.18.15

Signatures

Mark Fulton / Professor / 1.26.18
Proposer / Title / Date

Elizabeth Rave / Biology / 1.26.18
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 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 / 2.1.18
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.