UNIVERSITY OF MARY WASHINGTON – PROGRAM CHANGE PROPOSAL
Electronically submit this completed form with attachments in one file to the Chair of the College Curriculum Committee.

<table>
<thead>
<tr>
<th>COLLEGE (check one):</th>
<th>Arts and Sciences</th>
<th>x</th>
<th>Business</th>
<th>Education</th>
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Proposal Submitted By: Alan B. Griffith  
Date Prepared: Oct. 7, 2014

Department /Program: Biological Sciences

**Note:** for any program change entailing the addition any new courses, or revisions to existing courses, separate proposal for those course actions must also be submitted.

**PROPOSAL TO CHANGE EXISTING PROGRAM** (check no than one of the following)

- Revise requirements for existing major  
- Revise requirements for a concentration within an existing major
- Revise requirements for an existing degree program
- Revise requirements for existing certificate program
- Revise requirements for existing minor

Implementation Date: FALL semester, year:

**REQUIRED ATTACHMENTS FOR CHANGES TO EXISTING PROGRAMS:**

1. **Rationale statement** (Why is this program change needed? What purposes will it serve?)
2. **Impact Statement** (Provide details about the Library, space, budget, technology, and impacts created by this program change. Supporting statements from the Library, IT Department, etc. evaluating the resource impact and feasibility of the program change are required.)
3. **Catalog Copy** (Provide the existing Catalog Description and the complete statement of the proposed new Catalog description that reflects the program changes)

**PROPOSAL TO CREATE NEW PROGRAM NOT REQUIRING STATE ACTION**  
(check no more that one of the following)

- New concentration within existing major  
- New minor
- New Major but NOT a new degree*  

Implementation Date (semester and year):  

**REQUIRED ATTACHMENTS FOR NEW PROGRAMS NOT REQUIRING STATE APPROVAL:**

1. **Rationale statement** (Why is this additional program needed? What purposes will it serve?)
2. **Impact Statement** (Provide details about the Library, space, budget, technology, and impacts created by this program change. Supporting statements from the Library, IT Department, etc. evaluating the resource impact and feasibility of adding the new program are required.)
3. **Catalog Copy** (Provide the complete Catalog Description for the proposed new program)

Department Chair Approval: ___________________________  
Date: 10/14/14

CCC Chair Approval: ___________________________  
Date:

Dean Approval: ___________________________  
Date:

UCC Chair Approval: ___________________________  
Date:

*Provost Approval: ___________________________  
Date:

*Required only in cases of proposals for new concentrations, new minors, or new majors that do not involve a new degree
Required Attachments
1) Proposed change

Teach BIOL 471 A1, Plant Ecology Research Intensive course. This course will be offered beginning Fall 2015. This course would be offered 2 – 3 times, as BIOL 471 A1, and then submitted as a new course in the Biology major.

2) Rationale for Teaching BIOL 471 A1, Plant Ecology Research Intensive Course

The Department of Biological Sciences will face a number of challenges over the coming years: 1) changing standards and practices in biology education, including greater emphasis on scientific skills and reasoning, 2) more intense competition for high quality students, 3) rising costs of higher education, including UMW’s own tuition, fees, and housing, 4) increasing numbers of transfer students from the Virginia Community College System, 5) growing numbers of fourth-year students who have not met the 2.0 minimum major GPA requirement, and 6) more difficulty maintaining our ability to provide independent research experiences for students, while continuing to offer courses critical to program effectiveness.

In response to these challenges and to make our program more distinctive, we have revised our core curriculum by adding a minimum grade requirement for prerequisites, and implementing a new approach to creating opportunities for independent research, Research Intensive Courses. By placing greater emphasis on the scientific process, we believe that these changes would increase the scientific preparedness of our students and make our program more attractive to prospective students.

This proposed course, BIOL 471 A1, will fulfill all the requirements for a Research Intensive course. Each student will pursue an extended research project. Students will prepare proposals, manage the logistics of their own experiments or observational studies, collect and analyze data, and present their work in both written and oral format. This inquiry-based approach to science education is endorsed by such entities as the American Association for the Advancement of Science, the National Science Foundation, and the Howard Hughes Medical Institute.

2) Impact

I will teach one less section of BIOL 311 - Plant Ecology in order to offer a section of this RI course. Since we have changed the Biology major curriculum, no longer requiring a plant course, the demand for BIOL 311 - Plant Ecology will decrease. There may be a minimal increase in library resources demand. But, my Plant Ecology students write a proposal, requiring library resources. So, these demands will likely balance out. This course will also require van pool resources to get students into the field for data collection. Once again, I already require van pool resources in BIOL 311 – Plant Ecology. So, these demands will balance out.

3) Catalog Copy

No current catalog copy.

Proposed catalog copy.

Prerequisite: BIOL 210 and BIOL 260 (C- or better in each course).
Fulfills Research Intensive requirement in the Biology major. The study of current plant ecology problems by developing questions, hypotheses, and studies to answer students’ individual questions. Laboratory focuses on the design, implementation, and analysis of original research in the field or greenhouse. Laboratory.