# Curriculum Committee

## Course Cluster Proposal Form

<table>
<thead>
<tr>
<th>Name #1</th>
<th>Chris Herrick</th>
<th>Date: December 1, 2014</th>
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<tbody>
<tr>
<td>Department #1</td>
<td>Political Science</td>
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<tr>
<th>Name #2</th>
<th>Kimberly Heiman</th>
<th>Date: December 1, 2014</th>
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<tbody>
<tr>
<td>Department #2</td>
<td>Biology</td>
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**Title of Cluster**  Blue Planet: The Science and Management of the World’s Ocean Resources

**Proposed Course #1, Title and Number**  Ocean Resource Management (PSC 28x) - SL

**(Please contact the Registrar for course number information.)**

**Please indicate when Course #1 will be offered.**  Spring 2016

**(Note that cluster courses should be offered in the same or adjacent semesters.)**

**Is Course #1 a Special Topics course?**  Yes (If YES, contact the Registrar for a number.)

**Is Course #1 a new catalog course?**  No (If YES, please submit a new course request.)

**Is Course #1 a revised version of a current catalog course?**  No (If YES, please describe the extent of the revisions below.)

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**Proposed Course #2, Title and Number**  Changing Seas – (BIO183) - SC

**(Please contact the Registrar for course number information.)**

**Please indicate when Course #2 will be offered.**  Spring 2016

**(Note that cluster courses should be offered in the same or adjacent semesters.)**

**Is Course #2 a Special Topics course?**  Yes (If YES, contact the Registrar for a number.)

**Is Course #2 a new catalog course?**  No (If YES, please submit a new course request.)

**Is Course #2 a revised version of a current catalog course?**  No (If YES, please describe the extent of the revisions below.)

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**Description of Cluster**  (Please describe the shared theme, question, or area of interest of the cluster. Guidelines to be used in evaluating proposed clusters can be found at the end of this form.)

Over seventy percent of the world’s surface is covered by oceans, generating nearly half of the U.S. gross domestic product. Yet only five percent of the oceans have been explored and much of these waters are nearly lawless. This cluster will focus on the ecology and governance of the ocean and the resources their water’s provide. The biology course will examine the scientific understanding of ocean ecosystems that guides sustainable management of ocean resources both near the shore and in the deep oceans. Among the themes addressed in this cluster course are the natural processes of the oceans including basic oceanography, marine ecology, and fisheries biology. This course will also explore how humans use and impact the oceans natural resources covering topics such as invasive species, coastal zone development, overfishing, and global climate change. The political science course addresses the interaction of interest groups and political entities at the national and international level in the process of formulating responses to manage or, if possible, solve the natural and man-made conditions that are at the heart of marine environmental problems. Some policy issues addressed by this cluster will include coastal zone management, managing highly migratory species and marine mammals, as well as ocean acidification and emerging ocean technology related regulations.
Shared Learning Goals  (All cluster proposals must provide shared learning goals.)

Students in the cluster will develop an understanding of 1) the role of scientific data in identifying and characterizing environmental problems, 2) the extent to which science is and is not able to provide meaningful or definitive policy relevant data regarding problems in the marine environment, and 3) the complex interaction of science-based data and the political concerns of states and interest groups in the development of national and international policy regarding the marine environment. Students will also develop problem solving skills and awareness of power differentials between different groups during the political process.

Catalog Description for Course #1  (Only in rare cases will cluster courses require prerequisites. If the course has prerequisites, please list them and provide a rationale. How will these prerequisites affect cluster enrollment?)

The course will examine the domestic and global dimensions of the politics of managing the marine environment. Subjects covered will include the policymaking process, coastal and deep water fisheries management, coastal and ocean pollution, balancing multiple resource uses including resource management and emergent ocean technology applications, managing invasive marine species, the development of policies to address the interaction of climate change and marine management. It will compare policy-making at the national and international level in the United Nations system as well as the way in which the policy processes at the regional level in the European Union, ASEAN, NAFTA, etc. contribute to policymaking at the national and international level. Meets general academic requirement SL.

Catalog Description for Course #2  (Only in rare cases will cluster courses require prerequisites. If the course has prerequisites, please list them and provide a rationale. How will these prerequisites affect cluster enrollment?)

With a growing human population and society’s increasing demands on the planet’s natural resources, we are entering an era of ecological crisis on Earth. The oceans are no exception. Facing massive amounts of fishing, pollution, and more acidic waters, this class will explore some of the major impacts facing our planet’s oceans from a scientific and social perspective. Students will develop an understanding of the science needed to appreciate, diagnose, and tackle marine environmental issues such as global warming, habitat destruction, overfishing, invasive species, and pollution. By clustering with a political science course, we will explore causes of and solutions to these ecological catastrophes from social, political, and management perspectives. This course is an introduction to many environmental topics and is designed to engage students from different disciplines in the increasingly important hunt for solutions to Earth’s environmental crises. Meets general academic requirement SC.

Plans for Collaboration  (Please describe the faculty members’ plans for interaction and collaboration. Include a description of at least one shared or integrative assignment.)

We are planning a set of integrated assignments based on case studies to increase the depth and complexity of student understanding by introducing science/policy issues that are progressively more complex and ambiguous. The first case study, examining the Georges Bank fishing area presents an opportunity to examine one major ecological issue (overfishing) and the resulting policies that grow from the declining ecological health and subsequent near loss of regional fishing economies. In this instance, factors leading to declining cod populations were identified and a plan for addressing problems of overfishing was adopted based upon consultation with various affected interest groups. The next case studies will explore more than one management issue and be located in the highly used coastal zones of California and Australia. We will focus on the management of the Great Barrier Reef and the California Coastal System where management is trying to correct more than one issue and scientific debate over causes and future impacts attracts objections by various vested interest groups, resulting in a slow policy process less able to definitively address identified problems. The final issues, of global climate change and ocean acidification, have major international implications and are subject to scientific debates over the extent and timing of future impact.
Students will be required to complete paired assignments on each of these issues. For example, students will write an analysis of the Georges Bank from an ecological perspective addressing progress that has been made addressing the fisheries issue in one course, and a second paper analyzing the manner in which interest group pressures from various communities (scientific, environmental, business, political, ideological) interacted with increasingly strong scientific evidence to produce a relatively successful management plan for the fishery. A second joint assignment will address the issue of the Great Barrier Reef Management Plan or the California Coastal Zone Management Plan. In one course students will write a letter to elected officials regarding various aspects of the effectiveness of the plan. In the other course students will undertake a policy analysis of how to tweak the plan to improve its ability to more effectively protect the area. The third joint assignment will address the issue of ocean acidification. A portion of this assignment will include a simulation of a congressional hearing on the issue in which teams will address various potential impacts of ocean acidification. The paired assignment will shuffle groups to include at least one expert on each potential impact of acidification on each policy team the team will produce a 10 to 15 page policy recommendation to address the problem of ocean acidification.

Signatures:

Faculty #1: ________________________________ Date: 1/25/2014

Department Chair #1: _________________________ Date: 11/25/2014

Faculty #2: ________________________________ Date: 11/25/2014

Department Chair #2: _________________________ Date: 11/25/2014
Guidelines To Be Used In Evaluating Proposed Clusters

General guidelines to be used by the Curriculum Committee in approving proposed clusters are the following:

1. A cluster consists of two directly linked courses with different prefixes, taught by two different faculty members.

2. The courses should focus on a shared theme, question, or area of interest, examining it from the perspective of each discipline.

3. The courses should have shared learning goals that align with the College’s Academic Program Goals for “Exploration, Discovery and Integration” (see below).

4. The courses should be offered in the same semester or adjacent semesters. (A spring cluster course followed by a second cluster course in the fall are considered to be adjacent.)

5. The courses should contain at least one shared or integrative assignment. For example, for courses running in the same semester, students in both courses may be asked to write on the same topic. For courses running in adjacent semesters, students may be asked to write an integrative paper at the end of the second course.

6. The faculty should demonstrate concrete plans to collaborate and participate periodically in each other’s classes.

7. Only in rare cases will cluster courses require prerequisites. Applications for exemptions should include a rationale explaining why the prerequisite is essential. The Curriculum Committee may deny approval for clusters with prerequisites if low enrollment is a likely outcome.

8. Clusters courses enroll only cluster students.

9. Cluster courses may also carry distribution and/or HDGE designations.

10. Multi-section courses may not form part of a cluster. Departments may, however, create a new course that is a specialized, cluster-oriented version of a pre-existing course. Such courses are subject to the same requirements as other cluster courses.

The College’s Academic Program Goals for “Exploration, Discovery and Integration” are below:

Muhlenberg graduates:

- Cultivate curiosity.
- Explore and experience various modes of creative expression.
- Build a broad disciplinary and inter-disciplinary knowledge base.
- Understand that knowledge is embedded in multiple contexts (e.g., social, historical, cultural, scientific, ethical, etc.).
- Develop and apply different modes of inquiry to pose questions and address problems.