University of Hawai‘i – Honolulu Community College
GENERAL EDUCATION - Diversification Designation
Certification and Recertification
Application Form
(Fall 2010)

APPLICANT: Greg Witteman        E-MAIL: witteman@hawaii.edu

COURSE ALPHA and NUMBER: BIOL 123

COURSE TITLE: Hawaiian Environment Science

ESTIMATED NUMBER OF SECTIONS: Fall 1    Spring 1

Is this request for a:  ☑ New Course    ☐ Modified Course    ☐ Existing Course

☐ Re-designation

Is this request for a:  ☑ Certification    ☐ Re-Certification. Date of last certification:

______________________________

DIVERSIFICATION AREA DESIGNATION SOUGHT:

☐ DA (Arts)         ☐ DP (Physical Sciences)
☑ DB (Biological Sciences)    ☐ DS (Social Sciences)
☐ DH (Humanities)         ☐ DY (Laboratory)
☐ DL (Literature and Language)

What percentage of the CONTENT of this course focuses on this diversification area? 75%
What percentage of CLASS MEETINGS focuses on this diversification area? 90%

1. Please explain how the course SLOs align with the diversification area’s hallmarks.

Explanatory notes. The hallmarks (three for each designation) are posted on the HCC Intranet. In the text-box below, state the hallmarks for the diversification designation you are seeking and explain how the course SLOs meet each hallmark. For example, an SLO for Hallmark #3 for a DS designation would be to understand how descriptive and inferential statistics are used to summarize and evaluate results from psychological studies.

Student Learning Outcomes (SLO)
Upon successfully completing the course the student will be able to:

1. Identify differences between science and non-science, list the
steps in using the scientific method and compare the pure sciences with the applied sciences.

2. Record differences between living and nonliving matter and the major differences between animals and plants.

3. Associate scientists with their development of the major concepts and theories in geology, biology, oceanography and ecology that are important to the Hawaiian islands.

4. Demonstrate an understanding of the geological formation of the Hawaiian Island chain and its relationship to the development of terrestrial and marine habitats.

5. Describe the origin and evolution of Hawaii's plant and animal species and differentiate between native and endemic species.

6. Describe ecosystem processes and species interactions such as succession, predation, and competition using examples from Hawaii.

7. Describe and give examples of Hawaii's dominant terrestrial and marine habitats.

8. Identify the most common introduced species and describe the impact of invasive species on Hawaii's native habitats.

9. Demonstrate an understanding of the direct and indirect human impacts on the environment.

10. Characterize the interdisciplinary nature of environmental science.

11. Diagnose and illustrate some of the pressures on the global environment and how they are related to the pressures on Hawaii's ecosystems.

12. Evaluate the concepts of sustainability in Hawaii with respect to land use, energy production, waste disposal, and exploitation of natural resources.

13. Evaluate and compare sources and impacts of pollution in Hawaii.

DP.1 uses the terminology of the biological sciences;
DP.2 involves knowledge and theories relating to processes in the biological sciences;
DP.3 demonstrates inquiry that is guided by observation/experiment and reasoning/mathematics.

For DP.1, the use of terminology is very important in this course. For instance, SLO 1, the student will be expected to use the professional language of the scientific method and in determining how proper experimentation takes place. For SLO 2, to know the differences between living and nonliving things the student will have to know how to describe what makes living things living. For SLO 7, in describing the habitats, proper terminology must be used. For SLO 8 and 9, proper terminology for biological systems need to be used to describe those impacts.

For DP.2, SLO 1’s use of the scientific method shows the process behind biological science. For SLO 2 requires competency in the theories behind biology to describe living creatures. For SLO 7 and 8 the student must show proficiency in describing ecosystem and the interaction of different species in an ecosystem. For SLO 11, it is implied that a student will be able to assess an ecosystem.
For DP.3, SLO 1’s use of the scientific method requires the student to follow the scientific method’s process of inquiry. Observation is a main component of the basis for SLO 2 in determining whether or not matter is living or nonliving. For SLO 12, the process of evaluation requires much inquiry for the concept of sustainability. For SLO 13, to evaluate pollution a student must be able to reason and evaluate experimental data.

2. Explain assessment strategies you plan to use (or have used, in the case of recertification) to measure the degree to which students exit the course with the expected SLOs. If there are multiple sections of the course, please discuss how assessment will be carried through all sections.

See attachment

Explanatory notes. The applicant should clearly connect assessment strategies to the course SLOs stated in Question #1. For example, an assessment strategy for an SLO would be to have a set of questions on an exam, which requires students to evaluate a hypothetical study in terms of research methodology, and descriptive statistics (calculate the mean, median, mode of a data set).

3. How have you used the assessment findings to modify or improve this course?

N/A

Explanatory notes. If this is a new course, enter “N/A” as an answer. Courses being re-certified should include a summary of how assessment strategies and measures (Question #2) were used to modify or improve the course.

Reminder: Please attach a copy of your course syllabus that includes information described in the instruction part of this form.

DIVERSIFICATION BOARD DECISION:

☑ Approved
    Re-Certification Due: F2015

☐ Not approved
    If not approved, reasons for disapproval:

Diversification Chair Signature: [Signature] Date: 12/2/10
The SLOs will be evaluated using summative methods. The summative methods will be the direct determinate of the students' grades. For instance, the student will be assessed on SLO 2 by being able to determine whether something is living or nonliving based on a set of data. For SLO 4, the student will be assessed on the ability to the development of habitats from the geological formation of the islands. For instance, the composition of the magma used to form the island has certain minerals that directly impact the flora of the islands. A student is expected to understand that fact. SLOs 5 to 9 all require a student to have the analytical ability to understand how living creatures compete and evolve in Hawai'i. The student will be tested on understanding of these facts and interactions.
**Course Alpha & No.:** BIOL 123  
**Proposer:** Dr. G. J. Witteman  
**Effective Term:** Fall 2011

**PROPOSAL SUMMARY** (Include reasons for adding course, and similar courses offered elsewhere, i.e. college, alpha, number, title):
This is a general environmental science class for non-science majors that covers the characteristics of science and interaction with society illustrated with topics in geology, astronomy, oceanography, and biology of Hawaiian Islands. Dr. Gail Grabowsky (A past Chair of the State Environment Council (2009-2010) and Div Chair of Chaminade’s Environmental Studies Program) has offered to develop this as a HCC distance-education (cable) course. This course is accepted as a science elective at both Hilo and Manoa campuses. This course is already offered at UH-Manoa

**SIGNATURES**

<table>
<thead>
<tr>
<th>Proposal:</th>
<th>Division Chair / Date</th>
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<tbody>
<tr>
<td>Initiator / Date</td>
<td>Program Dean / Date</td>
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<tr>
<td>General Education Board (if applicable) / Date</td>
<td>Committee on Programs &amp; Curricula Chair / Date</td>
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<th>Approval:</th>
<th>Chancellor / Date</th>
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<tr>
<td>Division Curriculum Committee Chair / Date</td>
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<td>Vice Chancellor of Academic Affairs / Date</td>
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University of Hawai‘i Honolulu Community College
CURRICULUM ACTION PROPOSAL
ADD a New Course

Course Alpha & No.: BIOL 123  Proposer: Dr. G. J. Witterman  Effective Term: Fall 2011

PROPOSAL SUMMARY (Include reasons for adding course, and similar courses offered elsewhere, i.e. college, alpha, number, title):

This is a general environmental science class for non-science majors that covers the characteristics of science and interaction with society illustrated with topics in geology, astronomy, oceanography, and biology of Hawaiian Islands. Dr. Gail Grabowsky (A past Chair of the State Environment Council (2009-2010) and Div Chair of Chaminade's Environmental Studies Program) has offered to develop this as a HCC distance-education (cable) course. This course is accepted as a science elective at both Hilo and Manoa campuses. This course is already offered at UH-Manoa.

SIGNATURES

Proposal:
Initiator / Date

General Education Board (if applicable) / Date

Approval:
Division Curriculum Committee Chair / Date

Vice Chancellor of Academic Affairs / Date

Division Chair / Date

Program Dean / Date

Committee on Programs & Curricula Chair / Date

Chancellor / Date
INSTRUCTIONS: Complete all applicable fields. Continue overflow text on p. 3 under “Additional Information”.

<table>
<thead>
<tr>
<th>Course Alpha &amp; No.:</th>
<th>BIOL 123</th>
<th>Effective Term:</th>
<th>Fall 2011</th>
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<tbody>
<tr>
<td>Course Type:</td>
<td>Regular</td>
<td>Experimental Course Expiration Date:</td>
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<tr>
<td>Title:</td>
<td>Hawaiian Environment</td>
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<td>Banner Title (30 characters):</td>
<td>Hawaiian Environment</td>
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**YES □ NO** Does this course satisfy Career & Technical Education GEN ED Requirements (A.S. / A.A.S.)? If "YES", select GEN ED requirement 2a. Understanding the Natural Environment (ASGA)

**YES □ NO** Does this course satisfy Liberal Arts A.A. GEN ED Requirements &/or UHM GEN ED Core Articulation? If "YES", select GEN ED requirement below.

<table>
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<tr>
<th>FOUNDATION</th>
<th>DIVERSIFICATION</th>
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<th>OTHER</th>
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<td>LBART A.A. UHM</td>
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<td>Written Communication (FW)</td>
<td>□</td>
<td>□</td>
<td>Biological Sciences (DB)</td>
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<td>Symblic (FS)</td>
<td>□</td>
<td>□</td>
<td>Humanities (DH)</td>
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<tr>
<td>Global/Multicultural Perspectives (FG)</td>
<td>□</td>
<td>□</td>
<td>Literature (DL)</td>
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<td>Social Sciences (DS)</td>
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Class Length (weeks): 16
Credits: (For Variable Credits give range) 3
Repeat & Credit Limit: May be repeated ___ time(s) for a maximum of ___ credits
Schedule Type: LEC (Lecture)
Weekly Student Contact Hrs: 3 Hours Lecture per Week
3 Hours Lab per Week
3 Total Contact hrs per Week
Details for special cases:

Grading Option: Letter Grade Only
Enrollment Maximum: 24
Special Approval: Click To Select
Major Restriction:
Prerequisite:
Prerequisite or Corequisite:
Corequisite:
Bracket Course with:
Recommended Prep:
Cross-Listed Courses:
Comment for online SOC:
Catalog Course Description:
Characteristics of science and interaction with society illustrated by topics in geology, astronomy, oceanography, and biology of Hawaiian Islands.

Additional Information to print with Course Description:

☐ YES ☐ NO  Does this proposal affect Programs and/or Courses? (If "Yes" continue below.)
☐ YES ☐ NO  Were the affected Programs/Departments consulted and notified?

This Proposal affects Program requirements:
☐ The number of Credits for these Programs: ___ *
☐ Prerequisite for these Programs: ___ *
☐ Requirement for these Programs: ___ *
☐ Elective for these Programs: ____
☐ Other

* Attach Program Modification Forms

This Proposal affects other Courses:
☐ Prerequisite for these Courses: ___ **
☐ Prerequisite or Co-requisite for these Courses: ___ **
☐ Co-requisite for these Courses: ____ **
☐ Recommended Prep for these Courses: ____ **
☐ Cross-list for these Courses: ____ **
☐ Other **

** Attach Course Modification Forms

Describe changes marked above:

☐ YES ☐ NO  Does this proposal require additional resources? (Such as staff, equipment, facilities, etc.)
If yes, provide details and indicate whether or not resources are available.

This class is intended to be taught by distance education. The typical resources for distance education will be needed.

Additional Information:
Dr. Gail Grabowsky (A past Chair of the State Environment Council (2009-2010) and Div Chair of Chaminade's Environmental Studies Program) has offered to develop this as a HCC distance-education (cable) course. This course is accepted as a science elective at both Hilo and Manoa campuses.

This course is already offered at UH-Manoa
See Instructions for information on each item.

<table>
<thead>
<tr>
<th>Course Alpha &amp; No.: BIOL 123</th>
<th>Semester Credit Hours: 3</th>
<th>Effective Term: Fall 2011</th>
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</table>

**Course Title:** Hawaiian Environment  
**Prerequisites:**  
**Co-requisites:**  
**Prerequisites or Co-requisites:**  
Recommended Prep: High School Biology  
**Major Restrictions:**  
Instructor Approval or other Approval:

1. **Catalog Course Description:**  
   This is a general environmental science class for non-science majors that covers the characteristics of science and interaction with society illustrated with topics in geology, astronomy, oceanography, and biology of Hawaiian Islands.

2. **Student Learning Outcomes:**  
   Upon successful completion of this course, a student will be able to:
   
   Example Student Learning Outcomes (subject to instructor modification or addition).
   
   Upon successfully completing the course the student will be able to:
   
   1. Identify differences between science and non-science, list the steps in using the scientific method and compare the pure sciences with the applied sciences.‖
   2. Record differences between living and nonliving matter and the major differences between animals and plants.‖
   3. Associate scientists with their development of the major concepts and theories in geology, biology, oceanography and ecology that are important to the Hawaiian Islands.‖
   4. Demonstrate an understanding of the geological formation of the Hawaiian Island chain and its relationship to the development of terrestrial and marine habitats.
   5. Describe the origin and evolution of Hawaii's plant and animal species and differentiate between native and endemic species.
   6. Describe ecosystem processes and species interactions such as succession, predation, and competition using examples from Hawaii.
   7. Describe and give examples of Hawaii's dominant terrestrial and marine habitats.
   8. Identify the most common introduced species and describe the impact of invasive species on Hawaii's native habitats.
   9. Demonstrate an understanding of the direct and indirect human impacts on the environment.
   10. Characterize the interdisciplinary nature of environmental science.
   11. Diagnose and illustrate some of the pressures on the global environment and how they are related to the pressures on Hawaii's ecosystems.
   12. Evaluate the concepts of sustainability in Hawaii with respect to land use, energy production, waste disposal, and exploitation of natural resources.
   13. Evaluate and compare sources and impacts of pollution in Hawaii.

3. **Means by which the assessment of the SLOs will be accomplished:**  
The SLOs will be assessed primarily using summative techniques in the form of exams and quizzes.

4. **Program Learning Outcomes addressed by this course:**  
Fulfills Biological Science diversification requirements (DB) for some majors,  
No prerequisites. Not intended as a prerequisite for any other courses.

5. **Method(s) of Instruction:**  
Lecture

6. **Method(s) of Evaluation:**  
The SLOs will be evaluated using summative methods. The summative methods will be the direct determinate of the students' grades primarily quizzes and exams. For instance, the student will be assessed on SLO 2 by being able to determine whether something is living or nonliving based on a set of data. For SLO 4, the student will be assessed on the ability to the development of habitats from the geological formation of the islands. For instance, the composition of the magma used to form the island has certain minerals that directly impact the flora of the islands. A student is expected to understand that fact. SLOs 5 to 9 all require a student to have the analytical ability to understand how living creatures compete and evolve in Hawaii. The student will be tested on understanding of these facts and interactions.
7. Course Content:
Week/Topic
1. Introduction, Chemistry
2. Molecules to Cells
3. Cellular Processes
4. Ecology, Classification
5. Classification,
6. Protists, Porifera
7. Cnidarians, Acoelomates
8. Pseudocoelomates, Molluscs
9. Worms, Arthropods
10. Myriapods, Hexapods, Echinoderms,
11. Hemichordata
12. Fish
13. Amphibians & Reptiles
14. Birds
15. Mammals
16. Comparisons

8. Possible Texts:
Instructor developed materials and additional online and physical documents.

9. Reference and/or Auxiliary Materials (if any):
web based reference and supplemental materials

10. Resource Requirements (if applicable):

11. Relationship to other courses in the program (if applicable):
    Fulfils Biological Science diversification requirements (DB) for some majors,
    No prerequisites. Not intended as a prerequisite for any other courses

12. General Education or other requirement(s) satisfied:
    2a. Understanding of the Natural Environment

13. Articulation (if applicable):
    Accepted at both UH Manoa and UH Hilo as a science elective for (biology) non-majors.

14. Additional Information of importance:
    Gail Grabowski (A past Chair of the State Environment Council (2008-2010) and Div Chair of Chaminade's Environmental Studies Program) has offered to develop this course to be delivered as a cable-course for HCC.