

**UNIVERSITY OF HAWAII MAUI COLLEGE  
ASSOCIATE IN ARTS DEGREE  
REVIEW OF COURSES FOR DIVERSIFICATION REQUIREMENTS**

Any UH course with a diversification or equivalent designation that transfers to another UH campus will be accepted with the sending campus' designation. At each participating UH campus, the diversification designation is consistent with the hallmarks described below. Courses are approved through a campus level process and reviewed at least every five years to ensure that the course continues to meet the hallmarks.

**SUBJECT ALPHA: BIOL**

**COURSE NUMBER: 265**

If the course is cross-listed, please provide the cross-listing: Subject \_\_\_\_\_ Course # \_\_\_\_\_

**COURSE TITLE:** \_\_\_\_\_

**UH MANOA DIVERSIFICATION CATEGORY: DB**

**UHMC RECOMMENDED CATEGORY: EA**

(Refer to attached Hallmarks)

Is the course outline, on file with the UHMC Curriculum Committee, consistent with the stated Hallmarks?     Yes     No

If "No" and you wish to submit changes to correspond with the Hallmarks, attach a University of Hawaii Maui College Curriculum Action Request (CAR) (Form 4-93) with new course outline.

OR

Recommend course be changed to another sub-category: \_\_\_\_\_

OR

Recommend course be used only as general elective

AnnCoopersmith  
Instructor's Printed Name

AnnCoopersmith    20 Oct 2011  
Instructor's Signature    Date

**UNIVERSITY OF HAWAII MAUI COLLEGE  
ASSOCIATE IN ARTS DEGREE  
REVIEW OF COURSES FOR AA CATEGORY INCLUSION**

**SUBJECT ALPHA: BIOL**

**COURSE NUMBER: 265**

If the course is cross-listed, please provide the cross-listing: Subject \_\_\_\_\_ Course # \_\_\_\_\_

**COURSE TITLE: Ecology and Evolutionary Biology**

**CATEGORY: II – BREADTH OF UNDERSTANDING AND EXPERIENCE**

**SUB-CATEGORY: Environmental Awareness**

**RELATED PROGRAM LEARNING OUTCOME:** Students will demonstrate knowledge of natural systems and environmental issues.

**HALLMARKS:**

To satisfy the Environmental Awareness requirement, a course will:

- a) Develop students' understanding of the interactions between an individual and the natural world.
- b) Develop students' understanding of balance in natural systems.
- c) Introduce students to the terminology of the natural sciences.
- d) Develop students' understanding of theories relating to the processes of scientific inquiry.
- e) Develop students' understanding of inquiry guided by observation, experimentation, analysis, and reasoning.
- f) Develop students' understanding of the strengths and limitations of the scientific method.

Is the course outline, on file with the UHMC Curriculum Committee, consistent with the Hallmarks stated above?     Yes     No

If "No" and you wish to submit changes to correspond with the Hallmarks, attach a University of Hawaii Maui College Curriculum Action Request (CAR) (Form 4-93) with new course outline.

OR

Recommend course be changed to another sub-category: \_\_\_\_\_

OR

Recommend course be used only as general elective

Ann Coopersmith  
Instructor's Printed Name

ACoopersmith    20 Oct 2011  
Instructor's Signature    Date

Outline Approval

BIOL 265 - Ecology and Evolutionary Biology

1.    (0) Course Alpha. See HELP for information.  
BIOL
2.    (0) Course Number. See HELP for information.  
265
3.    (0) Course Title/Catalog Title. See HELP for information.  
Ecology and Evolutionary Biology
4.    (0) Number of Credits. See HELP for information.  
3
5.    (0) Contact Hours/Type. See HELP for information.  
  - Hour lecture (3)
6.    (0) Course Description. See HELP for information.  
Integrates the basic principles of ecology and evolution. Covers the origin of life, evolutionary mechanisms, systematics, macroevolution, ecological processes, population and community ecology, dispersal, and biogeography. Uses examples from the biodiversity of Hawai'i. Includes recent research and advances in the field.
7.    (0) Pre-Requisites. Please click on HELP icon for style sheet.  
*any*  
BIOL 101, 151, or 171, with grade C or better, or consent.
8.    (0) Co-requisites
9.    (0) Recommended Preparation.
10.    (0) Is this a cross-listed course? See help for information.  
NO
11.    (0) Reason for Proposal. Why is this course being proposed or modified? See help for information, as this question requires specific information as part of the explanation.  
Hour lab  
Taught at UH-Manoa, KapCC, LCC, WCC as Biology 265 and at UH-Hilo as Marine Science 265. Prerequisite for upper-division courses for the UH-Hilo BA degree in Marine Science offered through the UHMC University Center.
12.    (0) Effective Semester and Year. For new or modified courses, the effective year is one year from the semester proposed. For example, if proposed in Spring 2012, the effective semester is Spring 2013. See help for more information.  
Fall 2012
13.    (0) Grading Method. What grading methods may be used for this course? See help for information.  
  - Standard (Letter,Cr/NCr,Audit) (0)
14.    (0) Is this course repeatable for credit? How often can this course be counted toward a degree or certificate? See help for information.  
NO
15.    (0) DO NOT ENTER TEXT IN THE TEXT BOX BELOW. Click on the yellow button "COURSE LEARNING OUTCOMES" and enter in that screen. Course Student Learning Outcomes (Course SLOs). These need to be added before the connections are made in question 20. See help for information.

Course SLO/Competency	define key terms relevant to evolutionary biology and ecology;	describe the processes that can lead to speciation;	describe processes that can cause changes in allele frequencies in populations;	compare and contrast models of population growth;	compare and contrast types of interactions within a community; and	explain factors that affect trophic structure, species diversity, and community structure.
use the terminology of the biological sciences	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

demonstrate knowledge and theories relating to processes in the biological sciences				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Course SLO/GESLO							Critical Thinking - Apply critical thinking skills to effectively address the challenges and solve problems.	Information Retrieval and Technology - Access, evaluate, and utilize Information effectively, ethically, and responsibly.	Written Communication - Write effectively to convey ideas that meet the needs of specific audiences and purposes.
use the terminology of the biological sciences							<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
demonstrate knowledge and theories relating to processes in the biological sciences				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Course SLO/PSLO								Students should attain awareness and knowledge of ecosystems and environmental issues	
use the terminology of the biological sciences							<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
demonstrate knowledge and theories relating to processes in the biological sciences							<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

16. (0) DO NOT ENTER TEXT IN THE TEXT BOX BELOW. Click on the yellow button "COURSE COMPETENCIES/ISSUES/SKILLS" and enter text in that screen. Competencies/Concepts/Issues/Skills

Competency/Content	1-2 weeks: Review mitosis (cell division) and meiosis (reduction division), DNA, genes, genomes	1 week: Sources of variations	1-2 weeks: Decent with modification and other ideas about change	1-2 weeks: Evolution of populations	1-2 weeks: Species and speciation	1-2 weeks: History of life in the sea and paleo-marine biology	1-2 weeks: Phylogeny and molecular evolution	1-2 weeks: Marine ecology, life in a fluid, sex in sea water, marine migrations	1-2 weeks: Population ecology	1-2 weeks: Community ecology	1-2 weeks: Ecosystem ecology	1 week: Terrestrial and freshwater communities	2-3 weeks: Marine communities
define key terms relevant to evolutionary biology and ecology;	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
describe the processes that can lead to speciation;	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						
describe processes that can cause changes in allele frequencies in populations;	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>								
compare and contrast models of population growth;				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
compare and contrast types of interactions within a community; and						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
explain factors that affect trophic structure, species diversity, and community structure.		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

17. (0) DO NOT ENTER TEXT IN THE TEXT BOX BELOW. Click on the yellow button "RECOMMENDED COURSE CONTENT..." and enter text in that screen. Recommended Course Content and Timeline. See HELP for information.

Content
1-2 weeks: Review mitosis (cell division) and meiosis (reduction division), DNA, genes, genomes
1 week: Sources of variations
1-2 weeks: Decent with modification and other ideas about change
1-2 weeks: Evolution of populations
1-2 weeks: Species and speciation
1-2 weeks: History of life in the sea and paleo-marine biology
1-2 weeks: Phylogeny and molecular evolution
1-2 weeks: Marine ecology, life in a fluid, sex in sea water, marine migrations
1-2 weeks: Population ecology

1-2 weeks: Community ecology
1-2 weeks: Ecosystem ecology
1 week: Terrestrial and freshwater communities
2-3 weeks: Marine communities

18. (0) Recommended Evaluation and Assessment Methods. See help for information.

- Includes, but is not limited to: assignments done outside of class in any discipline, such as math problems, reading and questions, chapter questions, critical thinking questions, class preparation; appropriate rubrics. (0)
- Includes, but is not limited to: attendance, participation, readings, art projects, media reviews, reactions to speakers, critical thinking exercises, or reflective exercises; appropriate rubrics. (0)
- Includes, but is not limited to: research, art, observation, interview, or service learning projects, portfolio development; appropriate rubrics. (0)
- Includes, but is not limited to: essay tests, objective tests, mid-term and final exams, unit exams, quizzes of all types, tests may be written, oral, computerized, in-class, take-home, at testing sites; appropriate rubrics. (0)
- Includes, but is not limited to: term papers, essays, creative writings, reports, or reaction papers; appropriate rubrics. (0)

Method of Evaluation	Includes, but is not limited to: assignments done outside of class in any discipline, such as math problems, reading and questions, chapter questions, critical thinking questions, class preparation; appropriate rubrics.	Includes, but is not limited to: attendance, participation, readings, art projects, media reviews, reactions to speakers, critical thinking exercises, or reflective exercises; appropriate rubrics.	Includes, but is not limited to: essay tests, objective tests, mid-term and final exams, unit exams, quizzes of all types, tests may be written, oral, computerized, in-class, take-home, at testing sites; appropriate rubrics.	Includes, but is not limited to: research, art, observation, interview, or service learning projects, portfolio development; appropriate rubrics.	Includes, but is not limited to: term papers, essays, creative writings, reports, or reaction papers; appropriate rubrics.
<b>Course SLOs</b>					
use the terminology of the biological sciences					
demonstrate knowledge and theories relating to processes in the biological sciences					
<b>Course Competencies</b>					
define key terms relevant to evolutionary biology and ecology;					
describe the processes that can lead to speciation;					
describe processes that can cause changes in allele frequencies in populations;					
compare and contrast models of population growth;					
compare and contrast types of interactions within a community; and					
explain factors that affect trophic structure, species diversity, and community structure.					

<b>Method of Evaluation</b>
Includes, but is not limited to: assignments done outside of class in any discipline, such as math problems, reading and questions, chapter questions, critical thinking questions, class preparation; appropriate rubrics.
Includes, but is not limited to: attendance, participation, readings, art projects, media reviews, reactions to speakers, critical thinking exercises, or reflective exercises; appropriate rubrics.
Includes, but is not limited to: essay tests, objective tests, mid-term and final exams, unit exams, quizzes of all types, tests may be written, oral, computerized, in-class, take-home, at testing sites; appropriate rubrics.
Includes, but is not limited to: research, art, observation, interview, or service learning projects, portfolio development; appropriate rubrics.
Includes, but is not limited to: term papers, essays, creative writings, reports, or reaction papers; appropriate rubrics.

19. (0) DO NOT ENTER TEXT IN THE TEXT BOX BELOW. Click on the yellow button "PLOs" and enter text in that screen. Program Student Learning Outcomes (PLOs) supported by this course. If you are not a "program" use the Liberal Arts PLOs, view them by clicking on the HELP icon.

<b>Program SLO</b>
Students should attain awareness and knowledge of ecosystems and environmental issues

20. (0) General Education Student Learner Outcomes (CASLOs). FIRST, fill out the CASLO grid located in the UHMC tab above. Click on the HELP icon for tips on determining support for the CASLOs and indicate your choices below by clicking on the box in front of each supported CASLO. NOTE: Our campus does not use the Preparatory Level, Level 1 and Level 2 designations in the chart below.

<input type="checkbox"/>	Creativity - Able to express originality through a variety of forms.
<input checked="" type="checkbox"/>	Critical Thinking - Apply critical thinking skills to effectively address the challenges and solve problems.

<input checked="" type="checkbox"/>	Preparatory Level
<input checked="" type="checkbox"/>	Information Retrieval and Technology - Access, evaluate, and utilize information effectively, ethically, and responsibly. <input checked="" type="checkbox"/> Preparatory Level
	Oral Communication - Practice ethical and responsible oral communications appropriately to a variety of audiences and purposes.
	Quantitative Reasoning - Synthesize and articulate information using appropriate mathematical methods to solve problems of quantitative reasoning accurately and appropriately.
<input checked="" type="checkbox"/>	Written Communication - Write effectively to convey ideas that meet the needs of specific audiences and purposes. <input checked="" type="checkbox"/> Preparatory Level

	Creativity	Critical Thinking	Information Retrieval and Technology	Oral Communication	Quantitative Reasoning	Written Communication
Includes, but is not limited to: assignments done outside of class in any discipline, such as math problems, reading and questions, chapter questions, critical thinking questions, class preparation; appropriate rubrics.						
Includes, but is not limited to: attendance, participation, readings, art projects, media reviews, reactions to speakers, critical thinking exercises, or reflective exercises; appropriate rubrics.						
Includes, but is not limited to: essay tests, objective tests, mid-term and final exams, unit exams, quizzes of all types, tests may be written, oral, computerized, in-class, take-home, at testing sites; appropriate rubrics.						
Includes, but is not limited to: research, art, observation, interview, or service learning projects, portfolio development; appropriate rubrics.						
Includes, but is not limited to: term papers, essays, creative writings, reports, or reaction papers; appropriate rubrics.						

GenED SLO
Critical Thinking - Apply critical thinking skills to effectively address the challenges and solve problems.
Information Retrieval and Technology - Access, evaluate, and utilize information effectively, ethically, and responsibly.
Written Communication - Write effectively to convey ideas that meet the needs of specific audiences and purposes.

21.    (0) Linking Items in Course Outline. CLICK ON CHAIN LINK ICON IN UPPER RIGHT HAND CORNER TO BEGIN LINKING. See HELP for more information on Linking.
22.    (0) Method(s) of delivery appropriate for this course. See Help for Information.
- Cable TV (0)
  - Classroom/Lab (0)
  - HITS/Interactive TV (0)
  - Hybrid (0)
  - Online (0)
23.    (0) Text and Materials, Reference Materials, and Auxiliary Materials. See Help for information.
- Campbell, N.A. 2011. Biology, 9<sup>th</sup> ed. Benjamin Cummings, San Francisco, CA
- Levinton, J.S. 2009. Marine Biology: Function, Biodiversity, Ecology, 3<sup>rd</sup> ed. Oxford University Press.
24.    (0) Maximum enrollment. See Help for information.
- 24
25.    (0) Particular room type requirement. Is this course restricted to particular room type? See Help for information.
- NO
- Special scheduling considerations. Are there special scheduling considerations for this course? See Help for Information.

26.    (0)

NO

27.    (0) Are special or additional resources needed for this course? See Help for information.

NO

28.    (0) Does this course require special fees to be paid for by students? See Help for information.

NO

29.    (0) Does this course change the number of required credit hours in a degree or certificate? See help for information.

NO

30.    (0) Course designation(s) for the Liberal Arts A.A. degree and/or for the college's other associate degrees. See Help for information.

Degree	Program	Category
AA Liberal Arts:	AA	EA - Environmental Awareness
AS:	ANY	NS - Natural Science
AAS:	ANY	NS - Natural Science
BAS:	ANY	NS - Natural Science
Developmental/ Remedial:		

Associate in Science in Natural Science, elective

31.    (0) Course designation(s) for other colleges in the UH system.

UH System - DB

UHMC AA - EA

UHMC BAS, AS, and AAS - NS




32.    (0) Indicate the year and page # of UHMC catalog referred to. For new or modified courses, please indicate the catalog pages that need to be modified to reflect the new or modified course and provide sheet outlining catalog changes.

2011-2012

33.    (0) General Education Student Learner Outcomes (CASLOs). Please click on the HELP icon for more information.

<b>Standard 1 - Written Communication</b> Write effectively to convey ideas that meet the needs of specific audiences and purposes.		
Outcome 1.1 - Use writing to discover and articulate ideas.		1
Outcome 1.2 - Identify and analyze the audience and purpose for any intended communication.		1
Outcome 1.3 - Choose language, style, and organization appropriate to particular purposes and audiences.		2
Outcome 1.4 - Gather information and document sources appropriately.		2
Outcome 1.5 - Express a main idea as a thesis, hypothesis, or other appropriate statement.		2
Outcome 1.6 - Develop a main idea clearly and concisely with appropriate content.		2
Outcome 1.7 - Demonstrate a mastery of the conventions of writing, including grammar, spelling, and mechanics.		2
Outcome 1.8 - Demonstrate proficiency in revision and editing.		1
Outcome 1.9 - Develop a personal voice in written communication.		0
<b>Standard 2 - Quantitative Reasoning</b> Synthesize and articulate information using appropriate mathematical methods to solve problems of quantitative reasoning accurately and appropriately.		
Outcome 2.1 - Apply numeric, graphic, and symbolic skills and other forms of quantitative reasoning accurately and appropriately.		0
Outcome 2.2 - Demonstrate mastery of mathematical concepts, skills, and applications, using technology when appropriate.		0
Outcome 2.3 - Communicate clearly and concisely the methods and results of quantitative problem solving.		0

Outcome 2.4 - Formulate and test hypotheses using numerical experimentation.	0
Outcome 2.5 - Define quantitative issues and problems, gather relevant information, analyze that information, and present results.	0
Outcome 2.6 - Assess the validity of statistical conclusions.	1
<b>Standard 3 - Information Retrieval and Technology.</b> Access, evaluate, and utilize information effectively, ethically, and responsibly.	
Outcome 3.1 - Use print and electronic information technology ethically and responsibly.	2
Outcome 3.2 - Demonstrate knowledge of basic vocabulary, concepts, and operations of information retrieval and technology.	1
Outcome 3.3 - Recognize, identify, and define an information need.	1
Outcome 3.4 - Access and retrieve information through print and electronic media, evaluating the accuracy and authenticity of that information.	2
Outcome 3.5 - Create, manage, organize, and communicate information through electronic media.	2
Outcome 3.6 - Recognize changing technologies and make informed choices about their appropriateness and use.	0
<b>Standard 4 - Oral Communication</b> Practice ethical and responsible oral communications appropriately to a variety of audiences and purposes.	
Outcome 4.1 - Identify and analyze the audience and purpose of any intended communication.	1
Outcome 4.2 - Gather, evaluate, select, and organize information for the communication.	1
Outcome 4.3 - Use language, techniques, and strategies appropriate to the audience and occasion.	1
Outcome 4.4 - Speak clearly and confidently, using the voice, volume, tone, and articulation appropriate to the audience and occasion.	1
Outcome 4.5 - Summarize, analyze, and evaluate oral communications and ask coherent questions as needed.	1
Outcome 4.6 - Use competent oral expression to initiate and sustain discussions.	1
<b>Standard 5 - Critical Thinking</b> Apply critical thinking skills to effectively address the challenges and solve problems.	
Outcome 5.1 - Identify and state problems, issues, arguments, and questions contained in a body of information.	3
Outcome 5.2 - Identify and analyze assumptions and underlying points of view relating to an issue or problem.	3
Outcome 5.3 - Formulate research questions that require descriptive and explanatory analyses.	1
Outcome 5.4 - Recognize and understand multiple modes of inquiry, including investigative methods based on observation and analysis.	1
Outcome 5.5 - Evaluate a problem, distinguishing between relevant and irrelevant facts, opinions, assumptions, issues, values, and biases through the use of appropriate evidence.	3
Outcome 5.6 - Apply problem-solving techniques and skills, including the rules of logic and logical sequence.	2
Outcome 5.7 - Synthesize information from various sources, drawing appropriate conclusions.	2
Outcome 5.8 - Communicate clearly and concisely the methods and results of logical reasoning.	1
Outcome 5.9 - Reflect upon and evaluate their thought processes, value system, and world views in comparison to those of others.	1
<b>Standard 6 - Creativity</b> Able to express originality through a variety of forms.	
Outcome 6.1: Generate responses to problems and challenges through intuition and non-linear thinking.	0
Outcome 6.2: Explore diverse approaches to solving a problem or addressing a challenge.	0
Outcome 6.3: Sustain engagement in activities without a preconceived purpose.	0
Outcome 6.4: Apply creative principles to discover and express new ideas.	0
Outcome 6.5: Demonstrate the ability to trust and follow one's instincts in the absence of external direction	0
Outcome 6.6: Build upon or adapt the ideas of others to create novel expressions or new solutions.	0

34.    (0) Additional Information



[view all comments](#)   [compare outlines](#)

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Approver: BRUCK  
Date: 02/08/2012 10:55:32 AM  
Vote: For:  Against:  Abstain:

Comments:

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**Button Description**

- Approve - save your vote and comment and sends the process on to the next approver. If you are the last approver, the process ends.
- Revise - sends the outline back to the proposer/author for revision.
- Review - sends the outline out for review/voting by select users
- Cancel - cancels your approval at this time. You may return to this screen by selecting "Outline approval" from your task list.

NOTE: Highlighted item(s) are items requiring modifications by the proposer/author.