California State University Channel Islands
NEW COURSE PROPOSAL
Courses must be submitted by October 15, 2014, and finalized by the end of that fall semester for the next catalog (2015-16) production.
Use YELLOWED areas to enter data.

DATE (*Change if modified and redate file with current date)*)   10/26/2014, REV 01.15.15

PROGRAM AREA(S)   BIOLOGY

1. Course Information. *[Follow accepted catalog format.]*

Prefix(es) (Add additional prefixes if cross-listed) **and Course No. BIOL 320**

Title: DEEP-SEA BIOLOGY AND ECOLOGY Units: 3

Yes: Prerequisites BIOL 200

No: Corequisites

No Consent of Instructor Required for Enrollment

Catalog Description (Do not use any symbols): Overview of the diversity and complexity of deep-sea life and ecology. Starting from the photic zone and working down to the abyss, topics will include food webs, nutrient cycling, biodiversity, and adaptations to low-light, high-pressure, extreme environments. Ecosystems reviewed will include open ocean, continental shelves, deep benthic communities, hydrothermal vents and seeps, whale-falls, and more. Additional topics include the history, technology and exploration of the deep-sea, as well as conservation and anthropogenic interactions such as deep-sea fishing and hydrothermal vent mining.

Grading Scheme: **Repeatability:**   **Course Level Information:**

A-F Grades   NO   X Undergraduate

Mode of Instruction/Components (*Hours per Unit are determined by CSU policy*).

	Units	Hours per Unit	Default Section Size	Graded Component	CS & HEGIS # (Filled in by the Provost's Office)
Lecture	3	1	40	Yes	
Seminar		1			
Laboratory		3			
Activity		2			
Field Studies					
Indep Study					
Other Blank					

Leave the following hours per week areas blank. The hours per week will be filled out for you.

        hours lecture per week

        hours   per week

2. Course Attributes:

This course will be an upper-division elective for the Biology major.

    General Education Categories: All courses with GE category notations must be submitted to the GE website: http://summit.csuci.edu/geapproval. Upon completion, the GE Committee will forward your documents to the Curriculum Committee.

  A (English Language, Communication, Critical Thinking)

        A-1 Oral Communication

        A-2 English Writing

        A-3 Critical Thinking

B (Mathematics, Sciences & Technology)
B-1 Physical Sciences
B-2 Life Sciences – Biology
B-3 Mathematics – Mathematics and Applications
B-4 Computers and Information Technology
C (Fine Arts, Literature, Languages & Cultures)
C-1 Art
C-2 Literature Courses
C-3a Language
C-3b Multicultural
D (Social Perspectives)
E (Human Psychological and Physiological Perspectives)
UDIGE/INTD Interdisciplinary
Meets University Writing Requirement (Graduation Writing Assessment Requirement)
Meets University Language Requirement

American Institutions, Title V Section 40404:   Government   US Constitution   US History
Regarding Exec Order 405, for more information: http://senate.csuci.edu/comm/curriculum/resources.htm
Service Learning Course (Approval from the Center for Community Engagement must be received before you
can request this course attribute).
NO   **Online Course** (Answer YES if the course is ALWAYS delivered online).
NO   **Lab Fee Request –** Lab fee requests should be directed to the Student Fee Committee.

3. **Justification and Requirements for the Course.** (Make a brief statement to justify the need for the course)
A.   Justification: Channel Islands has a diverse selection of biological course

B.   Degree Requirement: Requirement for the Major/Minor   **Note: Submit Program Modification if**
X Elective for the Major/Minor   **this course changes your program**.
Free Elective

4. **Student Learning Outcomes.** List in numerical order. Please refer to the Curriculum Committee's "Learning Outcomes"
guideline for measurable outcomes that reflect elements of Bloom's Taxonomy:
http://senate.csuci.edu/comm/curriculum/resources.htm. The committee recommends 4 to 8 student learning outcomes, unless
governed by an external agency (e.g., Nursing).
Upon completion of the course, the student will be able to:
:
- Identify organisms in the deep-sea.
- Differentiate ecosystems in the deep-sea, and describe key features (abiotic and biotic conditions).
- Analyze specialized biological adaptations to extreme pressure, temperature, light, and other conditions.
- Apply these general biological adaptations to design a theoretical organism evolved in the deep-sea.
- Explain the current and projected anthropogenic impacts on deep-sea ecosystems.
- Describe the history, technology, and major expeditions to explore the deep-sea.

5. **Course Content in Outline Form.** *[Be as brief as possible, but use as much space as necessary]*
History
Mid-water zones
Sensory Systems and Bioluminescence
Fish Diversity
Bathyll and Abyssal Plains
Oceanic Nutrient Cycling
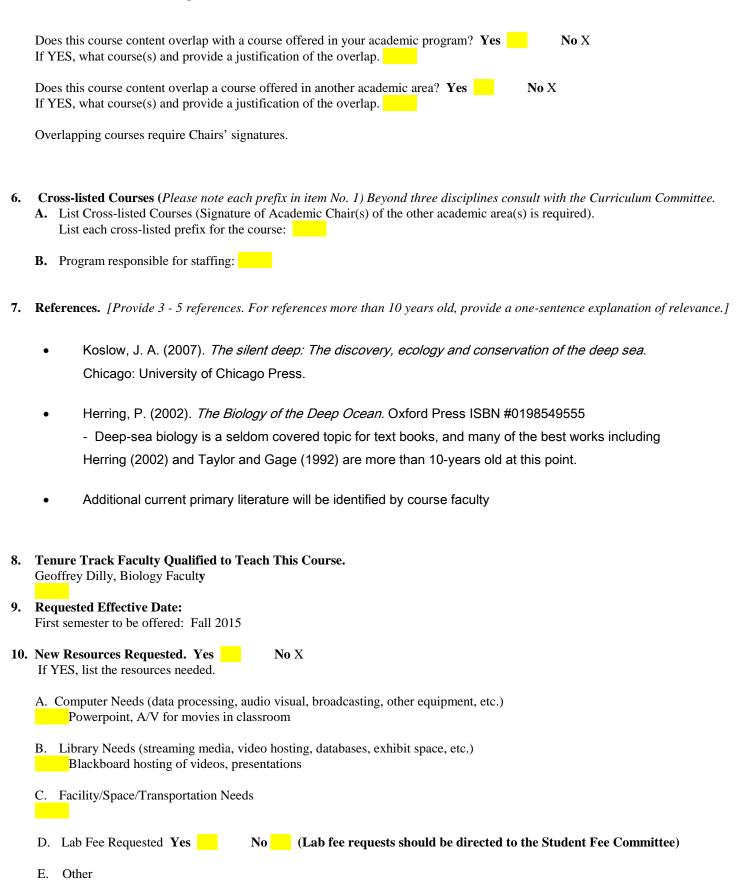Benthic Diversity and Adaptations
Marine Microbial Ecology
Hydrothermal Vents
Hydrocarbon Seeps
Whale Falls and Wood Falls
Deep Sea Fisheries

Hydrothermal Vent Mining
Global Climate Change
Ocean Acidification
Conservation in the Deep Sea

Does this course content overlap with a course offered in your academic program? **Yes** ▮   **No** X
If YES, what course(s) and provide a justification of the overlap. ▮

Does this course content overlap a course offered in another academic area? **Yes** ▮   **No** X
If YES, what course(s) and provide a justification of the overlap. ▮

Overlapping courses require Chairs' signatures.

6.   **Cross-listed Courses** (*Please note each prefix in item No. 1) Beyond three disciplines consult with the Curriculum Committee.*
   A.   List Cross-listed Courses (Signature of Academic Chair(s) of the other academic area(s) is required).
      List each cross-listed prefix for the course: ▮

   B.   Program responsible for staffing: ▮

7.   **References.** *[Provide 3 - 5 references. For references more than 10 years old, provide a one-sentence explanation of relevance.]*

   - Koslow, J. A. (2007). *The silent deep: The discovery, ecology and conservation of the deep sea*.
     Chicago: University of Chicago Press.

   - Herring, P. (2002). *The Biology of the Deep Ocean.* Oxford Press ISBN #0198549555
     - Deep-sea biology is a seldom covered topic for text books, and many of the best works including
     Herring (2002) and Taylor and Gage (1992) are more than 10-years old at this point.

   - Additional current primary literature will be identified by course faculty

8.   **Tenure Track Faculty Qualified to Teach This Course.**
   Geoffrey Dilly, Biology Facult**y**
   ▮

9.   **Requested Effective Date:**
   First semester to be offered: Fall 2015

10. New Resources Requested. Yes ▮   **No** X
   If YES, list the resources needed.

   A. Computer Needs (data processing, audio visual, broadcasting, other equipment, etc.)
   ▮ Powerpoint, A/V for movies in classroom

   B. Library Needs (streaming media, video hosting, databases, exhibit space, etc.)
   ▮ Blackboard hosting of videos, presentations

   C. Facility/Space/Transportation Needs
   ▮

   D. Lab Fee Requested **Yes** ▮   **No** ▮ (**Lab fee requests should be directed to the Student Fee Committee**)

   E. Other

11. Will this new course alter any degree, credential, certificate, or minor in your program? Yes ▢   **No** X

If, YES attach a program update or program modification form for all programs affected.
<u>Deadline</u> for New Minors and Programs: October 1, 2014.
<u>Priority deadline</u> for Course Proposals and Modifications, and for Program Modifications: October 15, 2014.
Last day to submit forms to be considered during the current academic year: April 1, 2015.

Geoffrey Dilly   10/15/14

Proposer of Course (Type in name(s). Signatures will be collected after Curriculum approval)   Date

Approval Sheet

Course Prefix and number:

If your course has a General Education Component or involves Center affiliation, the Center will also sign off during the approval process.

Multiple Chair fields are available for cross-listed courses.

The CI program review process includes a report from the respective department/program on its progress toward accessibility requirement compliance. By signing below, I acknowledge the importance of incorporating accessibility in course design.

Program Chair		
	Signature	Date

Program Chair		
	Signature	Date

Program Chair		
	Signature	Date

General Education Chair		
	Signature	Date

Center for International Affairs Director		
	Signature	Date

Center for Integrative Studies Director		
	Signature	Date

Center for Multicultural Engagement Director		
	Signature	Date

Center for Civic Engagement Director		
	Signature	Date

Curriculum Chair		
	Signature	Date

AVP		
	Signature	Date