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
PROGRAM AREA(S)   BIOLOGY

1. **Course Information.** *[Follow accepted catalog format.]*
   Prefix(es) (Add additional prefixes if cross-listed) **and Course No.** BIOL 473
   Title: SUSTAINABLE AGRICULTURE Units: 4
      Prerequisites BIOL 200
      Corequisites
      Consent of Instructor Required for Enrollment
   Catalog Description (Do not use any symbols): Explores local and global issues pertaining to sustainable agriculture. We will examine theoretical and practical aspects of food production from ecological, as well as social and economic perspectives. Topics will include soil fertility, crop selection, irrigation, pest management and sustainable food delivery systems. The laboratory will explore sustainable practices in a garden setting and in local agricultural systems. We will also discuss the challenges of food production in hotter and dryer conditions stemming from climate change.

Grading Scheme:

X A-F Grades

   Credit/No Credit
   Optional (Student Choice)

Repeatability:

   Repeatable for a maximum of   units

Total Completions Allowed
   Multiple Enrollment in Same Semester

Course Level Information:

X Undergraduate

X Post-Baccalaureate/Credential
   Graduate

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	24	X	
Seminar		1			
Laboratory	1	3	24		
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:**

   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).
Online Course (Answer YES if the course is ALWAYS delivered online).
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: BIOL 473 is an elective that would be of wide interest to Biology undergraduates. Students will be introduced to the ecological concepts and technological advances (e.g., GMO's, irrigation) that foster sustainability at various scales of production. Students will also explore the potential impacts of climate change on local and global agricultural systems, as well as on our food security. BIOL 473 would also be an elective in the new Pest Control Advisor (PCA) Certificate Program.

   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:
   1)   Describe the principles of sustainability in relation to agricultural practices.
   2)   Identify drought-tolerant crops and management practices.
   3)   Compare and contrast local and global agricultural systems.
   4)   Analyze the potential impacts of climate change on agriculture and food security.
   5)   Design and maintain an ecologically balanced garden.

5. **Course Content in Outline Form.** *[Be as brief as possible, but use as much space as necessary]*
   History of agriculture
   Principles of sustainability
   Soil & water in relation to plant growth
   Erosion and runoff control
   Irrigation in drought conditions
   Common weeds, pathogens & arthropod pests
   Organic vs. conventional Management Practices
   Permaculture
   Case studies of regionally important crops
   Plant breeding, GMO's and crop selection
   Agricultural systems in arid environment
   Challenges of agriculture under climate change
   Slow foods movement, farmer's markets and CSA's
   Sustainable food production and delivery systems
   Food Security

Agricultural Economics

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.]*

   Pollan, M. 2006. The Omnivore's Dilemma: A Natural History of Four Meals. Penguin Press. New York, NY.

   Gliessman, S. R. and M. Rosemeyer. 2009. The Conversion to Sustainable Agriculture: Principles, Processes, and Practices (Advances in Agroecology). CRC Press, Boca Raton, FL.

   Nabhan, G. and B. McKibben. 2013. Growing Food in a Hotter, Drier Land: Lessons from Desert Farmers on Adapting to Climate Uncertainty. Chelsea Green Publishing, White River Junction, VT.

   Shepard, M. 2013. Restoration Agriculture. Acres U.S.A., Austin, TX.

8. **Tenure Track Faculty Qualified to Teach This Course.**

   Ruben Alarcón

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.)
    ▮

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

    C. Facility/Space/Transportation Needs
    Access to greenhouse, shadehouse and research garden behind Modoc.

    D. Lab Fee Requested **Yes** X **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 X   No

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.

Ruben Alarcón   October 13, 2014

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

Approval Sheet

Course Prefix and number: BIOL 473

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