

Report on Campus as a Living Lab Grant “Special Projects Course: Sustainability in Campus Infrastructure”

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As a result of the Campus as a Living Lab grant, a new sustainability course has been developed at CSU Channel Islands, UNIV 492, which will run for the first time this Fall, 2014. The formal course proposal document is attached as univ492-12-9-13.pdf and is available from the CSU Channel Islands senate website as: <http://senate.csuci.edu/comm/curriculum/programs/univ492-12-9-13.pdf>. The course will run each Fall semester with the PI as instructor. The projects will carry over from year to year with the instructor serving as institutional memory so that projects do not repeat the efforts of past years. To facilitate this, various on-line sources are being considered. One option is to use an e-portfolio product from bluehost.com called SPOKE.

In the Spring of 2014, agreements were reached so that students from STEM majors can take the course for elective credit within their major on a case-by-case basis. Projects are being developed under the areas of lighting, water usage for irrigation and heating and cooling in close concert with facilities services at CI, to use the existing and new sensors, and with input from an industry contact, Chad Roper of Aecom who specializes in sustainable engineering. From contact with Dr. Roper, we are considering a project to improve efficiency in our campus data center, as data centers are ubiquitous and consume tremendous quantities of power.

Next academic year, 2014-15, the course will run in the Fall and results will be disseminated at the Faculty-Student Research Forum on the CI campus in May, 2015. Other avenues of dissemination are being pursued and will depend on results.

# NEW COURSE PROPOSAL

**Courses must be submitted by October 15, 2013, and finalized by the end of that fall semester for the next catalog production.**

**Use YELLOWED areas to enter data.**

DATE (*Change if modified and redate file with current date*) **10/15/2013; REV 12.9.13**

PROGRAM AREA(S) **UNIV 492**

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

**Prefix(es)** (Add additional prefixes if cross-listed) **and Course No. UNIV 492**

**Title: SUSTAINABILITY IN CAMPUS INFRASTRUCTURE Units: 3**

**Prerequisites** Consent of Instructor. Program approval will be required to substitute this course as an elective in a major.

**Corequisites**

X Consent of Instructor Required for Enrollment

**Catalog Description** (Do not use any symbols ): Supervised work and study involving sustainability in campus infrastructure. All students are required to attend the Sage Research Symposium, or similar conference, to present a talk or poster upon completion. Graded credit/no credit.

**Grading Scheme:**

A-F Grades

X Credit/No Credit  
Optional (Student Choice)

**Repeatability: Not repeatable.**

Repeatable for a maximum of units

Total Completions Allowed  
Multiple Enrollment in Same Semester

**Course Level Information:**

X Undergraduate

Post-Baccalaureate/Credential  
Graduate

**Mode of Instruction/Components** (*Hours per Unit are defaulted.*)

	Units	Hours per Unit	Default Section Size	Graded Component	CS & HEGIS # (Filled in by the Provost's Office)
Lecture	3	1	18	X	
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.

3 hours **lecture** per week  
hours blank per week

**2. Course Attributes:**

**General Education Categories:** All courses with GE category notations (including deletions) 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 for further processing.

**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: This is an upper division elective course designed to provide interested students with relevant sustainability and research experience in the practical applications of the knowledge and skills they have gained in their undergraduate program. Students across a variety of majors will be recruited to the projects by faculty. Special emphasis will be placed on forming interdisciplinary teams to address a project, such as the feasibility and environmental impact of using solar panels for the generation of electrical power. A team of a physics, chemistry and biology majors may be working together bring complementary skills and ideas to such a project. Enrollment in the course is via consent of the instructor, and an emphasis will be placed on recruiting senior students.

Some projects which have been developed by OPC include:

- Lighting surveys to determine the need for day-light sensors, de-lamping needs.
- Continuous commissioning of the lighting and HVAC control systems to optimize energy usage
- Analysis energy usage in buildings and evaluate conformance with the design parameters.
- Optimize irrigation water usage by installing and monitoring sensors, and designing low water usage landscaping.
- Implement a waste reduction and recycling program.
- Sustaining the campus-wide environmental communication program.

The course proposer has obtained funds from the CSU Chancellor’s Office of about \$60,000 for additional sensors to help monitor added campus resources. The details of the sensors were discussed with OPC and are sensors which they need. OPC has, historically, used student interns to persue various projects (and hired a few of them as a result). This course is a way of βbeen tried in the past, and what should be tried next. Further, the instructor will assist in recruiting students so that projects do not simply end, but are carried on, as needed.

This course is being proposed in UNIV because University Experience/Studies program is where high impact practices (such as undergraduate research; service learning; interdisciplinary learning; real-world applications) and mission-focused pedagogy are embedded in the curriculum, and where students come together from across majors for problem-solving through coursework. This themed undergraduate upper-division research course is under UNIV as it has an interdisciplinary focus and through its "campus as a living lab" orientation.

B. Degree Requirement:

Requirement for the Major/Minor  
 Elective for the Major/Minor

**Note: Submit Program Modification if this course changes your program.**

X Free Elective, but may be used within a major on a case by case basis.

**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:

- Discuss in oral and written form sustainable practices at a University
- Identify sustainable practices
- Analyze the sustainability of campus infrastructure
- Design changes to campus infrastructure to improve sustainability
- Measure and quantify sustainability of changes to campus infrastructure

**5. Course Content in Outline Form.** *[Be as brief as possible, but use as much space as necessary]*

Content will vary by student project, but all will be focused on campus infrastructure and sustainability.

Does this course content overlap with a course offered in your academic program? Yes  No

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

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: UNIV

**7. References.** *[Provide 3 - 5 references]*

In general, references will vary with student project, but there are general references in the area of sustainability which may be helpful:

Enhancing Sustainability Campuswide : New Directions for Student Services, Number 137  
Jacobs, Bruce A.; Kinzie, Jillian (Note: this is an electronic text available in the CSUCI library).

**8. Tenure Track Faculty Qualified to Teach This Course.** Gregory Wood, ESRM faculty, others

**9. Requested Effective Date:**

First semester offered: Fall 2014

**10. New Resources Requested.** Yes  No

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

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

E. Other

As the repository of institutional knowledge about the ongoing OPC projects, the course needs to be team-taught for one term to switch from one instructor to another. The proposer is willing to run the course until retirement without invoking this extra resource request. The grant from the chancellor's office allows the proposer release time in Spring 2015 to coordinate projects with OPC and "start up" the class by recruiting the first wave of students.

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.

Priority deadline for New Minors and Programs: **October 1, 2013** of preceding year.

Priority deadline for Course Proposals and Modifications: **October 15, 2013**, of preceding year.

Last day to submit forms to be considered during the current academic year: **April 15<sup>th</sup>**.

Gregory G. Wood

10/15/2013

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

Date

# Approval Sheet

**Program/Course:** UNIV

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