CSU CAMPUS AS A LIVING LAB

CSU, CHICO

PROJECT NAME: Sense of Place III
CALL CHAMPION: Fletcher Alexander, TISD
LEAD FACULTY: Dr. Kristen Kaczynski, GEOS

Learning Outcomes

- Describe proposed course in one sentence; including campus sustainability element
- What specific skills will students learn? What knowledge will they gain?
- What Sustainability Outcomes does your team want the students to achieve?

GEOS 130:

1. Identify the impacts of humans on natural systems
2. Explain the process of global climate change including proposed causes, impacts and solutions
3. Develop critical thinking skills needed to make complex scientific and social choices related to our environment

ECON 365:

1. Oral presentations on environmental issues, demonstrate effective speaking skills to deliver information
2. Bring to bear information and theories covered in class and apply them to the identification of environmental problems
3. Learn to use graphical representations of data; gain knowledge and skills to make informed decisions

Connecting to CALL

- How does this proposed course align with CALL program objectives?
- Which activities can CALL program support?
- What is the team's vision for the next year as part of the CALL redesign?

CSU Sustainability Policy Outcomes supported by this Project:

FO 1.1 Reduce GHG emissions to 1990 levels by 2020
FO 1.2 Reduce GHG emissions to 80% below 1990 levels by 2040
FO 2.2 Source 33% of energy from renewables by 2020
FO 3.1 Operate all buildings/facilities in the most efficient manner possible
FO 3.2 ID EE improvement measures to the greatest extent possible
FO 3.3 Pursue utility conservation and inform the entire campus community
FO 3.4 Monitor monthly utility usage and share data with the CO
FO 3.5 Develop and maintain an integrated strategic energy resource plan
FO 4.1 Reduce water consumption 20% from 2013 levels by 2020
FO 8.1 Design all future building projects to consider sustainability
FO 9.1 Operate and maintain a comprehensive EMS with centralized control
FO 9.2 Consolidate campus building use to achieve highest utilization

Overcoming Obstacles

- Are there mismatches between desired learning outcomes and sustainability outcomes?
- Do you need to modify existing outcomes?

This is a great project for our campus, and one we've been able to build out over three rounds of CALL, in large part because the Learning Outcomes (for these two courses and the others in the GE Sustainability Pathway from earlier rounds) and Sustainability / Facility Outcomes align in such complementary ways.

There is a great deal to be gained by the campus in continuing to expand monitoring of and access to building utility consumption data— in terms of facilities management and responsible stewardship of resources but also in terms of powerful experiential learning opportunities for students and development of interdisciplinary collaborative partnerships for faculty and staff.

Tracking Success

- How will you know if students achieved Sustainability Outcomes?
- How will you know if this redesigned course is an improvement over the current version? How will you measure?

CSU, Chico CALL Program Objectives:

Establish a public point of access to campus building utility consumption data and foster an expanded dialogue between students, faculty administration and facilities management regarding campus resource consumption and opportunities for conservation.

Integrate real campus utility consumption data into the Sustainability Pathway course curriculum with a focus on utilizing cutting-edge utility management software and analytics in new and innovative ways.

Explore a range of strategies for engaging building occupants and residents in better understanding their buildings and the impacts of their interactions with them on campus utility consumption, and compel them to act for conservation.

Taking Action

- What tasks/activities will the students perform?
- What role will facilities/sustainability officer have in redesign process and course delivery?

GEOS 130:

1. Lab activity where students will measure trees (diameter, height) and calculate the CO_2 uptake
2. Analyze and graph building energy use over time using dashboard data
3. Calculate carbon offsets for building energy use (ie. how many trees would need to be planted to offset CO_2 emissions from energy use)

ECON 365:

1. Identify interventions and incentives (i.e., changes in behaviors and technologies) that could be used to decrease emissions on campus
2. Develop a survey to evaluate support for the proposed interventions (how much are students willing to contribute to this public good?)
3. Learn how to use a contingent valuation survey to determine the value of nonmarket resources, such as reductions in GHG emission and a more "sustainable" campus

Future Tasks

Designing the assignments

- Structure of assignments (group/solo)
- Sequencing of assignments
- What kind of formative assessment/feedback along the way?
- Background info needed to achieve goals of this course?

Defining Criteria for Success

- Characteristics of the finished product
- How will you assess whether product demonstrates student learning?
- How will you assess whether students have addressed Sustainability Outcomes?
- How will you describe assignment to students?

CALL OBJECTIVE

The 'Campus as a Living Lab' Grant Program is a unique opportunity to partner faculty and facilities management staff in using the campus as a forum for the exploration of sustainability concepts and theories.