ES 194GB: Green Building Living Lab
UCSB LEED Lab 2017-18 (Winter Quarter)

Instructor: Brandon Kaysen
Email: ES194GB@gmail.com
Office Hours upon request
Mondays, 6:00 PM - 7:50 PM @ Bren 4016 (Bren Seminar Room)
Grading: letter grade
Completion of Fall Quarter is REQUIRED for participation in subsequent quarters

Course Description:
LEED Lab is a multidisciplinary immersion course that utilizes the built environment to educate and prepare students to become green building leaders and sustainability-focused citizens. Through the course spanning three quarters, students will facilitate the LEED for Existing Buildings: Operations & Maintenance (LEED EB: O&M) process with the goal of certifying the select facility. LEED Lab will equip students with the skills, knowledge and expertise needed to be effective communicators, project managers, critical thinkers, problem solvers, engaged leaders, and team players in the field of sustainability.

Covered Topics Include:

General Course Overview
Classes will be highly interactive and require significant individual and team level participation. Using the LEED for Existing Buildings Operations & Maintenance Reference Guide as a primary resource, students will be expected to apply new information, concepts and interpersonal skills to a final team-based project dependent on which quarter the course is operating in and how far along the LEED project has progressed during the concurrent quarter. Student teams will form to complete a LEED certification project of an actual building on campus at UCSB, the Student Resource Building (SRB). Feasibility assessments, team generation, project management, implementation, audits and documentation will all be reviewed as this course is a holistic view of an actual LEED project and building sustainability as a whole. Students will be given the opportunity to associate themselves, improve upon, certify, and eventually communicate achievements of a facility that they occupy on a regular basis.

Course Objectives:
1. To equip students with knowledge about green building and the LEED certification system.
2. To equip students with real-world project management, communication and documentation skills.
3. Provide a mechanism to engage students and drive campus sustainability efforts that focus on the existing built environment.
4. Provide students with sufficient experience to prepare them for the LEED Green Associate and/or LEED Accredited Professional exams.

**Recommended Reading**
LEED v4 Existing Buildings Operations & Maintenance Reference Guide

**Year Overview**

**Fall Quarter** will focus on LEED certification feasibility and preparation for the Performance Period of the project building. Milestones during the quarter will include the LEED charrette, site visit, and stakeholder feasibility presentation. The main project will be a Feasibility Report and PowerPoint presentation to building stakeholders.

**Winter Quarter** will focus on the Performance Period (minimum 90 consecutive days) of the building, during which all data will be collected and metrics tracked, audits and surveys performed, and any recommendations presented during the stakeholder feasibility presentation that were chosen to pursue will be incorporated. Milestones during the quarter will include the mid-performance charrette with stakeholders. The main project will be documentation of audits and associated credits.

**Spring Quarter** will focus on collecting final data for documentation as the Performance Period comes to a close. All documentation will be completed and submitted for review, and will be revised once LEED reviewers return with review comments. Milestones will include the closing charrette, documentation submittal, review comment responses, project certification, and project communication to the public. The main project will be review comment responses, as well as an individual case study or public announcement.

**Grading (Winter)**

- 40% Weekly attendance and participation
- 20% Individual GauchoSpace assignments
  - 5% Advanced Reference Guide Search
  - 5% Scope of Work
  - 5% Measurement Tool Workshop
  - 5% Completed Credit Template (LEED Online)
- 20% Team project
  - 5% Mid-Quarter formal review
  - 10% Final review presentation
  - 10% Best Practices Guide
- 10% Quizzes (4 @ 2.5% ea.)
- 10% Final Exam

The team assignments will receive one grade. Each student will also be reviewed by his or her team members. Peer Reviews will be considered in the calculation of each student’s participation.

Late work will have 20% deducted from the assignment’s final grade.

**Assignments, Attendance & Team Project**

Students are expected to arrive for class prepared and on time, ready to discuss the assignments and its application to the LEED certification process based on progress made. In-class assignments and exercises will be completed individually and in teams during class with minimal work to be completed outside of the lecture. Assignments on GauchoSpace will assess students’ understanding
of the LEED Reference Guide and related topics. As attendance is extremely important, $2^n\%$ of the total grade is subtracted for each absence where $n$ is the number of missed classes, where one absence corresponds to -2%, two is -4%, three is -8%, and so on.

**Winter Team Project: Performance Period Documentation**
The goal of your team is to complete all audits and data collection and to begin compiling the documentation for your assigned credit categories. Your group’s progress will be assessed through two PowerPoint presentations: one in the middle of the Performance Period, and one at the end. The goal of these presentations is to update the instructors and classmates on the progress of the assigned credits and outline actions still required to achieve them.

**Final Exam**
The Final Exam will be a practice exam for the LEED Green Associate accreditation. It will be non-graded, acting as an indicator of student knowledge and as practice for the real accreditation exam.

**Winter Quarter Weekly Agenda**

<table>
<thead>
<tr>
<th>Week</th>
<th>Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (Jan 9)</td>
<td>NO CLASS – Finals week for Fall 2017</td>
</tr>
<tr>
<td>2 (Jan 16)</td>
<td>Review feasibility presentation slides and Final Report Introduction to BOX.com Regroup, review performance period specifics Go over action items list: one-time documentation vs. performance period Technical credit timeline <strong>Homework:</strong> scope of work for group’s credits (on GauchoSpace, due 1/30/18)</td>
</tr>
<tr>
<td>3 (Jan 23)</td>
<td>Review technical credit timeline LEED Knockout (time permitting) Prepare for Stakeholder Meeting <strong>Homework:</strong> Quiz #1</td>
</tr>
<tr>
<td>4 (Jan 30)</td>
<td>Review timeline &amp; updates Green Roof Presentation &amp; Discussion Prepare for Stakeholder Meeting <strong>Homework:</strong> Advanced reference guide search (on Gauchospace, due week 6)</td>
</tr>
<tr>
<td>5 (Feb 6)</td>
<td>Stakeholder Meeting or Guest Lecture Review timeline &amp; updates Best Practice Guide <strong>Homework:</strong> Quiz #2</td>
</tr>
<tr>
<td>6 (Feb 13)</td>
<td>Stakeholder Meeting or Guest Lecture Review timeline &amp; updates One-on-one group meetings <strong>Homework:</strong> Complete LEED Online Credit Forms (due Week 8)</td>
</tr>
<tr>
<td>7 (Feb 20)</td>
<td>Review timeline &amp; updates Overview of LEED BD+C Innovation credits <strong>Homework:</strong> Quiz #3</td>
</tr>
<tr>
<td>Date</td>
<td>Topic</td>
</tr>
<tr>
<td>------------</td>
<td>------------------------------------------------------</td>
</tr>
<tr>
<td>8 (Feb 27)</td>
<td>Review timeline &amp; updates</td>
</tr>
<tr>
<td>8 (Feb 27)</td>
<td><strong>Homework:</strong> Personal progress report (on Gauchospace, due week 9)</td>
</tr>
<tr>
<td>9 (Mar 6)</td>
<td>Review timeline &amp; updates</td>
</tr>
<tr>
<td>9 (Mar 6)</td>
<td><strong>Homework:</strong> Quiz #4</td>
</tr>
<tr>
<td>10 (Mar 13)</td>
<td>Review timeline &amp; updates</td>
</tr>
<tr>
<td>10 (Mar 13)</td>
<td><strong>Final:</strong> LEED GA exam</td>
</tr>
<tr>
<td>10 (Mar 13)</td>
<td><strong>Homework:</strong> Quiz #5</td>
</tr>
</tbody>
</table>