



EnvE 30  
*Evaluating Sustainable Living Spaces:  
 Leadership in Energy & Environmental  
 Design (LEED)*

University of California, Merced  
 Fall 2017

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Office Hours: MWF 10:15am-11:15am, 12:30pm-1:30pm

This course will be taught in close association with University of California, Merced, Department of Sustainability

**Lectures:** WF 1:30-2:45pm COB 1 262

**Textbooks and Supplementary Reading Materials:**

Readings will be assigned from the required textbook listed below and from class handouts. The following textbook is required and is available for purchase at the campus bookstore:

**Required Text:** LEED® GREEN ASSOCIATE™ V4 EXAM Complete Study Guide 2<sup>nd</sup> Edition, Togay Koralturk, LEED AP

LEED GREEN ASSOCIATE™ Exam Preparation Guide,

LEED v4 Existing Buildings Operations & Maintenance Reference Guide

**Synopsis:** University of California, Merced is a recognized leader in sustainable construction and design. All of UC Merced's buildings have or will achieve Leadership in Energy and Environment Design (LEED). This academic program will address numerous social and scientific aspects of creating sustainable living areas-where as humans we spend 90% of our time indoors. Students will be positioned to sit for the professional certification exam to earn their LEED Green Associates and ultimately LEED Accredited Professional (LEED AP) certification. The course is designed for students from all majors and should appeal to those who wish to learn more about the construction of sustainable buildings and their role in 21st century society.

**Goals of the course:**

The goal of this academic program is to impart awareness of the key environmental issues facing the construction of new buildings. Students will examine the interactions between the environment and the social and scientific conservation mechanisms, which are needed to achieve and sustain an acceptable quality of life for all.

## **Learning Outcomes**

Students will:

- 1) Interpret current and emerging issues concerning LEED design, project administration, registration and submission.
- 2) Explain and apply complex, multiple objectives related to environmental resource management and conservation while achieving the triple bottom line
- 3) Learn to speak and write about LEED and sustainability issues individually and as part of a team
- 4) Apply knowledge of architectural engineering thermodynamics
- 5) Explain solar design for green buildings (active and passive)
- 6) Relate passive cooling design of our Central Plant
- 7) Synthesize site engineering and landscape architecture while considering our green-campus goal: land and water conservation
- 8) Examine architectural engineering illumination design
- 9) Recognize how improving building operation and maintenance lead to higher performing buildings-ultimately reducing our carbon footprint
- 10) At the end of the semester the students are prepared to sit for the LEED Green Associate exam.

## **General Education (GenEd) Credit:**

Upon completion of the course, students will receive credit for a lower division Engineering course. Thus, the course will satisfy the Social Sciences, Humanities and Arts (SSHA) GenEd requirement for one Natural Science/Engineering introductory course.

## **Class Structure:**

EnvE 30 is a one-semester course carrying 3 units of academic credit. A schedule is attached in the following pages. The course meets together for two 90-minute lectures each week. These lectures will engage the student in a variety of interactive exercises revolving around the sustainable science and engineering concepts of the week. The workload for the class encompasses weekly reading assignments, both from the class textbook and supplemental handouts. Short homework assignments or in-class discussions related to the reading, and two short writing assignments will be assigned. Students will develop a presentation in order to synthesize, illustrate, and evaluate one major category of LEED design. There will be 2 midterm exams and 1 final exam for the course.

## **Requirements:**

Students are expected to attend all class sessions, participate in all class activities, complete exams as scheduled, and turn in all assignments on time. University of California, Merced is a living laboratory. ENVE 30 will have frequent guest speakers and field trips attendance is required. Class instruction is based on an interactive learning model. Your ideas, questions, thoughts, and opinions are welcomed.

**Course Web Site:**

Course information, including lecture outlines, reading, handouts, and all assignments and their due dates, will be available at the course web site, which you should be able to access through the CatCourses portal.

**Weekly activities:**

Weekly activities will include homework, campus tours, in-class activities and one presentation. Two of the homework assignments will be writing assignments with specific writing skills stressed (see below). Other assignments will involve questions on the reading or supplemental material.

**Written Assignments:**

Two writing exercises will be required in this course; these will be due in February and March. The purpose of these writing assignments is to strengthen the student's ability to perform learning objectives 1-3, & 9.

<b><i>Writing assignment</i></b>	<b><i>Contents</i></b>	<b><i>Due Date</i></b>
Writing Assignment #1	Writing a summary	September 15 (F)
Writing Assignment #2	Critical Thinking	November 17 (F)

**Presentations:**

Week 15: Students will develop a presentation in order to synthesize, illustrate, and evaluate one major category of LEED design. Presentations should include an Introduction, Intent, Purpose, Discussion & Conclusion. All slides must be cited in APA. Presentations should be no longer than 10 minutes. Participation is required by all.

**Course Calendar:**

Week 1 Introductions and Expectations-Introduction to Green Building  
LEED

Week 2 LEED Process LEED Program, Rating System, Councils

Week 3 Location & Transportation

Week 4 Sustainable Sites

Week 5 Vernal Pools-Grasslands Nature Reserve

Week 6 Water Efficiency and our campus water stations, Midterm#1

Week 7-8 Energy & Atmosphere

Week 9 Materials & Resources

Week 10 Indoor Environmental Quality, Midterm #2

Week 11 Innovation in Design

Week 12 Regional Environmental Priority

Week 13 LEED Credit updates, LEED Synergies

Week 14 Thanksgiving Holiday

Week 15 Presentations

Week 16 LEED Green Associate Exam Tips and Final Exam

**Course schedule subject to change, advance notice will be provided**

**Examinations:**

Midterms – Friday **September 29, 2017**; Friday, **October 27, 2017**

Final – Last day of Instruction: Friday **December 8, 2017**

Midterms and the final are also designed to include learning objectives 1-5. All exams will be closed book and will consist of mixtures of multiple choice, and short answer (three complete sentences). Questions on these topics will be drawn from the material presented in lecture, discussion/think-pair-share activities, guest speakers, in-class assignments, and from the assigned readings.

**Participation:**

Attending lectures and actively participating in-class discussions & activities are both important aspects of the course, and both will be graded (see below). I require that students attend at least one office hour during the semester to check on their course progress.

**Grading:**

The course grade is determined by performance on examinations, written papers, homework and in-class activities and participation in lectures. There are 500 total points possible for the course, and they are distributed as follows:

Midterms	170 (2 midterms, 85 pts each)
Final	90
Homework, In-class activities, quizzes, field trips, and participation	120
Writing assignments	60 (30 pts each x 2 assignments)
Presentation	60
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Total	500

All components are essential. You will not receive a passing grade in this course if you have not completed a component of the course. The class participation grade will be determined by your attendance in the class and your contributions to the class discussions. You will only be able to contribute to the class in a significant way, if you have carefully read the assigned readings for the class.

**GRADING ELEMENTS**

Earned grades will range as follows:

A+ 98-100%	B+ 87-89	C+ 77-79	D+ 67-69	F <60
A 94-97	B 84-86	C 74-76	D 64-66	
A- 90-93	B- 80-83	C- 70-73	D- 60-63	

**Extra Credit:** To be determined

**Late Homework Policy:**

Late homework and labs are not accepted. You are expected to submit assignments on time.

**Makeup Exam Policy:**

No makeup exams will be given without a Doctor's note or a University approved absence.

**Cell Phone Policy:**

Cell phones should be turned off before entering the classroom.

**Laptop Use in the Classroom:**

No laptop computers or electronic devices to be used in the classroom unless part of the classroom assignment.

**Disability Services:**

The University of California Merced is committed to ensuring equal academic opportunities and inclusion for students with disabilities based on the principles of independent living, accessible universal design and diversity. Students with disabilities are encouraged to register with Disability Services Center to verify their eligibility for appropriate accommodations. I am also available to discuss appropriate academic accommodations that may be required.

UC Merced Disability Services  
KL 109  
(209) 228-6996  
disabilityservices@ucmerced.edu

**Academic Honesty Policy\*:**

"Thou Shall Not Cheat" Each student in this course is expected to abide by the University of California, Merced's Academic Honesty Policy\*. Any work submitted by a student in this course for academic credit will be the student's own work.

During examinations, you must do your own work. Talking or discussion is not permitted during the examinations, nor may you compare papers, copy from others, or collaborate in any way. Any collaborative behavior during the examinations will result in failure of the exam, and may lead to failure of the course and University disciplinary action.

What constitutes cheating?

The simple rule of thumb is: Never give finished answers to someone else or use someone else's finished answers. Such exchanges are definitely cheating and not cooperation.

## Discussions, Cooperation, and Collaboration\*

You are encouraged to discuss homework and other parts of the class with other students. Such discussions about ideas are not cheating, whereas the exchange of finished, written answers is cheating. When you cooperate on solution ideas or collaborate on producing final answers with other students, you must cite the other students you worked with as follows. This must be done for each problem on which you cooperate or collaborate. (That is, if you work with someone on a problem, you don't need to work together on the entire homework.) You can give "consulting" help to or receive "consulting" help from such students. However, this permissible cooperation should never involve one student having possession of a copy of all or part of work done by someone else, in the form of an e-mail, an e-mail attachment file, a diskette, or a hard copy. Should copying occur, both the student who copied work from another student and the student who gave material to be copied will both automatically receive a zero for the assignment. Penalty for violation of this Policy can also be extended to include failure of the course and University disciplinary action

Note that substantial collaboration on solutions between students that is not cited as described above is considered cheating. Such cheating will be dealt with as described above.

Finally, if you use reference materials (other than the course texts) to solve a problem, you must give a citation. This includes material from the web. Not doing so is plagiarism (i.e., cheating). All writing assignments will be submitted through Turnitin in CatCourses and as a hard copy.

\*The **University of California Academic Honesty Policy** is found at: <http://studentlife.ucmerced.edu/what-we-do/student-judicial-affairs/academicy-honesty-policy>

**THIS DOCUMENT & COURSE SCHEDULE IS SUBJECT TO CHANGE.  
ADVANCE NOTICE WILL BE GIVEN**