UNIVERSITY OF CALIFORNIA, MERCED
ENGR 097/197 Engineering Service Learning
Lecture: M 8:30 am, GRAN 135; Team Meetings: SE1 160
Final Design Review: Friday, May 17, 11:30 am-2:30 pm; COB1 105

Faculty instructor: Variable, each field section has a dedicated faculty adviser

Lectures (all sections): Abbas Ghassemi, aghassemi2@ucmerced.edu

EngSL Staff: Chris Butler (cbutler), engsl@ucmerced.edu, (209) 756-7869

Engineering Service Learning Website: https://engineeringservicelearning.ucmerced.edu

1 Course Description

Engineering Service Learning is an academic program in which multidisciplinary teams of freshman through senior level students partner with a not-for-profit organization to design engineering solutions to complex related problems faced by local and global organizations. Students receive academic credit and real-world engineering experience while the community benefits from technology-based engineering solutions.

2 Course Goals

Students gain insights into the design and development process. They attend planning and reporting meetings with their "customers" from the not-for-profit community and educational partner organizations. Students from all disciplines are expected to contribute their expertise to the design process. Students learn about the impact and social context of their project, and their future roles as citizens and professionals in the community.

3 Course Learning Outcomes

Upon completion of each semester of this course, students will gain:

- An understanding of design as a start to finish process
- An aptitude toward functioning on multidisciplinary teams and recognition of the contributions by other disciplines to projects
- Awareness of professional ethics and responsibilities as they pertain to a project
- An understanding of the role of their chosen discipline in broader social and global contexts

4 Textbook (optional)

Service-Learning: Engineering in Your Community, M. Lima and W. Oakes, Great Lakes Press, Okemos, MI, 2006 (ISBN-10: 0199767823).

5 Student Leadership

Engineering Service Learning teams are *student-led* and *team-based*. Team advisors monitor the team's progress on the project, direct students to sources of technical information, provide advice on project management, monitor each student's progress, verify that the needs of the project partner are being met, and assign grades. Advisors guide students and provide direction in the design process and project management.

6 Resources

The Engineering Service Learning program has a number of resources available for teams. Advance requests are required to obtain access of LCD projector, video camera, etc. Instructions on scheduling meetings with clients, scheduling rooms, purchasing supplies, travel etc. can be found on the Engineering Service Learning Catcourses lecture resource webpage. For additional assistance, please contact Engineering Service Learning (engsl@ucmerced.edu).

7 Announcements:

Students are responsible to keep apprised on any milestones, or upcoming activities listed in the weekly announcements.

8 Course Requirements
8.1 Units:

Team leadership positions are allowed to enroll for two units. In general, one unit corresponds to an effort of 3-4 hours/week and two units 6-8 hrs. /week (total time spent in and outside of class). **All students wishing to enroll for two units must submit a written request and justification to their team advisor by the second team meeting**. Lower division students should register for ENGR-097. Upper division students should register for ENGR-197. Each section has both options available.

8.2 Lecture Credits:

All first-semester engineering service learning students must attend the first lecture.

Students enrolled in Engineering Service Learning for one unit must acquire three lecture credits, while those enrolled for two units must acquire six lecture credits. Lectures, Skill Session workshops, and adviser-approved events, with prior authorization, may be used to fulfill lecture credit course requirements. Students who do not earn the required number of lecture credits will receive a zero for the lecture Attendance component of their grade.

Lecture attendance is recorded only via Catcard logging system. **Students who scan their cards after 5 minutes after the start time of the lecture or leave early will not receive credit for that lecture.** Failure to swipe or card defects will count as an absence. In the event of a card reader error, a physical sign-in sheet will be provided.

8.3   Adviser Approved Activities:

Adviser-approved activities allow Engineering Service Learning students to receive lecture credits by carrying out work for their projects that have academic value. Typical activities include client meetings, and field-testing. Adviser-approved activities will only count towards lecture credit if the appropriate paperwork has been submitted within five business days of the activity.

8.4   Weekly Team Meetings:

Students meet weekly for 2 hours during their scheduled team meeting time in the PG&E Engineering Service Learning Laboratory (SE1 160). Team meetings attendance is required for all students. Students are marked absent 5 minutes after the start time of the team meeting. **Attendance is only accounted through the Catcard door system**. Failure to swipe a card, or defective cards will still count as a tardy or absence. Students who have more than three unexcused absences will receive a zero for team meeting attendance component of their grade. Excused absences include medical and family emergencies with documentation turned in within five business days of the event. Conferences, traffic, missed busses, and job-related activities do not count as excused absences.

Project contribution is assessed by the design documentation that is contributed by each individual.

8.5   Skill Sessions:

Skill Sessions are supplemental instruction (workshops) designed to aid students in the completion of their projects and professional development by providing them with a skill set. Topics range from public speaking to electrical circuitry. Attendance of Skill Session workshops is counted towards lecture attendance requirements. Skill Session attendance is recorded only via Catcard logging system. Students are expected to be on time and stay for the entire workshop. **Students who swipe their cards 5 minutes after the start time of the workshop, or leave early will not receive credit for that skill session**. In the event of a card reader error, a physical sign-in sheet will be provided.

8.6   Weekly Status Updates:

Team status updates are due each Friday at week 5:00 pm (PST). Status updates are to be emailed as a Word attachment to your faculty adviser and Engineering Service Learning staff (engsl@ucmerced.edu). The status updates describe the week's progress and plans for the coming week (team Communications Officer is responsible for weekly submissions).

8.7   Weekly Reflections:

Weekly reflections are required to be submitted via Catcourses each Friday at 5:00 pm (PST). Reflections help document and demonstrate individual accomplishments and learning of the design process as it relates to their specific project. **Submissions after the stated deadline not accepted**.

8.8   Semester Proposal and Preliminary Design Review Presentations and posters:

Engineering Service Learning teams submit a written semester proposal by week 4 of the semester outlining the plans, milestones, and responsibilities of the team for the upcoming semester. Preliminary Design Review presentations are to be 10 minutes with 5-minute question period following the presentation. Semester Proposals, Preliminary Design Review presentations, and posters are required to be submitted via Catcourses. **Submissions after the stated deadline are not accepted**.

8.9   Project Report and Final Design Review Presentations and posters:

Engineering Service Learning teams submit a written report on the progress of the project and present their progress and technical designs at the end of the semester.   Final Design Review presentations are to be 20-minutes with 5-minute question period following the presentation. Project Reports, Final Design Review presentations, and posters are required to be submitted via Catcourses. **Submissions after the stated deadline are not accepted**.

Attendance is required for all students for the Final Design Review presentation and poster session unless written approval from EngSL staff.

9   Grading (percent contribution to grade) *:

50%   Team Contribution

- 25% Team presentations (2)
- 10% Preliminary Design Review
- 15% Final Design Review
- 25% Team reports (2)
- 10% Semester Proposal
- 15% Project Report

50%   Individual Contribution

- 25% Weekly Reflections
- 25% Class participation, broken down as follows:
- 15% Team meeting attendance/contribution
- 10% Lecture/learning activity attendance

*students who are exceptionally weak in any one of these areas will not receive an "A"

10 Academic Integrity:

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. [*Optional:* For this course, collaboration is allowed in the following instances: *list instances.*]

You are encouraged to study together and to discuss information and concepts covered in lecture and the sections with other students. 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. The penalty for violation of this Policy can also be extended to include failure of the course and University disciplinary action.

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.

11   Accommodations for Students with Disabilities:

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. I am available to discuss appropriate academic accommodations that may be required for students with disabilities. Requests for academic accommodations are to be made during the first three weeks of the semester, except for unusual circumstances. Students are encouraged to register with the Disability Services Center to verify their eligibility for appropriate accommodations.

12 Spring 2019 Lecture Schedule*

Date	Week	Lecture Topic	Tasks/Assignments
28-Jan	1	Human Centered Design	Forms, Team Building, Calendar, Photo Shoot
4-Feb	2	Problem Identification	
11-Feb	3	Teamwork and Project Management	
18-Feb	4	**No School-Presidents Day**	Semester Proposals Due
25-Feb	5	Evaluation Criteria Specification Development,	
4-Mar	6	Prototypes and Tests	Preliminary Design Review, PDR Poster
11-Mar	7	Understanding Context	
18-Mar	8	Ethics	
25-Mar	9	**No School-Spring Recess**	
1-Apr	10	Functional Decomposition Brainstorming	
8-Apr	11	DMFEA	
15-Apr	12	Presentations	
22-Apr	13	Collaborative Writing	
29-Apr	14	Effective Transitioning	
6-May	15	**No Lecture – Design Review Prep**	Project Report, FDR Poster
17-May	Innovate to Grow	11:00 am-3:00 pm, Gym	

*Course schedule is subject to change