



TTP 289A-006 D-Lab I: An overview of Energy and Development- Winter 2012

Units: 3 units graded

Instructor: Dr. Kurt Kornbluth

Meeting times: Tuesday, Thursday 10:00-11:50. Additional 1 hour per week meeting with focus groups TBA

Location: 90 Social Sciences

Prerequisite: None

Course Description

This course is designed to educate and expose students to energy issues specific to developing countries. The course will focus on schemes to disseminate new technologies and provide hands-on practical experience in designing and implementing sustainable energy solutions. Students will apply basic engineering, social science, and business skills to evaluate a prospective project/venture through guest lectures, lab modules, and case studies. UC Davis D-lab I is the first of a 2-part series focusing on energy in developing countries and is based on the MIT D-lab series.

Lectures and reading assignments will present a brief history of energy use in the context of developing countries, tracing the rise of appropriate technologies and the role of government agencies, the private sector and non-governmental organizations in determining technology selection.

Using a bottom-up approach, D-Lab student teams work with local communities to understand specific energy needs and assess the sustainability of proposed energy solutions through technical, social, environmental, and financial lenses. In this process the community partner is *the client* and guides the D-Lab team in all phases. Areas of focus include water pumping and irrigation, post harvest drying and storage, off-grid lighting and micro power, and small-scale renewable energy such as solar and biogas.

Multi-disciplinary teams are formed and communicate directly with local partners to perform feasibility studies for proposed energy solutions. They will present their findings with regard to scale, context, stakeholder analysis, and possible alternatives.



Course Website: I use the course's Smartsite to post all course information, including reading, assignments, and powerpoints. Look under resources. I have posted a course syllabus (an excel document) on the Smartsite, which contains all assignments and will be updated from time to time so please treat it as a living document.

All assignments will be turned in as hard copies to the class period they are due. Final reports require a hard copy plus an electronic copy. Late work will not be accepted without prior arrangements.

Grading

Attendance and punctuality are mandatory (you are only allowed 1 unexcused absence), furthermore, it is a class where your work is has the potential to impact the lives of people around the world and we expect an appropriate level of commitment.

Lab write-ups

To receive full credit labs are to written up and turned in (hard copy) 1 week after the lab.

Class participation, attendance: 20%

Homework assignments: 20%

Labs: 20%

Group Presentations: 20%

Final Report: 20%

Laptops and Smartphones

As an experiment there will be no use of phones or laptops in class unless you have checked with the instructor.

Office Hours

Office Hours will be Monday from 11:00-12:00 in D-lab (1113 Academic Surge)