LANDSCAPE HACKING

Environmental Sensing and Responsive Design

Course:	LA254, Fall 2014
Instructors:	Allison Lassiter, abl@berkeley.edu
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Location:	Wurster 494 (Cal Design Lab)
Time:	Fridays, 10a - 12p
Office hours:	By appointment

CLASS DESCRIPTION

In this course, we will examine objects, installations and visualizations that interact with real-time environmental stimuli. Using the Arduino microcontroller, you will collect and evaluate environmental data. You will code, build circuits, and create responsive, digital urban interventions. Following the model of hacker spaces around the globe, we will collaboratively pose problems and find solutions, teaching and learning from one another.

No background in coding, electronics or physics is required, but a desire to learn is absolutely necessary.

OBJECTIVES

- Learn basic circuitry
- Learn basic coding with the Arduino Integrated Development Environment
- Learn how to read environmental data from sensors
- Measure meaningful environmental indicators
- Create mechanical, auditory, or digital visualizations in response to environmental data

STUDENT REQUIREMENTS

Each week, you are responsible for completing the assignments posted on the syllabus and detailed on hackerscapes.com. All assignments must be completed before class.

In addition, you must attend all of weekly meetings. Arriving to class more than 15 minutes late, or leaving early, will be considered an absence unless arrangements are made with the instructor well in advance. Please come on time (10:10 am). Any absences must be discussed with the instructor. Repeated illness will require a note from the doctor.

MATERIALS

For this course, you will need to purchase some Arduino parts. The required introductory kit is \$55. Your projects will require additional parts – depending on your project, this may be simple or elaborate. In total, please budget \$100-150 for the course.

GRADES

Late Projects will receive a 0. Late Labs will be penalized 4 points per day.

Participation	100 pts
Labs	120 pts (20 pts/lab)
Project 1	100 pts
Project 2	300 pts

ACADEMIC INTEGRITY

Any work submitted by you that bears your name is presumed to be your own original work that has not previously been submitted for credit in another course, unless you obtain prior approval to do so from your instructor. Please refer to the UC Berkeley Code of Student Conduct for additional information: http://studentconduct.berkeley.edu

COUNSELING

At times, we can all use help with our mental health. I am available at any time if you want to talk. Even better, please take advantage of the campus services at the Tang Center. The Tang Center's Counseling and Psychiatric Services (CPS) office is Room 3300, 2222 Bancroft Way. They are open MTWF, 8 am -5:30 pm. Emergency Counseling is available Monday - Friday, 10 am-12 and 1-5:30 pm. http://uhs.berkeley.edu/students/counseling/cps.shtml

CLASS SCHEDULE

WEEK	DATE	CLASS TOPICS	ASSIGNMENT DUE*
1	8/29	Introduction to Sensing + Design	
2	9/5	Circuitry: Blink, Fade, Potentiometer	Get up and running + readings
3	9/12	Sensors: Temperature, Light	Lab: LEDs
4	9/19	Mechanics: Motors	Lab: Sensors
5	9/26	Making Things Talk	Lab: Motors
6	10/3	More on Circuitry	Lab: Communication
7	10/10	More on Coding	Lab: Volts, amps, and resistance
8	10/17	Work on Project 1	Lab: Processing
9	10/19	FIELD TRIP: East Bay Mini Maker Faire Park Day School + Studio One Art 360 42nd St., Oakland (Temescal)	
	10/24	Work on Project 1	Project 1 Diagram
10	10/31	NO CLASS: Make-up time for field trip	
11	11/7	Present Project 1	Project 1 How-To
12	11/10	LECTURE: Bradley Cantrell 6:30p, Wurster Auditorium	
	11/14	Work on Project 2	
13	11/21	NO CLASS: Thanksgiving	
14	11/28	Work on Project 2	
15	12/5	Work on Project 2	
16	12/11	Present Project 2	Project 2

* See http://www.hackerscapes.com/category/course-materials/assignments/