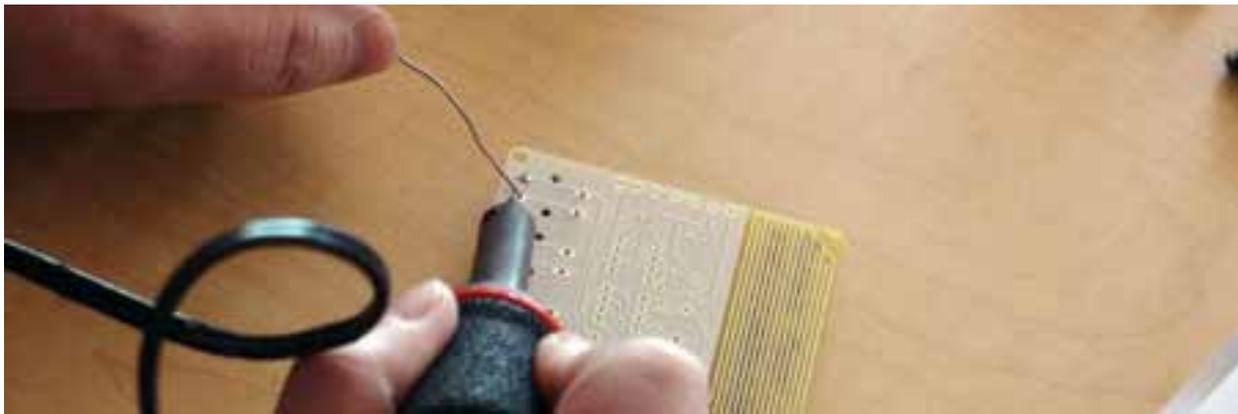




Institute for Multimedia Literacy
School of Cinematic Arts
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TANGIBLE COMPUTING IN THE HUMANITIES AND SCIENCES IML 535



Spring 2012
4 units
Thursdays, 1:00 – 3:50 pm
IML Blue Lab

Professor: Holly Willis
Email: hwillis@cinema.usc.edu
Office: EGG 200A
Office Hours TBA

COURSE DESCRIPTION

IML 535: Tangible Computing offers students without a background in engineering or computer science the opportunity to design interactions between computational devices and objects with the goal of creating new forms of scholarly expression.

The class is designed to solidify a foundation in computational literacy, and begins with an introduction to the programming language Scratch. Students then move on to use the NETlab Toolkit designed by Philip Van Allen at Art Center College of Design; the Toolkit offers an accessible entry point to “hardware sketching” and is designed to facilitate the easy integration of hardware, media and interactive behaviors.

Students will also explore the conceptual, cultural and social implications of pervasive computing, review its history and aspirations, and discover the ways in which scholars at other colleges and universities are deploying tangible computing, both in the humanities and sciences to further research goals and manifest that research in new ways.

HANDS-ON LAB COMPONENT

All classes at the IML integrate multimedia authoring and theory. Students in this course will have access to IML labs and will be using an array of software applications to complete assignments; you are invited to work with IML staff for tutorials and support.



REQUIRED TEXTS

- *Everyware: The Dawning Age of Ubiquitous Computing*, Adam Greenfield
- *Digital Ground: Architecture, Pervasive Computing and Environmental Knowing*, Malcolm McCullough
- *Shaping Things*, Bruce Sterling
- Further readings available on course wiki.

REQUIRED MATERIALS

- Scratch: a free programming language designed to introduce basic computational literacy. <http://scratch.mit.edu/>
- NETLab Toolkit: a free collection of software to aid in creating interactive projects uniting sensors, video, sound, lighting, motors and more. <http://www.netlabtoolkit.org/>

GRADING BREAKDOWN

- | | |
|---|-----|
| • Media-Rich Posts on Weekly Readings | 20% |
| • Scratch Exercise | 10% |
| • NETLab Toolkit Exercise #1 | 10% |
| • NETLab Toolkit Exercise #1 | 10% |
| • Final Project | 30% |
| • Final Project Presentation and Documentation | 20% |

Media-rich posts. Each student will keep a digital journal with text, image, links and video (if appropriate) that documents the weekly readings, screenings and tools. Minimum of 10 posts expected, written in an appropriate voice within a scholarly context.

Scratch Exercise. Students will be introduced to Scratch during the first weeks of the course, and will be asked to create a simple game to demonstrate understanding of the basic functionality of Scratch.

NETlab Toolkit Exercise. After an introduction to the NETLab Toolkit, students will undertake two exercises. The first creates an interaction between a motion sensor and a sound device; the other connects a knob to a video playback device.

Final Project Prototype. The final project unites some aspect of tangible computing with an idea specific to each student's discipline and research.

Final Project Demo and Documentation. In addition to completing the final project, students must also contextualize the project with respect to his/her own major and research through proper documentation procedures described in class. Students are expected to demo their projects with clarity and sophistication.

EVALUATION

In general, you will be graded using these criteria:

Conceptual Core

- The project's controlling idea must be apparent.
- The project must be productively aligned with one or more multimedia genres.
- The project must effectively engage with the primary issue/s of the subject area into which it is intervening.

Research Component

- The project must display evidence of substantive research and thoughtful engagement with its subject matter.
- The project must use a variety of credible sources and cite them appropriately.
- The project ought to deploy more than one approach to an issue.

Form and Content

- The project's structural or formal elements must serve the conceptual core.
- The project's design decisions must be deliberate, controlled, and defensible.
- The project's efficacy must be unencumbered by technical problems.

Creative Realization

- The project must approach the subject in a creative or innovative manner.
- The project must use media and design principles effectively.
- The project must achieve significant goals that could not be realized on paper.

POLICIES

FAIR USE AND CITATION GUIDELINES

We assert that all of our course work is covered under the Doctrine of Fair Use. In order to make this claim, however, all projects will need to include academically appropriate citations in the form of a Works Cited section, which covers all sources, in order to receive a passing grade. The Works Cited is either included in the project or as a separate document, as appropriate to your project. The style we use is APA 5th edition and you may refer to these guidelines: <http://owl.english.purdue.edu/owl/resource/560/01/>

STATEMENT ON ACADEMIC INTEGRITY

USC seeks to maintain an optimal learning environment. General principles of academic honesty include the concept of respect for the intellectual property of others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect one's own academic work from misuse by others as well as to avoid using another's work as one's own. All students are expected to understand and abide by these principles. *Scampus*, the Student Guidebook, contains the Student Conduct Code in Section 11.00, while the recommended sanctions are located in Appendix A: <http://www.usc.edu/dept/publications/SCAMPUS/gov/>. Students will be referred to the Office of Student Judicial Affairs and Community Standards for further review, should there be any suspicion of academic dishonesty. The Review process can be found at: <http://www.usc.edu/student-affairs/SJACS/>.

STATEMENT FOR STUDENTS WITH DISABILITIES

Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me (or to TA) as early in the semester as possible. DSP is located in STU 301 and is open 8:30 a.m.–5:00 p.m., Monday through Friday.

EMERGENCY PLAN

In the event that classes cannot convene at the university, all IML courses will continue via distance education. Specifically, the IML portal and course wikis will be deployed to enable faculty-student interaction (asynchronously and also via virtual office hours), complete syllabi, course readings and assignments, software tutorials, project assets, parameters and upload instructions, peer review

processes and open source alternatives to professional-level software used in the IML curriculum. Further details are available on the course wiki.