

# HCIN-720: Designing User Experiences for Internet-Enabled Devices

## Fall 2015

### Instructor

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### Info

Class meetings: Tuesdays and Thursdays, 2:00–3:15 pm  
GOL-3560 and ORN-1385 (*by announcement*)

Office hours: Thursdays, 3:30–5:00 pm  
FETLab: Orange Hall (Building 13) ORN-1385  
(*also by appointment via email*)

Website: <http://fetlab.rit.edu/720>

Slack: <http://hcin720-fall15.slack.com>  
(*note that I must sign you up in order for you to be able to log in to Slack*)

All course materials, assignments, readings, and updates will be posted to the course website above. Additionally, we'll use Slack as a communication channel, and updates will be posted there as well. MyCourses will only be used to post grades.

### Description

There is an ongoing revolution in the world of computing: no longer are personal screen-based devices (desktops, laptops, phone and tablets) the only ones for which we must design. We are entering a new age of computing, variously described as “ubiquitous computing,” “pervasive computing,” “the Internet of Things,” “everyware,” and so forth, in which the line between digital information and physical object is becoming much less clear.

In this course, we will explore the ideas behind devices and objects connected to digital information, learn about historical and contemporary research in the area, and spend a lot of time building prototypes of different kinds of Internet-enabled devices.

### Format

In general, on Tuesdays the course will be formatted as a lecture/discussion-style class, where historical and theoretical topics will be presented and discussed. Thursdays will generally be hands-on skill-building days where we will learn skills to prototype Internet-enabled devices. On some Thursdays (announced beforehand), we will meet in Dr. Ashbrook's research lab, the Future Everyday Technology Research Lab (FETLab), in Orange Hall (ORN) 1385.

### Objectives

Students will...

- learn about and understand the history of ubiquitous computing;
- be able to identify how historical research projects influence contemporary products;
- understand the breadth of contemporary ubiquitous computing-influenced products and identify their commonalities;

- identify the scales of user experiences with ubiquitous computing devices;
- and gain a basic knowledge of electronics, microcontrollers, Javascript, laser cutting, 3D printing, 3D modeling, and other prototyping skills.

## **Materials**

We will read a number of research papers in the course; most may be found on the ACM Digital Library, IEEEExplore, or via Google Scholar.

## **Policies**

### **Late Assignments**

Late assignments will generally not be accepted; with the instructor's prior permission, they will be accepted with a 50% penalty.

### **Attendance**

Students are expected to attend each class session, and to arrive on time. Students who miss class for any reason are responsible for gathering information about what was missed, and alerting the professor to how they will make up the in-class activities. No email, web surfing, texting, or phone use during class.

### **Attribution**

There will be a lot of coding in this course. For some of the work we do, there will be resources you can find on the Internet. It's okay to use libraries, code samples, and help from online, but **you must give proper attribution** to your sources! If you feel in doubt, err on the side of giving too much attribution rather than too little.

To give attribution for code, add a comment in your code clearly marking what you got from where, and include a list of sources in your Readme file that you turn in with each assignment.

To give attribution for ideas, images, papers, or anything else, include the source and a brief description of the material used in the relevant place (e.g. in the Readme for code, in your presentation if presenting, etc).

Note that you should be doing most of the work yourself! For example, for the first assignment, it's okay to grab someone's library to help you make a graph, but not okay to grab someone else's code that does all the first assignment for you.

### **Academic Integrity**

Students should be sure to review RIT's official policies concerning academic integrity.

**Violations of academic integrity (cheating, double submission, or plagiarism) will result in a failing grade!** In particular, for this class, this means that if you turn in material containing someone else's work without giving proper attribution, or if you copy entirely another's work without doing anything original yourself.

### **Assignments and Grading**

There are a number of assignments in this class. Each contributes a percentage to your final grade:

*Individual assignments (IA) (10% each—30% total)*

There will be four individual assignments; generally about a week and a half will be given for completion. These are intended to be relatively straightforward, giving you an opportunity to practice some of the skills you've learned in class. The grading rubric will be specified with each assignment, but in general more points will be awarded for creativity.

#### *Small group projects (10% each—20% total)*

There will be three small group assignments, where you'll work with one or two other students. Generally about two weeks will be given to complete them. These will be more in-depth and will require independent research and learning. They're an opportunity to combine multiple skills you've learned and perhaps pick up new skills independently. Like the individual assignments, the grading rubric will be specified with each one.

#### *Final project (25%)*

There will be one final project, which you will propose and implement in a small group. Its scale will be about the same as a small group assignment, but it will be much more free-form, being intended to allow you to synthesize everything you learn during the course. You'll have three weeks to complete the final project.

#### *In-class activities & presentations (15% total)*

There will be several times at which students will present during class. You'll present the results of the assignments and your final project, there will be occasional in-class activities such as UX analysis of existing products, where you will present the results, and there will be hands-on skill building in class for which you will be expected to be prepared. Each of the activities throughout will be weighted equally.

#### *Class participation (10%)*

There will be weekly reading assignments that you will be expected to complete (about one paper per week). Your class participation grade will be based in part on whether you illustrate that you've read the paper by constructively participating in discussion during class.

#### *Extra credit (5%)*

There may be optional activities for extra credit, worth up to 5% of your total grade.

### **RIT Gender-based discrimination policy**

RIT is committed to providing a safe learning environment, free of harassment and discrimination as articulated in our university policies located on our governance website.

RIT's policies require faculty to share information about incidents of gender based discrimination and harassment with RIT's Title IX coordinator or deputy coordinators, regardless whether the incidents are stated to them in person or shared by students as part of their coursework.

If you have a concern related to gender-based discrimination and/or harassment and prefer to have a confidential discussion, assistance is available from one of RIT's confidential resources on campus (listed below).

- The Center for Women & Gender: Campus Center Room 1760; 585-475-7464; CARES (available 24 hours/7 days a week) Call or text 585-295-3533.
- RIT Student Health Center – August Health Center/1st floor; 585-475-2255.
- RIT Counseling Center - August Health Center /2nd floor - 2100; 585-475-2261.
- The Ombuds Office – Student Auxiliary Union/Room 1114; 585-475-7200 or 585-475-2876.
- The Center for Religious Life – Schmitt Interfaith Center/Rm1400; 585-475-2137.
- NTID Counseling & Academic Advising Services – 2nd Floor Lynden B. Johnson; 585-475-6468 (v), 585-286-4070 (vp).