

 **HCIN-720: Designing User Experiences for Internet-Enabled Devices**  
**Fall 2016 Prototyping Wearable and Internet of Things Devices**

**Instructor**

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**Info**

Class meetings: Tuesdays and Thursdays, 2:00–3:15 pm  
FETLab: GOL-2330

Office hours: Thursdays, 3:30–5:00 pm  
FETLab: GOL-2330  
*(also by appointment via email)*

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

Slack: <http://hcin720-fall16.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 how to rapidly prototype and evaluate systems that combine hardware and software.

**Format**

The course will consist of lectures, hands-on demonstrations, working days in the classroom, and projects.

**Objective**

Students will learn to design and prototype mixed hardware/software wearable and IoT devices, gaining a basic knowledge of electronics, microcontrollers, Javascript, laser cutting, 3D printing, 3D modeling, and other prototyping skills.

**Materials**

In lieu of a textbook, students will be required to purchase a prototyping hardware kit.

**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.

## 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 *for the entire course!*** 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) (11% each—33% total)*

There will be three individual assignments. 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 project (33% total)*

There will be one small group assignment, where you'll work with one other student. This will be more in-depth and will require independent research and learning. It's 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 the assignment.

### *Final project (33%)*

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.

### *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).