

School of Communication University of Miami

CIM 542/642-1C

Physical Computing

Spring Semester 2018

Class Time: Monday, 10:10-12:40pm

Class Site: <https://github.com/zevenrodriguez/CIM542-642>

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SYLLABUS

COURSE DESCRIPTION AND PURPOSE:

This seminar will examine the differences and opportunities present, between a series of physical computing techniques and rapid prototyping.

COURSE OBJECTIVES:

- Understand to translate human to digital interactions
- How to setup basic electronic circuits
- Being able to program basic interactions
- Understand 3D printing process and best practices
- Able to design a basic physical human interface

MATERIALS FEES:

Arduino Starter Kit from Arduino.cc or from Adafuit.com

<https://www.adafruit.com/products/1078>

Learn Electronics with Arduino: An Illustrated Beginner's Guide to Physical Computing by Jody Culkin, Eric Hagan

ISBN-13: 978-1680453744

ISBN-10: 1680453742

COURSE PREREQUISITES: None

ASSIGNMENTS/COURSEWORK:

Assignments and due date will be assigned in class and posted on class website. Documentation and assignments should be kept on github and/or posted on a wiki.

Practice (8 total) <i>Consist of small sketches covering the day's lesson</i>	40%
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Midterm Project <i>Create an Arduino project that translates a simple user interaction to an output. Think about how your project might work in a larger context.</i>	20 %
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Final Project <i>An awesome interactive project that demonstrates your new found technical abilities as well as your attention to aesthetics.</i>	30%
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Participation	10%
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Note: Students enrolled in CIM642 assignments will be graded with greater rigor. When completing Class Assignments, Student applications must have a purpose and context which should be written in your blog entry.

TEXTS AND RESOURCES RECOMMENDED:

Online Resources:

<https://www.arduino.cc/>

RECOMMENDED READING:

Monk, Simon. Programming Arduino: Getting Started with Sketches
Mims III, Forest M. Getting Started in Electronics
Scherz, Paul and Monk, Simon. Practical Electronics for Inventors

GRADING/EVALUATION:

This is a skills based course and as such in class assignments are either complete or not. The professor determines whether the submitted assignment meets the appropriate criteria to be deemed completed. Midterm and final projects are graded on their functionality, aesthetics, creativity, and effort.

<i>Grade</i>	<i>Points Required</i>
A	95
A-	90
B+	87
B	84
B-	80
C+	77
C	74
C-	70
D	60
F	0

ATTENDANCE POLICY:

Students are expected to attend each class and be on time. All students are responsible for material covered in the classroom regardless of his/her presence. Three or more unexcused absences will result in the deduction of one complete letter grade. Doctor's appointments, job-related activities, interviews, study sessions or other meetings during class are *not* an excused absence.

RELIGIOUS HOLY DAY POLICY:

It is the student's obligation to provide faculty members with notice of the dates they will be absent for religious holy days, preferably before the beginning of classes but no later than the end of the first three (3) class days. Absences due to observance of religious holy days not pre-arranged within the first three class days may be considered unexcused and there is no obligation to allow any make up work, including examinations. Missing a class due to travel plans associated with a particular religious holy day does not constitute an excused absence. The University's complete Religious Holy Day Policy can be found in the current Bulletin.

HONOR CODE AND PLAGIARISM STATEMENTS:

Students enrolled in this course are expected to abide by the University of Miami Honor Code. The purpose of the Honor Code is to protect the academic integrity of the University by encouraging consistent ethical behavior in assigned coursework. Academic dishonesty of any kind, for whatever reason, will not be tolerated.

No honest student wants to be guilty of the intellectual crime of plagiarism, even unintentionally. Therefore, we provide you with these guidelines so that you don't accidentally fall into the plagiarism trap.

Plagiarism is the taking of someone else's words, work, or ideas, and passing them off as a product of your own efforts. Plagiarism may occur when a person fails to place quotation marks around someone else's exact words, directly rephrasing or paraphrasing someone else's words while still following the general form of the original, and/or failing to issue the proper citation to one's source material.

In student papers, plagiarism is often due to...

1. turning in someone else's paper as one's own
2. using another person's data or ideas without acknowledgment
3. failing to cite a written source (printed or Internet) of information that you used to collect data or ideas
4. copying an author's exact words and putting them in the paper without quotation marks
5. rephrasing an author's words and failing to cite the source
6. copying, rephrasing, or quoting an author's exact words and citing a source other than where the material was obtained. (For example, using a secondary source which cites the original material, but citing only the primary material. This misrepresents the nature of the scholarship involved in creating the paper. If you have not read an original publication, do not cite it in your references as if you have!)
7. using wording that is very similar to that of the original source, but passing it off as one's own.

The last item is probably the most common problem in student writing. It is still plagiarism if the student uses an author's key phrases or sentences in a way that implies they are his/her own, even if s/he cites the source.

In creative assignments, plagiarism is often due to...

- Copying, sampling, or modifying someone else's media or code without attribution or doing so when original work is expected or required for the assignment.
- Using stock imagery or media from a Creative Commons source without proper attribution.
- Removing source code licensing and attribution information and passing it off as your own.

- Using media without knowledge or documentation of copyrights, licensing, and other use restrictions.

COURSE TOPICS OUTLINE

Depending on the speed of the class, some topics might be delayed or sped up. In the case of delays, time will be devoted to workshops on trouble areas.

Week 1: Jan 15th - MLK Day

Week 2: Jan 22th - Intro to Physical Computing, Basic Electricity and Electronics

Week 3: Jan 29st - Getting Started with Arduino, Digital Input/Output

Week 4: Feb 5th - Analog Input/Output

Week 5: Feb 12th - Advanced Programming

Week 6: Feb 19st - Servos, Transistors, and Motors

Week 7: Feb 26th – Ideation Lab

Week 8: Mar 5th – Midterm Lab

Week 9: Mar 12th - Spring Break

Week 10: Mar 19st – Midterm Due, Intro to Serial

Week 11: Mar 26th - Intro to 3D Design

Week 12: Apr 2nd - Ideation Lab

Week 13: Apr 9th - 3D Design Continued

Week 14: Apr 16th - Final Lab

Week 15: Apr 23th - Final Presentation

STUDENT ACKNOWLEDGEMENT:

I HAVE RECEIVED AND READ THE SYLLABUS FOR CIM542/642 1C. I HAVE COMPLETED THE PREREQUISITE COURSES LISTED IN THE SYLLABUS OR HAVE HAD THE PROFESSOR SIGN BELOW TO CERTIFY A WAIVER OF THE PREREQUISITES.

SIGNED: _____

PRINT NAME: _____

DATE: _____

PROFESSOR PREREQUISITE WAIVER (IF NEEDED) _____