MAGD 271-01 Interactive Communication

Spring 2022

Classroom

McGraw 127

Meeting Times

12:30pm - 1:45pm, Tuesdays and Thursdays

Instructor

Fred Leighton, Assistant Professor MAGD program / Communication department

email <u>leightof@uww.edu</u>

Office Phone 262-472-5075

Mobile Phone 262-888-2307

Office Hours

Mondays and Wednesdays 11:15am to 1:45pm by appointment. Meetings can be schedule for alternate times, by appointment. If you plan on scheduling a meeting for a time not during regular office hours, please email the Instructor in advance, with a requested day and time.

Office

L1217G, Andersen Library, located in the L1217 corridor (near TV Station).

Prerequisites

MAGD 150

Course Format

Two in person class meetings per week, mixed format, lectures, demonstrations and discussions. Class meetings will take place in McGraw 127. Course material and related assignments will be available on Canvas along with information that supports class meetings.

Course Schedule

The course schedule is in the Calendar on Canvas. Information for individual class meetings will be made available on Canvas and reflected in the Calendar.

Course Overview

In this course, students will design, develop, and deliver working interactive media projects for computers with control via keyboard and physical interfaces. Content will be chosen by students, within the parameters and goals for an assignment or project. Students will learn to develop interactive projects using Arduino IDE software, a programming software that allows for writing sketches (programs). Students will also learn to the capabilities of physical interfaces including the Circuit Playground Express microcontroller board. Arduino sketches are transferred to the microcontroller board to run sketches. Fabrication of custom components and prototyping techniques for project work will be part of the course and will include working with a laser cutter. Interaction design theory and process will be introduced through lectures, readings, and discussion. Please note, students are not required to purchase any course materials. All student course materials will be provided in class.

Course Objectives

By the end of the course, students will:

Be able to create programs using the Arduino IDE (Integrated Development Environment) software.

Design and develop programs using the Circuit Playground Express microprocessor board programmed with the Arduino IDE.

Learn to write code for Arduino microprocessors, for use with Circuit Playground Express microcontrollers.

Learn capabilities of Circuit Playground Express, a microcontroller that contains multiple sensors (sound, light, temperature, movement) and outputs (data, speaker, colored light).

Learn a design process for developing projects that includes experimentation.

Understand the role of an interaction designer and examine examples of interaction design through readings, lectures, and discussions.

Learn prototyping methods for interaction design projects.

Apply principles of interaction design to course projects.

Learn fabrication methods including the use of a laser cutter for project components.

Develop skills in providing meaningful, constructive feedback for fellow students in class critiques.

Readings

Readings and resources will be made available during the semester on Canvas.

Sources will include:

The Design of Everyday Things, Don Norman, 2013.

Designing Interactions, Bill Moggridge, 2007.

Digital By Design, Troika (Conny Freyer, Sebastien Noel, Eva Rucki), 2008.

Makers: All Kinds of People Making Amazing Things In Garages, Basements, and Backyards, Bob Parks, 2006.

MAKE Magazine

online articles

Materials

All physical computing materials (microcontroller board, cables, sensors, LEDs, conductive materials, wood, and other materials) will be provided as part of the course. Students can purchase their own materials as well, but all of the equipment needed for the course will be provided in class with no cost to students.

Software will be available on computers in the classroom and remotely via <u>Citrix</u>. Any software tools used beyond what is available through the University will be free or open-source software.

Students should have some means of saving files, a thumb drive or other external drive, or online means of saving files (dropbox.com, Google drive etc.)

Canvas, and shared drives will be used for exchanging files.

All relevant course information will be located on Canvas.

Software / Microcontrollers

Arduino IDE software, installed on all computers in McGraw 127

Available from at https://www.arduino.cc/

Circuit Playground Express

https://www.adafruit.com/product/3333

Grading Opportunities

The final course grade will be calculated from the following areas:

40% assignments

60% projects

There will be four graded assignments that will each be worth 10% of the final grade. Details for each assignment will be given in the assignment description on Canvas.

There will be two graded projects. The first project will each be worth 25% of the overall course grade. The second project will be worth 35% of the final grade. Details for each project will be given in the project description on Canvas.

Class Mode

All classes meet in-person in McGraw 127. If there are changes to this during the semester, information will be communicated by the course instructor via campus email and/or Canvas.

Safety / COVID-19

Please follow <u>University guidelines</u> for minimizing your risk and that of others to infection. Face coverings are required in classrooms.

Grading Standards

Letter Grades:

- A (93 and above) Outstanding
- A- (90 92) Excellent
- B+ (87-89) High Achievement
- B (83-86) Good
- B- (80 82) Meets Requirements
- C+(77-79) Acceptable
- C (73-76) Average
- C-(70-72) Below Average
- D+ (67-69) Below Average
- D (63-66) Below Average
- D-(60-62) Below Average
- F (59 or below) Failure

Criteria for evaluation of assignments and projects:

Quality of work relating to concepts, ideas and research, as well as effective and creative use of tools for required tasks. All graded work assignments, and projects, will clearly state the objectives and areas of grading. This information will be included in the assignment, or project description. Feedback for graded work will communicate how a student performed and how the grade was calculated following the stated criteria. If there is any question during the semester as to why a grade was given or how it was determined, please see the instructor during office hours or other scheduled appointment time.

Attendance Policy

Class attendance is important to understanding the subject matter and successfully completing the course. If you are not able to attend a class meeting, use information posted on Canvas to keep up to date with class material.

Student Conduct

The University of Wisconsin-Whitewater is dedicated to a safe, supportive and nondiscriminatory learning environment. It is the responsibility of all undergraduate and graduate students to familiarize themselves with University policies regarding Special Accommodations, Academic Misconduct, Religious Beliefs Accommodation, Discrimination and Absence for University Sponsored Events (for details please refer to the Schedule of Classes; the "Rights and Responsibilities" section of the Undergraduate Catalog; the Academic Requirements and Policies and the Facilities and Services sections of the Graduate Catalog; and the "Student Academic Disciplinary Procedures (UWS Chapter 14); and the "Student Nonacademic Disciplinary Procedures") (UWS Chapter 17).

Students with Disabilities

Learning support services for students with disabilities is provided.

Students can get more information at the Center for Students with Disabilities:

http://www.uww.edu/csd