ART3807C Media Experiments in Technology and Art

Semester: Spring 2014  
Course Credit Hours: 3  
Instructor: Charlie Cummings (College of Fine Arts), charlie@ufl.edu 352-359-2015  
Instructor: David Cheney (College of Engineering), djcheney@ufl.edu  
Charlie’s Office Hours: Tue & Thu 2:00-3:00 or Fridays by appointment  
Office Location: FAC B17  
Class meets T/H 6:30-9:15pm at WARPhaus

This course is a collaborative, interdisciplinary, cutting-edge opportunity for students who want to gain real world engineering experience while learning to think creatively and analytically to create engaging works of art. The goal of META is to stimulate interdisciplinary collaboration and to develop creative methodologies that will enhance the life-long creative practice of both artist and engineers. Students will learn to create art using 3-D plastic printers, as well as learn basic electronics and the Arduino prototyping platform. Teams will be formed based on equal ratios of Engineering and Art students who register for the course. These teams will propose and produce projects that use electronic devices in a functional yet creative way. The teams will produce their projects over the course of the semester with assistance from professors in Engineering and Art. The result of these collaborations will be featured in a gallery exhibition at the end of the semester. Projects will be evaluated based on their functional and creative merits.

OBJECTIVES

- Work collaboratively and brainstorm collectively to develop ideas.
- Develop techniques to visualize concepts and communicate them to others.
- Integrate technical knowledge with artistic vision.
- Proficient with electronics and the Arduino prototyping platform.
- Proficient in 3-D printing.
- Learn how to troubleshoot a system by analyzing key components.
- Apply research and methodologies from other content areas to art making.

REQUIRED MATERIALS

- Adafruit ARDX - v1.3 Experimentation Kit for Arduino (Due by January 21)
- Prototyping shield and headers
- Laptop computer (we will assess and accommodate as needed).
- Various electronics tools.
- A sketchbook.
- Dropbox – Charlie will send you an invitation to your folder.

ART&ENGINEERING LINKS

Links and resources will be posted at: www.charliecummings.com
PARTICIPATION & READINGS
Participation, support, and respect in all phases of this course are imperative. The class dynamic depends on your energy, initiative, attitude, productivity, and willingness to get involved in group discussion and critiques. Participate in a responsive manner during critique and discussion. Complete all assigned readings and take notes so you can contribute to the discussion in class. Make safe and considerate choices with equipment and facilities. Do your part to keep the lab clean. Refrain from phone use, texting, chat, e-mail, and non-course related web surfing during class time. Ask questions and contribute answers. Offer constructive feedback during group discussions, class workdays, and critiques. Reflect on the comments you receive, to gauge the effectiveness of your work. Examine the way your ideas change, evolve, and influence formal and conceptual choices in your work. Development as an artist often hinges on your ability to make effective choices, express ideas clearly, and have fun.

GRADING AND EVALUATION
Grades are meant to reflect effort, ideas, and execution. Your overall grade will be based on participation and projects (including creativity, critical thinking, engagement with course information, research, presentation, technical proficiency with hardware and software, aesthetic application of technologies, and problem solving). Expectations will be explained in detail for each project when it is assigned. If anything seems unclear, you are responsible for asking the instructor for clarification far in advance of the due date. The most successful projects will exhibit close connections between their conceptual, technical, and material dimensions. UF grading policies website: https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

Final grades are based on:

- 10% - Arduino Deadline
- 10% - Collaborative effort, attendance
- 10% - Homework/Assignments
- 20% - Proposal
  - 15% Presentation
  - 20% Report
  - 25% Idea/concept
  - 10% Individual task assignment
  - 30% Milestones
- 50% - Final Project
  - 25% Individual effort (peer evaluation – collaboration)
  - 15% Studio participation
  - 15% Presentation
  - 20% Concept Realization
  - 10% Craft
  - 10% Technology
  - 10% Final Report

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ATTENDANCE
This course is a collaborative effort between students of different disciplines, therefore all students are expected to attend every class, prepared to participate. Up to two unexcused absences will be overlooked from a grading standpoint. The overall grade is lowered at the instructor’s discretion for each unexcused absence thereafter. Six or more absences, whether excused or unexcused, will result in a non-passing final grade. Tardiness and/or lack of appropriate class materials are unacceptable and may count as unexcused absences. Projects reflect learning, so you will succeed more easily with perfect attendance. Please refer to UF attendance policies: https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx
LATE WORK
Grades for late assignments and projects will be penalized at the instructor’s discretion (usually 20%). No work will be accepted after two class periods from the due date. 3D printing takes a long time, so you MUST meet deadlines for your projects to be included in print batches. Always attend class on project due dates. Even if you are not prepared to turn in your assignment, you still need to participate in discussion.

COMMUNICATION
The University of Florida and the School of Art + Art History strongly encourage you to use your @ufl.edu email address for all official UF business. You are encouraged to check your UF email account at least once a day. There is a listserv for this class. I will occasionally send timely information about Fab Lab equipment issues, class reminders, schedule changes, and other relevant class information.

When you need to contact me, here are my suggestions:
Email charlie@ufl.edu with complicated questions that require long answers. It may take 24-48 hours for me to answer emails. If you will miss class due to illness or UF activities, send me an email. This is the best way for us both to have a record of our communication.

Text me (352-359-2015) with short questions that need a quick answer. I will not reply when I am in class, so an answer may take up to several hours. If I am not in class, I usually answer quickly. Include your name so I know who you are. Never text after 10pm or before 8am.

Call me (352-359-2015) if you need verbal communication and it is very important to have a timely answer. Same rules as texting. I am very slow to return calls. Texting is better.

ACADEMIC HONESTY
Please do your own work, or you will fail. Students are expected to abide by the UF Academic Honesty Policy, which defines an academic honesty offense as “the act of lying, cheating, or stealing academic information so that one gains academic advantage.” Familiarize yourself with the academic honesty guidelines set forth by the University of Florida:
http://www.dso.ufl.edu/sccr/honorcodes/honorcode.php

ACCOMMODATION FOR STUDENTS
Students requesting classroom accommodation must first register with the Dean of Students office. The Dean of Students will provide documentation to the student who will then provide this to the instructor when requesting accommodation. The ADA office is located in Room 232 Stadium. Phone: (352) 392-7056 TDD: (352) 846-1046 http://www.ada.ufl.edu

UF STUDENT GUIDE
This resource covers important policies and procedures for students: http://ufstudentguide.com

UF COUNSELING AND WELLNESS CENTER
3190 Radio Rd.
PO Box 112662
HEALTH AND SAFETY
Please familiarize yourself with the UF SA+AH Health and Safety Handbook, available online: [http://saahhealthandsafety.weebly.com/handbook.html](http://saahhealthandsafety.weebly.com/handbook.html). Sign and return the waiver distributed on the first day of class. You are responsible for helping maintain the safety of the labs, especially by keeping them clean and free of trash and debris. Pick up after yourself, or your final grade will be lowered at the instructor’s discretion. Michael Christopher (mchristo@ufl.edu) is the area contact for health and safety issues. The following is an overview of the health and safety information specific to digital media art classes.

SA+AH CONTAINER POLICY
There are 2 types of labels used in the SA+AH-- Yellow and White. Both labels are found at the red MSDS box and are supplied by the SA+AH. Each is used for a different purpose.

White:
All new and or used products in containers (hazardous or what might be perceived as hazardous - i.e. watered down gesso, graphite solutions, satellite containers of solvents, powders, spray paints, fixatives, oils, solvents, etc…) must be labeled within the SA+AH to identify their contents. Labels can be found at the MSDS box in each studio and work area. All containers must be marked with your name, contents and date opened. All secondary/satellite containers for hazardous materials must be marked with content, your name and the date opened. All unmarked containers will be disposed of with no notice.

Yellow:
WHEN HAZARDOUS ITEMS ARE DESIGNATED AS TRASH. All containers must have a yellow label identifying the contents that are designated as trash for weekly EHS pick up.

- Flammable solid containers (red flip top) must have a yellow hazardous waste label on the outside (top).
- 5 gallon jugs must have a yellow hazardous waste label on the outside.
- Fibrous containers must have a yellow hazardous waste label on the outside (top).
- Each item in the blue bin must have a yellow hazardous waste label.

Note: Hazardous Waste labels should include all constituents in the waste mixture as well as an approximate percentage of the total for that item and must add up to 100%. Labels should also include the Bldg. and room number of the shop generating the waste along with the Waste Manager for your area, this is located on the SWMA sign posted at the sink or at the Waste Management Area.

TENTATIVE SCHEDULE
Jan 7• Intro
  What's going on in contemporary art/eng
  Previous MEAT projects
  @Assignment: Order kits (Arduino, Protoshield, tools)
    Complete contact info and survey for skills/strengths

Jan 9• Brainstorming in teams.

Jan 14• Take things apart (everyone should bring in something to take apart, toys, robots, printers, we will scavenge for parts).
  More examples art/eng.
Jan 16• Intro to 3-D printing / 3-D capture technology
   More examples art/eng.
   Assignment: Download and install Arduino software.

Jan 21• Arduino in-hand deadline – must bring to class (10% of grade)!
   Arduino demonstrations
   More examples art/eng.
   Assignment: Arduino tutorials 1-3 (Blinking LED, Multiple LEDs, Transistor & Motor)

Jan 23• Groups assigned: begin discussing project ideas.
   More examples art/eng.

Jan 28• Demonstrate Arduino tutorials 1-3
   Project idea discussion in groups
   More examples art/eng.
   Assignment: Arduino tutorials 4-6 (Servos, 74HC595 Shift Register, Piezo Elements)

Jan 30• Class discussion: what are your project ideas so far?
   More examples art/eng.

Feb 4• Demonstrate Arduino tutorials 4-6
   Circuits 101.
   Soldering workshop.
   Assignment: Arduino tutorials 7-10 (Pushbuttons, Potentiometers, Photo Resistors, TMP36 Temperature Sensor)

Feb 6• Proposal presentation to class with group discussion, formal report, abstract, sketches, functional sketch/description.

Feb 11• Demonstrate Arduino tutorials 7-10.
   Studio work day: Proposal detail development.
   Assignment: Arduino tutorials 11-13 (Relays, RGB LED, Force Sensitive Resistors)

Feb 13• Proposal presentation to class with group discussion
   code example, parts list and budget, milestones.

Feb 18• Demonstrate Arduino tutorials 11-13.
   Studio work day.

----- Begin studio workdays. Policy: Everyone is present for Studio days! ----- 
----- Progress reports at the beginning of class on Tuesdays. ----- 

Feb 20• Studio work day.

Feb 25• Demonstrate milestone #1
   Studio work day.

Feb 27• Studio work day.

Mar 1, 8• No Classes, Spring Break!!

Mar 11, 13• Studio work day.

Mar 18• Demonstrate milestone #2
   Studio work day.

Mar 20, 25, 27• Studio work day.

Apr 1• Studio work day.

Apr 3• Demonstrate milestone #3
   Studio work day.
Apr 8, 10, 15 • Studio work day.
Apr 17 • PROJECTS COMPLETE!
    Studio work day.
Apr 22 • GROUP PROJECT FINAL PRESENTATION.
Apr 25 • Public Exhibit at 4Most Gallery