ART 4642C Section: 1766: Digital Fabrication

University of Florida School of Art + Art History Spring 2014
Graduate Course Number: ART 5674C section: 09BH

Meets: T/TH Periods 8-10 (3:00 – 6:00 p.m.) FAC 306
Instructor: Charlie Cummings
Email: Charlie@ufl.edu
Office Hours: T/TH 2:00-3:00p.m. I will also be available on Fridays by appointment only
Office: FAC B17
Cell Phone: 352-359-2015
Fabrication Lab Manager: Mat Chandler - mpchandler@dcp.ufl.edu
Fabrication Lab Graduate Assistant: Juan Griego.
Class Site: https://art-tech-lab.arts.ufl.edu/wiki/projects/s14art4642cummings
The Art & Architecture Fabrication Lab is located in ARCH 307 Fabrication
Lab website: http://www.arts.ufl.edu/aafablaboratory/
Additional class resources will be posted under the student resources tab at
www.charliecummings.com

Description
This course is an in-depth exploration of the world of digital fabrication and contemporary art. Students will create projects by utilizing the Art & Architecture Fabrication Laboratory’s advanced facilities (including laser cutting, 3D scanning, rapid prototyping and manufacturing). We will consider digital fabrication in the context of an evolving discussion of the possibilities and limitations of the digitally mediated object in contemporary art practice. Central questions include: What role can digitally fabricated items play in expanding personal artwork and the field of fine art in general? How does an object's method of production influence its role as an art object? How can we use this equipment to expand the various fields of contemporary art? What does it mean to be able to translate objects from a virtual to a physical environment? How does choice of material influence our perceptions of a digitally produced object?

OBJECTIVES

- Learn to use advanced prototyping and manufacturing techniques in the production of art.
- Become adept at developing concepts that move from software to physical manifestations of form.
- Develop techniques to visualize artistic concepts and to communicate these concepts to a viewing audience.
- Consider materiality and the conceptual and aesthetic influence it exerts on a digitally produced object.
- Consider issues of commodity surrounding consumer and art objects.
- Integrate technical knowledge with artistic vision.
- Apply research and methodologies from other content areas to art making.
PROJECTS
The course will consist of 3 sections beginning with 3D modeling, scanning and printing, continuing with laser cutting, and ending with a final project utilizing the CNC Mill. Each section will begin with initial experiments in the focus area of the project allowing students to become familiar with the technical processes and requisite software. Over the duration of the term, each student plans, develops, and executes three major projects. Successful projects reflect thoughtful engagement with course topics, innovative use of lab technology as artistic tools, and developing a personal artistic voice.

REQUIRED MATERIALS
- USB flash drive, 1GB minimum, for storage and transfer of digital files.
- Notebook/Sketchbook
- Materials for laser cutting, such as paper, Plexiglas, wood, or other materials based on your project.
- One or more 4x8 foot sheets of plywood for the CNC Mill.
- Readings (available in .pdf format on class wiki)
- Software: Photoshop, Illustrator, Maya (all available in the FAC 306 lab and campus labs)
- Each student is charged a $120 Fab Lab four month access fee and also must pay for 3D printing materials, calculated by volume (charges go through ISIS)
- Digital assignments will be turned in digitally to a Dropbox folder. You will receive an email invitation to your individualized folder.
- VPN is required to access the class wiki from off campus.

PARTICIPATION
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! 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 and express your ideas clearly. Lastly: play, explore, experiment, and have fun!

GRADING AND EVALUATION
Grades are meant to reflect effort, ideas, and success in execution. Your overall grade will be based on your projects (including creativity, critical thinking, engagement with course information, research, presentation, technical proficiency with hardware and software, aesthetic application of technologies, and problem solving) and participation. 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 aesthetic dimensions.
Final grades are based on:

- 25% - Project 1: 3D Modeling/Print
- 20% - Project 2: Laser Cutting
- 25% - Project 3: CMC Mill
- 10 Homework
- 10 Quizzes
- 10 Participation and readings

- 93 to 100 = A
- 90 to 92 = A-
- 87 to 89 = B+
- 83 to 86 = B
- 80 to 82 = B-
- 77 to 79 = C+
- 73 to 76 = C
- 70 to 72 = C-
- 67 to 69 = D+
- 63 to 66 = D
- 60 to 62 = D-
- below 60 = E

ATTENDANCE

All students are expected to attend every class, prepared to participate. Up to three 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 and it will reflect positively on your participation grade for that critique.

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.

I use Facebook as a platform to promote my career as an artist and to promote my colleagues and students. You may friend me if you would like for me to tag you in images of your work I post (both with your permission.) I will never respond to a class related question posted on my wall or sent as a fb message. I also promise to never post class related questions or your wall.

ACADEMIC HONESTY

There are many pre-designed or pre-modeled digital objects available on the web. Never use any of these files for your projects unless you have my explicit permission and you modify the file significantly from its original form. 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/honorcode.php

UF MEDIA LABS

Never bring food or drinks into the lab, not even water. Class periods will always include breaks so you can step outside. Save your work onto a portable drive before logging off; files left on lab computers may be erased without warning.

FAC 306 lab hours: http://plaza.ufl.edu/mchristo/306-schedule.html
UF Academic Technology lab hours: https://labs.at.ufl.edu/Hours.php

ACCOMODATION 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:

https://catalog.ufl.edu/ugrad/current/Pages/academic-regulations.aspx
HEALTH AND SAFETY

Please familiarize yourself with the UF SA+AH Health and Safety Handbook, available online: http://arts.ufl.edu/art/healthandsafety. 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.

Area Specific Information: Digital Media

1. Hazards of Materials Batteries, old monitors, lamps form digital projectors if broken may release mercury. THERE ARE NO KNOWN HEALTH HAZARDS FROM EXPOSURE TO LAMPS THAT ARE INTACT.

2. Best Practices: Though not much is generated, the Digital Media technician is certified for handling Hazardous Waste by the University of Florida. For installations or sculptural elements, please cross-reference with other area specific information as needed.

3. Area Rules • Follow all SA+AH Health and Safety handbook guidelines. • Alcohol is not permitted (open or closed containers). • No smoking in the building or within 50 feet of the entry. • No eating or drinking in the lab. • Shoes must be worn at all times. • Protective equipment must be worn for hazardous work. • Do not block aisles, halls or doors with stored items or when working. This is a violation of fire codes. • Do not store anything on the floor. This impeded cleaning and creates a hazard. • Do not park bikes in the building. • Clean up spills immediately. • Take items which do not fit into the trash to the dumpster, follow dumpster guidelines.

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 product 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.
- 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.
- 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 Building 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.