

Design and Fabrication for Physical Space

EXP 210, 2021-2022 Winter

Class Schedule: Wednesday, 5:45 - 7:15PM

Location: Daley 310 - Idea Realization Lab, Zoom as noted

Office Hours: 5:00-6:00PM Thursday, Friday + additional times may be requested via email

Location: Zoom - <https://depaul.zoom.us/my/acamarde.depaul>

Instructors¹

Andrew Camardella, acamarde@depaul.edu

Course Description

This workshop introduces students to digital fabrication techniques. A focus on 2D and 3D design principles and ergonomics will be a prominent theme throughout the course. Students will experiment with various methods of additive and subtractive fabrication, using CNC machines and 3D Printers. Students will also become familiar with associated file formats, fabrication processes pros/cons, and documentation for remote production.

Prerequisite(s): None

Each week you will be expected to spend 2-4 hours outside of class on readings and/or projects. You should plan to spend some time in the IRL (or other makerspace) completing projects.

Learning Goals

- Create objects using various methods of additive and subtractive fabrication with attention to function, ergonomics, and aesthetic detail.
- Understand how to design artifacts through splicing and CAD software.
- Understand how stepper motors and digital fabrication machines function and how to identify and work within their limitations.

Required Materials

- *None - everything we're using is free!*

Assignment due dates/rubric

- Exercises will be due, when assigned, the following **first day of class of the following week**. Criteria will be laid out in each weekly assignment section.

1. Vinyl Cutting

- Part 1** - Introduction to the class, IRL orientation
- Part 2** - Vinyl cutting software and applications

2. 3D Printing

¹ Class is newly modified, but was originally developed and taught by Jay Margalus, jmargal@cdm.depaul.edu

- a. **Part 1** - 3D Printing Software
 - b. **Part 2** - 3D Printing Hardware
3. **More 3D Printing**
 - a. **Part 1** - 3D Printing Advanced Topics
 - b. **Part 2** - 3D Printing Advanced Topics
4. **Laser Cutting**
 - a. **Part 1** - Laser Cutting Software
 - b. **Part 2** - Laser Cutting Hardware
5. **Final Project**
 - a. **Part 1** - 3D Printing Exquisite Corpse
 - b. **Part 2** - In-Class Work Time

Grade Distribution

- 10% Vinyl Cutting Project
- 15% 3D Printing Project
- 15% CNC Milling Project
- 20% Laser Cutting Project
- 15% meaningful in-class participation
 - **Not** just attendance. You might have heard the phrase “90% of success is just showing up,” but that isn’t the case here. We’ll be practicing constructive criticism, an important design tool, which requires that you lean into in-class discussions and projects with sincere enthusiasm, a spirit of collaboration, and insightful comments.
- 25% final project

Late Assignments

Late assignments will not be accepted without an appropriate, documented excuse. Assignments are due at the start of class unless otherwise stated.

Academic Integrity

This course will be subject to the academic integrity policy passed by faculty. More information can be found at <http://academicintegrity.depaul.edu/>.

The university and school policy on plagiarism can be summarized as follows: Students in this course should be aware of the strong sanctions that can be imposed against someone guilty of plagiarism. If proven, a charge of plagiarism could result in an automatic F in the course and possible expulsion. The strongest of sanctions will be imposed on anyone who submits as his/her own work any assignment which has been prepared by someone else. If you have any questions or doubts about what plagiarism entails or how to properly acknowledge source materials be sure to consult the instructor.

Using and citing electronic sources - In conducting research for this course, I encourage you to consult those standard reference tools, scholarly projects and information databases, and peer-reviewed academic journals that may be found on the Internet in addition to traditional print resources. Keep in mind, however, that those electronic sources must be acknowledged. Please see the Modern Language Academy Handbook, section 4.9, for information on the correct citation of these sources.

Withdrawal

Students who withdraw from the course do so by using the Campus Connection system (<http://campusconnect.depaul.edu>). Withdrawals processed via this system are effective the day on which they are made. Simply ceasing to attend, or notifying the instructor, or nonpayment of tuition, does not constitute an official withdrawal from class and will result in academic as well as financial penalty.

Retroactive Withdrawal

This policy exists to assist students for whom extenuating circumstances prevented them from meeting the withdrawal deadline. During their college career students may be allowed one medical/personal administrative withdrawal and one college office administrative withdrawal, each for one or more courses in a single term. Repeated requests will not be considered. Submitting an appeal for retroactive withdrawal does not guarantee approval. College office appeals for CDM students must be submitted online via MyCDM. The deadlines for submitting appeals are as follows:

Autumn Quarter: Last day of the last final exam of the subsequent winter quarter

Winter Quarter: Last day of the last final exam of the subsequent spring quarter

Spring Quarter: Last day of the last final exam of the subsequent autumn quarter

Summer Terms: Last day of the last final exam of the subsequent autumn quarter

Excused Absence

In order to petition for an excused absence, students who miss class due to illness or significant personal circumstances should complete the Absence Notification process through the Dean of Students office. The form can be accessed at <http://studentaffairs.depaul.edu/dos/forms.html>.

Students must submit supporting documentation alongside the form. The professor reserves the sole right whether to offer an excused absence and/or academic accommodations for an excused absence.

Incomplete

An incomplete grade is a special, temporary grade that may be assigned by an instructor when unforeseeable circumstances prevent a student from completing course requirements by the end of the term and when otherwise the student had a record of satisfactory progress in the course. CDM policy requires the student to initiate the request for incomplete grade before the end of the term in which the course is taken. Prior to submitting the incomplete request, the student must discuss the circumstances with the instructor. Students may initiate the incomplete request process in MyCDM.

- All incomplete requests must be approved by the instructor of the course and a CDM Associate Dean. Only exceptions cases will receive such approval.
- If approved, students are required to complete all remaining course requirement independently in consultation with the instructor by the deadline indicated on the incomplete request form.
- By default, an incomplete grade will automatically change to a grade of F after two quarters have elapsed (excluding summer) unless another grade is recorded by the instructor.
- An incomplete grade does NOT grant the student permission to attend the same course in a future quarter.

Students with Disabilities

Students who feel they may need an accommodation based on the impact of a disability should contact the instructor privately to discuss their specific needs. All discussions will remain confidential. To ensure that you receive the most appropriate accommodation based on your needs, contact the instructor as early as possible in the quarter (preferably within the first week of class), and make sure that you have contacted the Center for Students with Disabilities (CSD) at:

Student Center, LPC, Suite #370

Phone number: (773)325.1677

Fax: (773)325.3720

TTY: (773)325.7296