

DMA 495: DESIGNING FOR PHYSICAL EXPERIENCES

INSTRUCTOR

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COURSE INFORMATION

DMA 495 Section 802 - Class number 26470
Class time: Wednesdays 5:45 - 9:00
Location: 14 E. Jackson, 310 - IRL Lab
Course homepage: d2l.depaul.edu/
Slack: physicalexperiences.slack.com
Last day to drop the course: Jan 18, 2019
Last day to withdraw: Feb 22, 2019

COURSE DESCRIPTION

Designing for Physical Experiences is a studio course that will focus on designing for experiences beyond the screen. The course centers on learning how to apply digital fabrication skills (laser cutting, 3D printing, etc.) and introductory electronics (circuits, soldering, Arduino, etc.) to designing and prototyping human centered interactive experiences. Prerequisite(s): None

CLASS FORMAT

Classes will be a combination of discussions and workshops. The first half of the quarter will be more heavily focused on learning digital fabrication techniques and introductory electronics. Students will work individually, using various machines to create solutions that address topics relevant to physical design. The second half will focus on application of the skills and concepts learned in the beginning of the course through the creation of a self defined final project. Students should plan to spend additional time in the IRL Lab outside of class each week to complete assignments.

LEARNING OUTCOMES

1. Demonstrate competency to operate various digital and analog fabrication machines.
2. Create designed objects using digital fabrication techniques and introductory electronics.
3. Apply an iterative design methodology to designing physical objects and interfaces.
4. Design objects using various methods of additive and subtractive fabrication with attention to function, ergonomics, and aesthetic detail.
5. Evaluate interaction design principles as applied to various physical design scenarios.

OPTIONAL TEXTS (ALL AVAILABLE THROUGH DEPAUL EBOOKS)

- Make: Getting Started with CNC; Edward Ford
- Make: Getting Started with 3D Printing; Liza Wallach Kloski, Nick Kloski

EVALUATION & GRADING

Coursework includes the following components.

	Grade Proportion
Workshop Projects	45%
Final Project	35%
Weekly Slack Posts	10%
Reflection Paper	10%

Workshop Projects. Small individual projects designed to teach operation of the machines and address relevant topics.

Final Project. Either individual or partner project that addresses a topic discussed in class. The project should utilize multiple digital fabrication techniques or electronics.

Weekly Slack Posts. Every student is required to post to their personal Slack channel at least once a week. Most weeks the post will be focused on project progress unless instructed otherwise.

Grading Scale

Letter grades will be given based on the following minimum percent of total points earned.

A	93.00%	Excellent/Outstanding effort
A-	90.00%	Very Good
B+	88.00%	
B	83.00%	Good
B-	80.00%	
C+	78.00%	
C	73.00%	Satisfactory
C-	70.00%	
D+	68.00%	
D	60.00%	
F	0.00%	

CLASS SCHEDULE (SUBJECT TO CHANGE)

1: INTRODUCTION TO DIGITAL FABRICATION + ELECTRONICS

1 Jan 9

In class:

- *Topics:*
 - digital fabrication process
 - design process as applied to physical design in this class
- *Workshops:*
 - vinyl cutter
 - electronics - circuit intro, paper/wearable circuits, breadboarding

Homework:

- make a sticker using the vinyl cutter
- vector software tutorials pt. 1 (choose Inkscape or Illustrator, links on D2L)
- post to Slack

Read:

- Make: Getting Started with CNC, Edward Ford - http://proquestcombo.safaribooksonline.com.ezproxy.depaul.edu/book/hardware/9781457183355/cover/cover_html
- Additional article links on D2L

2 Jan 16

Due today:

- vinyl cut sticker

In class:

- *Topics:*
 - review/critique vinyl cut stickers
 - interaction design principles
 - designing for 'self'
- *Workshops:*
 - CNC
 - electronics - soldering

Homework:

- create an object using the laser cutter
- vector software tutorials pt. 2 (choose Inkscape or Illustrator, links on D2L)
- post to Slack

Read:

- Article links on D2L

3 Jan 23

Due today:

- laser cut object

In class:

- *Topics:*
 - review/critique laser cut objects
 - designing for 'home'
 - wearables and ergonomics
- *Workshops:*
 - laser cutter
 - electronics - MakeyMakey

Homework:

- create an object using the CNC router
- 3D modeling software tutorials pt. 1
- post to Slack

Read:

- Make: Getting Started with 3D Printing, Liza Wallach Kloski; Nick Kloski - http://proquestcombo.safaribooksonline.com.ezproxy.depaul.edu/book/hardware/3d-printing/9781680450194/cover/cover_html
- Additional article links on D2L

4 Jan 30

Due today:

- CNC object

In class:

- *Topics:*
 - review/critique CNC objects
 - designing for 'museums'
 - engaging the senses
- *Workshop:*
 - 3D printer
 - electronics - Arduino/Circuit Playground

Homework:

- create an object using a 3D printer
- 3D modeling software tutorials pt. 2
- post to Slack

Read:

- Article links on D2L

5 Feb 6

Due today:

- 3D printed object
- final project proposal

In class:

- *Topics:*
 - review/critique 3D printed objects
 - designing for the 'city'
 - discuss final project proposals
- *Workshop:*
 - wood shop
 - open lab (work on final project)

Homework:

- final project plan
- post to Slack

Read:

- Article links on D2L

3: APPLICATION

6 Feb 13

Due today:

- final project plan

In class:

- *Topics:*
 - accessibility
- *Workshop:*
 - sewing machines
 - machine review, revisiting previous workshops
 - open lab (work on final project)

Homework:

- post to Slack

Read:

- Article links on D2L

7 Feb 20

In class:

- *Topics:*
 -
- *Workshop:*
 - screenprinting
 - open lab (work on final project)

Homework:

- final project first iteration
- post to Slack

Read:

- Article links on D2L

8 Feb 27

Due today:

- Final project first iteration - progress check

In class:

- *Topics:*
 - testing methods
- *Workshop:*
 - open lab (work on final project)

Homework:

- Final project ready for testing/demo
- post to Slack

Read:

- Article links on D2L
-

9 Mar 6

Due today:

- Final project testing

In class:

- *Topics:*
 - TBD
- *Workshop:*
 - open lab (work on final project)

Homework:

- post to Slack

Read:

- No readings
-

10 Mar 13

Due today:

- Final project + presentation

In class:

- Final project presentations

Homework:

- Final reflection paper
-

11 Mar 20

No class meeting

Due today, submit to D2L:

- Reflection paper

POLICIES & EXPECTATIONS

Guidelines for Class Behavior

- Be professional. Treat this class like a job.
- Be respectful towards others. Listen when others talk and share ideas.
- Attend every class. (Communicate with me if you must miss class for any reason, you wouldn't just fail to show up to a job.)
- Arrive on time to every class. Important information is communicated at the very beginning of class.
- Food and drink during class is ok.
- Keep your phones in silent mode, in your bag or pocket, and no texting in class. If you have a need to be available by phone (sick relative, etc.), please let me know.
- If you are not taking notes or viewing other class materials on your laptop, it should be closed. If you are found using your computer for purposes other than this class, you may lose the privilege to use your computer during class.
- Be engaged in class discussions and workshop activities, your participation grade depends on it:
 - Participate with enthusiasm
 - Show genuine effort to cooperate with others
 - Show leadership and take initiative in group efforts
 - Frequently and eagerly offer your thoughts, perspectives, and responses to instructor/classmates
 - Make contributions that reflect excellent preparation (i.e., complete required reading)
- Practice professionalism
 - Communicate (face-to-face, emails, etc.) with the professor and fellow students in a professional and appropriate manner
 - Use body language (ex., eyes, posture) that shows active listening during instructor/student presentations
 - Be careful not to distract others (socializing, sleeping, leaving early or during class, reading unrelated material, doing homework for another class or wearing inappropriate attire);
 - Be respectful towards others

Attendance

Students are expected to attend each class and to remain for the duration. Attendance will be taken. **Coming 15 minutes late or leaving 15 minutes early constitutes an absence for the student.** *Three absences for any reason, whether excused or not, may constitute failure for the course. Communicate with me if you must be absent or late for any reason.* Students are individually responsible for material they may have missed due to absence or tardiness. Please notify me in advance if there are any special needs.

Late Assignments

Late assignments will be accepted only if you **(1) contact me before the due date** with an explanation, and I find the explanation acceptable, **(2) you turn in the assignment within three day extension.** After the three day extension, you will receive a 0 on the assignment unless other arrangements have been discussed.

If you do not communicate with me at all within 24 hours of the due date, I will NOT accept the assignment and no credit for the assignment will be given. My policy is intended to encourage communication with me regarding any difficulty handing the assignment in on time.

Please be sure when uploading assignments to D2L that the file has uploaded to the Dropbox. I will not accept the excuse that 'I thought I

uploaded it, it must not have gone through'. If you have trouble uploading, please contact me.

Late assignments may not have comments or reviews included.

Group Assignments

When working in groups, you are responsible for communication outside of class within your group. It is your responsibility to be proactive in reaching out to group members and working together to complete assignments. When a group assignment is handed in, it is assumed that the work represents the final deliverable for the whole group. The entire group should review the assignment before it is handed in. If your group is having trouble communicating and/or working together, please contact me as soon as possible to resolve issues.

Incomplete Grades

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.

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

Changes to Syllabus

This syllabus is subject to change as necessary during the quarter. If a change occurs, it will be thoroughly addressed during class, posted under Announcements in D2L and sent via email.

Online Course Evaluations

Evaluations are a way for students to provide valuable feedback regarding their instructor and the course. Detailed feedback will enable the instructor to continuously tailor teaching methods and course content to meet the learning goals of the course and the academic needs of the students. They are a requirement of the course and are key to continue to provide you with the highest quality of teaching. The evaluations are anonymous; the instructor and administration do not track who entered what responses. A program is used to check if the student completed the evaluations, but the evaluation is completely separate from the student's identity. Since 100% participation is our goal, students are sent periodic reminders over three weeks. Students do not receive reminders once they complete the evaluation. Students complete the evaluation online in CampusConnect (<https://campusconnect.depaul.edu>).

Academic Integrity and Plagiarism

This course will be subject to the university's academic integrity policy. More information can be found at <http://academicintegrity.depaul.edu/>. If you have any questions be sure to consult with your professor.

Academic Policies

All students are required to manage their class schedules each term in accordance with the deadlines for enrolling and withdrawing as indicated in the [University Academic Calendar](#). Information on enrollment, withdrawal, grading and incompletes can be found at: <http://www.cdm.depaul.edu/Current%20Students/Pages/PoliciesandProcedures.aspx>

Civil Discourse

DePaul University is a community that thrives on open discourse that challenges students, both intellectually and personally, to be [Socially Responsible Leaders](#). It is the expectation that all dialogue in this course is civil and respectful of the dignity of each student. Any instances of disrespect or hostility can jeopardize a student's ability to be successful in the course. The professor will partner with the Dean of Students Office to assist in managing such issues.

Resources for 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: csd@depaul.edu.

Lewis Center 1420, 25 East Jackson Blvd.
Phone number: (312)362-8002
Fax: (312)362-6544
TTY: (773)325.7296

Visit the Writing Center

Consider visiting the Writing Center to discuss your written assignments for this course. Writing Center Tutors are specially trained undergraduate and graduate students who can help you at any stage of your writing project. They can help you focus and develop your ideas, review your drafts, and polish your writing, as well as answer questions about grammar, mechanics, style, and citation.

You may schedule appointments on an as-needed or weekly basis. In addition to Face-to-Face appointments, the Writing Center also provides Written Feedback by Email and Online Appointments. Be sure to schedule your appointment with enough time to think about and incorporate the feedback you'll receive. Bring/upload your assignment handout and/or any other relevant materials to your appointment.

How do I schedule a Writing Center appointment? To schedule a Face-to-Face, Written Feedback by Email, or Online Appointment, visit www.depaul.edu/writing. You can also call one of our offices: (312) 362-6726 (Loop Office, 1600 Lewis Center) or (773) 325-4272 (LPC Office, 250 McGaw Hall). When possible, the Writing Center accepts walk-in requests, but it's always a good idea to schedule your appointment ahead of time. You may schedule tutorials on an as-needed basis or as weekly standing appointments up to 3 hours per week. All Writing Center services are free to the DePaul community.