

# EXP 210: DESIGN AND FABRICATION WORKSHOP

## INSTRUCTOR

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## COURSE INFORMATION

EXP 210 Section 501 - Class number 27253  
Class time: Wednesdays, 3:10 - 4:40  
Location: 14 E. Jackson, 503 - Loop Campus  
Course homepage: [d2l.depaul.edu/](http://d2l.depaul.edu/)  
Slack: [exp210.slack.com](http://exp210.slack.com)  
*Last day to drop the course: Jan 15, 2017*  
*Last day to withdraw: Feb 19, 2017*

## 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.  
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 Physical Computing Lab (or other makerspace) completing projects.

## LEARNING OUTCOMES

1. Design objects using various methods of additive and subtractive fabrication with attention to function, ergonomics, and aesthetic detail.
2. Understand the software principles necessary to create well designed digitally fabricated objects.
3. Understand how to use the hardware necessary to create well designed digitally fabricated objects.

## REQUIRED TEXTS

- Getting Started with CNC. Edward Ford (2016). ISBN13: 9781457183362
- Getting Started with 3D Printing. Liza Wallach Kloski, Nick Kloski (2016). ISBN13: 9781680450200

## EVALUATION & GRADING

Coursework includes the following components.

	Grade Proportion
Participation	15%
CNC Project	20%
3D Printing Project	25%
Final Project	30%
Reflection Paper	10%

**Participation.** The participation portion of the grade is based on attendance and contributions to class discussions and activities. Weekly Slack posting will also be factored into the participation grade.

**Projects.** Assignment details will be posted on D2L. Be sure to submit your work to the D2L before class starts on the day it is due.

**Homework.** Weekly homework and reading assignments will be posted on D2L. All homework and reading should be finished and submitted before the start of the next class.

## 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

This course is under development and is subject to on-going revisions. The assignment schedule on D2L will be updated as the quarter progresses and should be used as the definitive assignment schedule and due dates. Homework and assignments will be discussed in class each week at the beginning of class. The weekly reading assignments will be posted on D2L before the start of class each week.

### 1: CNC PROJECT

**1** Jan 4            Syllabus, course overview and expectations  
Intro to Digital Fabrication  
Intro to CNC Machines and Software

**2** Jan 11            CNC Hardware  
Cutting with the CNC

**3** Jan 18            **Due: CNC project**  
Intro to 3D Printing

### 2: 3D PRINTING PROJECT

**4** Jan 25            3D Printing Software  
Principles of Ergonomics

**5** Feb 1             3D Printing Hardware  
Printing with the MakerBot

**6** Feb 8             **FIELD TRIP**

**7** Feb 15            **Due: 3D Printed project**  
Intro to final project

### 3: FINAL PROJECT

**8** Feb 22            Review Final Project sketches/digital files

**9** Mar 1             Build and refine final project

**10** Mar 8            **Due: Final Project**

**11** Mar 15           **NO FINAL EXAM CLASS**  
**Due: Reflection paper, submit to D2L**

# 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.

## 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](mailto: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](http://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.