Intro to SDM 2: How To Make Anything
APDM 1803 CRN 14949 – PC1 SPRING 24

Instructors: Martin De Bie, Pascal Nuzzo
E-mail: debiem@newschool.edu**,** nuzzop@newschool.edu
Semester: Spring 2024
Days/Times: Fridays from 10h00 to 12h40 CET
Room: Maker Lab
Location: Parsons Paris Romainville

Course Description

This course teaches students to envision, design and prototype projects using diverse materials, machines, and digital fabrication tools. It is a multi-disciplinary and hands-on learning experience that empowers students to translate ideas into tangible prototypes, do-it-yourself, and engage with the maker community in Paris and worldwide. Across 15 sessions, students will learn to sketch product ideas, prototype with cardboard, wood, and paper, as well as computer-aided design, 3D printing, building models, and making objects smart with electronics and pre-programmed components. By the end of the course, students will be able to conceptualize, make, document, and share physical prototypes of all kinds in sustainable ways.

Class description

During this class, students will create small projects as a starting point to learn news skills.
The course starts with a historical introduction of the *Maker Movement* and its different resources, followed by an introduction to the basics of product sketching. After this first apprenticeship, the students will have to imagine a product and create its logo, packaging and the corresponding showroom. Thanks to this, they will discover the use of machines such as plotter, laser cutting and 3D printing with a direct application. After the mid-term review, students will explore basic electronic kits to simulate interactive interfaces and connected objects and focus on a personal project that will use the different techniques learned throughout the semester.

Note: The attendance to the 3 sessions of the workshop on Adobe Tools is mandatory to be eligible for participation credits for Intro to SDM 2.

Schedule

Saturday, February 10, 2024 (Photoshop)
· Group 1: 10am-1pm (10h—13h = 3h)
· Group 2: 2pm-5pm (14h—17h = 3h)
Saturday, February 17, 2024 (Illustrator)
· Group 1: 10am-1pm (10h—13h = 3h)
· Group 2: 2pm-5pm (14h—17h = 3h)

Learning Outcomes

After completing the requirements for this course, students will be able to, at an introductory level:

- Demonstrate competence in rapid prototyping of physical products with various materials, tools, and techniques.
- Visualize product ideas through sketching, digital design, and mockup modeling.
- Source sustainable materials for second life use, reduce fabrication waste, and participate actively in the circular economy.
- Operate equipment and supplies in maker spaces, fabrication labs, and other technical workshop facilities.
- Collaborate with multidisciplinary creatives, including product designers, makers, DIYers, technicians, entrepreneurs, marketers, strategists, and futurists.
- Document, share, and collect feedback for prototypes across stages of the creative process, from rough idea sketch to functional demo.

Course Outline

Date	Topic and activity	Due on the day of the class

Week 1
 	
Jan 26
 	
MDB
	Introduction
	(Part 1 of 2)
	
	Course Overview
	Evaluation criteria
	
	- About this class: purpose, schedule, workflow, resources.
	- Getting to know the Parsons Paris Maker Lab.
	- Introduction to DIY, the maker movement and design making process.
	- Introduction to the tech lab > focus
	  - 3D printing
	  - Vacuum forming machine
		Explore
		- https://www.instructables.com/
		
		Watch
		- The Circle of HOPE (2018): History of the Maker Movement

Week 2
 	
Feb 02
 	
MDB
	Introduction
	(Part 2 of 2)
	
	● Introduction to the tech lab
	    > focus
	      - Laser cutting machine
	      - Plotter
	      - Sublimation fabric
	        printer	

Week 3 Feb 09 MDB	**Packaging** **(Part 1 of 2)** ● Finding and using online resources. ● Create an entire process to generate packaging (shape, pattern, logo…) ● Produce it using machine from the tech lab	Explore ● Free packaging template ● Free logo generator
Week 4 Feb 16 PN	**Sketching for product design** **(Part 1 of 3)** ● Fluency in sketching. ● Lines, perspectives and volumes. ● How to be spontaneous and efficient in product sketching. ● How to build and keep a sketchbook.	
Week 5 Feb 23 PN	**Sketching for product design** **(Part 2 of 3)** ● How to sketch hard and soft products. ● Working with light and shadows, colors and textures. ● Additional resources for future reference.	
Week 6 Mar 08 PN	**Sketching for product design** **(Part 3 of 3)** ● Hands-on practice	

Week 7 Mar 15 MDB	**Packaging (Part 2 of 2)** ● Finding and using online resources. ● Create an entire process to generate packaging (shape, pattern, logo…) ● Produce it using machine from the tech lab	
Week 8 Mar 22 MDB	**- Mid term Review -** **Imagine a space (Part 1 of 2)** ● Finding and using online resources. ● Imagine a space (house, retail shop, outside…) ● Create a model of it using machine from the tech lab	
Week 9 Mar 29 MDB	**Imagine a space (Part 2 of 2)** ● Finding and using online resources. ● Imagine a space (house, retail shop, outside…) ● Create a model of it using machine from the tech lab	

Week 10 Apr 12 MDB	**Electronics and programming (Makey Makey)** ● Making objects smart. ● What is Makey Makey? ● How does it work? ● Creating an interface and interaction prototype.	Explore ● Different projects made with a Makey Makey and choose one to share with the class. ● Makey Makey Instructables
Week 11 Apr 19 MDB	**Electronics and programming (Little Bits)** ● What are Little Bits? ● How do they work? ● Creating a connected object prototype.	
Week 12 May 03* MDB	**Personal project (Part 1 of 3)** ● Hands-on session to design and produce a personal project. ● Use different resources	

	learned in class and machine from the tech lab to develop a personal project.	
Week 13 May 04* (Saturday) MDB	**Personal project** **(Part 2 of 3)** ● Hands-on session to design and produce a personal project. ● Use different resources learned in class and machine from the tech lab to develop a personal project.	
Week 14 May 10 MDB	**Personal project** **(Part 3 of 3)** ● Hands-on session to design and produce a personal project. ● Use different resources learned in class and machine from the tech lab to develop a personal project.	
Week 15 May 17 MDB	**Final presentations** ● Project presentations and critique. ● Course reflection, learnings, and takeaways. ● What's next? Moving forward as a maker and DIYer. ● Semester closure.	You will present the different exercises made during the class with their documentation and your documented personal project.

 Note: Course sequences are subject to change, depending on class development, projects, and guest speakers. Please check your email and canvas every week for eventual program changes.

Selective Videos

- [Rise Of The Makers: Return Of The Maker Movement | A League Of Extraordinary Makers](#)

Selective Bibliography

- *Makers: The New Industrial Revolution.* Anderson, C., 2012
- *Free to Make: How the Maker Movement is Changing Our Schools, Our Jobs, and Our Minds.* Dougherty, D., 2016.
- *Make: Paper Inventions: Machines that Move, Drawings that Light Up, and Wearables and Structures You Can Cut, Fold, and Roll.* Ceceri, K., 2015.

- *Prototyping for Designers: Developing the Best Digital and Physical Products.* McElroy, K., 2017.
- *Sketching: Drawing Techniques for Product Designers*. Eissen, K., Steur, R., 2008.
- *The Art of Tinkering: Meet 150+ Makers Working at the Intersection of Art, Science & Technology*. Wilkinson, K., 2014.
- *The Big Book of Makerspace Projects: Inspiring Makers to Experiment, Create, and Learn*. Graves, C. and Graves, A., 2016.
- *The Hardware Hacker: Adventures in Making and Breaking Hardware*. Huang, A., 2017.
- *The Maker Movement Manifesto: Rules for Innovation in the New World of Crafters, Hackers, and Tinkerers.* Hatch, M., 2013.
- *Zero to Maker: A Beginner's Guide to the Skills, Tools, and Ideas of the Maker Movement.* Lang, D., 2017.

Materials and Supplies

You will need a sketchbook, your computer and a phone camera. You will be provided with all necessary materials for each session like pens of different thicknesses, markers, a pencil, a ruler, post-it notes, as well as the materials for each machine. As indicated on the schedule, during some classes will require more specific prototyping supplies, in particular those related to your projects. This will be reminded to you the class before but please pay attention to it.

Grading and Evaluation

Students' ability to meet the course learning outcomes will be evaluated based on the following criteria:
- Ability to operate equipment and work with materials in a maker or fabrication lab.
- Inventiveness and quality execution prototyping projects, evidencing ability to translate ideas into visual concepts and physical products.
- Competence in sourcing, reusing, and upcycling materials for making projects.
- Attendance in class, timely completion of each step of the project, as well as ability to incorporate feedback and participate actively in group assignments.
- Ability to document and communicate the final outcomes of a design through visual and oral presentations.

Final Grade Calculation

- 10 % Class participation, attendance, and collaboration.
- 10% Participation in Adobe workshops
- 25% Mid-term review.
- 25% Exercises in the second part of the semester.
- 30% Final project.

100% TOTAL

Absence Policy

Final letter grades for classes at Parsons Paris will be reduced based on accumulated absences according to the following breakdown:

UNEXCUSED ABSENCES:

Amount of Unexcused Absences	Grade Markdown	Example
1 absence	No markdown	N/A
2 absences	One point markdown	Eg. A to A-
3 absences	One full grade deduction	Eg. A- to B-
4 absences	May fail the course	Student must speak with their advisor to discuss options

COURSE SCHEDULE TYPES:

Courses meeting 2h40m for 1 session per week
1 absence = 1 session
2 absences = 2 sessions
3 absences = 3 sessions
3 sessions represents 20% of class time.

EXCUSED ABSENCES:

Absences may be marked excused in the following scenarios:

- Doctor's appointment - A doctor's note is needed, and may be given by student or student success
- Official visa appointments scheduled with the French office of immigration in coordination with Student Services.
- Death or accident in the family - student should present a note from a parent or guardian, information may be provided by student success
- Religious observance - All classes missed for religious observance must be communicated to the faculty member at the start of class
- Students working on special projects - Students must inform their faculty, program director, and Asst. Dir or Career Services if the project involves an internship. Note that outside of special projects, internships may not happen during class time.

For any and all excused absences there is an expectation that students will make up the work missed, and turn in assignments that were due in consultation with their teacher.

Once a student reaches the equivalent of **3 excused absences** for any class they must speak with their academic advisor to discuss continuing the class.

UNDERGRADUATE GRADING STANDARDS			
Letter Grade	Percentage	GPA	Grade Description
A	96-100%	4	Work of exceptional quality, which often goes beyond the stated goals of the course
A-	91-95%	3.7	Work of very high quality
B+	86-90%	3.3	Work of high quality that indicates substantially higher than average abilities
B	81-85%	3	Very good work that satisfies the goals of the course
B-	76-80%	2.7	Good work
C+	71-75%	2.3	Above-average work
C	66-70%	2	Average work that indicates an understanding of the course material; passable Satisfactory completion of a course is considered to be a grade of C or higher
C-	61-65%	1.7	Passing work but below good academic standing
D	46-60%	1	Below-average work that indicates a student does not fully understand the assignments; Probation level though passing for credit
F	0-45%	0	Failure, no credit

Grade of W
The grade of W will be assigned by the Registrar's Office to a student who officially withdraws from a course within the applicable deadline. There is no academic penalty, but the grade will appear on the student's transcript.

Grades of Incomplete
A grade of I will be assigned only if a student has filed a request for an incomplete with the instructor and the instructor approves the grade. Unless the instructor submits a regular letter grade within the period of time required by the student's academic program, a grade of I or GM will automatically convert to F or N, as described below.

For undergraduate students, grades of I and GM convert to F at the end of the seventh week of the spring semester for fall courses and at the end of the seventh week of the following fall semester for spring and summer courses. For graduate students, grades of I and GM for graduate students convert to N one year after the end date of the course.

REMINDER: you must record the student's last date of attendance in Starfish.

For further information, please refer to the following link:
https://www.newschool.edu/registrar/academic-policies/

Program and Class Policies

● <u>**Responsibility**</u>
Students are responsible for all assignments, even if they are absent. Late assignments, failure to complete the assignments for class discussion and/or critique, and lack of preparedness for in-class discussions, presentations and/or critiques will jeopardize your successful completion of this course.

● <u>**Participation**</u>
Class participation is an essential part of class and includes: keeping up with reading, assignments, projects, contributing meaningfully to class discussions, active participation in group work, and coming to class regularly and on time.

● <u>**Attendance**</u>

<u>Parsons Paris Attendance Policy</u>
Parsons Paris attendance guidelines encourage students' success in all aspects of their academic programs. To ensure the quality of a student's educational experience, Parsons Paris considers that full participation in class is essential to the successful completion of coursework and mastery of learning outcomes included in course assessment.

Students are expected to attend all scheduled classes and arrive promptly in compliance with the standards clearly stated in course syllabi and distributed on the first day of class and then available on each course website.
Absence from a significant portion of class time will prevent the successful attainment of course objectives and will therefore impact a student's final grade. A significant portion of class time is generally defined as 20% of class time. Tardiness, especially chronic tardiness, or early departure from class, will constitute absences at the discretion of the faculty.

Whether the course is a lecture, seminar or studio, faculty will assess each student's performance against all of the assessment criteria in determining the student's final grade. However, beyond 20% absence/tardiness, students and/or the instructor will be asked to consult with their program director and the Director of Student Success to discuss withdrawal from the course.

At Parsons Paris, attendance and lateness are assessed as of the first day of classes. Students who register after a class has begun are responsible for any missed assignments and coursework. Students who must miss a class session should notify the instructor and arrange to make up any missed work as soon as possible. A student who anticipates an extended absence should immediately inform the faculty and the Director of Student Success.

Finally, faculty are asked to notify the Director of Student Success of any student who misses two consecutive classes. Following two absences, students may be asked to speak with the Director of Student Success to review any impediments to their successful performance in class and, if so, to provide confirmation to the faculty member that such a conversation took place.

Attendance issues for all students will be addressed by Parsons Paris and in particular by the Director of Student Success. Faculty who have concerns about students' absences should notify both their program directors and the Director of Student Success. While in residence at Parsons

Paris, mobility students must bring attendance issues to the Director of Student Success. Parsons NY advising staff will not address issues of attendance that occur at Parsons Paris. Similarly, decisions regarding the attainment of learning outcomes in case of excessive absences will be determined by Parsons Paris.

Religious Absences and Equivalent Opportunity
Pursuant to Section 224-a of the New York State Education Laws, any student who is absent from school because of his or her religious beliefs will be given an equivalent opportunity to register for classes or make up any examination, study, or work requirements which he or she may have missed because of such absence on any particular day or days. The student must inform the instructor at the beginning of the course of any anticipated absences due to religious observance.

● **Canvas**
Use of the Canvas online learning management system may be an important resource for this class. Students should check it for announcements before coming to class each week.

● **Delays**
In rare instances, I may be delayed arriving to class. If I have not arrived by the time class is scheduled to start, you must wait a minimum of thirty minutes for my arrival. In the event that I will miss class entirely, a sign will be posted at the classroom indicating your assignment for the next class meeting.

● **Academic Integrity**
This is The New School's Statement on Academic Integrity: "Plagiarism and cheating of any kind in the course of academic work will not be tolerated. Academic honesty includes accurate use of quotations, as well as appropriate and explicit citation of sources in instances of paraphrasing and describing ideas, or reporting on research findings or any aspect of the work of others (including that of instructors and other students). These standards of academic honesty and citation of sources apply to all forms of academic work (examinations, essays, theses, computer work, art and design work, oral presentations, and other projects)."

It is the responsibility of students to learn the procedures specific to their discipline for correctly and appropriately differentiating their own work from that of others. Compromising your academic integrity may lead to serious consequences, including (but not limited to) one or more of the following: failure of the assignment, failure of the course, academic warning, disciplinary probation, suspension from the university, or dismissal from the university.

Every student at Parsons signs an Academic Integrity Statement as a part of the registration process. Thus, you are held responsible for being familiar with, understanding, adhering to and upholding the spirit and standards of academic integrity as set forth by the Parsons Student Handbook.

Guidelines for Written Assignments
Plagiarism is the use of another person's words or ideas in any academic work using books, journals, internet postings, or other student papers without proper acknowledgment. For further information on proper acknowledgment and plagiarism, including expectations for paraphrasing source material and proper forms of citation in research and writing, students should consult the

Chicago Manual of Style (cf. Turabian, 6th edition). The University Writing Center also provides useful on-line resources to help students understand and avoid plagiarism. Students must receive prior permission from instructors to submit the same or substantially overlapping material for two different assignments. Submission of the same work for two assignments without the prior permission of instructors is plagiarism.

Guidelines for Studio Assignments
Work from other visual sources may be imitated or incorporated into studio work if the fact of imitation or incorporation and the identity of the original source are properly acknowledged. There must be no intent to deceive; the work must make clear that it emulates or comments on the source as a source. Referencing a style or concept in otherwise original work does not constitute plagiarism. The originality of studio work that presents itself as "in the manner of" or as playing with "variations on" a particular source should be evaluated by the individual faculty member in the context of a critique.

Incorporating ready-made materials into studio work as in a collage, synthesized photograph or paste-up is not plagiarism in the educational context. In the commercial world, however, such appropriation is prohibited by copyright laws and may result in legal consequences.

● **Student Disability Services**
Student Disability Services (SDS) assists students with disabilities in need of academic and programmatic accommodations as required by the Americans with Disabilities Act of 1990 (ADA) and Section 504 of the Federal Rehabilitation Act of 1973.

In keeping with the university's policy of providing equal access for students with disabilities, any student with a disability who needs academic accommodations must contact Fabienne Maitre in the Office of Student Success (located 31 avenue de l'Opéra, 6th floor), in order to start the process with Student Disability Services (SDS), based in New York. SDS will conduct an intake and, if appropriate, you will be provided an academic accommodation notice for you to bring to me. This letter is necessary in order for classroom accommodations to be provided. Once you provide me with this letter, we will have a private discussion about the accommodations in relation to this course. You may also access more information through the University's web site at https://www.newschool.edu/student-disability-services/.

● **Student Course Evaluation**
During the last two weeks of the semester, students are asked to provide feedback for each of their courses through an online survey. They cannot view grades until providing feedback or officially declining to do so. Course evaluations are a vital space where students can speak about the learning experience. It is an important process which provides valuable data about the successful delivery and support of a course or topic to both the faculty and administrators. Instructors rely on course rating surveys for feedback on the course and teaching methods, so they can understand what aspects of the class are most successful in teaching students, and what aspects might be improved or changed in the future. Without this information, it can be difficult for an instructor to reflect upon and improve teaching methods and course design. In addition, program/department chairs and other administrators review course surveys. Instructions are available online at http://www.newschool.edu/provost/course-evaluations-student-instructions.pdf

Parsons Paris Community Agreements

Cultivate a brave space – We cannot guarantee safety, but we can strive for a space where we share bravely, take risks, be vulnerable and hold each accountable with kindness and respect. No one knows everything; everyone knows something; together we know a lot. We are all learners and have different life experiences; we can all learn from each other without canceling anyone. We can't be eloquent all the time.

Be respectful – of your own feelings and those of others when speaking.

Honor Confidentiality – What we share stays here.

Share from your own experiences – Your perspective is shaped by your tradition, beliefs, identities and life experiences. Speak from your heart using "I" statements to take ownership of what you say. The only person you can truly speak for is yourself.

Honor silence and time for reflection – This also allows time for others to move up their speaking. Practice waiting: W.A.I.T. – why am I talking?

Practice active listening – Try to listen without judgment, with the intent of understanding the speaker. Listen to understand, not to respond. As soon as you're thinking "That's good." or "I don't like that" or you're planning how you're going to respond, you are having a conversation in your mind and not listening to the speaker.

Agree to disagree… but don't disengage – Listen with the intent of understanding, not to agree or to believe what is being said. Your presence adds value to our group process. You do not have to agree or believe anything shared; your job is to listen for understanding. Disagree with the statement, not the person if you must disagree.

Acknowledge intent, address impact – We may not mean to cause harm, but it can happen anyway. When someone is hurt we first attend to the hurt person, and then can process why and how the hurt happened and how to prevent it in the future while maintaining active group engagement.

Acknowledge the liveliness of language – As an example, "you guys" may be intended as gender neutral but may not be received as such; the term "queer" can be offensive to one person and essential for another.

Move up, move up – If you usually don't share much, challenge yourself to share more; if you find yourself sharing more than others, challenge yourself to listen more.

Suspend status – We are all partners in our quest for insight and understanding, and we each have different areas of expertise.