

San José State University

Department of Design / Industrial Design Program

DSID128, Advanced Projects in Industrial Design, Spring 2022

Instructor:	Prof. Joshua Nelson
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Office Hours:	M/W 11:00am - 12:00pm
Class Days/Time:	M/W 3:00pm - 5:50pm
Classroom:	IS 118
Prerequisites:	DSID 125A; DSGN 127

Canvas Course Management Website

Copies of the course materials such as the syllabus, assignment handouts, grading, etc. may be found on the course Canvas website. You may find your link to this website on MySJSU, along with your login/password info. You are responsible for regularly checking with the messaging system in Canvas for course updates, assignments, etc.

Course Description

Comprehensive, in-depth analysis and design of faculty-assigned projects as well as a student-proposed project. Student proposed projects must meet with the approval of the Industrial Design faculty.

Course Goals and Student Learning Objectives

Upon successful completion of this course, students will be able to:

LO1: Identify and demonstrate the role of a professional designer.

LO2: Create a design project from idea to final design that demonstrates advanced design during all phases of the project.

LO3: Demonstrate systematic thinking for complex problems and apply industry standards of sustainability, user research, and manufacturing processes to a project.

LO4: Practice problem identification and discovery, and apply empathic design methods.

LO5: Demonstrate advanced problem solving skills and tools, engage in active learning in and outside the classroom, and apply lessons learned to the project. Participation is key to active learning and students will demonstrate the methods associated with active learning in a creative environment.

LO6: Know the role of the designer in scenario development in the design industry.

LO7: Apply physical and behavioral ergonomics and human factors and successfully use scientific methods to find the most appropriate solutions.

LO8: Perform advanced critical and technical writing skills as applied to design briefs and documentation of project work.

LO10: Produce clear and compelling communication of ideas in 2D, and 3D mediums.

LO11: Apply the principles of time management through the use of scheduling tools.

LO12: Evaluate appropriate aesthetics and branding and apply to the entire design.

Required Texts/Readings

Required Reading List

No required textbooks.

Recommended Reading List

There are several other books that are highly recommended for this course:

[Ulrich, Karl and Eppinger, Steven: 2011: *Product Design and Development* \(5th or 6th edition\), McGraw-Hill.](#)

Tim Tan, article on design and aesthetics, PDF (available in Canvas)

Hanington, B., Martin, B., *Universal Methods of Design: 100 Ways to Research Complex Problems, Develop Innovative Ideas, and Design Effective Solutions*. Rockport Publishers, Beverly, MA, 2012. ISBN 978-1592537563

Boradkar, P. *Designing Things: A Critical Introduction to the Culture of Objects*. Berg Publishers, New York, 2010. ISBN 978-1-84520-426-6

Buchanan, R. *The Designed World: Images, Objects, Environments*. Berg Publishers, New York, 2010. ISBN 978-1-84788-586-9

Caplan, R. *By Design. Why There Are No Locks On the Bathroom Doors In The Hotel Louis XIV And Other Object Lessons*. Fairchild Publications, New York, 2005. ISBN 1-56367-349-5

Fukasawa, Naoto. Naoto Fukasawa. Phaidon Press, 2007. ISBN 978-0714845869.

Laurel, B. *Design Research: Methods and Perspectives*. MIT, Cambridge, 2003. ISBN 0-262-12263-4

Richardson, A. *Innovation X: Why a Company's Toughest Problems Are Its Greatest Advantage*. Jossey-Bass, San Francisco, 2010. ISBN 978-0-470-48219-3

Rogers, E. *Diffusion of Innovations*. Free Press, New York, 2003.

Sennett, R. *The Craftsman*. Yale University Press, New Haven, 2008. ISBN 978-0-300-11909-1

Equipment and Material Requirements

There will be additional tools and materials required to complete the course assignments. Past examples of tools have included respirators, files, saws, foam carving tools and other hand tools that students utilize in model making (approx \$300). Many of these would have been purchased in previous courses but you should budget at least \$200 in case you find yourself needing additional tools.

Prototyping materials include:

There will be additional tools and materials required to complete the course assignments. This has, in the past, cost students from \$500 to as high as \$800 depending on the scale and complexity of a student's final design direction. Due to this variation, we suggest that you budget towards the higher amounts to be safe. Prototyping materials are difficult to calculate as this course generates student projects that vary widely in scale and complexity. Some of the materials you should expect to purchase include:

- 1) Urethane modeling foam (\$160-\$320)
<http://www.mcmaster.com/-standard-urethane-foam-sheets/=inzoq8>
- 2) Modulan foam
- 3) Sandpaper (100, 150, 220 and 400 grit approx.\$100)
- 4) Body filler and spot putty (Evercoat or Bondo approx. \$40)
- 5) Paint and primer (we recommend Duplicolor brand paints approx.\$100)
- 6) Foamcore or Cardboard (\$30)
- 7) Medium Density fiberboard (\$50)
- 8) Wood, if needed (\$100)
- 9) Sheets, rods and/or tubes of Plastic, if needed (\$150)

Shop Test

The Department of Design requires that Industrial Design students attend and pass the shop safety orientation at least once each year. You are responsible for viewing the shop safety test video on your own in preparation to take the test:
<http://www.sjsu.edu/atn/services/webcasting/events/shopysafety.html>. If you need to take the shop safety test, please make arrangements with the instructor to schedule a date to do so. That will be the only date that you will be able to take the shop test for this course so make sure you have studied up and paid your shop test fee at the bursar's office before that date. You must provide proof of enrollment and the original receipt from the bursar's office that you have paid the required \$20 shop fee to fund #62089 prior to taking the test.

Library Liaison

Gareth Scott, Liaison Librarian for Design Department
Email: gareth.scott@sjsu.edu

Classroom Protocol

Active participation in class activities is a significant factor in a student's success in the Industrial Design program. Active learning facilitates mental growth, skill enhancement, creates a lifelong learner and improves the goals of becoming a good designer. Students are expected to be on time to class and when a class critique is planned, work is to be displayed on the table at the center of the room by 10 minutes after the official start of the class period. Be ready to start the critique by 15 minutes after the class officially starts.

Students are to be respectful of the professor and their peers and any disruptive activities in the classroom will result in the student being asked to leave the class. Arriving late to class without prior arrangement and approval from the professor is considered disruptive. If the student cannot be in the classroom by the start of class, please do not interrupt the class in session by entering the classroom. If a student encounters any problems that inhibit their ability to participate in the class, please provide as much advance notice as possible to the instructor so that he/she may respond and inform the student in a timely manner. Students are expected to leave the classroom in a clean condition at the end of each class meeting so that the next class has an organized, clean room waiting for them.

Cell phones, organizers, laptops are also disruptive and inconsiderate to your classmates and instructors. *Phones are NOT permitted in this class* and you will be asked to turn off and surrender your phone at the start of each class. If you disrupt or withdraw from class activities due to your inability to silence your devices, it will count against the participation portion of your final grade. If personal issues (family, medical, etc) require you to leave your phone on, you may do so by making arrangements with the instructor in advance. With this in mind, your instructor may need to answer his phone during class due to professional demands or university business but will try to keep this to a minimum during the semester.

Missed or Late Homework:

All assignments are due on time. No late work is accepted. Extra credit is not possible in this course as the workload is significant enough. All work turned in late will receive an automatic 40% deduction in grading. If you have an excusable reason for turning in an assignment late or missing a class, please contact the professor as soon as possible before the class begins. The professor will work with you to develop an approved plan to turn in late work and still get full credit. Feedback on approved late work can be obtained during the professor's office hours.

Assignments and Grading Policy

Students will be engaged in demos, discussions and critiques during class meeting times and they will be assessed on engagement in those activities in their Participation grade (LO5). Students will have homework assignments to do outside of class (up to 12 hours per week) that include reading, writing, research and concept development assignments as required by the course assignments (LO 1-6). You will be required to turn in your final project on the final presentation date (LO 7-12). The assigned final will be the turning in of your project process book (LO 1-12). Grading will follow the standard SJSU A-F system.

A+, A, A- / 100+ - 91% / Excellent
B+, B, B- / 90 - 81% / Above Average
C+, C, C- / 80-71% / Average
D / 70-61% / Below Average
F / Below 61% / Failure

Grading is weighted as follows:

Participation:	15%
Milestone 1:	15%
Milestone 2:	15%
Milestone 3:	15%
Milestone 4:	25%

Final: 15%

Course credit is achieved with a grade of D- or higher, however low grades will represent likely challenges in your professional development.

The Participation grade in this course will be assessed through your engagement in work/practice sessions, class discussions, critique, and exhibiting life-long learning skills during class.

Success in this course is based on the expectation that students will spend, for each unit of credit, a minimum of 45 hours over the length of the course (normally three hours per unit per week) for instruction, preparation/studying, or course related activities, including but not limited to internships, labs, and clinical practica. Other course structures will have equivalent workload expectations as described in the syllabus.

University Policies

SJSU's Office of Graduate and Undergraduate Programs maintains university-wide policy information relevant to all courses, such as academic integrity, accommodations, etc. You may find all syllabus related University Policies and resources information listed on [GUP's Syllabus Information Web Page](http://www.sjsu.edu/gup/syllabusinfo/) at <http://www.sjsu.edu/gup/syllabusinfo/>.

DSID 128 / Advanced Projects in Industrial Design, Spring 2022 Course Schedule

Schedule is subject to change with fair notice (one week) in class or via notice on Canvas.

Week	Date	Topics, Readings, Assignments, Deadlines
1	1/26	Review of syllabus, course content, assignment structure, course expectations and assignments; what-if/big ideas M1 Review 1 Assignment: M1 Presentation
2	1/31	Definition Phase M1 Review 2
	2/2	M1 Review 2
3	2/7	Due: M1 Presentation

		<p>Exploration Phase</p> <p>Exploring problems & solutions, divergent design: creating choices</p> <p>Assignment: M2 Presentation</p>
	2/9	<p>Due: M1 Presentation</p> <p>Exploration Phase</p> <p>Exploring problems & solutions, divergent design: creating choices; what-if/big ideas</p> <p>Assignment: M2 Presentation</p>
4	2/14	M2 Review 1
	2/16	M2 Review 1
5	2/21	M2 Review 2
	2/23	M2 Review 2
6	2/28	M2 Review 3
	3/2	M2 Review 3
7	3/7	<p>Due: M2 Presentation</p> <p>Convergent design: making choices</p> <p>Assignment: M3 Presentation</p>
	3/9	<p>Due: M2 Presentation</p> <p>Convergent design: making choices</p> <p>Assignment: M3 Presentation</p>
8	3/14	<p>Refinement Phase</p> <p>M3 Review 1</p>

	3/16	Refinement Phase M3 Review 1
9	3/21	Work Day
	3/23	Work Day
10	3/28	Spring Recess <i>No class</i>
	3/30	Spring Recess <i>No class</i>
11	4/4	M3 Review 2
	4/6	M3 Review 2
12	4/11	Due: M3 Presentation Design execution & craftsmanship Assignment: M4 Presentation
	4/13	Due: M3 Presentation Design execution & craftsmanship Assignment: M4 Presentation
13	4/18	Final Design Phase M4 Review 1
	4/20	M5 Review 1
14	4/25	M5 Review 2
	4/27	M5 Review 2

15	5/2	Work Day
	5/4	Work Day
16	5/9	Due: M5 Presentation
	5/11	Due: M5 Presentation
17	5/16	Work Day
18	5/24 2:30pm	Final Due: Process Books