

San José State University
Department of Design / Industrial Design Program
DSID 125, Advanced Industrial Design, Section 01 Fall
2018

Instructor:	Prof. John Guenther
Office Location:	Art 113
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Email:	John.Guenther@sjsu.edu
Office Hours:	3:00 - 5:50 PM Monday by appointment
Class Days/Time:	MW 3:00PM-5:50PM
Classroom:	Art 205
Prerequisites:	DSID 123A; BSID Major

Canvas Course Management Website & Course Format

This course uses a hybrid method of teaching. A hybrid course means that there are components of the course that are done in the classroom and other components that require using the online course management system. All course materials such as the syllabus, assignment handouts, grading, etc. may be found on the DSID 125 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. All class correspondence and grading will also be managed through the class Canvas site. If you do not check Canvas often, you should set up your email forwarding to forward all class correspondence to your preferred email address. You must have access to a computer and Internet to be able to access the Canvas site. You may also use a tablet or your phone. Some assignments will be required to be turned in on Canvas, in which case you will need to have access to some basic software such as MS Office (MS Word) or some writing software, Adobe Acrobat (for making pdfs), and basic scanning software for scanning sketches to upload to the assignment portal. See [University Policy F13-2](http://www.sjsu.edu/senate/docs/F132.pdf) at <http://www.sjsu.edu/senate/docs/F132.pdf> for more details.

Course Description

This course teaches an advanced exploration of industrial design theory and practice with projects involving high levels of complexity of technological, functional and aesthetic constraints. DSID125 represents the 3rd year-level studio of the SJSU Industrial Design program curriculum. You are expected to demonstrate the knowledge and skills developed in previous coursework as well as develop new skills particularly focused on

identifying trends, need-finding and designing for future scenarios. Course is repeatable for a total of 6 units.

Students will be learning about how to identify driving forces that have shaped the present and determine how they shape the future. Generating scenarios regarding a multitude of ways the future may play out will be a key component of the exercises in the course. Design concepts need to relate directly to the user needs in the future scenarios and students need to connect their design decisions to evolving human needs and values. Throughout the semester students will be expected to communicate their design decisions with professional level quality presentation sketches (2D and 3D) and to propose a project with a clear plan towards achieving success.

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.”

Course Goals:

Student Learning Objectives

The project will be divided into two distinct segments. The first phase of primary research and scenario-building will be conducted in assigned teams. Upon completion of the primary research, the class will then work individually to utilize that research with the intent of clarifying user needs, identifying emerging technologies and conceptualizing new products and systems. Once a range of products and systems are conceptualized the student will select a product concept to refine and complete for the remainder of the semester. Final deliverables to be presented include a final appearance model (appropriate scale to be determined) and final presentation to the class. The project will conclude with the creation of a project summary document (often referred to as a Process Book) and a poster for the Final Presentation. This poster may be used when you present your work for your next Portfolio course, DSID 125A.

Students are expected to actively participate in their assigned research team contributing an equal effort to the other team members. There will be an iterative method of design exploration applied in this course wherein you are expected to:

- (1) Develop a range of potential future scenarios.
- (2) Explore a broad range of product concepts for each scenario.
- (3) Identify and develop the most promising concepts.

- (4) Refine and detail one primary product concept (hardware, or software with the instructor approval).

This exploration must be communicated in a presentable manner in both 2D and 3D sketches (mockups).

Final design concepts must be clearly communicated in both a 2D presentation and a 3D appearance model. Final presentations should clearly explain:

- (1) What the product concept is.
- (2) Whose needs and desires it addresses.
- (3) How it addresses a potential future scenario.
- (4) How it works.
- (5) How its aesthetic form language would best be described. (This should be self-evident from the presentation and mockup).

In addition to the 2D presentation, you are expected to have refined mockups for each concept presentation.

Course Content Learning Outcomes

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

- (LO1) Demonstrate and successfully engage in all phases of a complex product design project.
- (LO2) Describe the critical relationship between product internal functional components and product external appearance and apply to an individual product design.
- (LO3) Employ specific techniques to increase their creativity while conceptualizing product designs.
- (LO4) Identify the successful organization of functional, mechanical, and electrical components within a product and arrange these into a successful product design.
- (LO5) Know what makes a product aesthetically appealing for a specific user group and target market.
- (LO6) Employ human factors methods and best practices and design products that meet human ergonomic needs.
- (LO7) Collect, archive, edit, and produce a digital project process book that illustrates a consistent and iterative design process.

Required Texts/Readings

Textbook

All assigned and recommended reading will be posted on Canvas. Required reading will come from books, blogs, online journals, and trade journals listed below.

Required Readings (see Canvas)

Rogers, Paul and Milton, Alex; Product Design; Laurence King Publishing 2011

Recommended Readings (see Canvas)

Baxter, Andrew. Philips Corporate Design; Vision of the Future; V+K Publishing, Bussum, The Netherlands, 1996. ISBN 9066115912

Marzano, Stefano (ed.); Television at the Crossroads. Academy Group LTD, London, 1995. ISBN 978-1854904256

Schwartz, Peter; The Art of the Long View: Planning for the Future in an Uncertain World; Doubleday Currency, NY, NY; 1991. ISBN: 0385267312

Required Materials List

Many of these materials you may already have on hand from your previous student course requirements in the program.

Everyone's projects will vary in their material demands. That said, you should expect to spend between \$500-800 in 2D and 3D sketching and model making materials. This should be enough for demonstrating all the exploration of design alternatives expected for the course. Everyone needs to have their own personal stock of urethane foam equivalent to what is listed in the list below. The source link is also listed. You do not have to purchase it from this source but you do need to show proof of either owning or having purchased that much foam by the 2nd class meeting on August 27, 2018.

Quantity	Descriptions
1	Ream of high quality 8 ½" by 11" bond printer paper. (Staples best 20 lb. or Hammermill Bond recommended)
1-2	Bienfang 360 Graphics Pad 14X17 50Sh
1	Prismacolor Marker Set of 12 Cool Gray Shades
1	At least #1,2,4,6,8 warm gray markers (full set recommended)
1	BIC round stic Grip fine USA ball point pens (black)
1	Staedtler Mars White Plastic Eraser - Large
1	Prismacolor Premier PC901 Indigo Blue pencil (round) Prismacolor Premier PC9380 white pencil (round)
1	Prismacolor Verithin Colored Pencil Black (hex shape)

- 1 Electric pencil sharpener (grinding cutter, not bade)
- 1 [MOORE Push Pins, Aluminum Head, 1/2 in, 20 pack](#)
- 1 Pentel PRESTO jumbo correction pen, fine point, white
- 1 4' by 4' sheet of 3/16" white foam core board
- 1+ Various miscellaneous materials for sketch models 1+

Materials for detailed finished model.

(Could be made from metal, plastic, modulan, bondo, 3D printer parts, sandpaper, paint, or purchased from model shop).

- 1 Block of Urethane Ultra Machinable Prototyping Foam from McMaster-Carr (24"x48"x3" Urethane Foam Sheet, Part# 3152T24. <http://www.mcmaster.com/#>. Input the Part# in the "Find" window.

Other required materials

Laptop computer capable of running Adobe CC or other equivalent software and Solidworks. Tablet PC that can use a pressure sensitive stylus recommended. A large format (11"x17" or 13"x19") printer is recommended.

Course Fees

Course fees collected for DSID 125 will be used to supplement costs for running the ID Labs and maintaining equipment. It will also provide each student with a subsidized 3 cubic inches of 3D printing materials and up to 8 linear feet of large format printing (4 linear feet on draft paper and 4 linear feet on presentation paper).

Shop Test

The Department of Design requires that Industrial Design students attend and pass the shop safety orientation at least once each year. We will be showing the video in class and then you will have at least a week to review the video again on your own as it is posted online (<http://www.sjsu.edu/atn/services/webcasting/events/shopysafety.html>) now. The shop test date will be announced the first day of class. 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 bursars 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. The shop test will be held in the first 3 weeks of the semester only. There will be no shop tests after September 10.

Library Liaison

Elkin, Aliza

Email: aliza.elkin@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 life long 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 taped/pinned up to the walls by 10 minutes after the official start of the class period. Be ready to start the critique by 10 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. Do not send messages about lateness or absence through a classmate.

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. Roll will be taken at the beginning of each class and occasionally at the end of class.

Cell phones, digital tablets, and laptops are also disruptive and inconsiderate to your classmates and the instructor. Unless it is being used for a class activity, please turn off all electronic devices that can potentially disrupt class. If you disrupt or withdraw from class activities due to your inability to silence and ignore these devices, it will count against the participation portion of your final grade and you will be asked to leave the classroom. If emergency personal issues (family, medical, etc) require you to leave your phone on, you may do so by making arrangements with the instructor in advance. Additionally, talking in class during a lecture is considered disruptive to the class, and generally rude, and will adversely affect the participation grade and the student may be asked to leave the classroom.

Assignments and Grading Policy

Students will be engaged in lectures, discussion, design activities, and lab time during class meeting times and they will be assessed on engagement in those activities in their Participation grade. Students will have homework assignments to do outside of class (approx. 12 hours per week) that include reading, sketching, model making, prototyping and other design project activities. You will be required to turn in all projects at the required presentation dates. The final project and project summary booklet must be turned

in on Canvas in digital format. The digital deliverables will include 3-6 high resolution images of your final model as well as a .pdf format project summary booklet.

Grading will follow the standard SJSU A-F system.

All grades are assessed on the following three criteria: Quality, Effort, and Completeness.

A+, A, A- / 100+ - 91% /
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:

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Class Participation	15%
Research and Scenario Team Presentations	15%
Sketch Portfolio	15%
Final Product Concept Sketchbook/Mockup/Prototype	15%
Final Appearance Model	20%
Final Project Summary Booklets/Poster/Presentation	20%

All assignments are due on time. No late work is accepted (this includes work that is for uploading to Canvas). Extra credit is not possible in this course as the workload is significant enough. The Participation grade in this course will be assessed through your engagement in Work/Practice sessions and critiques each week. Actively engaging and exhibiting life-long learning skills during class are the mode by which participation is assessed. All assignments must be submitted on time to receive a grade. No late work is accepted except in cases of documented illness or death in the family. No assignments may be redone for a higher grade. No extra work will be assessed for extra credit except as submitted as part of a regular assignment.

This course must be passed with a C or better as an SJSU graduation requirement.

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 125 / Advanced Industrial Design, Fall 2018, Course Schedule

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

Week	Date	Topics, Readings, Activities, Assignments, Deliverables
1	W 8/22	Review class program and semester objectives. Review Class design brief. Assign Class Project and Research Teams. Explain Research Assignments
2	M 8/27	Research Teams Progress Reports Research Methodology Lecture
	W 8/329	Class Pin Up: Initial Sketches and Initial Research Observations Shop test for those who need it.
3	M 9/3	Labor Day Holiday – no class – campus closed
	W 9/5	1/1 review with teams and Research Lecture: Continue to work on 2nd round Concepts and Research
4	M 9/10	1/1 review with teams and Research Lecture: Continue to work on 2nd round Concepts and Research
	W 9/12	Class Pin-up: 2nd round Concepts (5-7 pages each) and Revised Research Observations and Cultural Drivers
5	M 9/17	Final Research Presentations: Upload Team Research Presentation to Canvas by 9pm on Sunday, September 17.
	W 9/19	Assign Conceptualization Phase. Review design brief and lecture/discussion Work Day: Initial conceptualization explorations
6	M 9/24	Class Pin Up: Initial Concept scenarios and sketches (15)
	W 9/26	Work Day: 1/1 review of Revised Scenarios and Concepts
7	M 10/1	Class Pin Up: Refined Concept Scenarios and Sketches (5)
	W 10/3	Turn in Sketch Portfolio and identify top 3 concepts/scenarios for possible final project direction. Upload Sketch Portfolio to Canvas by 9pm on Tuesday, 10/3. Scan all sketches that you will need for the next week.
8	M 10/8	Class Pin Up: 3 refined concepts for each of 3 directions (total of 9)
	W 10/10	Work Day: 1/1 reviews of selection of final concept direction
9	M 10/15	Class presentation: Final Concept progress
	W 10/17	Work Day: 1/1 review of Final Concept refinements and development mockup sketches
10	M 10/22	Class Presentation Critique: Final Individual Concept Mockups and Initial Orthographics of Final Concept and present in class.
	W 10/24	Class Discussion/Lecture: Detailing Work Day. Exploration of Design Details
11	M 10/29	Work Day. 1/1 Review of Exploration of Design Details

	W 10/31	1/1 review of final design plan including model strategy
12	M 11/5	Final Product Concept sketchbook. Final, dimensioned orthographics with all details worked out and a final, appearance rendering and mockup due at the start of class. Upload Final Concept Sketches to Canvas by 9pm on Sunday, 11/5. Be sure to scan all sketches that you will need for the next week. Try to have most of your materials needed to begin your final model build
	W 11/7	Work in class: Final Model. Check in at the beginning of class.
13	M 11/12	Work in class: Final model. Check in at the beginning of class.
	W 11/14	Final model progress presentation – review progress with class and instructor
14	M 11/19	Painting Day. Have model in primer and whatever paint(s) you will need. Work in class: complete final model details and work on documentation
	W 11/21	Work in class or shop: complete final model details and documentation
15	M 11/26	Completed Final Models Due at the start of class Model Documentation and review with instructor.
	W 11/28	Work day: complete final model revisions and work on documentation
16	M 12/3	Everyone must turn in their final power point presentations to Canvas no later than 9pm on Sunday, 12/2. Group A Final Presentations (projected from a .pdf) Have Final Model, Final Project Summary Booklet, Poster and presentation ready to go at the start of class. (1) What is it? (2) Who is it for? (3) What does it do for them? (4) How do they interact with it? (5) Size. Initial, dimensioned orthographics (with internal components, exploded views and cross sections as needed) The booklet due summarizes your final project. This should include any research findings, scenarios, design matrices, inspiration boards, storyboards, sketches, mockups, decision matrices, detail refinement sketches, final mockups, final appearance model and final presentation.

	W 12/5	<p>Everyone must turn in their final power point presentations to Canvas no later than 9pm on Sunday, 12/2.</p> <p>Group B Final Presentations (projected from a .pdf)</p> <p>Have Final Model, Final Project Summary Booklet, Poster and presentation ready to go at the start of class.</p> <p>(1) What is it?</p> <p>(2) Who is it for?</p> <p>(3) What does it do for them?</p> <p>(4) How do they interact with it?</p> <p>(5) Size. Initial, dimensioned orthographics (with internal components, exploded views and cross sections as needed)</p> <p>The booklet due summarizes your final project. This should include any</p>
		<p>research findings, scenarios, design matrices, inspiration boards, storyboards, sketches, mockups, decision matrices, detail refinement sketches, final mockups, final appearance model and final presentation.</p>
17	M 12/10	<p>Final day of class – bring program improvement suggestions to discuss in class.</p>

