

San José State University
Department of Design
DSIT 107, Interactive Surfaces, Spring, 2019

Course and Contact Information

Instructor:	Bryan Allen
Office Location:	IS 210
Telephone:	(801) 916-0885
Email:	bryan.allen@sjsu.edu bryall13@gmail.com
Office Hours:	<i>By Appointment</i> Tuesday/Thursday 11:30a-12p
Class Days/Time:	Tuesday/Thursday 12p-2:50p
Classroom:	IS 240

Course Format

This course is a Design Studio and must be attended in Person, the course is a lecture format with a portion of the course taking place in the shop and other fabrication spaces.

Canvas

Course materials such as syllabus, handouts, notes, assignment instructions, etc. can be found on [Canvas Learning Management System course login website](#) at <http://sjsu.instructure.com>. You are responsible for regularly checking with the messaging system through [MySJSU](#) at <http://my.sjsu.edu> (or other communication system as indicated by the instructor) to learn of any updates.

Course Description

The nature of work is changing, collaborative tools like Slack, Google docs, video calls, and telepresence allow us to work from anywhere. Increasingly the home is becoming connected, companies like Google and Facebook invest heavily into ‘smarthomes’. You can change a song with your voice, turn your lights off remotely, lock a door, and do various other things. Global design centered companies like WeWork and Airbnb create workspaces that are designed to look, feel, and act like a living space. This blending of work/home is recasting the lines between functional a leisure spaces and leading designers to ask more from furnishings traditionally found in the home.

When we consider the nature of work we must also consider what is the the power of design to frame this work? How can we make workspaces more accessible, open, intuitive, friendly, collaborative, and interesting? How can we provide healthy spaces to ‘unplug’ while still maintaining productivity?

What does it mean to design a space to be lived in, to be worked in, to be felt and experienced every day? A space to hold us at our worst and our best? Spaces that fade away, that express power and order, that provide support? Given the changing nature of work and the spaces it takes place in how can we rethink the interfaces between us and those spaces: furniture.

In this course we will be investigating what goes on inside of spaces, furniture is the interface between architecture and material and provides the framework for the experience of a space. We will investigate making, materiality, and form through a series of hands-on physical prototyping exercises.

To explore this global and societal questions we will start small and from personal experience, we will build the skill-set for creating interactive surfaces through a deep dive into fabrication and technology tools to build an understanding though hands-on exercises in fabrication and prototyping. Throughout this process rendering and video tools will be used to study and prototype dynamic elements in parallel and to guide fabrication.

Through these virtual and physical explorations limitations and opportunities will arise, we will identify them and use our design process to match each opportunity with an identified social need. By the end of the course as a team the students will construct a series of prototypes to test their theories of interaction in the real world.

Course Learning Outcomes (CLO)

At the end of this course students will understand:

Design thinking skills

- How to raise clear and precise questions, use abstract ideas to interpret information, consider diverse points of view, reach well-reasoned conclusions, and test them against relevant criteria and standards.

Digital and analogue fluency

- How and when to use introductory digital fabrication and rapid prototyping.
- The basics of coding and electrical prototyping
- How to fabricate a physical model from a digital 3d model using techniques such as 3D printing, contouring, unrolling or unfolding.
- How to test structure, form and material through physical modeling and full scale construction.

Material Processes

- The basic principles and appropriate application and performance of construction materials, products, components, and assemblies, including their environmental impact and use.
- How to physically work through a material process such as patterning, molding or casting to fabricate a finished product.

Community Engagement

- How to translate client input into a cohesive and evocative design solution
- An understanding of the value of design and how it might rejuvenate a neighborhood or impact a specific community and how design can be used for social reform. Students will learn that they can actually make a difference.

Required Texts/Readings (Required)

Textbook

Manufacturing Processes for Design Professionals by Rob Thompson
Digital Fabrications: Architectural and Material Techniques by Lisa Iwamoto

Other Readings

Interactive Architecture: Adaptive World Edited by Michael Fox 2016
Make Space Scott Doorley and Scott Witthoft
If You Build It, Patrick Creadon, 2010
Sukkah City, Jason Hutt, 2013
Design Like You Give a Dam by Kate Stohr and Cameron Sinclair
Additional Readings will be assigned and made available through the course

Library Liaison

Aliza Elkin
aliza.elkin@sjsu.edu
Associate Librarian, Dr. Martin Luther King, Jr. Library
Liaison to the School of Art and Design
San Jose State University

Course Requirements and Assignments (Required)

The course is organized around lecture and lab work: lectures will introduce topics and assignments and provide an overview of issues and outline the design principles and communication concepts that are expected to be investigated. Labs will be a period of focused exploration of design issues and communication skills. Finished projects and work in progress will be presented and discussed during each class session to make important points about design. Each pin up will be graded. It is expected that your work will be printed out and pinned up within the first 15 minutes of class. If it is not you will receive a grade of 0 for that assignment.

Your final grade for this class will be based on class participation in reviews and labs and the successful completion of assignments. The assignment grade will be based on a set of criteria including the thoughtfulness and originality of the concept, rigorous and iterative experimentation, the application of the design principles you have learned, and the time and care you have invested in making models, final objects, renderings and presentations.

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 3 hours per unit per week with 1 of the hours used for lecture) for instruction or preparation/studying or course related activities including but not limited to internships, labs, clinical practica. Other course structures will have equivalent workload expectations as described in the syllabus.

Other Required technology / equipment / materials

You will need a laptop that is powerful enough and meets the minimum requirements to run the appropriate software for this class.

SOFTWARE:

Rhino/ Other modeling programs

Fusion360

Modo 11

Adobe Creative Cloud

Arduino

You may purchase the student version of MODO 11 online at:

<https://www.thefoundry.co.uk/industries/education/>

1. Click on student and graduate program
2. Click on apply for a student license
3. Fill out the request
4. A representative from the foundry will email you and provide subsequent instructions. It usually takes about a week to get Modo up and running on your laptop.

You **MUST** have the educational or trial version of MODO installed on your computer by the second day of class.

Photoshop and Illustrator are part of the Adobe Creative Suite and are available to SJSU students.

Autocad and revit are available to students for free through the Autodesk website.

Quicktime is free and can be downloaded from the internet.

Rhino comes with a 90 day evaluation, when we begin our Rhino section you will be asked to download it, do not download it before.

Rhino for mac is in development and you may download it at <http://mac.rhino3d.com>.

Rhino for PC may be purchased at http://www.rhino3d.com/sales/north-america/United_States

For \$195.00

You will use these software applications for the rest of your academic career and newer versions and variations on them as you move into the profession. They are mandatory and no designer can expect to be gainfully employed without working knowledge of these tools today.

Students will also be responsible for purchasing material as required for assignments, materials may include: pens, pencils, paper, wood, cement, acrylic, adhesives, plastics, foamcore, plaster, fastening hardware, aluminum, wax prints, cornstarch prints and other materials suitable for model making, high quality paper for print outs, and professional printing services.

The following is a list of materials that you will need to have available to you throughout the semester. These

are materials that you will continue to use throughout your education and career.

Architectural Scale

Cutting knives: Olfa and X-acto knife and blades

Drafting tape or draft dots

Erasers: Mars white plastic #526-50

Glues: Hot glue gun and glue sticks,

Elmer's Glue

Lead pointer (handheld)

Lead holder (at least 2) – retractable Leads: H, HB, 2H, 4H, 6H

Push pins

Sketching pencils (variety)

Steel Cutting Edge (14" with cork backing and 36")

Tracing paper rolls (bum wad):

10" adjustable triangle, 30/45/60

NOTE that [University policy F69-24](http://www.sjsu.edu/senate/docs/F69-24.pdf) at <http://www.sjsu.edu/senate/docs/F69-24.pdf> states that "Students should attend all meetings of their classes, not only because they are responsible for material discussed therein, but because active participation is frequently essential to insure maximum benefit for all members of the class. Attendance per se shall not be used as a criterion for grading."

Final Examination or Evaluation

The final for this course will be a Final Review with a presentation of the final class project(s) with external Jury members. It will be scheduled according to fabrication schedules later in the course and may be adjusted accordingly. There will be a video/documentation component for the course which will be presented the day of the final and will chronicle the entire process of the work.

Grading Information

Your final grade for this class will be based on class participation in reviews and labs and the successful completion of assignments. The assignment grade will be based on a set of criteria including the thoughtfulness and originality of the concept, rigorous and iterative experimentation, the application of the design principles you have learned, and the time and care you have invested in making models, final objects, renderings and presentations.

<u>Breakdown:</u>	100 %
Project 1:	25%
Project 2:	25%
Project 3 :	25%
Class Participation:	25%

Class Participation will be based on preparedness for in class desk critiques and pin ups and your role in the group project.

Grading Percentage Breakdown

97-100 = A+

93-96 = A

90-92 = A-

87-89 = B+

83-86 = B

80-82 = B-

77-79 = C+

73-76 = C

70-72 = C-

67-69 = D+

63-66 = D

60-62 = D-

59 and below = F

- A- Excellent. Indicates work of a very high character; the highest grade given. This grade is reserved for work that shows leadership and inspiration, demonstrating significant insight developed to its fullest extent and presented with exquisite craftsmanship.
- B- Good. Indicates work that is definitely above average, though not of the highest quality. This work shows thorough exploration and development, and is well presented with good craftsmanship, but it may not rise to the highest level of excellence.
- C- Fair. Indicates work of average or medium character. Work in this category demonstrates complete fulfillment of the stated requirements and an understanding of the issues covered, but does not exceed the expectations of understanding, development, or execution.
- D- Pass. Indicates work below average and unsatisfactory. The lowest passing grade. Though work may meet the minimum requirements, it lacks depth, development or is unsatisfactorily crafted.
- F- Fail. Indicates work that the student knows so little of the subject that it must be repeated in order that credit may be received. Work in this category may be unfinished, unimaginative, underdeveloped or poorly executed, and shows minimal understanding of issues.

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

Classroom Protocol

Teaching is a two-way dialogue. Attendance is expected at all class sessions and the student's presence throughout the entire class time is required. Whenever possible, the professor should be notified in advance of a

student's inability to attend a class. In the event the professor is late for class, students are authorized to leave after a half hour wait. It is important to be on time and to be present. It is possible to produce "A" work in the class yet receive a lower grade due to poor class participation and attendance. Students must be present for in class critiques, students who arrive late will not be allowed to present.

If you miss a class, It is your responsibility to find out what you missed BEFORE the next class. Technical demos and lectures will not be repeated for students who miss a class; Projected critique dates will given to you in advance; however, in some instances these may change do to extenuating circumstances, and it is your responsibility to find out about any announcements made in class, by communicating with your classmates.

Deadlines will be made available to you in class. Any work not turned in on the date it is due is considered late. Ten percent will be deducted from the grade for every class period it is not turned in. Special circumstances will be taken into consideration (e.g. Illness, court appearance, death of a relative.) All assignments must be completed and turned in to receive a passing grade for the class.

The instructor reserves the right to alter assignments and change project due dates with sufficient notice to the students.

University Policies

Per University Policy S16-9, university-wide policy information relevant to all courses, such as academic integrity, ADA and Religious holiday accommodations, dropping and adding, recording, etc. will be available on Office of Graduate and Undergraduate Programs' [Syllabus Information web page](http://www.sjsu.edu/gup/syllabusinfo/) at <http://www.sjsu.edu/gup/syllabusinfo/>"

DSIT 107, Interactive Surfaces, Spring, 2019, Course Schedule

List the agenda for the semester including when and where the final exam will be held. Indicate the schedule is subject to change with fair notice and how the notice will be made available.

Course Schedule

Week	Date	Topics, Readings, Assignments, Deadlines
1	1/24	Course Introduction <i>Assignment: Portfolios</i>
2	1/29	Portfolio reviews in class Project 1 Assigned <i>Assignment: Arduino PreReq</i>
2	2/31	Arduino 1
3	2/5	Arduino 2
3	2/7	Project 1 Desk Crits
4	2/12	Arduino 3
4	2/14	Project 1 Desk Crits
5	2/19	Project 1 Due
5	2/21	Project 2 Assigned
6	2/26	Arduino 5/ Project 2 Desk crits, Download Rhino
6	2/28	*Fabrication Day
7	3/5	Rhino Basics+Desk Crits
7	3/7	Rhino Curves+Surfacing
8	3/12	Rhino Grasshopper
8	3/14	Desk Crits+Fabrication
9	3/19	Project 2 Mid Review
9	3/21	*Fabrication Day
10	3/26	Desk Crits+Fabrication
10	3/28	Desk Crits+Fabrication
11	4/2	SPRING BREAK
11	4/4	SPRING BREAK
12	4/10	Desk Crits+Fabrication
12	4/12	Desk Crits+Fabrication
13	4/17	Desk Crits+Fabrication

13	4/19	Desk Crits+Fabrication
14	4/24	Desk Crits+Fabrication
14	4/26	<i>Project 2 Due, Project 3 Assigned</i>
15	5/1	Desk Crits+Fabrication
15	5/3	Desk Crits+Fabrication
16	5/8	Desk Crits+Fabrication
16	5/10	Final Review