USC Iovine and
Young Academy

*Arts, Technology and the Business
of Innovation*

ACAD 245: Designing Products I
Units: 4
Tues/Thurs 5:00-7:50pm

Location: Iovine and Young Hall (IYH) 110
Iovine and Young Hall Creator Studio (Select Days)

Instructor: Trent Jones
Office: IYH
Office Hours: By Appointment
Contact Info: trentjon@usc.edu

IT Help:
https://uscedu.sharepoint.com/sites/IYAStudent/SitePages/IT-Resources.aspx
Hours of Service: 9 a.m. – 6 p.m.
Contact Info: iyahelp@usc.edu

USC Technology Support Links
Zoom information for students
Blackboard help for students
Software available to USC Campus

Course Description

Designing Products 1 is an introductory course in learning how to design and develop a range of physical consumer products to solve problems and address market opportunities. The goal of this course is to give students an understanding of what makes successful and unsuccessful products, identify opportunities within a competitive product landscape, create compelling product solutions and build aptitude in the process of prototyping and idea communication. Through a process of implementing blue ocean strategy analysis and human centered design principles, student teams will take on different project prompts throughout the semester to develop skills in creating product solutions for a range of product categories that require different methodologies of design, prototyping, and manufacturing processes. This course heavily emphasizes rapid market analysis user research, ideation and low to medium fidelity prototyping as the process for students to develop desirable, feasible and viable product solutions quickly.

Learning Objectives and Outcomes

Students will be able to demonstrate:

- An understanding of the fundamentals to developing a range of consumer product solutions.
- An ability to determine typical consumer pain points / problems with the competition and create compelling and feasible solutions to address these areas of opportunity.
- Development in skills relating to creative problem solving, rapid visualization and ideation, and techniques in how to create both low and medium fidelity prototypes.
- A familiarity with human centered design principles and the iterative process of creating multiple prototypes based on user insights and feedback.
- Preliminary understanding of the intersections of industries of product design.
- Development in familiarity with digital fabrication technologies and accompanying digital tools.
- Demonstrate the proper and appropriate use cases for various tools in equipment in a design studio-based environment.

Prerequisite(s): ACAD 176 and DES 102

Course Notes:

Designing Products 1 is a studio-based course which very closely mimics the actual work environment of a design studio. The format of the course is highly collaborative and primarily critique based. Learning objectives will come from lecture, weekly homework assignments and the feedback of both the instructor and fellow classmates. It is expected that students will engage in dialogue during class critiques, and a portion of their grade will be based on their ability and willingness to do so.

Technological Proficiency and Hardware/Software Requirements

Students should have a basic to proficient understanding of Adobe Creative Suite, Keynote and/or PowerPoint, and although not necessary, some basic experience with 3D CAD modeling is beneficial (i.e. - Solid Works, Fusion 360, Rhino) Demonstrations will be conducted throughout the course.

USC Technology Rental Program
The university realizes that attending classes online and completing coursework remotely requires access to technology that not all students possess. If you need resources to successfully participate in your classes,

such as a laptop or internet hotspot, you may be eligible for the university's equipment rental program. To apply, please submit an USC Technology Rental Program Application

HOW TO PURCHASE SOFTWARE AT THE DISCOUNTED ACADEMY RATE

For classes that require them, the following software are available for purchase **online** through the USC Iovine and Young software catalog at the Academy discounted rate:

Software	IYA Short-Term License at USC Bookstore
Adobe Creative Cloud	$70 2019–2020 annual license
Apple Logic Pro	$35 semester licenses
Solidworks	$35 semester license
Apple Final Cut Pro	$35 semester license

To purchase:
- Visit: https://commerce.cashnet.com/IOVINE
- Select the software license(s) you would like to purchase by clicking "View Details" or the software title, and make your purchase
- You will receive an order confirmation receipt at the email address you provided
- You will be notified by email when the software license has been activated

If you have any questions about this process, please do not hesitate to contact Academy IT Support at iyahelp@usc.edu.

Optional Materials
Optional materials will be discussed throughout the duration of the course.

Description and Assessment of Assignments

Homework will be weekly assignments presented and/or uploaded digitally each week to a shared virtual workspace, with feedback provided in the form of critique from both the instructor and fellow classmates. For most of the class, students will work in small teams to create a series of product solutions addressing opportunities relating to a range of different product categories. Each of these projects will go through a process of analyzing the competitive landscape to determine blue ocean opportunities, determining design criteria to address these opportunities, developing initial ideas through brainstorming techniques and ideation sketches, developing initial low-fidelity prototypes, utilizing user feedback to iterate on initial concepts, and creating medium fidelity prototypes based on this feedback.

Class time may consist of the entire class collectively participating in a large group critique, or the teams may be broken out to have in-class studio time while the instructor gives individual critique and feedback to other teams.

Students are responsible for all assignments, including homework, in-class work, critiques, presentations, demos, readings, process documentation, and archiving work. It is the student's responsibility to obtain missed work and information missed if absent. As ACAD 245 is a studio-based class, information is

exchanged in group discussion and may not be imparted through handouts or notes, therefore it is critical for students to attend class and be on time to succeed.

Grading Breakdown

Projects will be graded based on adherence to given guidelines, attention to craft and overall appropriateness. Taking initiative, progression and follow-through will also be considered. Both giving and receiving feedback are critical to your success in the class; therefore, your participation grade is based on your active involvement in class and critiques. Assignments will be docked one full letter grade each week they are late. Please be sure to communicate with the instructor if you miss or are planning to miss a class to arrange for homework submission. All homework assignment specifications, expectations, due dates and grading parameters will be provided and made clear upon the introduction of each project.

Assignment	Points	% of Grade
Project 1	175	17.5%
Project 2	175	17.5%
Project 3	175	17.5%
Project 4	175	17.5%
Final Document	300	30.0%
TOTAL	**1000 pts**	100%

Grading Scale (Example)
Course final grades will be determined using the following scale
A   95-100
A-   90-94
B+   87-89
B   83-86
B-   80-82
C+   77-79
C   73-76
C-   70-72
D+   67-69
D   63-66
D-   60-62
F   59 and below

A Exceptional - Going above and beyond with exemplary work both quantitatively and qualitatively.

A- Excellent – Meeting all homework requirements with a very high quality of what's expected with regard to content, creativity, attention to detail and craftsmanship.

B+ Very good - Completing all assignments with a high level of proficiency but lacking in some areas of competency.

B Good - Completing assignments with an above adequate to adequate level of proficiency in the five areas of competency.

B- Satisfactory - Completing assignments with a satisfactory level of proficiency in most areas of competency, and below adequate in some areas.

C+ Unsatisfactory - Improvement needed in the five areas of competency listed in the grading criteria

Assignment Submission Policy
Assignment due dates can be found in the syllabus and upon the introduction of each project. Submission medium of projects will vary and be specified upon project introduction.

Grading Timeline
Grades for each assignment will be completed no later than 7 days following the final presentation for each project.

Course Schedule: A Weekly Breakdown

Week	Session 01 (Tuesday)	Session 02 (Thursday)
01	*8.23.22* Course Introduction Overview: Designing Products Task for Next Class: Good & Bad Design Assignment (8.30.22)	*8.25.22* Creator Studio Training Session
02	*8.30.22* Homework Overview Lecture: User Centered Design Project 1 Introduction Team Formation Task for Next Class: Identify Target Users	*9.1.22* Lecture: *Competitive Analysis, Finding Competition* Task for Next Class: Competitive Matrix + Opportunity Statement
03	*9.6.22* Homework Overview Lecture: Ideation Pt1 Team Ideation Task for Next Class: Mind Map	*9.8.22* Lecture: Ideation Pt2, Visual Ideation: Mood Board & Visual Sampling Task for Next Class: How Might We, What If, Thumbnail Visuals
04	9.13.22 Homework Overview Lecture & Demo: Prototyping 1 Studio Time: Low-Fi Prototyping	*9.15.22* Studio Time & Check-In Task for Next Class: Completed Low-Fi Prototype
05	*9.20.22* Homework Overview: Low-Fi Prototype Lecture & Demo: Prototyping 2, Digital Fabrication i Providing Feedback	*9.22.22* Studio Time
06	*9.27.22* Presentations for Project 1	*9.29.22* Project 2 Introduction

		Lecture: Competitive Analysis 2 Features and Differentiation Team Formation Task for Next Class: Early Research
07	10.4.22 Homework Overview Task for Next Class: Visual Ideation	10.6.22 Homework Overview Lecture & Demo Studio Time: Low-Fi Prototype for Project 2 Task for Next Class: Low-Fi Prototype
08	10.11.22 Homework Review Lecture & Demo: Prototyping 3, Digital Fabrication ii Task for Next Class: Mid-Fi Prototype	10.13.22 Fall Recess
09	10.18.22 Studio Time + Check-In	10.20.22 Presentations for Project 2
10	10.25.22 Guest Speaker	10.27.22 Project 3 Introduction Worktime Task for Next Class: Analysis + Ideation
11	11.1.22 Lecture: Best Practices Studio Time + Check-In	11.3.22 Project 3 Sprint Presentations
12	11.8.22 Project 4 Introduction Task for Next Class: Early Research + Ideation	11.10.22 Homework Review Demo & Lecture: Prototyping 4 Studio Time + Check-In
13	11.17.22 Homework Review Demo & Lecture Studio Time & Check-Ins Materials and Inventory Check	11.17 Lecture: Prototyping 5, Digital Fabrication iii Studio Time
14	11.22.22 Studio Time	11.4.22 Thanksgiving
15	11.29.22 Final Check-Ins & Studio Time	12.1.22 Final Presentations
Study Days		

Iovine and Young Hall Cleanout

The Academy is unable to store student projects and materials beyond the end of the semester. Students must remove all projects and personal materials from the Creators Studio, lockers/locker room, and other classrooms by the end of each semester. **All projects and materials left in Iovine and Young Hall will be discarded two days after final exams end. No exceptions.**

Academy Attendance Policy

The Academy maintains rigorous academic standards for its students and on-time attendance at all class meetings is expected. Each student will be allowed two excused absences over the course of the semester for which no explanation is required. Students are admonished to not waste excused absences on non-critical issues, and to use them carefully for illness or other issues that may arise unexpectedly. Except in the case of prolonged illness or other serious issue (see below), no additional absences will be excused. Each unexcused absence will result in the lowering of the final grade by ⅓ of a grade (e.g., an A will be lowered to A-, and A- will be lowered to a B+, etc.). In addition, being tardy to class will count as one-third of an absence. Three tardies will equal a full course absence.

Students remain responsible for any missed work from excused or unexcused absences. Immediately following an absence, students should contact the instructor to obtain missed assignments or lecture notes and to confirm new deadlines or due dates. Extensions or other accommodations are at the discretion of the instructor.

Automatically excused absences normally may not be used for quiz, exam or presentation days. Using an excused absence for a quiz, exam or presentation, such as in the case of sudden illness or other emergency, is at the discretion of the instructor.

In the case of prolonged illness, family emergencies, or other unforeseen serious issues, the student should contact the instructor to arrange for accommodation. Accommodation may also be made for essential professional or career-related events or opportunities. Additionally, students who need accommodations for religious observations should provide advanced notice to instructors and student athletes should provide Travel Request Letters. All accommodations remain at the discretion of the instructor, and appropriate documentation may be required.

Fall 2022 addendum:
- Unless students provide an accommodation letter from USC's Office of Student Accessibility Services (OSAS) or a letter from IYA Student Services detailing visa or travel restrictions, attendance and active participation is expected in the classroom. Any student with such accommodations should submit their accommodation document to the instructor as soon as possible to discuss appropriate accommodations. Either classroom recordings or live remote access to the class via Zoom will be provided.
- Students who are experiencing illness should not attend class in person. Please inform the instructor in advance of any class sessions that you can't attend for medical reasons, and accommodations will be arranged to view recorded lectures and submit alternatives to any missed class participation. Students will not be penalized for not attending class in person under these circumstances.
- In the event that you find yourself experiencing COVID-19 related symptoms, in keeping with university recommendations, you should Stay home! This is the best way to prevent spreading COVID-19 as supported by scientific evidence; Please do not come to an in-person class if you are feeling ill, particularly if you are experiencing symptoms of COVID-19.

Statement on Academic Conduct and Support Systems

Academic Conduct:

Plagiarism – presenting someone else's ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in SCampus in Part B, Section 11, "Behavior Violating University Standards" policy.usc.edu/scampus-part-b. Other forms of academic dishonesty are equally unacceptable. See additional information in SCampus and university policies on Research and Scholarship Misconduct.

Students and Disability Accommodations:

USC welcomes students with disabilities into all of the University's educational programs. The Office of Student Accessibility Services (OSAS) is responsible for the determination of appropriate accommodations for students who encounter disability-related barriers. Once a student has completed the OSAS process (registration, initial appointment, and submitted documentation) and accommodations are determined to be reasonable and appropriate, a Letter of Accommodation (LOA) will be available to generate for each course. The LOA must be given to each course instructor by the student and followed up with a discussion. This should be done as early in the semester as possible as accommodations are not retroactive. More information can be found at osas.usc.edu. You may contact OSAS at (213) 740-0776 or via email at osasfrontdesk@usc.edu.

Support Systems:

Counseling and Mental Health - *(213) 740-9355 – 24/7 on call*
studenthealth.usc.edu/counseling
Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

National Suicide Prevention Lifeline - *1 (800) 273-8255 – 24/7 on call*
suicidepreventionlifeline.org
Free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week.

Relationship and Sexual Violence Prevention Services *(RSVP) - (213) 740-9355(WELL), press "0" after hours – 24/7 on call*
Studenthealth.usc.edu/sexual-assault
Free and confidential therapy services, workshops, and training for situations related to gender-based harm.

Office for Equity, Equal Opportunity, and Title IX (EEO-TIX) - *(213) 740-5086*
eeotix.usc.edu
Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants.

Reporting Incidents of Bias or Harassment *- (213) 740-5086 or (213) 821-8298*
usc-advocate.symplicity.com/care_report
Avenue to report incidents of bias, hate crimes, and microaggressions to the Office for Equity, Equal Opportunity, and Title for appropriate investigation, supportive measures, and response.

The Office of Student Accessibility Services (OSAS) *- (213) 740-0776*
osas.usc.edu
OSAS ensures equal access for students with disabilities through providing academic accommodations and auxiliary aids in accordance with federal laws and university policy.

USC Campus Support and Intervention *- (213) 821-4710*
campussupport.usc.edu
Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

Diversity, Equity and Inclusion *- (213) 740-2101*
diversity.usc.edu
Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

USC Emergency - UPC: *(213) 740-4321, HSC: (323) 442-1000 – 24/7 on call*
dps.usc.edu, emergency.usc.edu
Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

USC Department of Public Safety - UPC*: (213) 740-6000, HSC: (323) 442-120 – 24/7 on call*
dps.usc.edu
Non-emergency assistance or information.

Office of the Ombuds - (213) 821-9556 (UPC) / (323-442-0382 (HSC)
ombuds.usc.edu
A safe and confidential place to share your USC-related issues with a University Ombuds who will work with you to explore options or paths to manage your concern.

Occupational Therapy Faculty Practice *- (323) 442-33*40 or otfp@med.usc.edu
chan.usc.edu/otfp
Confidential Lifestyle Redesign services for USC students to support health promoting habits and routines that enhance quality of life and academic performance.