

**USC Iovine and
Young Academy**
*Arts, Technology and the Business
of Innovation*

PRIN 575a: Garage Experience

Units: 2

Fall 2022 – Wednesdays – 12:00-2:50pm

Location: IYH 211

Instructor: Grant Delgatty & Trent Jones

Office: HSH 101 / via Zoom appointment

Office Hours: By appointment

Contact Info: delgatty@usc.edu, 818-378-2736; trentjon@usc.edu

IT Help: <http://iovine-young.usc.edu/ait/index.html>

Hours of Service: M-F, 8:30am-6:30pm

Contact Info: iya.helpdesk@usc.edu

Course Description

Product Innovation capstone leading to innovative outcomes, including advanced research artifacts, operational prototypes and breakthrough enterprises across multiple fields and industries.

Learning Objectives and Outcomes

Students will learn the processes, tools, and techniques for envisioning, designing, marketing and commercializing product solutions. Through discussion and application students will garner an understanding of the steps required to design and launch physical products through market and human centered design research, iterative low and medium/high fidelity prototyping, consumer testing, proof of concept validation, and final design execution.

Suggested Readings and Supplementary Materials

Designing Products People Love, O'Reilly. Scott Hurff

Description and Assessment of Assignments

Weekly homework assignments will be submitted digitally and/or presented, with feedback being provided as critique from both the instructor and fellow classmates. For the duration of the class, students will work towards developing a final product solution they have identified as having opportunity for innovation, and through this process, will be expected to collaborate with other students. Class time may consist of the entire class collectively participating in large group discussions and critiques or may be broken out to have in-class studio time while the instructor gives individual feedback.

As Garage Experience is intended to be mostly a student led research and development project lasting two semesters, it is expected that students take initiative to maintain a schedule conducive to accomplishing desired outcomes.

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 will be 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. Absence is not an excuse for late work. Please be sure to communicate with the professor if you miss (or plan to miss) a class to arrange for homework submission.

Grades will be assigned according to a point system based on the following criteria:

- Competency in key concepts
- Effort/range of exploration
- Process and methodology
- Presentation/craftsmanship
- Participation in critiques

- 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.

- C Below expectation** - Most likely caused by poor levels of execution, lack of participation incomplete work, and overall lack of performance/effort.
- C- Well below expectation.**
- D Significantly below expectation.**

Assignment	Points	% of Grade
Report out #1-Consumer Insights	150	15%
Report out #2-Initial Ideation/Opportunity Analysis	150	15%
Report out #3-Revised Ideation	150	15%
Report out #4-Final Design Direction	150	15%
Finish Model-function, craftsmanship, form	200	200%
Final Poster	150	15%
Class Participation	50	5%
TOTAL	1000	100%

Grading Scale

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

Assignment Submission and Rubric Policy

Unless otherwise noted, all assignments must be submitted either on the Miro virtual whiteboard or as a PDF presentation. For assignments delivered in class (such as presentations), the work must be completed before the commencement of the class session in which the assignment is due.

Grading Timeline

Grades and feedback for all assignments will be returned to students within one week of submission.

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 1/3 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.

An established pattern of tardy and/or disruptive behavior may result in being asked to leave the class for that day, generating a full absence.

Attendance will be taken at the beginning of each class. It is your responsibility to ensure your attendance recording at the start of each class.

In the event of online classes, you are required to submit a chat text entry (or similar) to record your attendance in class.

If you are more than 15 mins late for a class—without prior permission from the instructor—it will be counted as an 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. All accommodations remain at the discretion of the instructor, and appropriate documentation may be required.

Additional Policies

It is expected that students will conduct themselves in a professional manner. Use of connected devices such as cell phones, tablets, etc. during class critique is not allowed, and should only be used during class for the purpose of taking notes or researching information pertinent to the project at hand.

Although the focus of this class is to develop consumer products, it is also expected that much thought and care be put into every component of the project. This includes spelling, punctuation, and grammar, as well as attention to detail such as design layout, cleanliness and craftsmanship, and formatting of homework assignments. Not adhering to these professionalism standards will be reflected in the final grade.

Course Schedule: A Weekly Breakdown

	Topics/Daily Activities	Homework Assignments	Deliverable/Due Dates
Week 1	Target Consumer/Pain Points <ul style="list-style-type: none">- Introductions- Discussion on creating informative user questionnaires	<ul style="list-style-type: none">-Consider prompts/categories for the semester project.- Create a slide layout design to be used as a consistent format for your team’s project- Conduct in-depth (micro and macro) trend analysis on the subject topic (3-5 slides)- Produce a trend/mood board of the target	<ul style="list-style-type: none">- Trend analysis (min 3 slides)- Target consumer mood board- Insights questionnaire

		<p>consumer and include a brief description of the user profile</p> <ul style="list-style-type: none"> - Create a target consumer insights questionnaire (1 slide, 10-15 questions) 	
Week 2	<p>Consumer Insights</p> <ul style="list-style-type: none"> - Project check-ins 	<ul style="list-style-type: none"> - Conduct in-person interviews and document if possible. (minimum of 3 - more is preferred) - Produce an on-line survey - Create slides for key insights (1 slide per target user interviewed) - Create a concise single sentence problem statement 	<ul style="list-style-type: none"> - User insights/pain points (min 2 interviews per team member) - On-line survey - Problem statement <p>- Report out #1 (Consumer Insights)</p> <ul style="list-style-type: none"> - Due Week 3
Week 3	<p>Report out #1</p> <ul style="list-style-type: none"> - Consumer Insights presentations 	<ul style="list-style-type: none"> - Create a mind-map showcasing different potential problems and touch points for your product category. - Create minimum of 15-20 'How might we' framing questions - Produce 10-15 sketches of initial ideation concepts based on 'what if' exercise 	<ul style="list-style-type: none"> - Mind-map - 15-20 framing questions (Mira) - 20-30 'what if' post-its (Mira) - 10-15 initial concept sketches
Week 4	<p>Initial Ideation</p> <ul style="list-style-type: none"> - Project check-ins 	<ul style="list-style-type: none"> - Run initial concepts by target users to obtain initial feedback (document this with photos) - Obtain information on similar products already used by target users - Revise concepts based on user feedback 	<ul style="list-style-type: none"> - Obtain user feedback on initial concepts - 10-15 revised concept sketches
Week 5	<p>Opportunity Analysis</p> <ul style="list-style-type: none"> - Project check-ins 	<ul style="list-style-type: none"> - Identify a minimum of 10 competitive products Each should have: <ul style="list-style-type: none"> - brand and model name of the product - image of the product - retail price point 	<ul style="list-style-type: none"> - Competitor analysis (min 10 examples) - Opportunity matrix (min of 2) - Problem/Opportunity Statement - Design criteria (min of 7)

		<ul style="list-style-type: none"> - key features and benefits claimed by manufacturer - pros and cons - Create a primary and secondary opportunity matrix identifying blue ocean strategy - Compose a problem/opportunity statement - Create a list of design criteria (7-10) 	<p>– Report out #2 (Initial Ideation / Opportunity Analysis) - Due Week 6</p>
Week 6	<p>Report out #2 - Initial Ideation / Opportunity Analysis presentations</p>	<ul style="list-style-type: none"> - Narrow down to 3 concepts based on opportunity and design criteria - 3-5 high fidelity sketches for each concept (10-15 total) - Sketches should show multiple views and details for each concept and include annotations communicating features and functionality. - Concepts should be ranked in order of preference and presented as such in the midterm presentation. - Create low-fidelity prototypes – minimum of one (more is better) 	<ul style="list-style-type: none"> - 10-15 sketches - Initial prototypes (1 or more)
Week 7	- Project check-ins	<ul style="list-style-type: none"> - Run initial prototypes by target users to obtain feedback (document this with photos) - Create revised medium-fidelity prototype 	<ul style="list-style-type: none"> - Obtain user feedback on initial prototypes - Medium fidelity prototypes/proof of concept (min of 1)
Week 8	- Project check-ins	<ul style="list-style-type: none"> - Finish medium-fidelity prototype - Obtain user feedback 	<ul style="list-style-type: none"> - Obtain user feedback on revised prototypes <p>– Report out #3 (Revised Ideation) - Due Week 9</p>
Week 9	<p>Report out #3 - Revised Ideation presentations</p>	<ul style="list-style-type: none"> - Create revised medium-fidelity prototypes/proof of concept (POC) model (1 or more) 	

		- Obtain user feedback on initial prototypes/POC (document with photos)	
Week 10	Final Direction - Project check-ins	- Decide on final product direction - Revise concept based on user feedback and produce new high-fidelity sketches/renderings, as well as revised medium fidelity prototypes, considering functionality, human factors, materials, aesthetics, etc.	- Revised sketches/renderings with annotated details depicting functionality, materials, technology, etc. (min of 6 high fidelity sketches and/or renderings) - Begin final model
Week 11	- Project check-ins	- Continue to work on final model	- Report out #4 (Final Design Direction) - Due Week 12
Week 12	Report out #4 - Final Design Direction presentations	- Produce a 3D CAD rendering - Include computer generated annotations communicating features and details - Produce several form, material, and color studies to determine the final aesthetic.	- CAD renderings (min of 3 renderings of final design in different views) - Form, material, color studies/renderings (min of 5 renderings)
Week 13	- Project check-ins	- Decide on final name of product and create logo	
Week 14	- Project check-ins	- Begin final poster design Final poster should visualize your product being used in the intended environment, and should include name/logo, short description indicating what it is and the problem it is solving, and potentially other images showing/annotation unique features and benefits. Image can either be a rendering of the product, or a photo of the final model.	- Final poster
Week 15	Final Presentation		

Course Hours

This 2-unit course requires 1500 minutes of instructional time per semester, which equals 100 minutes of instructional time each week. In addition, it is expected that students will work, on average, an additional 200 minutes per week outside of class — on readings/viewings, homework assignments, field experiences, and individual or team projects.

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 scientific misconduct, policy.usc.edu/scientific-misconduct.

Support Systems:

Student Health Counseling Services - (213) 740-7711 – 24/7 on call
engemannshc.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)

<https://studenthealth.usc.edu/sexual-assault/>

Free and confidential therapy services, workshops, and training for situations related to gender-based harm.

Relationship and Sexual Violence Prevention and Services provides immediate therapy services for situations related to gender- and power-based harm (e.g., sexual assault, domestic violence, stalking).

Office of Equity and Diversity (OED) | Title IX - (213) 740-5086
equity.usc.edu, titleix.usc.edu

Information about how to get help or help a survivor of harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants. The university prohibits discrimination or harassment based on the following protected characteristics: race, color, national origin, ancestry, religion, sex, gender, gender identity, gender expression, sexual orientation, age, physical disability, medical condition, mental disability, marital status, pregnancy, veteran status, genetic information, and any other characteristic which may be specified in applicable laws and governmental regulations.

USC Policy Reporting to Title IX (213) 740-5086

<https://policy.usc.edu/reporting-to-title-ix-student-misconduct/>

The university encourages individuals to report prohibited conduct to the *Title IX Office*. Individuals can report to the university's *Title IX Coordinator* in the *Office of Equity and Diversity*.

Bias Assessment Response and Support - (213) 740-2421

studentaffairs.usc.edu/bias-assessment-response-support

Avenue to report incidents of bias, hate crimes, and microaggressions for appropriate investigation and response.

The Office of Disability Services and Programs - (213) 740-0776

dsp.usc.edu

Support and accommodations for students with disabilities. Services include assistance in providing readers/notetakers/interpreters, special accommodations for test taking needs, assistance with architectural barriers, assistive technology, and support for individual needs.

USC Support and Advocacy - (213) 821-4710

studentaffairs.usc.edu/ssa

Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

Diversity at USC - (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.