

USC Iovine and Young Academy

*Arts, Technology and the Business
of Innovation*

PRIN 575b: Garage Experience

Units: 2
Spring 2022
Tuesday
12:00-1:50pm

Location: Iovine and Young Hall

3780 Watt Way
Los Angeles, 90089
Room: IYH 211

Instructors:

Philip H. B. More, Ph.D., CVA Professor Emeritus

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310.938.8684

Trent Jones

Lecturer, Maker-In-Residence

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- **IT Contact Information** – Hours of Service: 8:30 a.m. – 6:30 p.m. Contact Info: iya.helpdesk@usc.edu
- **New Software Links** – Visit: <https://commerce.cashnet.com/IOVINE>

Contact Info: iyhelp@usc.edu, 213-821-6917

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.

Required Readings and Supplementary Materials

Order Link: <https://hbsp.harvard.edu/import/899695>

Price = \$23.50 and includes one simulation and two cases listed in the syllabus.

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 business pitch based on a “traditional” format business plan in accordance with U.S. Government, Small Business Administration (sba) guidelines.

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 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 five criteria: (1) Competency in key concepts, (2) Effort/range of exploration, (3) Process and methodology, (4) Presentation/craftsmanship, and (5) 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 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 listed above.

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 above.

C Below expectation – Due to poor levels of execution, lack of participation, incomplete work, and overall lack of performance/effort.

C- Well below expectation.

D Significantly below expectation.

Assignments	Points	% Grade
Innovation process	50	5%
MVP1	100	10%
S-curve	50	5%
MVP2	100	10%
Jobs To Be Done (JTBD)	50	5%
Pricing strategy	100	10%
Market sizing	50	5%
Competitive advantage	100	10%
Strategic group analysis	100	10%
Business Plan	150	15%
Final Presentation – VC request for funds pitch	150	15%
TOTAL	1000	100%

Grading Scale

Course final grades will be determined using the following scale

95 – 100 A = 4.0

70 – 74 C+ = 2.3

90 – 94 A- = 3.7

65 – 69 C = 2.0

85 – 89 B+ = 3.3

60 – 64 C- = 1.7

80 – 84 B = 3.0

55 – 59 D = 1.0

75 – 79 B- = 2.7

0 – 55 F

Assignment Submission and Rubric Policy

Unless otherwise noted, all assignments must be submitted as a PDF presentation. For assignments delivered in class (such as presentations), the work must be completed by midnight the day 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 $\frac{1}{3}$ 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.

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 many are not 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.

Spring 2021 addendum:

- Unless students provide an accommodation letter from USC's Office of Student Accessibility Services 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.
- If 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.

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.

HOW TO PURCHASE SOFTWARE AT THE DISCOUNTED ACADEMY RATE

The following first year software are now available for purchase **online** through the USC Iovine and Young software catalog at the Academy discounted rate:

<u>Software</u>	<u>IYA Short-Term License</u>
Adobe Creative Cloud	\$70 2021-2022 annual license (active through July 2022)
Apple Logic Pro	\$35 semester license
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 iya.helpdesk@usc.edu.

Course Schedule (See Blackboard (Bb) Session Folders for Details)

	Topics/Daily Activities	Homework Assignments	Deliverable/Due Dates
Week 1 (Tues) 1/11	<p>Discussion of the SBA business plan template and methods for project scheduling. The Minimum Viable Product (MVP)</p> <p>Discussion of what comes next for product</p> <p>development and prototyping.</p> <p>Final Class Artifact</p>	<p>Select one method for scheduling your project from those discussed and presented in the slide deck posted within Blackboard (Bb) for this session and come to class ready to apply it to your project. Review the SBA business “traditional” plan template, this syllabus, and include the key elements in your project schedule. Finally watch the brief videos on what an MVP is.</p>	<p>Review the syllabus and any materials posted for the sessions within Bb.</p> <p>Take your working prototype from the end of term 1 of GX and use it as an MVP1 experiment for: willingness to pay (WTP) for the key minimum features you think it needs to succeed in the market. Get your MVP out for a market test, by the end of the first week.</p>
Week 2 (Tues) 1/18	<p>The process of innovation</p> <p>Discuss the product introduction life cycle using classic examples.</p> <p>Discuss levels of fidelity, goal setting and documentation.</p> <p>Personal & Product Goals</p>	<p>Each project team will be randomly assigned one product category (e.g., aircraft, cameras, cars, and ships) and will be provided with a representative sample of pictures for each as it changed over time. Your assignment is to come to class with a slide deck of 3-4 slides that answers the following the following questions and gives examples: (1) what subsystems changed over time and how did they affect the overall structure of the product? (2) What were the most likely major dilemmas faced by the incumbent firms as the product’s changed over time? (3) What were the major implications for the incumbent firm’s supply chains, the incumbent firm’s employees, and their society more generally as the product changed?</p>	<p>Your Spring term schedule (see Week 1 assignment)</p> <p>Submit and present your analysis and answers to the assigned questions in 3-4 slides.</p> <p>Progress report on MVP1 tests.</p>

<p>Week 3 (Tues 1/25)</p>	<p>The S curve and the implications for your project on it.</p> <p>MVP 2 Studio Work Time</p>	<p>Plot the S-curve as a cumulative frequency distribution of your product category adoptions (from the previous term) on a graph vs time for your project category and come to class prepared to present your graph and where your product is on the graph.</p>	<p>In class discussion of the implications of where your product is on the S-curve for likely future scenarios for your product class.</p> <p>Modify your MVP and submit the revised version for MVP2.</p>
<p>Week 4 (Tues) 2/1</p>	<p>Market Niches and the S curve</p> <p>1:1 Meetings- MVP 2 results and moving forward. Exploring additional methods of prototype testing.</p> <p>Introduce Project Update 1</p>	<p>Apply the S curve to your project and develop alternative scenarios for development.</p>	<p>MVP2 progress report.</p>
<p>Week 5 (Tues) 2/8</p>	<p>Project Update 1 Presentations</p> <p>A summary of progress made so far from each team.</p> <p>Using “Jobs to be Done” (JTBD) to identify and strengthen your market niche</p>	<p>Come to class prepared to apply the JTBD approach to identifying how to narrow your niche. Watch the following 3 videos to understand the basic idea and then how to use the idea to ID your critical customer and size your market.</p>	<p>Bring 2-3 slides to class to share by restating your earlier assignment from last term in terms of the JTBD approach? What are its functional, emotional, and social dimensions of the job and the weight of each? Be prepared to discuss the experiences that you will provide your customer with that will enable them to perform their job perfectly. Then, how will you need to integrate your operational system to provide these experiences? Finally, we can put a purpose or a brand on our solution. MURAL has a template for the JTBD approach within it that may be helpful to you in this assignment. MURAL uses JTBD itself to introduce new products.</p> <p>Discuss implications your MVP results had for your original JTBD?</p>

Week 6 (Tuesday) 2/25	Willingness to Pay (WTP) Studio Work Time	Discuss alternative methods for providing evidence of WTP and apply the most appropriate to your project.	Focus on MVPs, surveys and focus groups, discuss +/- of all methods and select one method to provide your WTP evidence. Send or use them to collect evidence to present next week
Week 7 (Tues) 2/22	Pricing Strategies Sourcing Materials- Digital Products (Guest Speaker TBD) Studio Work Time	Before coming to class take 2 hours to play "Pricing Simulation: Universal Rental Car V2". Come to class prepared to discuss the key learnings and their implications for your project.	Using the results from last week's method for collecting WTP evidence and what you've learned from the simulation, prepare a pricing strategy for your product.
Week 8 (Tues) 3/1	Business Models Guest Speaker- Models of Impact (TBD)	Apply the "business model canvas" to your project to identify key revenues and costs to optimize for maximum profitability.	Present and turn-in a brief slide deck showing your business model canvas including your pricing strategy developed previously.
Week 9 (Tues) 3/8	Sizing the market Sourcing Materials- Physical Products (Guest Speaker TBD) Introduce Project Update 2	Before coming to class watch the video on sizing your market. Then using the JTBD to apply this approach to identifying the number of prime beneficiaries for your product.	Present and turn-in a brief slide-deck showing the size of your market that includes the JTBD approach to identify your primary customer beneficiary and your business model canvas analysis.
Week 10 (Tues) 3/15	SPRING BREAK (March 13-20)		
Week 11 (Tues) 3/22	Project Update 2 Presentations Erecting Barriers to Imitation Part A	Come to class prepared to discuss, "Attack of the Cones: Birchbox Defends Against Copycat Competitors."	Come to class prepared to discuss what went right and wrong with Birchbox. Was this a blue or a red ocean market? What would you recommend that the entrepreneurs do differently next time? How

			does what happened with Birchbox relate to your project?
Week 12 (Tues) 3/29	Erecting Barriers to Imitation Part B 1:1 Meetings +Studio Work Time	Come to class prepared to discuss, "Mobileye: The Future of Driverless Cars"	Come to class prepared to discuss what went right and wrong with Mobileye. Was this a blue or a red ocean market? What would you recommend that the entrepreneurs do differently next time? How does what happened with Mobileye relate to your project?
Week 13 (Tues) 4/5	Branding Guest speaker (e.g., Steve Child or new faculty member?)		Present & turn-in 3-4 slides on ways you'll create a sustainable competitive advantage
Week 14 (Tues) 4/12	Competition as markets change from blue to red oceans Studio Work Time 1:1 Meetings- Assessing documentation, assets, and artifacts. Studio Work Time	Watch the following videos: <u>Red Queen Competition: A Dynamic View of Strategy, featuring William P. Barnett – Bing video</u> (1.16 min) <u>https://www.youtube.com/watch?v=mYF2_FBCvXw</u> (13.11 min) Skim the two slide decks posted in Bb: (1) Industry Competitive Analysis Basics. (2) Strategic Group Analysis	Create a strategic group analysis for your product industry and how you will successfully enter their market. Prepare 3-4 slides for presentation and turn-in next week
Week 15 (Tues) 4/19	Go to market strategies Revisiting our goals and metrics Studio Work Time	Online thru another vendor – e.g., ETSY, Amazon, Apple Apps (Online independent, direct sales online, Brick & mortar, Independent, Alliance partner, Bought out)	Present and turn in strategic group map and market entry strategy including market entry/distribution strategy.

Week 16 (Tues)4/ 26	Final class – Business Plan Due		Turn in “traditional” sba business plan and prepare for final presentation based on it.
Week 17 (Tues) 5/3	Study Week		
Week 18 (Wed) 5/11, 2-4 pm	Final Exam. 2 parts: Business plan and pitch based on it.	Presentation of business pitch to raise outside funds based on business plan and turn-in the completed business plan and presentation slide deck.	Presentation of business pitch

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](http://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 *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.