ITP/BAEP 496 – The Startup Launchpad
Units: 4
Spring 2025, 1 hour 50 mins / twice a week
       Weekly 2 hour lab section

Location: OHE 542

Instructor: Mike Lee
Contact Info: mikelee@usc.edu
Office Hours: https://bit.ly/professorlee

IT Help:
USC IT (ITS): https://itservices.usc.edu/contact/

Course Description

Welcome to The Startup Launchpad, where innovative minds transform ideas into developed, market-ready ventures. This immersive, hands-on capstone course is designed as a startup incubator with a focus on Generative AI-driven solutions and entrepreneurial execution. Students will move through the critical phases of startup development, from problem validation and product development to achieving product-market fit, culminating in a Capstone Showcase.

Each semester, the course is revised to reflect the state of the venture and innovation landscape.

This iteration of the course include:

- **Generative AI Integration:** Hands-on workshops to build AI-driven products such as chatbots, digital twins, hyper-personalized tools, and marketing automation systems.
- **Bootcamps:** Intensive Design Thinking and Pitch Bootcamps to refine problem-solving, user empathy, storytelling, and investor communication skills.
- **Real Startup Simulations:** Weekly use case challenges, team competitions, and iterative MVP development to mimic real-world startup environments.
- **Mentorship and Industry Insights:** Access to industry mentors, guest speakers, and resource packages to accelerate venture success.
- **Capstone Showcase:** Teams present their polished MVPs and go-to-market strategies to a panel of judges, with opportunities for funding and connections.

This class is perfect for aspiring founders, innovators, and problem solvers ready to make their mark in the **AI-driven startup ecosystem**.

Learning Objectives

By the end of this course, students will:

- Expertise in **Generative AI applications:** Learn to create cutting-edge AI-driven solutions, including chatbots, predictive models, and creative tools.

- The ability to **validate market needs:** Conduct user interviews, empathy mapping, and iterative customer feedback loops.
- Skills to **build market-ready MVPs**: Use agile methodologies to prototype, test, and refine products.
- Confidence to **deliver winning pitches**: Craft compelling investor pitches and pitch decks to showcase the technical and business value of your product.
- Insights into **startup logistics**: Understand incorporation, intellectual property, and funding strategies.

Prerequisite(s): BAEP 452, ITP 466, and ITP 476
Corequisite(s): ITP 496 and BAEP 496 must be taken in the same semester

Remote Attendance
This course does not support remote attendance. Lectures will not be recorded or available on Zoom, there are short in-person individual/group activities during many class meetings and exams are in-person.

Course Notes
All course materials will be made available through Course Website. These include:
- Lecture slides
- In-class exercises
- Mini-competitions (graded assignments)
- Mini-games (out of class exercises)
- Readings
- Software details
- Grades and feedback
- Office hours
- Online discussion forums will be used for out-of-class discussions

Announcements made in class and content posted in Course Website will supersede the contents of this syllabus.

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

Technological Proficiency and Hardware/Software Required
All tools will be installed on your local computer. To participate in this course, students must have access to the following hardware to ensure they can fully engage in the hands-on AI development activities:

- **MacBook Pro:**
    - Minimum: M1 Max with 16GB VRAM.
    - Recommended: M2 Max with 16GB+ VRAM.
- **PC:**
    - Minimum: RTX 3000 series GPU or higher.
    - VRAM: 8GB minimum, 12GB+ recommended. (this is VRAM and not RAM)

Note: A very limited number of remote PCs with GPUs will be available for students who cannot meet the hardware requirements.

Readings and Supplementary Materials
- Open source documentation

- Professor notes

Description and Assessment of Assignments

Assessments and assignments will be turned into the course management system unless otherwise stated.

Category	Weight	Description
In-Class Exercises	**30%**	Practical, participation-based exercises to reinforce key concepts. Examples include prototyping sessions, customer interviews, and AI development labs.
Mini-Competitions	**20%**	Weekly team-based challenges graded on creativity, functionality, and impact. Examples include chatbot MVPs or healthcare AI assistant competitions.
Bootcamp Participation	**10%**	Active engagement in the **Design Thinking** and **Pitch Bootcamps**. Graded based on deliverables and team collaboration during the workshops.
Midterm Exam	**15%**	Covers core concepts taught in the first half of the course, including **Generative AI fundamentals**, **product development**, and **startup methodologies**.
Capstone Project	**25%**	Final project combining MVP development, pitch presentation, and go-to-market strategy. Graded based on innovation, technical execution, and business viability.

*Mini-Competitions**

Week	Date (Class #)	Mini-Competition	Description	Deliverable

4	Feb 3 (Class 6)	Restaurant Chatbot	Teams present chatbots tailored for restaurant operations, judged on creativity, functionality, and user experience.	Polished chatbot demo.
5	Feb 12 (Class 9)	USC Student Affairs Chatbot	Build and present chatbots to handle FAQs and support for USC student services, judged on functionality and creativity.	Polished chatbot and live demo.
7	Feb 24 (Class 11)	Digital Twins	Teams showcase digital twin applications with voice interaction and memory retention, judged on interactivity and creativity.	Polished Digital Twin demo.
8	Mar 5 (Class 14)	Hyper-Personalized Learning Tool	Create and present personalized learning tools for students or employees, judged on adaptability and technical creativity.	Polished learning tool demo.
12	Mar 31 (Class 19)	AI Driven Marketing	Use Generative AI to create marketing materials like ad campaigns or social media content, judged on creativity and targeting.	Polished marketing designs and presentation.
14	Apr 16 (Class 24)	Healthcare AI Assistant	Develop AI solutions for healthcare, such as diagnostic tools or chatbots, judged on scalability, user impact, and creativity.	Polished Healthcare AI Assistant demo.

* Mini-competitions may be different than the ones listed based on the interest and need of the specific cohort of students and their ventures.

Mini-Competitions Rubric

Criteria	Weight	Description
Creativity	25%	The originality and innovative nature of the solution. Does the product introduce new or exciting features?

Functionality	30%	The technical execution and working state of the product. Does it perform as intended and address the problem?
User Experience (UX)	20%	The ease of use, design, and overall user interaction. Is the solution intuitive, engaging, and well-designed?
Impact	15%	The potential real-world utility and effectiveness of the solution in addressing the given challenge.
Team Collaboration	10%	Evidence of teamwork and collaboration. Did the team leverage diverse skills and work cohesively?

Capstone Project Grading Rubric

Criteria	Weight	Description
Technical Execution	40%	Functionality and quality of the MVP. Is the product technically sound and aligned with the proposed solution?
Business Viability	30%	Strength of the business model, market fit, and scalability potential.
Pitch Presentation	20%	Clarity, persuasiveness, and professionalism of the pitch.
Teamwork and Iteration	10%	Demonstration of teamwork, effective use of feedback, and iterative improvements throughout the course.

Grading Scale

Grade	Percentage
A	93-100%
A-	90-92%
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	*<60%*

Grading Timeline

Grading will typically be completed 7 days after submission. Any variations will be announced in class or on Brightspace. ***Regrade requests must be submitted within a week of the grades being published unless otherwise communicated in class.***

Generative AI Policy

Use of Generative AI technologies, including ChatGPT, are encouraged and allowed unless explicitly stated otherwise. ***YOU MUST CITE THAT YOU USED THE TECHNOLOGY AND INCLUDE ALL PROMPTS THAT YOU HAVE USED.***

Policies

Students are expected to attend and participate in lecture discussions, in-class exercises, and team meetings.

Late assignments will not be accepted unless explicitly stated as such. If stated, late assignments will have 25% of the total points deducted from the graded score for each late day.

No make-up exams (except for documented medical or family emergencies) will be offered. If they will not be able to attend an exam due to an athletic game or other valid reason, then they must coordinate with the instructor before the exam is given. They may arrange to take the exam before they leave, with an approved university personnel during the time they are gone, or within the week the exam is given. If students do not take an exam, then they will receive a 0 for the exam. Accommodations religious observance must be arranged with the Professor at least two weeks before the exam.

If students need accommodations authorized by OSAS (Office of Student Accessibility Services), notify the instructor at least two weeks before the exam. This will allow time for arrangements to be made.

Sharing of course materials outside of the learning environment

SCampus Section 11.12(B)

Distribution or use of notes or recordings based on university classes or lectures without the express permission of the instructor for purposes other than individual or group study is a violation of the USC Student Conduct Code. This includes, but is not limited to, providing materials for distribution by services publishing class notes. This restriction on unauthorized use also applies to all information, which had been

distributed to students or in any way had been displayed for use in relationship to the class, whether obtained in class, via email, on the Internet or via any other media. (See Section C.1 Class Notes Policy).

Weekly Schedule

Week	Date (Class #)	Class Topic & Activity	Assignments & Deliverables
1	Jan 13 (Class 1)	**Startup Incubator Kickoff & Generative AI in Startups** - Overview of course structure, objectives, and grading. - Research startup competitions and share inspirations.	**Deliverable:** List of 3 AI-driven challenges your venture could address (due Jan 15).
	Jan 15 (Class 2)	**Startup Challenges & Gen AI Fundamentals** - Explore the role of Generative AI in startups. - Introduction to product development lifecycle and customer problem discovery.	**Deliverable:** Initial venture idea incorporating Generative AI (due Jan 22).
2	Jan 20	**MLK Day – No Class**	
	Jan 22 (Class 3)	**Guest Lecture: State of AI by Professor Nitin Kale** - Overview of current trends and future directions in AI. - Insights into building AI-driven startups.	**Reflection Assignment:** 1-page summary of lecture takeaways and relevance to venture (due Jan 27).
3	Jan 27 (Class 4)	**Installing Local LLMs & MVP Fundamentals** - Hands-on session: Install Generative AI tools. - Develop initial prototypes aligned with venture ideas.	**Deliverable:** Installed tools and initial AI prototype (due Jan 29).
	Jan 29 (Class 5)	**Use Case: Restaurant Chatbot (In-Class Activity)** - Build a chatbot tailored for restaurant operations (e.g., reservations, menu inquiries, customer support).	**Deliverable:** Functional restaurant chatbot MVP (due Feb 5).

4	Feb 3 (Class 6)	**Competition: Restaurant Chatbot** - Teams present their chatbots, judged on creativity, functionality, and user experience.	**Competition Deliverable:** Polished chatbot demo.
	Feb 5 (Class 7)	**Customer Discovery Workshop** - Conduct user interviews and gather feedback to validate your venture's problem and solution.	**Deliverable:** Problem Validation Report (due Feb 10).
	Feb 8 (Saturday)	**Design Thinking Workshop** - Empathy mapping, problem definition, ideation techniques, and prototyping.	**Deliverable:** Refined problem statement and solution concept (due Feb 12).
5	Feb 10 (Class 8)	**Use Case: USC Student Affairs Chatbot (In-Class Activity)** - Build a chatbot capable of handling FAQs and support for student services.	**Deliverable:** USC Student Affairs chatbot MVP (due Feb 12).
	Feb 12 (Class 9)	**Competition: USC Student Affairs Chatbot** - Teams present chatbots, judged on functionality, creativity, and technical quality.	**Competition Deliverable:** Polished chatbot and live demo.
6	Feb 17	**President's Day – No Class**	
	Feb 19 (Class 10)	**Guest Lecture: Digital Twins using Voice and Memories by Professor PJ Leimgruber** - Create digital twins with voice interaction and memory retention for interactive applications.	**Deliverable:** Digital Twin MVP (due Feb 24).
7	Feb 24 (Class 11)	**Competition: Digital Twins** - Teams present polished Digital Twin applications, judged on interactivity and creativity.	**Competition Deliverable:** Polished Digital Twin demo.
	Feb 26 (Class 12)	**Go-to-Market Strategies Workshop** - Develop customer acquisition strategies, revenue models, and market entry plans.	**Deliverable:** Draft Go-to-Market Plan (due Mar 3).

8	Mar 3 (Class 13)	**Guest Lecture: Professor Labs - Hyper-Personalized Learning by Amy Jiang & Claude Yoo** - Build AI systems to create customized learning experiences for students or employees.	**Deliverable:** Personalized Learning MVP (due Mar 10).
	Mar 5 (Class 14)	**Competition: Hyper-Personalized Learning** - Present solutions, judged on personalization, adaptability, and technical creativity.	**Competition Deliverable:** Polished learning tool demo.
9	Mar 10 (Class 15)	**Midterm Review & Pitch Refinement** - Continue refining pitch decks and practicing value propositions initiated during the Pitch Bootcamp. Mentors provide feedback.	
	Mar 12 (Class 16)	**Midterm Exam**	
10	Mar 16-23	**Spring Break – No Class**	
11	Mar 24 (Class 17)	**MVP Refinement Workshop** - Teams refine MVPs based on user feedback and mentor advice.	**Deliverable:** Updated MVP with summary of iterations (due Mar 31).
	Mar 26 (Class 18)	**Guest Lecture: AI Driven Marketing by Professor PJ** - Use Generative AI to create marketing materials like ad campaigns or social media content.	**Deliverable:** AI-generated marketing designs with audience targeting (due Mar 31).
12	Mar 31 (Class 19)	**Competition: AI Driven Marketing** - Use Generative AI to create marketing materials like ad campaigns or social media content.	**Competition Deliverable**: Polished marketing designs and presentation.

	Apr 2 (Class 20)	**Final MVP Review & Integration Strategies** - Teams present near-final MVPs for class feedback. - Workshop on integration with go-to-market strategies.	**Deliverable:** Finalized MVP ready for competition and showcase (due Apr 7).
	Apr 6 (Saturday)	**Pitch Bootcamp** - Storytelling, crafting value propositions, building pitch decks, and iterative practice with mentor feedback.	**Deliverable:** Draft pitch deck and presentation (due Apr 10).
13	Apr 7 (Class 21)	**Guest Lecture: Legal & Financial Basics for Startups by Timothy Li** - Overview of incorporation, intellectual property, and funding strategies.	**Deliverable:** Legal readiness checklist (due Apr 9).
	Apr 9 (Class 22)	**Final Go-to-Market Strategy Workshop** - Teams finalize customer acquisition plans and revenue models based on MVP progress. - Class feedback session on go-to-market strategies.	**Deliverable:** Refined go-to-market strategy document (due Apr 14).
14	Apr 14 (Class 23)	**Use Case: Healthcare AI Assistant** - Build AI systems to assist healthcare professionals, such as diagnostic tools, patient communication chatbots, or personalized care assistants.	**Deliverable:** Healthcare AI Assistant MVP (due Apr 16).
	Apr 16 (Class 24)	**Competition: Healthcare AI Assistant** - Present AI-driven healthcare solutions, judged on scalability, user impact, and creativity.	**Competition Deliverable:** Polished Healthcare AI Assistant demo.
15	Apr 21 (Class 25)	**Capstone Showcase Preparation** - Finalize MVPs, pitch decks, and go-to-market plans.	**Deliverable:** Final pitch deck and MVP (due Apr 28).

	Apr 23 (Class 26)	**Capstone Showcase Practice Session** - Teams conduct a dry run of their presentations with class feedback and final mentor guidance.	**Deliverable:** Updated capstone pitch and MVP for the showcase.
16	Apr 28 (Class 27)	**Capstone Showcase: Part 1** - Teams present their MVPs and go-to-market strategies to judges.	**Deliverable:** Initial capstone pitch and demo.
	Apr 30 (Class 28)	**Capstone Showcase: Part 2** - Remaining teams present MVPs and strategies. - Closing awards and remarks.	**Deliverable:** Final reflections (due May 2).