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

ACAD 450/ PRIN 550: SOLA IMPACT LAB

Units: 2.0

Term / Day / Time: Fall 2023, Wednesdays 4-5:50 pm
Location: Iovine and Young Hall 110

Instructors: Grant Delgatty
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Office / Office Hours: By Appointment
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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

The purpose of this course is to develop an 18-week product innovation curriculum. The curriculum will address in an integrative manner, the material science, computing, modeling, prototyping and fabrication components of product innovation, thus providing an integrative STEAM experience to high school students. The delivery of the product innovation curriculum will require the expansion of the concept and functionality of SoLa's Howmet Materials Science and Engineering Lab (the "**Lab**") to also integrate product modeling, prototyping and fabrication components. The Lab will be based at the SoLa Technology and Entrepreneurship Center (the "**Center**") and will enhance the innovation capacity of the Center. The Lab is being developed in partnership with the Howmet Aerospace Foundation to train and inspire a new generation of Black and brown material science and STEM professionals. The Lab will serve at least 750 students annually.

Learning Objectives and Course Goals
- Develop and deploy a product innovation 18-week curriculum for high school students utilizing the integrated functionality of the Lab. The curriculum will be completed and delivered by June 2024. The curriculum will be offered at SoLa during the 2024-25 academic year.

- Serve as a replicable and scalable model for how universities and community-based non-profit organizations can work together to provide integrated technology and creativity access for closing the racial STEM skills gap, which, in turn, will elevate the Parties' local and national profile and leadership as a hub of STEM innovation.

- Create new and exciting teaching and mentoring opportunities for USC IYA students at the Center. Create potential pathways for South LA youth to engage with USC STEM and STEAM programs including IYA.

- Jointly work to engage industry and philanthropy to expand the capabilities and impact of the Lab. Inspire the imagination and spirit of South Los Angeles's underrepresented youth to see the endless possibilities of their lives, embracing SoLa's vision statement: "if you can see it, you can be it." To this end, we propose starting the learning from a "product" that captures the imagination of students and using the student engagement to introduce relevant science and technology concepts.

- Connect the Lab and its learning activities to industry and 21st century internships and careers as well as higher education pathways. This will create new access points for economic and educational opportunities allowing students to fundamentally change the trajectory of their lives, resulting in long-term economic growth and a decline in intergenerational poverty in South Los Angeles.

- Upon completion of the curriculum, the Parties will coordinate a "Phase Two" of the effort where USC IYA has access and is involved in SoLa's first expansion of the Center, the SoLa Tech & Entertainment Center Powered by Live Nation.

- Develop the Lab and curriculum through an industry project course at USC IYA in Spring 2024 where undergraduate and graduate students will work with USC IYA faculty, SoLa instructors and industry guests to design the lab and curriculum for deployment at the Center.

Prerequisite(s):
There is no formal pre-req for this course. However, each project must be approved for admission by a *ACAD 450/ prin 550* admissions committee for the year. The submission process for the course will be announced in the Spring semester for the following Fall.

Recommended Preparation
Students are strongly encouraged to have prepared venture concepts prior to submitting for admission to this finishing course - such as via previous IYA courses.

Course Notes
Grading type: Letter. Software used in the class will be browser based.

Students use personal laptops or computers and connect to course sessions via Zoom.

Lecture slides and any supplemental course content will be posted to Blackboard for use by all students. Any and all announcements for the course will be posted to Blackboard.

Technological Proficiency and Hardware/Software Required
Students must provide their own laptop. The laptop specifications take into consideration that students will be creating, streaming, and downloading audio and video; communicating using video conferencing applications; and creating and storing large multimedia files.

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 .

Required Readings and Supplementary Materials

Additional reference material and online reading will be provided in class.

Description and Assessment of Assignments

This course will make use of Blackboard for assignments. All assignments will be posted to Blackboard. Each assignment will include instructions, a due date, and instructions for electronic submission. Assignments must be submitted electronically.

Biweekly Reflections:

Participate in biweekly reflections tailored for the development of the material science and innovation lab. Explore the prompts provided on Blackboard to deepen your understanding of material science,, foster creativity, and contribute to the growth of the lab project.

Note: Regularly check Blackboard for project updates, prompts, and additional resources related to the lab development.

Interview Syntheses

The Interview Synthesis assignment is a key component of our Material Science & Innovation Lab Development course. This assignment challenges students to engage with SoLA students. Through conducting interviews, students will gather valuable insights and perspectives on topics related to our lab development.

Key Objectives:

(1) Real-World Insights: Gain real-world insights from the students the Lab is being designed for.
(2) Critical Analysis: Synthesize information gathered from interviews to inform strategic decisions for the lab development.

Assignment Process:

(1) Identify Interviewees: Select SoLA students
(2) Conduct Interviews: Conduct insightful interviews, exploring topics relevant to the lab development.
(3) Documentation: Document key points, insights, and observations from each interview.
(4) Synthesis Presentation: Share synthesized findings with the class through a 3-4 minute presentation highlighting key takeaways and implications for the lab development.

Team Milestones (Gantt Chart)

The Gantt Chart visually represents the timeline, tasks, and dependencies involved in bringing our lab development project to fruition.

Key Objectives:

(1) Project Planning: Develop skills in project planning and organization specific to material science lab development.
(2) Timeline Management: Understand the importance of setting realistic timelines and milestones for project tasks.
(3) Task Dependencies: Identify and manage task dependencies, ensuring a smooth workflow.
(4) Resource Allocation: Learn to allocate resources efficiently, considering constraints and requirements.
(5) Communication and Coordination: Enhance communication and coordination skills by visualizing and sharing project plans with stakeholders.

Assignment Process:

(1) Define Project Tasks: Break down the material science lab development into key tasks and subtasks.
(2) Establish Timeline: Create a Gantt Chart outlining the timeline for each task, considering dependencies.
(3) Resource Allocation: Assign resources (human, material, financial) to each task.
(4) Task Dependencies: Clearly indicate task dependencies on the Gantt Chart.
(5) Review and Refine: Review the Gantt Chart for feasibility and refine as needed.

Assessment Criteria:

(1) Clarity and completeness of the Gantt Chart.
(2) Thoughtfulness in task sequencing and dependency management.
(3) Realistic allocation of resources.
(4) Alignment of the Gantt Chart with the overall goals of the lab development.

Report Outs

The Report Out Presentations provide students with the opportunity to communicate project progress, findings, and recommendations to key stakeholders. This assignment emphasizes effective presentation skills, strategic communication, and the ability to convey complex material science concepts in a clear and compelling manner.

Key Objectives:

(1) Communication Proficiency: Develop and demonstrate effective oral communication skills to convey material science concepts to diverse stakeholders.
(2) Strategic Presentation: Craft a presentation that strategically highlights project achievements, challenges, and future directions.
(3) Stakeholder Engagement: Learn to engage and address questions from stakeholders, fostering a collaborative and communicative relationship.
(4) Professionalism: Cultivate professionalism in presenting project updates, reflecting the importance of clear and concise communication in the material science field.
(5) Adaptability: Practice adapting presentations to different stakeholder audiences, tailoring content to their interests and needs.

Assignment Process:

(1) Prepare Presentation Content: Summarize key project elements, including goals, progress, challenges, and proposed solutions.
(2) Create Visuals: Develop visual aids, such as slides or charts, to enhance the clarity and impact of the presentation.
(3) Rehearse: Rehearse the presentation to ensure smooth delivery and familiarity with the material.
(4) Delivery: Present project updates to stakeholders, addressing their questions and concerns.
(5) Feedback Incorporation: Reflect on stakeholder feedback and incorporate constructive insights for continuous improvement.

Assessment Criteria:

(1) Clarity and effectiveness of the presentation.

(2) Demonstration of material science knowledge in layman's terms.
(3) Engagement with stakeholders and response to questions.
(4) Professionalism in delivery and content.

Final Presentation

The Final Presentation to the stakeholders is the culminating assignment for this course. This assignment challenges students to synthesize their learning, showcase the comprehensive development of the material science lab, and present a compelling vision to stakeholders. It encompasses the integration of technical knowledge, project management skills, and effective communication to garner support and enthusiasm from key stakeholders.

Key Objectives:

(1) Comprehensive Project Overview: Summarize the entire material science lab development project, including goals, processes, challenges, and outcomes.
(2) Strategic Communication: Craft a persuasive narrative that aligns with stakeholder interests and emphasizes the impact of the lab on the field of material science.
(3) Integration of Learning: Showcase the application of material science concepts, project management skills, and interdisciplinary knowledge in the lab development.
(4) Professionalism: Demonstrate professionalism in presentation style, content, and handling of questions from stakeholders.
(5) Visionary Thinking: Present a forward-looking vision for the material science lab, highlighting potential contributions to innovation and research in the field.

Assignment Process:

(1) Content Development: Prepare a comprehensive deck that covers all aspects of the material science lab development.
(2) Visual Representation: Create visually engaging slides that enhance understanding and emphasize key points.
(3) Practice Sessions: Rehearse the presentation to ensure smooth delivery and confidence in conveying complex concepts.
(4) Presentation: Deliver the final deck presentation to stakeholders, addressing their inquiries and feedback.
(5) Post-Presentation Reflection: Reflect on the experience, lessons learned, and areas for future improvement.

Assessment Criteria:

(1) Clarity and coherence of the presentation.
(2) Alignment with stakeholder interests and project goals.
(3) Effective integration of material science concepts and project management skills.
(4) Professionalism in delivery and response to stakeholder questions.

Participation/Discussion/Attendance:

> Class participation grade is based on your engagement during class discussions, the constructive critique and evaluation of peer work, and team engagement. Graded by professors.

Grading Breakdown

The weight of the graded material during the semester is listed below:

Assignment	Points	% of Grade
Biweekly Reflections	100	10%
Individual Interview Synthesis	100	10%
Team Milestones (Gantt Chart)	100	10%
Report Out #1	100	10%
Report Out #2	100	10%
Report Out #3	100	10%
Final Presentation	300	30%
Participation	100	10%

Grading Scale

Final course grades will be determined using the following scale:

Letter Grade	Numerical Score
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

Grading Timeline

Grades and feedback will be posted for students within 72 hours of submission.

Late Work

Assignments will be accepted after the deadline with the following grade penalties. Please do not ask for extensions.

● Submission in the 24 hours after the deadline 10% deduction
● Submission between 24 and 48 hours after the deadline 20% deduction
● Submission between 48 hours and 3 days after the deadline 50% deduction
● Submission more than 3 days after the deadline 100% deduction
    Please keep copies of all your files and emails until the end of the semester.

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.

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.

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.

Additional Policies

Class notes policy: Notes or recordings made by students based on a university class or lecture may only be made for purposes of individual or group study, or for other non-commercial purposes that reasonably arise from the student's membership in the class or attendance at the university. This restriction also applies to any information distributed, disseminated, or in any way displayed for use in relation to the class, whether obtained in class, via e-mail or otherwise on the Internet, or via any other medium. Actions in violation of this policy constitute a violation of the Student Conduct Code, and may subject an individual or entity to university discipline and/or legal proceedings. Again, it is a violation of USC's Academic Integrity Policies to share course materials with others without permission from the instructor.

No recording and copyright notice: No student may record any lecture, class discussion or meeting with the instructor without his/her prior express written permission. The word "record" or the act of recording includes, but is not limited to, any and all means by which sound or visual images can be stored, duplicated, or retransmitted whether by an electro-mechanical, analog, digital, wire, electronic or other device or any other means of signal encoding. The instructor reserves all rights, including copyright, to his/her lectures, course syllabi and related materials, including summaries, slides (e.g., Keynote, PowerPoint), prior exams, answer keys, and all supplementary course materials available to the students enrolled in the class whether posted to the LMS or otherwise. They may not be reproduced, distributed, copied, or disseminated in any media or in any form, including but not limited to all course note-sharing websites. Exceptions are made for students who have made prior arrangements with The USC Office of Disability Services and Programs and the instructor.

Participation: Students are expected to actively participate in this course. In an online forum, participation includes:
- Careful reading and viewing of assigned materials by the date due
- Regular, substantive contributions to discussions
- Active engagement with online content
- On-time attendance and full attention (with camera on) in synchronous sessions
- Significant collaboration with classmates and teammates

Course grades may be affected for students who do not contribute to the course through active participation. Students should notify the instructor in advance if they are unable to attend class. Those unable to attend will be required to review the online recording for the session missed, and submit thoughtful feedback to the Instructor.

Course Schedule: A Weekly Breakdown

	Topics	Assignment

Week 1	Project Introduction	
Week 2	Off Site visit to SoLA Tech	● Complete Baseline /Interest Questionnaire
Week 3	● Material Science Lecture/Interview from Dr. Sreejesh Moolayadukka ● Discussion on personal interests/skill sets ● Collective Conversation to Develop SoLA Student Interview Questions ● Group Allocations 　○ Material Science/Innovation Programming 　○ Material Science Buildout 　○ Innovation Lab Buildout	● Finalize Group Allocation ● Finalize Questionnaire ● Reflection Submission
Week 4	● SoLA Student 1:1 Insight Discovery: Qualitative Interviews ● Work in class - brainstorm programming ● Intro to Gantt Charts	● Create Interview Synthesis ● Create Gantt Chart
Week 5	● Present Initial SoLA Youth Interview Synthesis ● Work in class session to brainstorm programming	● Reflection Submission
Week 6	Team work in class session to brainstorm specific prompt (programming, material science lab buildout, innovation lab buildout)	● complete team initial concepts presentation
Week 7	● Report Out #1 ● Receive Feedback from Stakeholders	● Team make concept iterations based on feedback ● Reflection Submission
Week 8	(1) Project Budget Breakdown Discussion (2) Work in class- concept revision	
Week 9	● Work in class ● Team feedback	● Reflection Submission ● Prepare report out presentation
Week 10	● Report Out #2 ● Receive Feedback from Stakeholders	● Begin final buildout/deliverables
Week 11	● Work in class ● Team feedback	● Reflection Submission
Week 12	● Work in class ● Team feedback	
Week 13	● Report Out #3	● Begin final presentation prep ● Reflection Submission

Week 14	● Work in class ● Team feedback	
Week 15	● Dry Run Presentations ● Team feedback	● Final Reflection Submission
Finals Week	Final Plan Presentations to Stakeholders	

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.