

USC Iovine and Young Academy

*Arts, Technology and the Business
of Innovation*

ACAD 217 Designing Immersive Media

Units: 4

Fall 2021

Mondays & Wednesdays - 5 to 7.50pm Pacific Time

Location: IYH 112

Instructors: Carsten Becker

Office: via Zoom

Office Hours: Per Individual Request

Contact Info: Preferred communication channel is Slack

DM me in the **iya-becker.slack.com** workspace

For grades-related questions: carstenb@usc.edu

Allow up to 24 hours for replies to emails and messages.

Grader and/or Classroom Assistant/s: TBD

Office Hours (if applicable):

Contact Info:

IT Help:

<https://uscedu.sharepoint.com/sites/IYAStudent/SitePages/IT-Resources.aspx>

Hours of Service: 8:30am - 6:30pm

IYA Contact Info: iya.helpdesk@usc.edu, 213-821-6917

*Experience is not what happens to you.
It is what you do with what happens to you.*

- Aldous Huxley

Course Description

Designing compelling experiences that effectively inspire audiences and entice interaction.

Students will be given tools and inspiration to foray into Augmented and Mixed Reality platforms to create in multimedia landscapes without bounds.

Key Learning Objectives

1. Understand the potential of immersive installs for new ways to experience the world, raise awareness, create or launch a product or service.
2. Acquisition of hands-on skills that allow students to build prototypes / sample scenes of experience.
3. Ability to ideate and successfully communicate all aspects of an immersive experiences (goal, audience appeal, feasibility, mechanics, user experience and impact).

Specific Skills to be Covered:

- Creation of visual assets (Adobe Creative Cloud, photography, 3d software)
- Understanding technical pipelines in XR production
- Intermediate use of tools for Augmented Reality, 360 Video, VR, and the Unity game engine
- Practicing a productive creative process
- Fulfill various roles in a production team and together strive for success
- Regularly exercise group crit
- Documenting the process and outcome of your projects (in the form of video)

Expectations

To master this course, a student will...

1. develop a solid understanding of XR: Augmented Reality, Virtual Reality, the tech that make these possible and the current status and success of these media forms.
2. acquire and demonstrate the software skills for building XR experiences. Employ various forms of immersive media to create adequate applications.
3. apply and expand your skills in video/audio techniques and storytelling to pitch and later document your projects.
4. define purpose and alignment for the XR applications you build in relation to a product, business, or research you are pursuing.
5. create immersive experiences that engage an audience/users in discovery and compels them to act.

Prerequisites:

Completion of ACAD 187 will be helpful (but not required).

Recommended Preparation:

- 1) Inform yourself about the latest in augmented reality, projection mapping, 360 video, and virtual reality.
- 2) Get a feel for the basic concepts of the Unity software, through guided tutorials (see Welcome email you received from me).

Nature of this Course

This is a fast-paced course which will immerse students in a range of media tools. Through lecture and practice, they will become the authors, designers, deployers and documentarians of media forms that create meaningful communications and user interaction. Assignments are based on narrative and interactive concepts that deepen and expand existing skills in media creation.

Student responsibilities: Students need to develop their project goals and execution on a base of research, thematic merit and relevance to their career goals. Furthermore, instructors expect everyone to take an active role in the success of the full group through discussion in the classroom, sharing of ideas, actively providing constructive feedback for your peers, observing your own learning process and taking initiative in everyone's growth as media-savvy makers.

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Required Hardware/Software

Students must bring the following:

- **Laptop Computer** with authorized installs of the following software:
 - Software of choice to create visual assets
 - Unity - Student license with GitHub account and install of the latest version
 - iTunes or Google Play account to download free AR Creation software
- Cloud Storage account (Google Drive, Dropbox, Microsoft OneDrive et.) for safely storing your project files
- Instructors recommend keeping up-to-date backups on a hard drive as well
- For in-class instruction, **Headphones** to use with your laptop. Over-ear / closed type only (no ear buds) so you can listen without disturbing others. Some recommended models: Audio Technica ATH-M50x, Sony MDR-7506 or equivalent

Academy Equipment

When permitted by USC health regulations, we will utilize the Academy's Mixed Reality Lab and sound, video and lighting equipment to create audio and video content. You'll receive proper training in the use of the equipment so you can use these tools confidently in your labs and projects. To check out valuable equipment you may need to acquire certification.

Equipment that is returned broken may lead to delays or restrictions in your subsequent check-out.

Recommended Readings and Supplementary Materials

Books:

"The History of the Future" by Blake J. Harris

"The VR Book: Human-Centered Design for Virtual Reality" by Jason Jerald

Blogs:

<https://usdzshare.com/>

<https://vr-tigers.com>

<https://ngrp.github.io/FabriqueMobile/>

<blogs.unity3d.com>

Instructors may publish additional recommended readings throughout the term as it relates to the individual areas of study and topics we touch upon.

Assessments and Assignments

Async Prompts recall or complete material from class. They might be reading assignments, or a preparation necessary to move ahead. Prompts are always due at the next meeting.

Quizzes recall technical knowledge that will be critical for your next Project.

Projects are highly weighted assignments that require research, ideation, creative design, and execution.

In Project 1, you'll create the concept and prototype of a new Augmented Reality experience for a product, brand, or object of public interest.

The objective in Project 2 will be to create a 360-degree video or interactive install that entices audiences to explore the scene and action around them.

Your Final in this course is a partner project in which you will ideate and design a meaningful immersive experience together. Concepts should be aimed at an industry or cause, and you will pitch goals, user journey and technical execution.

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Grading Breakdown

	Points	% of Grade
Participation ¹	80	10
Async Prompts ² (10)	120	15
Quizzes (2)	80	10
Projects (3)	400	50
Final Presentation/Exhibit	120	15
TOTAL	800	100

¹ Participation grade is not just attendance. To receive an 'A' in participation, you will frequently contribute to the discussion across all channels of the course: Classroom/Zoom, Mural, and Slack

² Examples: Read&Reflect, installing an app, product review, charting your process in Mural

Grading Scale (Example)

Course final grades will be determined using the following scale

A	94-100
A-	90-93
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 Policy

All labs, projects and assignments are due at the date and time specified in the syllabus. Projects that are more than 24 hours late will receive a 50% deduction in points. Projects that are more than 7 days late will receive 0 points. Be sure to check Blackboard if you have to miss a class. You are responsible for any materials presented and assignments made even if you are not in class that day.

Extensions

Each student may ask for an extension on one of her/his assignments during the term. Above Assignment Submission Policy strictly applies to the extension date given.

Grading Timeline

You will receive grades for classroom quizzes, check-ins, labs, projects and other assignments within two weeks of submission.

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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 $\frac{1}{2}$ 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. All accommodations remain at the discretion of the instructor, and appropriate documentation may be required.

Fall 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.
- 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

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Additional Policies

Should the needs of the class dictate, I reserve the right to modify the class schedule and assignments. Any substantive changes will be announced in class and posted in Blackboard and/or Slack.

HOW TO PURCHASE SOFTWARE AT THE DISCOUNTED ACADEMY RATE THROUGH THE USC BOOKSTORE:

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

Software	IYA Short-Term License at USC Bookstore
Adobe Creative Cloud	\$70 2020-2021 annual license (active through July 2021)

1. Visit the USC Bookstore online:
<https://www.uscbookstore.com/usciasoftware>
2. Select the software license(s) you would like to purchase.
3. When you proceed to checkout, add the Promo Code “IYASoftware” (This will override the listed taxes).
4. For shipping, select FedEx Home Delivery (free).
5. Once you complete your online purchase, you will receive a confirmation email/receipt.
(Note that even if a shipping charge appears on your invoice, it will not be charged to your credit card. This relates to a known technical problem with the Bookstore’s online store.)
6. Upload your receipt [here](#) to receive access to your purchased license.
7. You will be notified by email when the license has been activated

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

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Class Schedule

Note: To accommodate changing modalities and access to equipment, I reserve the right to alter the weekly topics and assignments.

	Topics and Discussions	Lab	Assignments (excluding Async Prompts)
Week 1	What is <i>immersive</i> ? What constitutes an <i>experience</i> ? History of immersive visual technologies.	Create a short video introduction to a co-student.	
Week 2	Augmented Reality: How we are using it already - from Information to Collaboration	Avatars!	
Week 3	<i>No class Monday – Labor Day</i> Basics of 3d space, objects, viewing Seeing under the hood of augmented reality: ARKit5	ARKit and Reality Composer	Project 1 Assigned
Week 4	Augmented Reality: Industry leaders Internet 3.0	Group dev exercise: Build an augmented reality experience in the Iovine & Young Hall	Quiz 1 - AR Project 1 Outline
Week 5	Augmented Reality: Connecting tactile surfaces to AR experiences – designing in Xcode		Due: Project 1 Prototype 1
Week 6	Next big things in Augmented Reality Wearables, wide-spread implementations, Mixed Reality		Due: Project 1 Prototype 2 (Students' level-up)
Week 7	VR Fundamentals and Opportunity Digital Humanism	Analyzing VR in genres and user involvement (with guest)	Due: Project 1 Final
Week 8	How game engines are revolutionizing content creation, live experiences and film-making. [Opportunity for guest speaker or field trip.]	Unity Onboarding Unity lab: Basics	
Week 9	Designing action for 360 degrees User guidance and interaction	Unity lab: 360 Space	Project 2 Assigned

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Week 10	Opportunities for new types of businesses. We'll look at successful XR startups.	Unity lab: Interaction	Quiz 2 – Unity Due: Project 2 Outline
Week 11	Cinematics and Product Demos Art of entertaining interaction	Intermediate Unity: Camera Animation, Lights	Due: Project 2 Prototype
Week 12	User Journeys in Virtual Worlds Mixed Reality and <i>Dreamwalker</i> – Clues to the future of experiencing Entertainment, Work, Communication, and our World	Students and instructor create a virtual meeting place	Project 3 (Proposal) Assigned
Week 13	XR for Product Design	Spatial Prototyping with Gravity Sketch	Due: Project 3 Pitch Deck (draft)
Week 14	Exhibit Space <i>No class Wednesday - Thanksgiving</i>	Prepping Semester Exhibit	Develop Project 3
Week 15	Opportunities for immersive media creators: Oculus Launchpad, Snap Research Fellowship, Unreal Engine Fellowship etc. (with guests) (Last regular class is Dec.1)	Prepping Semester Exhibit	Develop Project 3
Finals Week	Wednesday, 12/8 – 5.30m: FINAL	Exhibit	Due: Project 3 Final Pitch with supporting media

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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).
(wording from the site)

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

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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.