USC Iovine and Young Academy

Arts, Technology and the Business of Innovation

ACAD-307: Multimedia for Designers and Entrepreneurs II
Units: 4.0

Spring 2021
Mondays & Wednesdays - 5 to 7.50pm
Location: IYH 107 and Online

Course Slack: iya-becker.slack.com

Instructor: Carsten Becker
Office: Zoom, two times a week (tbd)
Office Hours: pls request a personal meeting
Contact Info: carstenb@usc.edu
Allow up to 24 hours for replies to emails and messages.

Classroom Assistant: tbd
Office Hours: Zoom meeting by request
Contact Info: tbd

IT Help: https://iovine-young.usc.edu/ait/index.html
Hours of Service: 8:30am - 5:00pm
Contact Info: iyhelp@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 effective and compelling multimedia experiences, including through the application of intermediate tools and techniques related to state-of-the-art creative hardware and software.

Building on foundational skills learned in ACAD 207, students will expand their knowledge into Augmented and Virtual Reality platforms to create in multimedia landscapes without bounds. Students will create and learn in Iovine and Young Hall's new Mixed Reality Studio, which boasts capabilities in audio, video and photo, as well as state-of-the-art motion capture.

Key Learning Objectives
1. Understand the potential of immersive media in the launch, presentation, user engagement and/or marketing of a product or service.
2. The experience itself can be the product.

Detailed Objectives and Outcomes
1. Use strategy, writing and production tools to create compelling content that educates or promotes business goals in effective communications.
2. Learn hardware and software applications for designing, acquiring, editing, and programing audio-visual experiences, both one-directional and immersive.
3. Exercise planning, teamwork and collaboration as part of the media creation process.
4. Use elements of storytelling for brand- and presentation-focused communications.
5. Create work that adds to your portfolio in meaningful ways.

Specific Skills to be Covered:
- Creation of visual assets (Adobe Creative Cloud, photography, 3d software of choice)
- Understanding technical pipelines in virtual 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, student needs to…
1. Develop a solid understanding of different immersive media: Augmented Reality, 360 Video, 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 immersive media 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:
One term of a foundational narrative course in traditional or immersive media, ACAD-207 Multimedia for Designers and Entrepreneurs I, or equivalent.

Hands-on experience in videography and a working knowledge of a non-linear video editing software, preferably Final Cut Pro-X or Premiere Pro.

General understanding of visual and 3d space concepts, and interaction models.

Recommended Preparation:
1) Refresh your proficiency in audio, video recording and editing skills
2) Familiarize yourself if needed with the concepts of augmented reality, user experience and immersive experiences (projection mapping, 360 video, virtual reality)
3) Proficiency in either Apple Keynote or Adobe InDesign for creating visual presentations of your concepts

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 be 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 I 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.

Required Hardware/Software

Students must have access to the following:
On day 1 of instruction:
- **Laptop Computer** with authorized installs of the following software:

> Apple Keynote (free) to create presentations (can use InDesign if preferred)

> Adobe Creative Cloud (If you do not already have an Adobe CC account, you will need to purchase it through the online bookstore and the Academy will set up an account for you (see below)

> Apple Xcode 11 (requires MacOs 10.14.6 or later)

> iTunes or Google Play account to download free AR Creation software

- at least one **external hard drive** for safely storing/backing up all media

- Each student needs to purchase **one highspeed SDXC card** for the use in cameras and audio equipment. I will share the preferred type of cards.

- **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

As the course progresses, I will announce other software necessary for work in labs and projects such as
> 3d photo stitching app (free or trial)
> Adobe Mixamo and Fuse (free), can be substituted with a 3d software package you are familiar with
> Unity Game Engine (free)

Academy Equipment

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. In order to check out valuable equipment you will need to acquire certification.

Software Proficiencies

We will use Adobe Creative Cloud apps and 3d software to create, edit and compile assets to appear in the experiences created in Projects. For editing video content, students may choose FCP-X or Premiere Pro. And for facilitating realtime experiences we will use a tbd game engine and AR software. Additional software may be occur based on the student's choice of technique to their vision.

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Recommended Readings and Supplementary Materials

Books: "Follow the Feeling: Brand-building in a Noisy World" by Kai D. Wright
"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

I 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

Quizzes recall important concepts and terminology in media production. Mix of multiple-choice, blanks and text answers.

Lab Exercises will test your practical skills e.g. developing a concept book, creating a simple AR experience, recording video to present your concept, filming a product to implement in augmented reality etc.

Your **Final Exam** is a 2-hour-long in-class application of acquired skills.

The following **Projects** are the core portfolio pieces generated in this course:

In **Project 1** you will develop an augmented reality experience that lets people discover your brand or entrepreneurial endeavors in playful but also informative ways.

In **Project 2** you will employ the video and immersive media tools you now use with confidence to create a VR or elaborate AR experience. The piece must highlight the effects or benefits of a product or service or the study of a meaningful subject. If Motion Capture is a component you'd like to include, you will also have opportunity to write and execute a treatment for a sports, health, robotics or entertainment product.

Project 2 should be a more complex immersive production, but an exception is possible for a film about the science, practice or economics of virtual production containing meaningful discourse with samples. The exception will be at the instructor's discretion.

Grading Breakdown

Assignment	Points	Approx. % of Grade
Quizzes	75	10.5
Labs	150	21.5
Participation[1]	70	10
Project 1	110	16
Project 2	110	16
Project 3 - Group Grade[2]	110	16
Final Presentation	75	10.5
TOTAL	700	100

[1] Participation grade is based on the substance of your interactive and verbal contribution across all channels of the course experience (classroom, Zoom, Mural, Slack)

[2] A note on grading of Group Projects: Each student is expected to support each other's projects with contributions such as design, programming and logistics. Hence a grade for your own project, and one as Collaborator. Feedback on your contributions to other students' projects may be gathered through a mutual peer evaluation survey.

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Grading Scale
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. 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.

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. All accommodations remain at the discretion of the instructor, and appropriate documentation may be required.

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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

1. Visit the USC Bookstore online:
   https://www.uscbookstore.com/usciyasoftware
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

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Weekly Class Schedule

Note: To accommodate changing modalities and access to equipment, I reserve the right to alter the weekly topics and assignments. Adjustments will be made with the objective of optimizing the course's progress and opportunities for students.

	Topics/Activities	Testing and Critiques	Assignments (some to be done outside of class time)
Week 1	**Mon: No Class – MLK** Introductions Overview of IYA's media facilities and the tools we'll use in this course. From A- to XR: Analytical and practical look at latest immersive technologies to immerse audiences. We'll look at current B2C apps. Vs. use in social.	Async prep & refreshers tba	Students who have not worked with IYA audio and video equipment may request hands-on training lab! Film a peer video portrait.
Week 2	AR Practice: Purpose-built location-based and marker based applications AR Frameworks: ARkit, ARcore etc. Xcode and Reality Composer Media Project Planning (look at PrePro Books from Acad207)		Lab Exercise: Create a simple AR experience Assign Proj.1: AR Brand Experience
Week 3	Narrative concepts in XR and providing feedback channels for users Lab: Creating assets for AR		Proj.1 Concept Book due. Assign Goals & Walkthrough Video with audio testimonials
Week 4	AR experience creation + testing Product Photography Photogrammetry Assets fine-tuning/post production	Project 1 Group Crit	AR Concept Presentation due
Week 5	**Mon: No Class - Presidents Day** Finalizing and deploying AR experiences	Quiz 1	
Week 6	Introduction to Unity real-time engine for immersive experiences		Project 1 (AR) due, complete and with documentation
Week 7	Unity	Async Unity Self-Training	Lab Exercise: Build a virtual 360 environment in Unity.
Week 8	Unity		Unity Teams: Build a Scene collaboratively

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Week 9	Motion Capture Primer Walkthrough of the MoCap Process. Use Cases: Biomechanics, Training, Robotics, UX Research, Games	Quiz 2	Lab: Unity Scene due
Week 10	MoCap Tools: Planning out space and performer interaction with environment Directing Talent MoCap Shoot OR Film Storyboarding		Lab Exercise: Motion Capture of a Performer or Athletic Activity
Week 11	Work on Project2 (VR or Mocap film scene*)	Project 2 Group Crit	
Week 12	Post Production, VR or MoCap Film **Wed: No Class - Wellness Day**		Project 2 (VR/MoCap) due, complete and with documentation
Week 13	Planning of Final Project – Next Level Immersive Experience (Project 3, Group Project) Research/ Analysis/Pitch	Quiz 3 Project 3 Team Pitch	Project 3 Team-Building
Week 14	Work on Project 3	Project 3 Group Crit	
Week 15	Final work on Project 3		
Finals Week	Summer Media Show	Final Presentation	

*Some choices dependent on access to equipment. Each student will get access and opportunity to create several immersive experiences.

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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
dsp.usc.edu

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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.