ACAD/IDSN 537 Extended Reality for Fashion

Units: 4
Spring 2025

Mondays/Wednesdays 6-7.50pm
Location: Iovine & Young Hall, Room 213 and XR Lab

Instructor: Carsten Becker
Office: Zoom
Office Hours: As scheduled, or 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: 8.30 am – 6.30 pm
Contact Info: iyahelp@usc.edu

*The future of fashion is creative,
collaborative and circular.*

- Eleanor Turner

Course Description

Fashion is intrinsically experiential. With its close connotations to our ideas of self-expression, design-in-motion and material richness, fashion is predestined to embrace breakthroughs in digital design.

This course will provide students with an inside view into the amazing innovation capacity of fashion in the 21st century, focusing on three intersections of Fashion, Spatial Computing and Extended Realities:

1) digital fashion design

2) new opportunities for retail and showcasing fashion

3) fashion as expandable. shareable, and co-creative experiences

In lectures, student exploration and hands-on workshops, we will explore many facets of innovation in both physical and virtual fashion powered by digital tools. Students learn about fashion context and conventions, and how some are disrupted with extended reality.

Students will be provided with an expert understanding, inspiration, and the design skills to foray into designing fashion experiences through Augmented (AR) and Mixed Reality (MR).

Students will receive support in realizing their ideas with the latest XR tools, and opportunity to connect with makers of cutting-edge fashion designers and startups.

Key Learning Objectives

The arc of this course will have students design, digitally craft, and uniquely showcase a complete fashion outfit using 3d design and extended reality tools. Along this journey, they will be (re-)familiarized with traditional pipelines of apparel production and learn about their virtual counterparts.

Specific Objectives:
1. Understand the culture of fashion and its changing premise.
2. Awareness of technology used to integrate customers into fashion's cycles.
3. Understand the potential of new experiences in retail and fashion shows.
4. Recognize the key role customer experience (CX) plays in retail and brand experiences.
5. Acquisition of hands-on skills in digital design and sampling tools (Clo3D)*.
6. Ability to ideate and successfully communicate all aspects of immersive fashion experiences (goal, audience appeal, feasibility, mechanics, user experience and impact).

Prerequisites: tbd

Expectations

To master this course, a student will…
1. Develop a solid understanding of how fashion is designed and experienced.
2. Continue developing their skills in building XR experiences. Employ various forms of immersive experiences in the fashion context.
3. Actively support the success of the entire group by participating in group crits, collaborating etc.
4. Ideate applications of these new formats that promote discovery and positive life advancements, engaging with and for diverse groups of people.

A 4-unit class is defined as 4 hours of lecture, and students can be expected to spend up to 12 hours per week on the course. To meet all course goals, expect 6 to 8 hours per week outside of our class sessions for preparation, short-turnaround assignments, and project work.

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HOW TO PURCHASE OPTIONAL SOFTWARE AT THE DISCOUNTED ACADEMY:

For classes that require them, the following software are available for purchase **online** through the USC Iovine and Young software catalog at the Academy discounted rate:

Software	IYA Short-Term License at USC Bookstore
Adobe Creative Cloud	$70 2023–2024 annual license
Apple Logic Pro	$35 semester licenses
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 iyahelp@usc.edu.

Assessments and Assignments

Prompts are short, async exercises that either follow up on, or prepare for material covered in the classroom. They might be tasks like gathering fabric samples, completing a software exercise, installing a software component, or "Read or View & Reflects" on pertinent media publications. Prompts are always due at the next meeting.

Design Challenges are ideation exercises based on prompts relating to challenges and opportunities in fashion design and its markets.

Projects are more complex assignments that require research, ideation, creative design, and execution. The ideation and complexity of Projects will weigh most into a student's term grade.

Following the trajectory drawn on page 2 of this syllabus, Projects may be framed like this:

In Project 1, you'll design a complete fashion outfit using digital tools.

For Project 2, develop and execute an innovate customer or fan experience in either retail or showcasing (fashion show) using spatial design and extended reality. Two students can pair up.

In Project 3, you will expand your fashion expression into an experience space. Design innovative opportunities for customers and fans to interact and co-create with your fashion experience.

Recommended Reading

"UX for XR"
by Cornel Hillmann (Apress, 2019) available as download from the USC Library
or as Softcover Book, ISBN 978-1-4842-7019-6 ($37.99 at barnesandnoble.com)

"Fashion Tech Applied" (topics: digital fashion, in XR, NFTs and more)
by Von N. Ruzive, Peter Jeun Ho Tsang (Apress, 2023)
ISBN 9781484296936 (Hardcover, $49.99 at Barnes&Noble)
Download free via USC Libraries

This list to be expanded by instructor as we move through the term.

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Required Hardware/Software

- **Laptop Computer** (minimum i7 processor) with min, 100GB of free hard disk space (M2 processor rec'd)

- students must **purchase the Marvelous Designer software for $99** which provides access for all of 2025

- and the following free software:

        Other fashion design software

        Mixamo (free for anyone with an Adobe ID)

        Shapr3d (free with Edu license), or Blender

        iTunes or Google Play account to download free mobile apps

- **3-Button Mouse with Scroll Wheel**

- Cloud Storage account (Google Drive, Dropbox, Microsoft OneDrive et.) for safely storing your project files

- **Instructor recommends keeping up-to-date backups in the cloud and on an external hard drive as well**

- For in-class instruction, **Headphones**. 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

We may utilize the Academy's XR Lab, sound, video and lighting equipment to create media content, and the Creator Space to . Ask your instructor or the Systems personnel for proper training in the setup and use of the equipment so you can utilize these tools confidently in exercises and projects. Not having spent the proper time to familiarize yourself with proper use of these spaces or equipment in them will not be accepted as a valid reason for delays in submitting your assignments.

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

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 .

Grading

Assessment Categories

	Points	% of Grade
Participation[1]	60	10
Prompts[2]	75	12.5
Design Challenges	75	12.5
Tests	75	12.5
Projects	240	40
Final Presentation & Essay	75	12.5
TOTAL points max. possible	600	

[1] = Attendance + regular contributions to the discussion in the classroom and in our white-boarding sessions for full points. Unique ways of contributing are welcome also – please communicate.

[2] Examples: Read or View & Reflect, installing an app, quick research, charting your process, etc.

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Letter Scale

Course final grades will be determined using the following scale:

A	95-100	C	73-76
A-	90-94	C-	70-72
B+	87-89	D+	67-69
B	83-86	D	63-66
B-	80-82	D-	60-62
C+	77-79	F	59 and below

Result Timeline

You will receive your score in all graded exercises within 14 days of submission.

Assignment Submission Policy / Late Submissions

Assignments will be accepted after the deadline with the following grade penalties. Do not ask for extensions; the below are the 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

Keep copies of all your files and emails until the end of the semester.

Course 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 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.

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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.

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.

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

Classroom Norms

Students are expected to actively engage with the subjects of the course inside and outside of the classroom. Assigned papers should be informed by research beyond common knowledge. Your solutions to weekly prompts and your course project are expected to be fulfilled from a personal point of engaging your skills, possess thematic merit and relevance to your maker / portfolio goals. Furthermore, instructor expects all students to documenting your own learning process, take an active role in the success of the group through contributing to discussion in the classroom, sharing of ideas, voluntarily providing constructive feedback for your peers, and supporting each other as teammates.

To make the above possible, phones must be put away while in the classroom. Use of laptops is allowed only for tasks relating to our course. I recommend taking notes by pen in a notebook.

Course Content Distribution and Synchronous Session Recordings Policies

USC has policies that prohibit recording and distribution of any synchronous and asynchronous course content outside of the learning environment.

Recording a university class without the express permission of the instructor and announcement to the class, or unless conducted pursuant to an Office of Student Accessibility Services (OSAS) accommodation. Recording can inhibit free discussion in the future, and thus infringe on the academic freedom of other students as well as the instructor. (Living our Unifying Values: The USC Student Handbook, page 13).

Distribution or use of notes, recordings, exams, or other intellectual property, based on university classes or lectures without the express permission of the instructor for purposes other than individual or group study. This includes but is not limited to providing materials for distribution by services publishing course materials. 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. (Living our Unifying Values: The USC Student Handbook, page 13).

USC Learning Experience Evaluations

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You'll be provided opportunity to give your feedback on the course during the last week of regular classes.

Course Schedule: Weekly Breakdown

Notes: To accommodate course development and access to equipment, I reserves the right to alter the weekly topics and assignments.

1-Hour-or-less Prompts are always <u>due the following course meeting</u> and are not listed below.

Week 1
Introduction to the Changing World of Fashion
Changing ideas, creator model, Web3, Virtual Retail and the Metaverse
Practice: How Fashion Was Made and Marketed (Past Tense), What Will Stay and What May Go
Course Overview

Week 2
The Craft of the Fashion Designer
The analogue chain: Drafting - Pattern-Making – Cutting - Sewing
Fit: Designing for Motion
The virtual pipeline: Modeling - Texturing - Animation
Software Instruction: Clo3D.

Week 3
Lecture: Sensory Immersion
Material Science
Innovation in material sourcing
Clo3D Instruction cont'd / Student Async Deep-Dive

Week 4
Lecture: The intersection of *Statement* and *Play*
New Playgrounds:
Gn3ra, DressX, et al. (incl. possible Guest Visit)
> **Project 1 Assignment: Students design a full outfit in Clo3D**

Week 5
Lecture: Digital Sampling – from virtual to physical garment
Project 1 Production
Test 1: Clo3D knowledge

Week 6
Avatars and Fashion: Genies, Ready Player Me et al.
Project 1 Production

Week 7
Project 1 Presentations
Creating new Touchpoints for Fashion Encounters
Learn about Experiential Marketing
Retail Innovation
Building the perfect Pop-Up for your brand
> **Project 2 Assignment: Designing an Innovative Retail or Showcase Experience**

Week 8
Project 2 Production
Lab: Design elements, build UX and interactions
Assigned: Complete first full run of experience and output for feedback

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Submit list of improvements.
Week 9
Project 2 Production
P2 Partners advance all aspects: narrative, design, UX.
Test 2: XR Experience Design

-    Spring Break -

Week 10
Project 2 Finalizing & Presentations
Load & share-out all Project 2 finals
> **Project 3 Assignment: Fan Integrative XR Innovation** plus building P3 teams
Instructor provides Teams with feedback on Project 3 proposal (on realistic scope, aligning with rubric etc.)

Week 11
Lecture: Virtualization for Inclusivity
Body scans and custom apparel-making.
Concepting Project 3: A Collaborative Fashion Experience (Group Project)
P3 team building. Teams pitch and finalize concepts with sketches, UX map, mood boards

Week 12
Lecture: Future-Facing Brand Definitions
New Fan Experiences and Collaboration
Lecture: Mixed reality - The importance of body experience in XR.
New Platforms: Democratization of Apparel
P3 Team members advance work in their areas:
Lead designer fleshes out a full (12-piece) collection.

Week 13
Lecture: Business of XR Fashion – Entrepreneurs (incl. Guest Visit)
Project 3 Production
P3 Team members advance work in their areas.
Each team deploys to Quest2 or AR devices, gathers feedback from peers.
Test 3: Tooling of the Co-Creative Customer Experience

Week 14
Lecture: Business of XR Fashion – New Distribution Channels
Project 3 Production
P3 Team members advance work in their areas.

Week 15
Project 3 Wrap-Up and Rehearsals
Last round of improvements to P3s
Physical space prep and rehearsals.
Full presentations with working prototypes on-device

Important dates: No classes on March 17 and 19 (Spring Break)
               May 7, 7-9pm: FINAL - will include a showcase of all P2s and P3s

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The curriculum of this course will be amended by visits of entrepreneurs in digital fashion such as designers, creators of design software, innovative fashion shows and retail, based on availability and demtermind by the course instructor.

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 Research and Scholarship Misconduct.

Students and Disability Accommodations:

USC welcomes students with disabilities into all of the University's educational programs. The Office of Student Accessibility Services (OSAS) is responsible for the determination of appropriate accommodations for students who encounter disability-related barriers. Once a student has completed the OSAS process (registration, initial appointment, and submitted documentation) and accommodations are determined to be reasonable and appropriate, a Letter of Accommodation (LOA) will be available to generate for each course. The LOA must be given to each course instructor by the student and followed up with a discussion. This should be done as early in the semester as possible as accommodations are not retroactive. More information can be found at osas.usc.edu. You may contact OSAS at (213) 740-0776 or via email at osasfrontdesk@usc.edu.

Support Systems:

Counseling and Mental Health - *(213) 740-9355 – 24/7 on call*
studenthealth.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), press "0" after hours – 24/7 on call*
Studenthealth.usc.edu/sexual-assault
Free and confidential therapy services, workshops, and training for situations related to gender-based harm.

Office for Equity, Equal Opportunity, and Title IX (EEO-TIX) - *(213) 740-5086*
eeotix.usc.edu
Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants.

Reporting Incidents of Bias or Harassment - *(213) 740-5086 or (213) 821-8298*

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usc-advocate.symplicity.com/care_report
Avenue to report incidents of bias, hate crimes, and microaggressions to the Office for Equity, Equal
Opportunity, and Title for appropriate investigation, supportive measures, and response.

The Office of Student Accessibility Services (OSAS) - *(213) 740-0776*
osas.usc.edu
OSAS ensures equal access for students with disabilities through providing academic accommodations and
auxiliary aids in accordance with federal laws and university policy.

USC Campus Support and Intervention - *(213) 821-4710*
campussupport.usc.edu
Assists students and families in resolving complex personal, financial, and academic issues adversely
affecting their success as a student.

Diversity, Equity and Inclusion - *(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.

Office of the Ombuds - (213) 821-9556 (UPC) / (323-442-0382 (HSC)
ombuds.usc.edu
A safe and confidential place to share your USC-related issues with a University Ombuds who will work with
you to explore options or paths to manage your concern.

Occupational Therapy Faculty Practice - *(323) 442-33*40 or otfp@med.usc.edu
chan.usc.edu/otfp
Confidential Lifestyle Redesign services for USC students to support health promoting habits and routines
that enhance quality of life and academic performance.