

---

## Term Information

Effective Term Spring 2027

## General Information

Course Bulletin Listing/Subject Area Design  
Fiscal Unit/Academic Org Design - D0230  
College/Academic Group Arts and Sciences  
Level/Career Undergraduate  
Course Number/Catalog 4156  
Course Title Immersive Media Design 2  
Transcript Abbreviation ImmersMediaDsn2  
Course Description Advanced practices for extended reality (XR) design and development. Focus on skills in conceptualization, pre-production, planning, and production of working XR prototypes. Examine current trends in developing technologies and the use of real-time graphics. Assess, hack, and experiment with new methods, software and hardware for creating and delivering digital XR experiences.  
Semester Credit Hours/Units Fixed: 3

## Offering Information

Length Of Course 14 Week  
Flexibly Scheduled Course Never  
Does any section of this course have a distance education component? No  
Grading Basis Letter Grade  
Repeatable No  
Course Components Laboratory  
Grade Roster Component Laboratory  
Credit Available by Exam No  
Admission Condition Course No  
Off Campus Never  
Campus of Offering Columbus

## Prerequisites and Exclusions

Prerequisites/Corequisites Design 4106  
Exclusions  
Electronically Enforced Yes

## Cross-Listings

Cross-Listings

## Subject/CIP Code

Subject/CIP Code 11.0804  
Subsidy Level Baccalaureate Course  
Intended Rank Junior

## Requirement/Elective Designation

Required for this unit's degrees, majors, and/or minors

## Course Details

### Course goals or learning objectives/outcomes

- Explain differences in types of extended reality (XR).
- Compare XR immersive experiences.
- Discuss technical considerations and limitations.
- Research and plan XR projects.
- Create assets for XR environments.
- Create XR prototypes.
- Use industry standard XR software and tools for prototyping.

### Content Topic List

- User experience; XR; prototyping; world building; user testing; optimization; augmented reality; virtual reality; asset building

### Sought Concurrence

Yes

## Attachments

- DESIGN4156ImmersiveMediaDesign2.pdf: Syllabus  
*(Syllabus. Owner: Beecher, Mary Anne)*
- ACCAD\_concurrence.pdf: Concurrence  
*(Concurrence. Owner: Beecher, Mary Anne)*
- Art\_concurrence.pdf: Concurrence  
*(Concurrence. Owner: Beecher, Mary Anne)*
- CSE\_concurrence.pdf: Concurrence  
*(Concurrence. Owner: Beecher, Mary Anne)*
- TFMA\_concurrence.pdf: Concurrence  
*(Concurrence. Owner: Beecher, Mary Anne)*

## Comments

## Workflow Information

Status	User(s)	Date/Time	Step
Submitted	Beecher, Mary Anne	08/24/2023 12:45 PM	Submitted for Approval
Approved	Munch, Fabienne	08/24/2023 05:07 PM	Unit Approval
Approved	Vankeerbergen, Bernadette Chantal	09/19/2023 11:16 AM	College Approval
Pending Approval	Jenkins, Mary Ellen Bigler Hanlin, Deborah Kay Hilty, Michael Neff, Jennifer Vankeerbergen, Bernadette Chantal Steele, Rachel Lea	09/19/2023 11:16 AM	ASCCAO Approval



## Design 4156: Immersive Media Design 2

<b>Instructor</b>	<i>Name</i>
<b>Contact</b>	<i>name.#@osu.edu, office room/building, office hours</i>
<b>Semester</b>	<i>SP 2027</i>
<b>Location/Time</b>	<i>room/building, meets 2x/week for 2 hr. 40 minutes each meeting</i>
<b>Format</b>	Studio, 3 credits
<b>Prerequisites</b>	Design 4106: Immersive Media Design I
<b>Description</b>	Advanced practices for extended reality (XR) design and development. Focus on skills in conceptualization, pre-production, planning, and production of working XR prototypes. Examine current trends in developing technologies and the use of real-time graphics. Assess, hack, and experiment with new methods, software and hardware for creating and delivering digital XR experiences.

### Course Goals

Upon completion of this course, students should be able to do the following:

1. Design and produce advanced XR experiences for engagement, including integrated interaction
2. Analyze project work and practices in relationship with current practices and audience needs
3. Practice XR prototyping as an individual designer and as a member of a collaborative team
4. Integrate user testing practices into prototype evaluation
5. Create blended immersive experiences integrating both physical and virtual artifacts
6. Expand knowledge of industry standard XR software and tools for prototyping by using them in appropriate applications
7. Document project work and outcomes in online portfolio

### Associated Program Learning Outcomes

#### 1. *Design of Experiential Media:*

- a. **Identify** design opportunities and respond with functioning prototypes to demonstrate innovative and engaging experiential media concepts. *Associated course goals: (1) and (5)*
- b. **Demonstrate** practice of the processes for the development and coordination of digitally based design strategies (for example, storyboarding, prototyping, concept mapping, and the use of scenarios and personas). *Associated course goals: (6)*
- c. **Employ** the use of concepts related to the visual, spatial, sound, motion, interactivity, coding, and temporal elements/features of technology in the creation and application of quality experiential media design. *Associated course goals: (1),(5) and (6)*

- d. **Create** experiential media environments that are technically proficient, aesthetically engaging, and conceptually sophisticated. *Associated course goals: (1) and (5)*
- 2. Critical Thinking and Analysis:**
  - a. **Evaluate** works of creative technology in terms of their formal, conceptual, ethical, historical, and social impacts. *Associated course goals: (1) and (2)*
  - b. **Apply** fundamental critical thinking skills to the analysis and interpretation of experiential media projects with particular attention to user-centered practices. *Associated course goals: (1),(2) and (4)*
  - c. **Appraise** the context and implication of one's own work with regard to social responsibility. *Associated course goals: (1) and (2)*
  - d. **Organize** and represent content structures in ways that are responsive to technological, social, and cultural systems. *Associated course goals: (1) and (6)*
  - e. **Correlate** what is useful, usable, effective, and desirable with respect to user/ audience-centered digitally and physically based experiences. *Associated course goals: (1),(2) and (5)*
- 3. Adaptability:**
  - a. **Integrate** new media technologies with traditional media in the creation of tangible experiential media experiences. *Associated course goals: (1) and (5)*
  - b. **Anticipate** and **adapt** to new technologies, concepts, and processes in experiential media creation. *Associated course goals: (5)*
  - c. **Demonstrate** problem-solving and collaborative skills in both technical and creative arenas in ways that enhance the ability to work successfully on teams and to organize collaborations among people on teams. *Associated course goals: (1),(3), and (4)*
- 4. Professional Practice:**
  - a. **Employ** both verbal and visual aspects of communication in the presentation of resulting creative works. *Associated course goals: (3) and (7)*
  - b. **Present** and **defend** work from an informed conceptual, ethical, historical, and social point of view. *Associated course goals: (1) and (2)*
  - c. **Market** and **promote** one's work through portfolio development. *Associated course goals: (7)*

## Course Methodology

This course will consist of lectures and demonstrations and hands-on studio production work for individual and group work during class hours. The instructor will present examples of XR applications in the form of documentation, readings, and demonstration. Students are encouraged to share with the class examples found during research on topics of interest relative to the course. Students will complete assignments and exercises designed to aid in learning topics and evaluation of progress.

Students must demonstrate satisfactory achievement of course objectives through the fulfillment of course projects and by contributing to class discussions and critiques. Students are expected to seek and apply their own unique creative voice to all course assignments and projects.

## Assignments

**Course Projects and Process:** Each of the course projects will be broken down into weekly graded process steps. To be successful in the course, students will need to complete process steps for each project. Placing a value on completing the process steps addresses two pedagogical issues: 1) it helps

students to learn and value the production steps necessary for making immersive media; 2) it realigns the grading to value both process and outcome, by distributing the grading throughout all phases of production.

**Course Textbooks and Chapter Discussion:** Reading for this course consist of a text book, referred to as *Convergence* and journal articles (*See Reading List for more details*). Students will find this book online via the OSU Library or may choose to purchase it online.

Biweekly, a reading for the course will be presented by assigned discussion leaders. The discussion leaders are responsible for engaging class participants in the article or book chapter’s subject matter through creative means. This may include hands-on exercises, games, worksheets, and other creative activities. The leaders should keep in mind the overall summary of the material, and allow us to discuss the key takeaways, unanswered puzzles, and practical use in the classroom. This period should last between 20-30 minutes and will typically happen within the first hour of class.

Type	Description	Point Value
<b>Project 1</b>	<b>Virtual House Museum</b>	
Process Step 1	Proposal and Concept Development	5
Process Step 2	Asset Building & Prototype 1	5
Process Step 3	Refined Prototype 1	5
Process Step 4	Refined Prototype 2	5
	Presentation Prototype	25
<b>Project 2</b>	<b>Augmented Reading</b>	
Process Step 1	Proposal and Concept Development	5
Process Step 2	Asset Building & Prototype 1	5
Process Step 3	Refined Prototype 1	5
Process Step 4	Refined Prototype 2	5
	Presentation Prototype	25
<b>Project 3</b>	<b>Augmenting Reality</b>	
Process Step 1	Proposal and Concept Development	5
Process Step 2	Asset Building & Prototype 1	5
Process Step 3	Refined Prototype 1	5
Process Step 4	Refined Prototype 2	5
	Presentation Prototype	25
<b>Readings/Discussion</b>	<b>Leading Chapter Discussion</b>	<b>15</b>
	<b>Total</b>	<b>150</b>

## PROJECT DESCRIPTIONS

### Project One: Virtual House Museum / 5 Weeks

Historic Virtual Reality (VR) experiences provide an opportunity for participants to re-visit historic periods and re-live moments that helped transform society and the world around us. For this project, students will work in teams to develop a virtual reality house museum experience. The experience

should be based around one of the six types of house museums (Young, 2016). Students will conduct and present research on their chosen event/context, design and develop assets and create prototypes using Panaform. Students will develop the final VR experience for the Oculus Quest using Unity Game Engine. Each experience should be room-scale and address one social implication that might prevent participants from experiencing their virtual museum. Implications may include hearing and mobility impairments, language, and other communicative barriers.

### **Project Two: Augmented Reading / 5 Weeks**

Like the course textbook *Convergence*, many educators, writers, and publishers are leveraging the power of augmented reality to turn static book pages into dynamic interactive reading experiences. For this project, students will leverage the affordances of augmented reality to turn their favorite book (picture book, comic book, textbook, magazine, or any other publications of their choosing) into a dynamic reading experience using image markers to trigger verbal and visual cues. Be mindful when choosing your book to ensure it includes high contrast images that can be used as AR markers. You don't need to do the entire book, but you must have a minimum of five interactive AR markers.

### **Project Three: Augmenting Reality / 5 Weeks**

For the final project, in teams of four, students will design a system that leverages the affordances of AR and AI to help people make informed decisions. The final deliverable will consist of a hi-fi prototype of the system's interface and a scenario video showcasing the AR experience in context. The design of the AR system must be rooted in Brett Oppegaard's Mobile Media Alignment framework. The AR experience should include at least one touchpoint for each tier of the framework.

***See Calendar of Topics and Project Briefs for further details.***

## **Reading and Viewing Materials**

**Course Books and Journal Articles** – On reserve at OSU Fine Arts Library

- Fink, Charlie. *Convergence How The World Will Be Painted With Data*. Convergence Press. 2019
- B. Oppegaard, "Designing, Arranging, and Assessing Augmented Places through Mobile Media Alignment," in *Augmented Reality: Innovative Perspectives across Art, Industry, and Academia*, S. Morey, and J. Tinnell, Eds. Anderson, South Carolina: Parlor Press, pp. 26-44.
- L. Young (2007) *Is There a Museum in the House? Historic Houses as a Species of Museum*, *Museum Management and Curatorship*, 22:1, 59-77

### **Tutorials:**

1. Please obtain a free library card from Columbus Metropolitan Libraries (CML)  
<https://www.columbuslibrary.org/card-application>
2. Your CML card number will provide you with free access to assigned LYNDIA tutorials on the CML Research page at: <https://www.columbuslibrary.org/research>
3. Some tutorials will be free online tutorials as listed on the course Carmen site.

Students may also receive reading and viewing materials during the semester via Carmen. There will be an assortment of collected materials, short papers, and media to view covering a wide range of experiential media projects, emerging developments in the field and related materials.

## Grading

Evaluations for each project deliverable will consist of a numerical grade following the grading scale listed below.

- Project 1 is 45 points
- Project 2 is 45 points
- Project 3 is 45 points
- Leading Chapter Discussion is 15 points

### Grading Scale

142-150 A	133-131 B+	117-114 C+	101-97 D+
141-135 A-	129-125 B	113-109 C	96-90 D
	123-118 B-	108-102 C-	below 90 E

Work evaluations fall within four equally weighted categories. Excellence in each of these categories constitutes a grade of "A": **Degree of exploration • Degree of resolution • Quality, depth, and synthesis of research • On-time completion.**

## Grading Policy

To receive a passing grade in the course, students must demonstrate satisfactory achievement of course learning objectives through fulfillment of course assignments and by contributing to class discussions. Adherence to deadlines is expected. It is the individual student's responsibility to keep track of the goals and deadlines and to present the work to the class and instructor on the specified dates. All assignments must be completed and turned in to receive a passing grade in the course.

Late or missed goals will be graded as follows:

- An assignment turned in after the original due date but by the start of the next class will have the grade reduced 10%
- An assignment turned in after the original due date and after the subsequent next class start time but before the start time of the 3rd subsequent class (1 week) will have the grade reduced 30%
- Late assignments turned in more than 4 classes (2 weeks) past the original due date will receive a grade (D).



## Attendance Policy

All students are required to be on time and in attendance for each class. Arrive less than 10 minutes late to be counted as present. Four (4) absences will lower a final grade by 1/3 a letter. Five (5) absences will lower a final grade by one letter. Six (6) absences will result in a failing grade ("E") for the course. The need for excused absences should be discussed with the instructor (e.g., your own illness, family illness or death, conference presentations) **Do not come to class if you are feeling ill, have a temperature or have been told to isolate or quarantine. Let me know if you are ill and you will be excused without penalty.**

## Disability Services

The University strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability (including mental health, chronic or temporary medical conditions), please let me know immediately so that we can privately discuss options. To establish reasonable accommodation, I request that you register with Student Life Disability Services. After registration, make arrangements with me as soon as possible to discuss your accommodation so that they may be implemented in a timely fashion. SLDS contact information: [slds@osu.edu](mailto:slds@osu.edu); 614-292-3307; [slds.osu.edu](http://slds.osu.edu); 098 Baker Hall, 113 W. 12th Avenue.

## Help for Distressed Students

A recent American College Health Survey found stress, sleep problems, anxiety, depression, interpersonal concerns, death of a significant other, and alcohol use among the top ten health impediments to academic performance. Students experiencing personal problems or situational crises during the semester are encouraged to contact the OSU Counseling and Consultation Service (614-292-5766; [www.ccs.osu.edu](http://www.ccs.osu.edu)) for assistance, support, and advocacy. This service is free and confidential.

## Religious Statement

Our inclusive environment allows for religious expression. Students requesting accommodations based on faith, religious or a spiritual belief system in regard to examinations, other academic requirements or absences, are required to provide the instructor with written notice of specific dates for which the student requests alternative accommodations at the earliest possible date. For more information about religious accommodations at Ohio State, visit [odi.osu.edu/religious-accommodations](http://odi.osu.edu/religious-accommodations).

## Academic Misconduct Statement

It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term "academic

misconduct” includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5- 487). For additional information, see the Code of Student Conduct <http://studentlife.osu.edu/csc/>.

# Calendar of Topics and Assignments

## Week 1

**Topic:** Introduction, Overview, Resources. Hardware and software overview

**Assignment/Project:** Project 1, *Virtual House Museum* **ASSIGNED**  
Proposal and Concept Development **DUE**

**Readings:** Linda Young (2007) Is There a Museum in the House? *Historic Houses as a Species of Museum, Museum Management and Curatorship*, 22:1, 59-77

## Week 2

**Topic:** User Experience for XR

**Assignment/Project:** Project 1 Asset Building and Prototype 1 **DUE**

**Readings:** Reading Discussion

## Week 3

**Topic:** Prototyping, World Building

**Assignment/Project:** Project 1, Refined Prototype 1 **DUE**

**Readings:** Oppegaard's "Designing, Arranging, and Assessing Augmented Places through Mobile Media Alignment," 26-44.

## Week 4

**Topic:** User Testing, Unity Workshop

**Assignment/Project:** Project 1, Refined Prototype 2 **DUE**

**Readings:** Reading Discussion

## Week 5

**Topic:** Optimization for Mobile VR

**Assignment/Project:** Project 1, *Virtual House Museum* **DUE**

**Readings:** *Convergence*, Introduction pg. 12-19 and Chapt. 1 pg. 20-32

## Week 6

**Topic:** Designing AR Experiences

**Assignment/Project:** Project 2, *Augmented Reading* **ASSIGNED**  
Proposal and Concept Development **DUE**

**Readings:** Reading Discussion

## Week 7

**Topic:** Developing with Vuforia

**Assignment/Project:** Project 2 Asset Building and Prototype 1 **DUE**

**Readings:** *Convergence*, Chapt. 2 & 3, pgs. 32-47

## Week 8

**Topic:** Augmented Reality Technologies and Approaches

**Assignment/Project:** Project 2, Refined Prototype 1 **DUE**

**Readings:** Reading Discussion

## Week 9

**Topic:** Augmented Reality Experiences

**Assignment/Project:** Project 2, Refined Prototype 2 **DUE**  
**Readings:** *Convergence*, Chapt. 4 & 5, pgs. 48-63

**Week 10**

**Topic:** Augmented Reality as Engagement  
**Assignment/Project:** Project 2, *Augmented Reading* **DUE**  
**Readings:** Reading Discussion

**Week 11**

**Topic:** AR in Real Life  
**Assignment/Project:** Project 3, *Augmenting Reality* **ASSIGNED**  
Proposal and Concept Development **DUE**  
**Readings:** *Convergence*, Chapt. 6 & 7, pgs. 64-93

**Week 12**

**Topic:** AR and AI  
**Assignment/Project:** Project 3, Asset Building and Prototype 1 **DUE**  
**Readings:** Reading Discussion

**Week 13**

**Topic:** AR Systems  
**Assignment/Project:** Project 3, Refined Prototype 1 **DUE**  
**Readings:** *Convergence*, Chapt. 16 & 7, pgs. 166-185

**Week 14**

**Topic:** AR Systems  
**Assignment/Project:** Project 3, Refined Prototype 2 **DUE**  
**Readings:** Reading Discussion

**Finals Week**

**Assignment/Project:** Project 3, Augmenting Reality **DUE**

**The Ohio State University  
College of the Arts and Sciences Concurrence Form**

The purpose of this form is to provide a simple system of obtaining departmental reactions to course requests. **An e-mail may be substituted for this form.**

An academic unit initiating a request should complete Section A of this form and send a copy of the form, course request, and syllabus to each of the academic units that might have related interests in the course. Units should be allowed two weeks to respond to requests for concurrence.

Academic units receiving this form should respond to Section B and return the form to the initiating unit. Overlap of course content and other problems should be resolved by the academic units before this form and all other accompanying documentation may be forwarded to the Office of Academic Affairs.

**A. Proposal to review**

Department of Design

Initiating Academic Unit	Course Number	Course Title	
			8/1/2023
New major proposal and ten new courses			Date request sent
Type of Proposal (New, Change, Withdrawal, or other)			
			8/15/2023
ACCAD			Date response needed
Academic Unit Asked to Review			

**B. Response from the Academic Unit reviewing**

Response: include a reaction to the proposal, including a statement of support or non-support (continued on the back of this form or a separate sheet, if necessary).

ACCAD grants concurrence for Design's new major XMD based on agreements outlined in email exchanges in early May 2023 between Design and ACCAD. Basically, Design will be financing a lecturer who will duplicate Kyoung's ACCAD 5002 course. This will not happen until the first XMD cohorts reaches their 3d year, Design will see if 5301 is also impacted (can we add capacity or do we need to duplicate). More details in the emails.

**Signatures**

<i>Jana Hashamova</i>	Interim Director	ACCAD	8/17/2023
Name	Position	Unit	Date
2. Name	Position	Unit	Date
3. Name	Position	Unit	Date

## Re: Concurrence request

Lisbon, Laura <lisbon.1@osu.edu>

Thu 8/17/2023 7:52 AM

To: Beecher, Mary A. <beecher.17@osu.edu>

Cc: Munch, Fabienne <munch.31@osu.edu>

Dear Mary Anne,

The Department of Art offers its concurrence for the new Experiential Media Design major as well as the new courses developed to support the major.

Best wishes,

Laura



The Ohio State University

**Laura Lisbon**

Professor and Chair

### The Ohio State University

Department of Art

College of Arts and Sciences

254C Hopkins Hall, 128 N Oval Mall, Columbus, OH 43210-1319

614-247-5551 Office / 614-292-5072 Art Office

[lisbon.1@osu.edu](mailto:lisbon.1@osu.edu), [art.osu.edu](http://art.osu.edu)

Pronouns: she/her/hers

---

**From:** "Munch, Fabienne" <munch.31@osu.edu>

**Date:** Tuesday, August 1, 2023 at 2:47 PM

**To:** "Arora, Anish" <anish@cse.ohio-state.edu>, "Westlake, E.J." <westlake.35@osu.edu>, "Hashamova, Yana" <hashamova.1@osu.edu>, "Lisbon, Laura" <lisbon.1@osu.edu>

**Cc:** "Beecher, Mary A." <beecher.17@osu.edu>

**Subject:** Concurrence request

Dear Chairs and Directors,

The Department of Design is seeking your department's concurrence for a new Bachelor of Science in Design (BSD) program in Experiential Media Design (XMD).

The purpose of the undergraduate design program in Experiential Media Design (XMD) is to prepare designers in conceptualizing and constructing engaging and compelling user experiences through innovative, playful and collaborative creative media practices. Over the course of their studies, students become adept at aligning the principles of design with the construction of immersive experiences that engage people. Students learn to harness and apply the latest media technologies in ways that are uniquely tailored to the needs and requirements of each experience and its stakeholders.

For your review, I have attached the program proposal for the new major and syllabi for the ten new associated courses in the Department of Design, they are:

- DESIGN\_XMDProgramProposal.pdf
- DESIGN\_XMDNewCourses.pdf

I have also attached the College's fillable .pdf concurrence form if you would like to use that, or an email may be substituted for this form.

I would appreciate it if you would email your responses/concurrences to Dr. Mary Anne Beecher ([beecher.17@osu.edu](mailto:beecher.17@osu.edu)), the Department of Design Undergraduate Studies Chair. Responses are due by Tuesday, August 15, 2023. Concurrence will be assumed if no response is received within two weeks.

Thank you for your attention to this request, and thank you for your partnership,

Fabienne



**THE OHIO STATE UNIVERSITY**

**Fabienne Münch, PhD**

Professor and Department Chair

**The Ohio State University**

College of Arts and Sciences

Department of Design

100 Hayes Hall

108 North Oval Mall, Columbus, OH 43210

614.247.8943 Office

[munch.31@osu.edu](mailto:munch.31@osu.edu)

Pronouns: she/her/hers

**From:** Arora, Anish <anish@cse.ohio-state.edu>  
**Sent:** Wednesday, August 23, 2023 17:52  
**To:** Munch, Fabienne <munch.31@osu.edu>  
**Cc:** Fosler-Lussier, Eric <fosler@cse.ohio-state.edu>; Sivilotti, Paul <paolo@cse.ohio-state.edu>  
**Subject:** RE: Concurrence request

Dear Fabienne,

We appreciate the recent discussions and concur.

In what will now be an action item on our side, we'll reflect on alternatives for reviving gentler introductions to programming that already on books or offering other pathways for students, but this won't restrict what you're seeking concurrence for at the moment.

With best wishes,  
Anish

----

Anish Arora  
Professor and Chair, Computer Science and Engineering  
Faculty Director, 5G-OH Connectivity Center  
[arora.9@osu.edu](mailto:arora.9@osu.edu)

Ingrid Rivera  
Executive Assistant  
[rivera.153@osu.edu](mailto:rivera.153@osu.edu)  
614-292-5973 Office





