IMMERSIVE MEDIA DESIGN MAJOR (CMSC)

Program Director: Roger D. Eastman, Ph.D.

The Immersive Media Design major is jointly offered by the Departments of Computer Science in the College of Computer, Mathematical, and Natural Sciences and Art in the College of Arts and Humanities.

Through this unique cross-campus alliance of expert faculty members and resources at the University of Maryland, the Immersive Media Design major provides the scientific and scholarly foundations needed to advance the extraordinary potential of new and emerging forms of digital media. These new forms move beyond the usual flatscreen of laptops and desktops to immerse the user in new and complex virtual environments, such as virtual reality, augmented reality, projective domes and spaces, interactive installations and sculptures, and tangible computing.

Mastering these new media requires knowledge of technology and art. Immersive Media Design students will complete multiple collaborative studio courses in which they collaborate on teams to get hands-on experience and mentoring in building immersive media works, preparing them to work in fields as diverse as health care, education, industrial training and design, marketing and advertising, art, and more.

The cross-disciplinary Immersive Media Design program offers two degree pathways: a B.A. in “emerging creatives” for those desiring an artistic focus and a B.S. in “computing” for those interested in a more technical approach. Both degrees are co-taught by faculty experts in the Department of Art in the College of Arts and Humanities and the Department of Computer Science in the College of Computer, Mathematical, and Natural Sciences. State-of-the-art facilities include a large projection wall, a prototyping makerspace, and labs for motion capture, imaging and 3D scanning, sound, design and XR/VR.

Admission to the Major

The Immersive Media Design major is a Limited Enrollment Program. Please see the admission requirements and procedures at http://lep.umd.edu.

Program Learning Outcomes

1. Technical proficiency, skill, and contextual knowledge of immersive media technologies, products, and applications so as to produce physical and digital works that are technically proficient, aesthetically engaging, and which demonstrate conceptual sophistication.
2. Deep learned cross-disciplinary problem-solving and collaborative skills in both technical and creative arenas.
3. Knowledge and proficiency in user-centered practices as they pertain to the development and application of immersive media projects.
4. Capacity to adapt to new technologies, concepts and processes as well as anticipate new technical and conceptual developments in this emerging field.
5. Computing track: Technical proficiency in the development of coding structures and algorithms central to the practices of immersive media.
6. Computing track: Fluency in the methodologies of computer graphics programing for real-time and AR/VR contexts.
7. Computing track: Ability to create and implement user-facing tools and algorithms for immersive media design.
8. Computing track: Ability to critically evaluate and apply relevant areas of immersive media scholarship.
9. Computing track: Ability to anticipate and adapt to the advent of new technological concepts, methods and practices in the field.
10. Emerging Creatives track: Ability to effectively communicate ideas and concepts visually through the use of immersive media conventions.
11. Emerging Creatives track: Technical proficiency in common methods of content creation for immersive media such as creative coding, digital fabrication, physical computing, and 3-D modeling.
12. Emerging Creatives track: Ability to critically evaluate works of creative technology in terms of their formal, conceptual, historical and social impacts.
13. Emerging Creatives track: Ability to appropriately couple new technologies with traditional media in the creation of tangible immersive media projects.
14. Emerging Creatives track: Ability to market and promote ones work through portfolio development and business planning.

REQUIREMENTS

Immersive Media Design majors complete a rigorous set of courses in Art (ARTT), Computer Science (CMSC) as well as Immersive Media (IMDM). The courses differ by track. Students in Track 1 (Computing) take introductory courses at the core of the Computer Science major, a common set of ARTT courses, and the IMDM sequence. Students in Track 2 (Art) take the core of the Art major, a set of introductory computing courses, and the IMDM sequence.

For students in Track 1 who are transferring to UMD, the Computer Science Department offers exemption exams for the required courses CMSC131, CMSC132, CMSC216 and CMSC250. Students who have had CS courses prior to starting at Maryland are encouraged to schedule and take exemption exams. These courses are not required for Track 2.

Computing Track

Course	Title	Credits
ENGL Elective (Choose one of the following):		3
ENGL143	Visualizing Knowledge: From Data to Images	
ENGL245	Film Form and Culture	
ENGL255	Literature, Science, and Technology	
ENGL290	Introduction to Digital Studies	
ENGL294	Persuasion through Social Media	
ENGL295	Introduction to Digital Storytelling and Poetics	
MATH140	Calculus I	4
MATH141	Calculus II	4
CMSC131	Object-Oriented Programming I	4
CMSC132	Object-Oriented Programming II	4
CMSC216	Introduction to Computer Systems	4
CMSC250	Discrete Structures	4
CMSC330	Organization of Programming Languages	3
CMSC351	Algorithms	3
Major Elective: CMSC 4xx (Graphics Programming)		3
CMSC Elective: CMSC 4xx (Graphics Programming)		3
ARTT100	Two-Dimensional Design Fundamentals	3

ARTT200	Three-Dimensional Art Fundamentals	3
ARTT255	Introduction to Digital Art and Design Processes	3
Major Elective: ARTT37x/47x (Digital Media)		3
IMDM101	Introduction to Immersive Media	3
IMDM150	Digital Media Theory and Culture	3
IMDM227	Introduction to Computational Media	3
IMDM290	Collaborative Studio I: Image + Time	3
IMDM327	Computational Virtual Reality (Augmented and Virtual Reality)	3
IMDM390	Collaborative Studio II: Experiential Computing	3
IMDM490	Senior Capstone I (Capstone I)	3
IMDM491	Senior Capstone II (Capstone II)	3
Total Credits		**75**

Emerging Creatives Track

Course	Title	Credits
ENGL Elective (Choose one of the following):		3
ENGL143	Visualizing Knowledge: From Data to Images	
ENGL245	Film Form and Culture	
ENGL255	Literature, Science, and Technology	
ENGL290	Introduction to Digital Studies	
ENGL294	Persuasion through Social Media	
ENGL295	Introduction to Digital Storytelling and Poetics	
MATH115	Precalculus	3
CMSC122	Introduction to Computer Programming via the Web	3
ARTT100	Two-Dimensional Design Fundamentals	3
ARTT110	Elements of Drawing I	3
ARTT200	Three-Dimensional Art Fundamentals	3
ARTT210	Elements of Drawing II	3
ARTT255	Introduction to Digital Art and Design Processes	3
ARTT370	Elements of Digital Media	3
ARTT47X	(Advanced Digital Media Choice: 479a/c/d/e)	3
IMDM101	Introduction to Immersive Media	3
IMDM127	Creative Coding for Digital Media	3
IMDM150	Digital Media Theory and Culture	3
IMDM227	Introduction to Computational Media	3
IMDM290	Collaborative Studio I: Image + Time (Collaborative Studi I - Image + Time)	3
IMDM350	Advanced Digital Media Theory	3
IMDM390	Collaborative Studio II: Experiential Computing	3
IMDM491	Senior Capstone II	3
IMDM490	Senior Capstone I	3
Total Credits		**57**

GRADUATION PLANS

Click here (https://cmns.umd.edu/undergraduate/advising-academic-planning/academic-planning/four-year-plans/four-year-plans-gened/) for roadmaps for graduation plans in the College of Computer, Mathematical, and Natural Sciences.

Additional information on developing a graduation plan can be found on the following pages:

- http://4yearplans.umd.edu
- the Student Academic Success-Degree Completion Policy (https://academiccatalog.umd.edu/undergraduate/registration-academic-requirements-regulations/academic-advising/#success) section of this catalog

ADVISING

Prospective Students

Immersive Media Design is able to work with current, and prospective, University of Maryland students who may be interested in the program to see if the program meets their personal, academic, and career goals. Students with questions should email imd@umd.edu.

Current Students

Students are assigned an academic advisor after the schedule adjustment period. Prior to being assigned an advisor students are encouraged to email imd@umd.edu with any questions, comments, or concerns. After a student is assigned an academic advisor within Immersive Media Design, they should email their assigned advisor. The assigned advisor will work with students throughout their time in Immersive Media Design from their first-year through graduation. All students in Immersive Media Design are required to meet with their assigned academic advisor every semester. Students make advising appointments via their TerpEngage Community (https://terpengage.umd.edu/community/s/) portal.
Students pursuing the Bachelor of Arts are required to meet with an advisor within the College of Arts and Humanities. To learn more, please visit their advising webpage (https://arhu.umd.edu/academics/advising/).

Academic Plans

- Computing B.S. (https://imd.umd.edu/sites/default/files/2024-09/2408%20IMD%20Computing%20Track%20-%20Four%20Year%20Plan.pdf)
- Emerging Creatives B.A. (https://imd.umd.edu/sites/default/files/2024-09/Immersive%20Media%20Design.pdf)