ORIGINAL COURSE IMPLEMENTATION DATE: September 2022

REVISED COURSE IMPLEMENTATION DATE:

COURSE TO BE REVIEWED (six years after UEC approval)**:** February 2028

Course outline form version: 06/18/2021

OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

Note: The University reserves the right to amend course outlines as needed without notice.

Course Code and Number: MEDA 385	**Number of Credits:** 3 Course credit policy (105)
Course Full Title: Art and Design for Virtual Reality **Course Short Title:** Art and Design for VR	
Faculty: Faculty of Humanities	**Department (or program if no department):** Media Arts

Calendar Description:

Students explore the technologies that underpin AR/MR/VR and motion tracking. This includes theoretical and applied learning experiences in virtual reality content creation and using virtual reality as a creative tool itself. Students also explore virtual production technology for visual effects, and innovative ways to fuse physical and virtual experiences for experiential installations.

Prerequisites (or NONE):	One of MEDA 270, MEDA 280, or THEA 311.
Corequisites (if applicable, or NONE):	
Pre/corequisites (if applicable, or NONE):	

Antirequisite Courses *(Cannot be taken for additional credit.)*

Former course code/number:

Cross-listed with:

Equivalent course(s):

(If offered in the previous five years, antirequisite course(s) will be included in the calendar description as a note that students with credit for the antirequisite course(s) cannot take this course for further credit.)

Typical Structure of Instructional Hours

Lecture/seminar	15
Tutorials/workshops	15
Supervised laboratory hours (computer lab)	15
Total hours	**45**

Labs to be scheduled independent of lecture hours: ☒ No ☐ Yes

Course Details

Special Topics course: **No**

(If yes, the course will be offered under different letter designations representing different topics.)

Directed Study course: **No**

Grading System: **Letter Grades**

Delivery Mode: **May be offered in multiple delivery modes**

Expected frequency: **Annually**

Maximum enrolment (for information only)**:** 32

Prior Learning Assessment and Recognition (PLAR)

PLAR is available for this course.

Transfer Credit *(See **bctransferguide.ca**.)*

Transfer credit already exists: **No**

Submit outline for (re)articulation: **No**

(If yes, fill in transfer credit form.)

Department approval	**Date of meeting:**	November 26, 2021
Faculty Council approval	**Date of meeting:**	December 17. 2021
Undergraduate Education Committee (UEC) approval	**Date of meeting:**	February 25, 2022

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Describe the functional aspects of VR/AR/MR technology.
2. Create virtual reality content using virtual reality as a creative tool.
3. Create real-time interactive virtual reality experiences.
4. Produce passive pre-rendered film, animation, and sculptural spaces for virtual reality.
5. Apply user experience design concepts to human-computer interaction (HCI) systems.
6. Use real-time software for virtual production and immersive audience experiences.

Recommended Evaluation Methods and Weighting *(Evaluation should align to learning outcomes.)*

Project:	100%	%	%

Details:

Project 1 (20%): Produce a VR tour or VR film
Project 2 (40%): Produce an animated VR experience
Project 3 (40%): Experiential production

NOTE: The following sections may vary by instructor. Please see course syllabus available from the instructor.

Texts and Resource Materials *(Include online resources and Indigenous knowledge sources. Open Educational Resources (OER) should be included whenever possible. If more space is required, use the Supplemental Texts and Resource Materials form.)*

	Type	Author or description	Title and publication/access details	Year
1.	Textbook	Greengard S	Virtual Reality The MIT Press Essential Knowledge series	2019
2.	Textbook	Shannon Tom	Unreal Engine 4 for Design Visualization: Developing Stunning Interactive Visualizations, Animations, and Renderings	2017
3.	Textbook	McCaffrey M	Unreal Engine VR Cookbook: Developing Virtual Reality with UE4	2017
4.				

Required Additional Supplies and Materials *(Software, hardware, tools, specialized clothing, etc.)*

Adobe Photoshop CC, Unreal Engine.

Course Content and Topics

Unit 1: Introduction to VR/AR/MR technology

- Introduction to VR hardware.
- Principles of monoscopy, stereoscopy, inter-pupillary distance, and field of view.
- Design challenges.
- Stereoscopic live VR filmmaking
- Storytelling in VR.
- Editing in VR.
- Stitching video.
- VR film dissemination (YouTube, Oculus Store, WebVR)

Unit 2: Creative VR Applications.

- VR illustration and sculpture.
- VR concept design, and 3D modeling.
- Animating in VR

Unit 3: Experiential production

- Virtual production technology, and workflows.
- Experiential production.
- Real-time motion-tracking.
- Augmented reality applications.
- Social media and the metaverse.
- Fusing physical and virtual experiences for installations.
- Innovating experiences for audiences of the future.