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 270	**Number of Credits:** 3 Course credit policy (105)
Course Full Title: 3D Modeling and Animation I **Course Short Title:**	
Faculty: Faculty of Humanities	**Department (or program if no department):** Media Arts

Calendar Description:

Introduces the concepts and techniques used in digital 3D content creation. Topics include modeling, animation, surfacing, lighting, and simulation. Students create 3D assets for use in animation, games, and visual effects, while also developing a greater understanding of industry production methods.

Prerequisites (or NONE):	MEDA 110.
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)**:** 36

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: **Yes**

(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:

- Produce 3D assets using industry-standard tools, and practices.
- Synthesize real-world objects and surfaces in a 3D render.
- Animate objects and characters in 3D.
- Apply principles of visual organization, visual language, and theory to visual communication problems.
- Communicate narratives, dramatic information, ideas, moods, and feelings through computer-generated imagery.
- Use appropriate terminology when discussing the technical aspects of 3D digital arts.
- Identify how 3D software is used within a larger production context.
- Develop self-directed ideation, problem-solving, and project management skills.

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

Assignments:	100%	Project:	%	Quizzes/tests:	%
	%		%		%

Details: Assignment 1 (10%): Basic Modeling and Materials. Assignment 2 (10%): UV Mapping and Texturing. Assignment 3 (30%) Environment Modeling. Assignment 4 (15%): Character Rigging and Posing. Assignment 5 (15%): Walk Cycle. Assignment 6 (20%): Performance.

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	Autodesk	Maya Documentation	2022
2.	Online resource	Adobe	Substance Documentation	2022
3.				
4.				
5.				

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

Autodesk Maya, Adobe Photoshop, Adobe Substance Painter.

Course Content and Topics

Unit 1: Introduction to 3D modeling and texturing.
- Introduction to computer graphics and 3D DCC software.
- Basic tools and terminology.
- Introduction modeling tools, techniques, and terminology.
- Hard-surface modeling.
- Organic modeling.
- Understanding topology, and shape.
- Introduction surfacing and texture mapping and UVs.

Unit 2: Lighting, rendering and surfacing.
- Materials and their properties.
- 2D and 3D texture creation.
- Import and export of texture maps.
- Light types.
- Rendering theory and settings.

Unit 3: Introduction to animation.
- Keyframes, in-betweens, and animation splines.
- Principles of animation.
- Character rigging and skin binding.
- Hierarchy, inverse kinematics, forward kinematics, constraints,
- Character posing.
- Anticipation and jumping.
- Walk and run cycles.
- Introduction to dynamic simulation