



COURSE OUTLINE : ART 270
D Credit – Degree Applicable
COURSE ID 010104
Cyclical Review: September 2020

COURSE DISCIPLINE : ART
COURSE NUMBER : 270
COURSE TITLE (FULL) : 3D Game Level Design I
COURSE TITLE (SHORT) : 3D Game Level Design I

CATALOG DESCRIPTION

Art 270 introduces students to the tools and concepts used to create levels for games and simulations using a level design editor. Students will apply basic principles of game design, including the design of rules, a core game mechanic, victory, and loss conditions using industry-standard game development toolsets. Current industry-standard game development software will be used.

Total Lecture Units: 4.00

Total Laboratory Units: 0.00

Total Course Units: 4.00

Total Lecture Hours: 72.00

Total Laboratory Hours: 0.00

Total Laboratory Hours To Be Arranged: 0.00

Total Contact Hours: 72.00

Total Out-of-Class Hours: 144.00

Prerequisite: None.



ENTRY STANDARDS

	Subject	Number	Title	Description	Include
1					No

EXIT STANDARDS

- 1 Create terrain using a game development toolset;
- 2 import art assets into the game environment;
- 3 light and texture the game level;
- 4 create interactive features within the game level;
- 5 design a basic 3D game level using a level editor;
- 6 play-test a basic 3D game level.

STUDENT LEARNING OUTCOMES

- 1 Create a basic playable game level using Unreal Developer Toolkit
- 2 Use basic game level design software tools

COURSE CONTENT WITH INSTRUCTIONAL HOURS

	Description	Lecture	Lab	Total Hours
1	The Basic Level <ul style="list-style-type: none"> • The game editor • The anatomy of a level • The game editor user interface • 3D directionality and space • Creating a room • Adding detail using static meshes 	8	0	8
2	Brush Techniques <ul style="list-style-type: none"> • Binary space partitioning • Brushes and brush derivation • Using brushes • Polygon creation • Editing 2D shapes 	8	0	8



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3	<p>Terrain</p> <ul style="list-style-type: none"> • Terrain overview and componentry • Using layers • Editing and light terrain • Texture layer editing tools 	7	0	7
4	<p>Lighting</p> <ul style="list-style-type: none"> • Lighting overview • Light types • Common properties of lights • Working with lights • Surface lighting • Projectors 	8	0	8
5	<p>Materials</p> <ul style="list-style-type: none"> • In-game textures • In-game shaders • Real-time render modifiers 	8	0	8
6	<p>Interactive Elements</p> <ul style="list-style-type: none"> • Movers • Triggers • Real-time render modifiers • Jump pads and teleporters 	8	0	8
7	<p>Integration of External Content</p> <ul style="list-style-type: none"> • Polygon models • Textures • Animation curves • Characters vs. levels • Importing characters into the game environment 	9	0	9



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8	Aesthetic and Technical Skills Development	16	0	16
	<ul style="list-style-type: none"> • Level layout • Asset integration • Game play 			
				72

OUT OF CLASS ASSIGNMENTS

- 1 Projects (e.g. creating a game environment/virtual space).

METHODS OF EVALUATION

- 1 Peer and instructor review;
- 2 Final projects;
- 3 Final examination.

METHODS OF INSTRUCTION

- Lecture
- Laboratory
- Studio
- Discussion
- Multimedia
- Tutorial
- Independent Study
- Collaboratory Learning
- Demonstration
- Field Activities (Trips)
- Guest Speakers
- Presentations

TEXTBOOKS

Title	Type	Publisher	Edition	Medium	Author	IBSN	Date
class uses Unreal Academy - free resource	Required			web	https://www.unrealengine.com/en-US/onlinelearning-courses		2020