GA 2220 - GAME CREATION FUNDAMENTALS

Credits: 3

This sophomore-level, studio-based course is an introduction to game design and development. Students will learn the fundamentals of how a game engine works, how to differentiate between various genres (such as FPS, Action, Side Scroller etc), modify and import custom assets, and use basic scripting to influence game play. Upon successful completion of this course, students will have demonstrated familiarity and proficiency with an engine through the creation of test assets and simple level prototypes.

Prerequisites: AN3D 1210 - 3D Computer Fundamentals

Notes: (Formerly GA 1120 and GA 2010)

Course Learning Outcomes:	Exceeding	Meeting	Developing	Not meeting	Program Outcomes	Institutional Outcomes
Plan and create small, functional levels utilizing a combination of static meshes and brushes.	Levels are scaled appropriately, are built with performance-oriented poly-counts in are comprised of a balanced blend of brush surfaces and static meshes	Levels are scaled appropriately, and have a balance of brush and static mesh surfaces.	Levels are too large, consisting primarily brush or static mesh surfaces, negatively impacting performance.	Levels are incomplete, too small or too large, and have noticeable errors in meshes, build quality or design.	GA-1, GA-2, GA-3, GA-6	Critical Thinking Design Competence
Demonstrate knowledge of triggered events for gameplay.	Triggered events are representative of both touch and proximity events. Simple functionality for opening doors, flickering lights and/or sound effects are present. More complex, layered events present, such as cinematic triggers, camera moves and environmental animation.	Triggered events are representative of both touch and proximity events. Simple functionality for opening doors, flickering lights and/or sound effects are present.	Triggered events are representative of only touch or proximity events. Simple functionality for opening doors, flickering lights and/or sound effects are present with minor issues or broken code.	Triggered events do not function properly, or are missing.	GA-1, GA-6	Critical Thinking
Apply materials to static and brush surfaces.	UVs have no errors and material creation goes beyond basic proceedural textures/shaders including but not limited to handpainted textures and the application of advanced shading techniques.	Prepares geometry UVs for surfacing with minimal errors. Is proficient at generating and applying simple, procedural materials.	UVs possess errors that are addressable. Material creation is minimal and lacking in basic elements that simulate the surface type.	UVs are not properly established if at all. Material creation is elementary and does not demonstrate an understanding of shader properties	GA-1, GA-2, GA-3, GA-6	Critical Thinking Design Competence
Sculpt exterior environments using terrain editing tools.	Exterior terrain adequately blocks horizon line, is scaled to fit the level's needs, and features a variety of terrain-specific structures, such as riverbeds, mountains, hills and plains. Fully integrates aspects of creative look dev, such as emotional lighting, dynamic time of day, animated terrain features etc.	Exterior terrain adequately blocks horizon line, is scaled to fit the level's needs, and features a variety of terrain-specific structures, such as riverbeds, mountains, hills and plains.	Exterior terrain features a variety of terrain specific structures, such as riverbeds, mountains, hills and plains, but does not adequately block horizon line, or negatively impacts performance.	Exterior terrain is absent, featureless, or scaled to negatively impact performance.	GA-1, GA-2, GA-3, GA-6	Critical Thinking Design Competence