GA 3120 - 3D MODELING

Credits: 3

In this junior-level studio class, students will apply a variety of modeling strategies to solve technique-specific tasks, such as modular environment modeling, LOD creation, and hero mesh development. Additional methods of optimizing UVs based on project constraints will also be explored. Upon successful completion of this course, students will have created an engine-ready environment that is prepared for sculpting and refinement.

Prerequisites: AN3D 1210 - 3D Computer Fundamentals or AN2D 3620 - 2D + Z

Course Learning Outcomes:	Exceeding	Meeting	Developing	Not meeting	Program Outcomes	Institutional Outcomes
Model hard-surface, modular assets for use in the creation of detailed environments.	Modular hard surface models adhere to proper technique and do not display any topolical errors. Modular pieces maximize variety in assembly.	Able to create modular hard surface models that adhere to proper modeling technique. Models have few topological errors. Modular pieces offer limited variety in assembly.	Modular models posess topological errors and offer minimal variation in assembly	Modular models do not exhibit proper modeling technique and posses many topologial errors. Pieces offer little variation in assembly	GA-1, GA-3, GA-6	Design Competence Critical Thinking
Model and export custom created collision for meshes.	Base character mesh exhibits proper modeling technique and has no topological errors. Proportions are proper and free of anatomical errors.	Base character mesh possesses proper proportion with minor anatomical flaws. Topology exhibits proper edge flow and possesses little excessive geometry	Base character mesh contains anatomical and topological errors. There is irregular edge flow and excessive/insuficient geometry	Base character mesh has major anatomical errors. Edge flow is lacking and geometry distribution does not follow standard practice.	GA-1, GA-3, GA-6	Design Competence Critical Thinking
Create basic materials that have tilable textures in both Maya and Unreal.	Materials are well made and tile properly in Maya and Unreal with no distortion.	Materials are well made and tile properly in Maya and Unreal with little to no distortion.	Materials are made but lack quality and/or do not tile properly in Maya and Unreal without noticeable distortion.	Materials are poorly made and lack quality and do not tile properly in Maya and Unreal	GA-1, GA-3, GA-6	Design Competence Critical Thinking
Apply techniques for UV unwrapping modular and non-modular assets.	UV Maps contain no overlapping or twisting, are laid out in 0 to 1 space (when necessary), exhibit no distortion, are scaled for consistency and have adequate padding based on destination texture resolution.	UV Maps contain no overlapping or twisting, are laid out in 0 to 1 space, exhibit minimal distortion, are scaled for consistency, and have adequate padding based on destination texture resolution	UV Maps contain minimal overlapping or twisting, are laid out in 0 to 1 space, exhibit noticeable distortion, are not scaled for consistency and have irregular padding based on destination texture resolution	UV Maps contain excessive overlapping or twisting, are laid out beyond 0 to 1 space, exhibit extreme distortion, are not scaled for consitency and do not have adequate padding based on destination texture resolution	GA-1, GA-3, GA-6	Design Competence Critical Thinking