

AN3D 1210 - 3D COMPUTER FUNDAMENTALS

Credits: 3

This freshman-level course introduces the student to the basic methodologies and techniques used for the creation of 3D computer art. Modeling, materials and textures, lighting, camera, and animation are all studied and practiced at the introductory level. The student gains practical experience with the software user interface, workflow pipeline, project management, and rendering. Upon successful completion of the course, students will have developed a complex 3D scene that demonstrates competencies in these disciplines at a basic to intermediate level.

Prerequisites: none

Notes: (Formerly AN3D 2210)

Course Learning Outcomes:	Exceeding	Meeting	Developing	Not meeting	Program Outcomes	Institutional Outcomes
Practice simple animation techniques for both characters and cameras.	Camera animation is consistent, smooth and does not distract the viewer.	Able to create basic keyframes to animate a camera through a scene. Camera motion is relatively smooth and does not distract.	Able to create basic keyframes to animate a camera but camera motion is sometimes irregular in framing and speed causing distraction.	Able to create keyframes but the resulting animation is erratic, poorly timed and completely distracts from the scene.	AN3D-1, AN3D-2	Critical Thinking, Design Competence
Locate and recognize essential software interface tools for modeling, animation, lighting and rendering.	Able to articulate the purpose of interface elements that go beyond the basics including but not limited to Hypergraphs, Graph Editors, Component Editors	Able to clearly articulate the purpose of the core interface elements. Can consistently navigate to essential tools for modeling, animation, lighting and rendering.	Able to identify and navigate to some core interface elements but not able to fully articulate their purpose.	Unable to navigate the user interface or identify the core elements. Not able to articulate the purpose of basic core interface elements.	AN3D-1, AN3D-6	Critical Thinking
Demonstrate fundamental modeling techniques for polygonal geometry.	Consistently constructs geometry with clean topology demonstrating a thorough knowledge of edge loops and edge flow.	Repeatedly constructs geometry with clean topology and destination-based poly counts.	Constructs geometry with minor flaws in topology, the forms are established but are in need of finesse, detail and order.	Constructs geometry that does not have order and or possesses numerous topological flaws. Models do not exhibit an understanding of basic modeling techniques.	AN3D-1, AN3D-2, AN3D-3, AN3D-6	Critical Thinking, Design Competence
Apply simple, procedural textures to 3D geometry.	UVs have no errors and material creation goes beyond basic procedural 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	AN3D-1, AN3D-2, AN3D-3, AN3D-6	Critical Thinking, Design Competence