B.S. in Computer Graphics and Motion Technology

Learning Outcomes

Learning Goal 1:
Knowledge of 3D modeling techniques

Learning Outcomes
- Knowledge of axes, handedness, points and vectors
- Specify and/or execute linear transformations of objects in a 3D coordinate system through script and via a user interface
- Cite the advantages and disadvantages of using solid objects, polygon meshes, NURBS and subdivision surfaces to create models
- Basic competency of the modeling techniques used for polygons, NURBS and subdivision surfaces

Learning Goal 2:
Working knowledge of lighting and rendering algorithms

Learning Outcomes
- Identify the lighting algorithm(s) used to create an image
- Identify the rendering algorithm(s) used to create an image
- Specify or execute algorithms in rendering objects

Learning Goal 3:
Relate technical knowledge to visual communication

Learning Outcomes
- Organize complex information structures coherently within a scene and cite the structural principles utilized.
- Understand the principles of human visual perception that effect the focal meaning and purpose of information content and recommend the most appropriate techniques for meeting these principles.
- Critically analyze the relative advantages and disadvantages of the formal features and organizational structures employed to communicate visual data within a graphic image.

Learning Goal 4:
Knowledge of techniques to speed or customize production workflow

Learning Outcomes
- Use scripting to automate repetitious tasks in a user interface

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• Use layering, visibility and saved views to manage creation of complex graphics
• Use of macros and the creation of seeks to speed projects

Learning Goal 5:
Knowledge of motion specification techniques within a 3D environment

Learning Outcomes
• Explain the advantages and disadvantages of basic techniques, including keyframe, constraints, kinematics, dynamics, motion capture.
• Explain how basic principles from traditional character animation are applied in computer animation.
• Use procedural or interactive mechanisms to create effective animation.