Course Name: 3D Animation: Maya
Course Number: GRA* 272
Credits: 3

Catalog Description:

An introduction to the basic concepts of 3D imaging. Students will learn to navigate the Autodesk Maya interface and become familiar with the principles of 3D modeling and animation. Through a variety of projects, students explore Maya's many features and develop a fundamental understanding of modeling, lighting, keyframes and rendering.

Prerequisite: GRA* 111

General Education Competencies Satisfied:

Designated Competency Attribute Code(s):

None

Embedded Competency(ies):

None

Discipline-Specific Attribute Code(s):

X **FINA** **Fine Arts elective**

General Education Goals and Outcomes:

None

Course Specific Outcomes:

1. Demonstrate a solid understanding and working knowledge of 3D animation using Autodesk Maya.
2. Demonstrate a knowledge of skills required in computer graphics production and design.
3. Illustrate the process of visual thinking and enhance techniques in problem solving through challenging projects.
4. Demonstrate the ability to think creatively.
5. Investigate and articulate ethical choices when communicating through the visual medium.

Course Content:

Autodesk Maya has become a standard in 3D animation and is used in the entertainment and manufacturing industry. In this course students will explore the many different components in the Maya software package including workspace, modeling, animation, lighting, shading, and workspace. Through s series of projects, students will get an in-depth look at the many facets of 3D animation.

Content:

1. Essential Skills using Maya
    a. Workspace
    b. Modeling
    c. Animation
    d. Shading
    e. Lighting
    f. Rendering

2. Modeling
    a. NURBS
    b. Polygons
    c. Surfaces
    d. Curves
    e. Revolves

3. Animation
    a. Keyframes
    b. Joints and Constraints
    c. Motion Paths
    d. Driven Keys
    e. Animation Layers

4. Shading
    a. Shading Concepts
    b. Mental Ray Shaders
    c. The Mia Material

5. Lighting
    a. Spotlights
    b. Indirect Lighting
    c. Shadow- Casting Lights
    d. Light Shaders

6. Rendering
    a. Rendering Layers
    b. Rendering Passes
    c. Rendering Pass Contribution Maps
    d. Rendering with Mental Ray

7. Introducing nParticles
    a. Creating nParticles
    b. Using nParticles to simulate liquids
    c. Using Wind
    d. nParticle and fields

8. Dynamic Effects
    a. Creating nCloth Objects

b. Rendering Passes
c. Rigid Body Dynamics