

## **COURSE OUTLINE**

### **Art 237 Creating Textures for 3-D Animation**

#### **Catalog Statement**

ART 237 provides introductory instruction in the theory and practice of texturing three dimensional (3-D) computer graphic objects. The course begins with a thorough general review of the Maya interface. Maya's rendering module is then discussed in depth so that students understand thoroughly how texturing functions within the overall rendering process. Students learn how to unwrap UV's on a polygon object and create a UV snapshot.

Total Lecture Units: 2.5

Total Laboratory Units: 0.5

**Total Course Units: 3.0**

Total Lecture Hours: 40.0

Total Laboratory Hours: 24.0

**Total Faculty Contact Hours: 64.0**

Recommended Preparation: ART 230 or equivalent.

Note: Current industry standard digital animation software (Maya) will be used.

#### **Course Entry Expectations**

Prior to enrolling in this course, the student will be able to:

- operate essential user interface devices, such as camera and transformation tools;
- apply basic modeling tools and techniques;
- apply basic rendering tools and techniques;
- apply basic animation tools and techniques;
- analyze and edit modeling, rendering, and animation data using designated spreadsheets/windows;
- describe image output.

#### **Course Exit Standards**

Upon successful completion of the required course work, the student will be able to:

- navigate the rendering module of Maya;
- describe the difference between procedural and bitmap textures;
- use procedural textures to create textures on nurbs objects;
- unwrap UV's of an inorganic polygon model and create a UV snapshot;

- unwrap UV's of an organic polygon model and create a UV snapshot;
- evaluate the topology of a given model with respect to texturing;
- correct UV parameterization;
- create, assign and manage a bitmap texture file.

### **Course Content**

**Total Faculty Contact Hours = 64.0**

#### **Maya's Rendering Module (8 lecture hours)**

The hypershade interface  
The render view window  
The attribute editor  
The UV texture editor  
In-depth coverage of rendering nodes: lights, materials, textures, utilities, cameras  
Procedural and bitmap textures  
Alpha channels

#### **Unwrapping UV's (8 lecture hours)**

Types of Projection  
Theory of UV parameterization  
UV parameterization tools  
UV snapshot creation  
Texture in Photoshop using the UV snapshot

#### **Analyzing an Object Prior to Texturing (8 lecture hours)**

The organic object  
Projection use on a given topology

#### **Troubleshooting UV Parameterization (8 lecture hours)**

Texture stretching on a surface  
The UV map, texture, or projection to eliminate stretching  
3-D procedural textures

#### **Creating a Bitmap Texture (8 lecture hours)**

Working between Maya and Photoshop Previewing textures in Maya using interactive photorealistic rendering (IPR) and the update .psd textures tool  
Constructing a texture using multiple bitmap sources

#### **Laboratories Emphasizing Technical and Aesthetic Development (24 lab hours)**

### **Methods of Instruction**

The following methods of instruction may be used in this course:

- lectures and demonstrations;
- instructor critique of student work;
- peer critique of student work;
- individual instruction of students in a computer lab.

### **Out of Class Assignments**

The following out of class assignments may be used in this course

- designing a 3-D texture;
- assigning a 3-D texture to a 3-D digital surface.

### **Methods of Evaluation**

The following methods of evaluation may be used in this course:

- evaluation of projects and assignments;
- midterm and final examinations;
- evaluation of final project.

### **Textbook**

"Autodesk Maya." *Autodesk Knowledge Network*. Autodesk Inc., n.d. Web. 08 May 2014.

9<sup>th</sup> Grade Reading Level.

"Maya Learning Channel." *YouTube*. YouTube, n.d. Web. 08 May 2014.

9<sup>th</sup> Grade Reading Level.

### **Student Learning Outcome**

Upon successful completion of the required coursework, the student will be able to:

- create, assign and manage a bitmap texture file.