

COURSE OUTLINE

Art 230 Introduction to 3-D Computer Graphics

Catalog Statement

ART 230 introduces students to the Maya user interface and essential modeling, rendering, character set up, and animation tools and techniques. This course is intended to provide the student with an understanding of theoretical concepts required for future projects.

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 Laboratory Hours To Be Arranged: 0.0

Total Faculty Contact Hours: 64.0

Prerequisite: None.

Recommended Preparation: CABOT 206 and ART 152.

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

Course Entry Expectations

Prior to enrolling in the course, the student should be able to:

N/A

Course Exit Standards

Upon successful completion of the required course work, 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 Content

Interface Operation (8 lecture hours)

Total Faculty Contact Hours = 64.0

- Operating system orientation
- Tri-axial coordinate space
- Camera tools
- Transformation tools
- User interface layout
- File sharing and hierarchy
- Modeling Module (8 lecture hours)**
 - Node hierarchy and its purpose
 - The hypergraph
 - Surface directionality
 - Curves
 - Primitives
 - Surfaces
 - Surface editing tools
 - Surface hierarchy
- Rendering Module (8 lecture hours)**
 - Hypershade interface
 - The attribute editor
 - Node dependency in rendering
 - Material types, techniques and controls
 - Texture types, techniques and controls
 - Light types, techniques and controls
 - Basic output concerns
- Animation Module (8 lecture hours)**
 - The graph editor
 - The dope sheet
 - Keyframes
 - Timing
 - Character set-up
- Project Preparation and Execution (8 lecture hours)**
 - Image planes
 - Management of surfaces
 - Axial orientation
- 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:

- projects (making a sculpture);

- field activity (gathering source images).

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.
9th Grade Reading Level

"Maya Learning Channel." *YouTube*. YouTube, n.d. Web. 08 May 2014.
9th Grade Reading Level

Student Learning Outcome

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

- The student will apply basic modeling, rendering or animation tools.