COURSE OUTLINE

Art 230
Introduction to 3-D Computer Graphics

I. **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.

Units – 3.0
Lecture Hours – 2.0
Total Studio Hours – 4.0
(Faculty Studio Hours 2.0 + Student Studio Hours 2.0 = Total Studio Hours 4.0)

Recommended Preparation: CABOT 206 and Art 152.

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

II. **Course Entry Expectations**

Skills Level Ranges: Reading 5; Writing 5; Listening-Speaking 5; Math 3

III. **Course Exit Standards**

Upon successful completion of the required course work, the student will be able to:
1. operate essential user interface devices, such as camera and transformation tools;
2. apply basic modeling tools and techniques;
3. apply basic rendering tools and techniques;
4. apply basic animation tools and techniques;
5. analyze and edit modeling, rendering, and animation data using designated spreadsheets/windows;
6. describe image output.

IV. **Course Content**

A. Interface Operation   4 hours
  1. Operating system orientation
  2. Tri-axial coordinate space
  3. Camera tools
  4. Transformation tools
  5. User interface layout
  6. File sharing and hierarchy

   B. Modeling Module   8 hours
1. Node hierarchy and its purpose
2. The hypergraph
3. Surface directionality
4. Curves
5. Primitives
6. Surfaces
7. Surface editing tools
8. Surface hierarchy

   C. Rendering Module   8 hours
1. Hypershade interface
2. The attribute editor
3. Node dependency in rendering
4. Material types, techniques and controls
5. Texture types, techniques and controls
6. Light types, techniques and controls
7. Basic output concerns

   D. Animation Module   8 hours
1. The graph editor
2. The dope sheet
3. Keyframes
4. Timing
5. Character set-up

   E. Project Preparation and Execution   4 hours
1. Image planes
2. Management of surfaces
3. Axial orientation

   F. Laboratories Emphasizing Technical and Aesthetic Development   32 hours

V. **Methods of Presentation**

The following instructional methodologies may be used in the course:
1. lectures and demonstrations;
2. instructor critique of student work;
3. peer critique of student work;
4. individual instruction of students in a computer lab.

VI. **Assignments and Methods of Evaluation**

1. Projects.
2. Peer and instructor review.
3. Review of final projects.
4. Final examination.

VII. **Textbook**

Alias-Wavefront Company. The Art of Maya.
Toronto: Sybex Press, 2007.
12th Grade Textbook Reading Level. ISBN 1-894893-13-1.