

Course Syllabus
ART 376 01
ADVANCED 3D COMPUTER ANIMATION
3 Credit Hours
Fall 2007

Room 217 Farrington
Mon/Wed 12:00 - 2:50

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Office hours – 1 hour before and after class as well as by appointment

Course Description

This course provides with certified training in Maya, a 3D computer animation program that is the standard in the industry.

It is designed for students who have some experience using 3D modeling and animating software and seek to continue developing their skills as animators. Topics include Polygonal and NURBS modeling techniques; Joints, Deformers and Constraints; Inverse Kinematics; Lighting and Texturing techniques; Rendering and Compositing.

Course Objectives

At the conclusion of this course, Students should

- understand the Maya interface and dependency graph
- be able to use Maya to model and animate representations of 3 dimensional objects.
- be able to create virtual environments and lighting effects
- be able to use dynamics in an animated scene
- be able to create shading groups and texture maps and render scenes
- be able to compile rendered frames into a QuickTime movie with sound

Methodology

The course will be taught through lectures and demonstrations as well as through the examination and discussion of professional work. The software used will be Maya 8.

Students will become familiar with Maya by completing the polygonal modeling and polygonal texturing section of the getting started PDF or by doing one of the three projects 1, 2 or 3 in the *Learning Maya 8 Foundation* book that is available from Amazon.com and other websites. Project 1 encompasses varies aspects of

creating a room in Maya such as lighting, texturing, particle affects, and rendering. Project 2 deals with Polygonal modeling tools, UV projection (Unwrapping) and animated textures. Project 3 demonstrates methods and work flows used when creating a character in Maya including modeling, creating joints, animating, texture mapping and rendering. For the first few weeks of the semester, there will be demonstrations followed by lab time to complete your individual projects.

Upon the successful completion of your project, each student will work on an independent project of your choice. You will be required to present your idea for your personal project through pre visualization (i.e. 2D sketches, storyboards, thumbnails or illustrations/color comps.) Your project will need to include the use of Maya's polygonal modeling and UV projection tools. You will also be asked to create custom textures generated through the use of Photoshop or Painter. The final required component of your project will be the use of Maya's set driven key feature.

Supplies

Sketchbook

CD-R's or CD-RW's, or jump drive

DVD-R

Required Text

Learning Maya 8 Foundation

Published by Autodesk

Attendance is mandatory

According to University policy, a student may miss 3 hours (that's one class period) before their final grade is affected.

In this course, you may miss two class periods before your final grade is affected.

Use your absences wisely. I suggest saving them for when you are sick or in jail.

Please do not ask me if you can miss class for personal reasons. If you have 3

absences, your final grade will be lowered 5 points, 4 absences -10 points, 5 -15,

6 -20, 7 -25. If you miss more than 7 classes, you will not pass the course.

Students who are more than 20 minutes late will be counted absent. Students are

expected to remain in class the entire period. You are responsible for all

assignments and information given in class even if you are absent.

Assignments, Exams and Grading

Grade 1: *Project 1, 2 or 3*

33%

Grade based on successful completion of tutorial.

DUE / Aug 29 Wed

Grade 2: Pre Visualization- sketches, storyboard, presentation 33%

Grade based on ability to effectively articulate a cohesive, interesting cartoon level. Your grade will include the descriptiveness of drawings, appeal of story or scene, and student's ability to "sell" project to class in presentation.

DUE / Sep 5 Wed

Grade 3: Final completed 3D scene 33%

Grade based on successful completion of project and the artistic merit of your work.

DUE / Oct 15 Mon FARSIGHT SUBMISSION DEADLINE

DUE / Dec 12 Wed

Total = Final Grade

In this class 100-90=A, 89-80=B, 79-70=C, 69-60=D 59-0=F.

At the conclusion of each project, work will be discussed in a critique. Grades for each project will be based on craftsmanship and quality, as well as an expressed understanding of concepts. **All work must be turned in on time for full credit. An emphasis is placed on the artistic merit and appeal of your work!**

The grade of C is considered average. If work meets the minimum stated requirements for the project, it will be considered average in terms of design, concept and craft. Work that exceeds that basic expectation will have points added and fall into the B range, and exceptional work will earn an A. Work that fails to meet the minimum criteria for the project will receive C-, D, or F.

Grades for each project and exam will be posted on Blackboard within 2 weeks of the due date. Due to the amount of work required for the course, work cannot be re-done and re-submitted for re-grading. Extra Credit work is not allowed.

Academic Dishonesty

All students are expected to engage in all academic pursuits in a manner that is above reproach. Students are expected to maintain complete honest and integrity in the academic experiences both in and out of the classroom. Any student found guilty of dishonesty in any phase of academic work will be subject to disciplinary action. The University and its official representatives may initiate disciplinary proceedings against a student accused of any form of academic dishonesty including, but not limited to, cheating on an examination or other academic work which is to be submitted, plagiarism, collusion and the abuse of resource materials.

Students who submit work for credit that has been authored by anyone other than themselves, or who plagiarize (copy) work by others will fail the course and may be subject to further departmental and university discipline.

Classroom Rules of Conduct

Students will refrain from behavior in the classroom that intentionally or unintentionally disrupts the learning process and, thus impedes the mission of the university. Cellular telephones and pagers must be turned off before class begins. Students are prohibited from eating in class, using tobacco products, making offensive remarks, reading newspapers, sleeping, talking at inappropriate times, wearing inappropriate clothing or engaging in any other form of distraction. Inappropriate behavior in the classroom shall result in a directive to leave class. Students who are especially disruptive also may be reported to the Dean of Students for disciplinary action in accordance with university policy.

Students must abide by the posted lab rules concerning use of computers or lab privileges will be revoked.

No Food is allowed in the lab. Drinks may be brought in as long as they are kept on the center table and not placed on the computer tables. Please dispose of any trash (including newspapers) that you bring into the room. The privilege of consuming beverages in the classroom will be revoked if it is abused.

Visitors in the Classroom

Unannounced visitors to class must present a current, official SHSU identification card to be permitted in the classroom. They must not present a disruption to the class by their attendance. If the visitor is not a registered student, it is at the instructor's discretion whether or not the visitor will be allowed to remain in the classroom.

Americans with Disabilities Act

It is the policy of Sam Houston State University that no otherwise qualified disabled individual shall, solely by reason of his/her handicap, be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any academic or Student Life program or activity. Disabled students may request assistance with academically related problems stemming from individual disabilities by contacting the Director of the Counseling Center in Lee Drain Annex or by calling (936) 294-1720.

Religious Holidays

University policy states that a student who is absent from class for the observance of a religious holy day must be allowed to take an examination or complete an assignment scheduled for that day within a reasonable time after the

absence. Students must be excused to travel for observance of a religious holy day. A student who wishes to be excused for a religious holy day must present the instructor with a written statement describing the holy day(s) and the travel involved. The instructor should provide the student with a written description of the deadline for the completion of missed exams or assignments.

Calendar Advanced Animation
(Subject to Change)

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| Aug 20 Mon | Intro to Maya. |
| Aug 22 Wed | Demos and Lecture. (Poly Tools) |
| Aug 27 Mon | Demos and Lecture. (Poly Tools) |
| Aug 29 Wed | Grade1: Project Due/lab (Sketching and Perspective) |
| Sep 3 Mon | Labor Day Holiday |
| Sep 5 Wed | Grade 2 Pre visualization Due - Presentations. |
| Sep 10 Mon | Demo/lab (UV projection Tools) |
| Sep 12 Wed | PP/Demo/lab (Unwrapping and Photoshop) |
| Sep 17 Mon | PP/Demo/lab (Texture and Photoshop) |
| Sep 19 Wed | PP/Demo/lab (Low Poly Vehicles) |
| Sep 24 Mon | PP/Demo/lab (Low Poly Tree) |
| Sep 26 Wed | PP/Demo/lab (Texturing grass, shrubs) |
| Oct 1 Mon | PP/Demo/lab (Texture mapping environments) |
| Oct 3 Wed | PP/Demo/lab (Texture mapping/Photoshop) |
| Oct 8 Mon | PP/Demo/lab (Photoshop/Normal Mapping) |
| Oct 10 Wed | PP/Demo/lab (Lights) |
| Oct 15 Mon | FARSIGHT SUBMISSION DEADLINE |
| Oct 17 Wed | PP/Demo/lab (Lighting a character 3 point) |
| Oct 22 Mon | PP/Demo/lab (Cameras and Rendering) |
| Oct 24 Wed | PP/Demo/lab (Poly Tools edge looping/ Head) |
| Oct 29 Mon | PP/Demo/lab (Poly Tools edge looping/ Body) |
| Oct 31 Wed | PP/Demo/lab (Unwrapping a character) |
| Nov 5 Mon | PP/Demo/lab (Texture mapping characters) |
| Nov 7 Wed | PP/Demo/lab (Set Driven Key) |
| Nov 12 Mon | PP/Demo/lab (Set Driven Key) |
| Nov 14 Wed | PP/Demo/lab (Character setup/face/Clusters) |
| Nov 19 Mon | PP/Demo/lab (Character setup/face /Blend Shape) |
| Nov 21 Wed | Thanksgiving holidays |
| Nov 26 Mon | PP/Demo/lab (Character setup/ joints) |
| Nov 28 Wed | PP/Demo/lab (Character setup/ skinning) |
| Dec 3 Mon | PP/Demo/lab (Iconic controls) |
| Dec 5 Wed | PP/Demo/lab (Character setup/ IK handles) |
| Dec 10 Mon | PP/Demo/lab (Character setup/ IK vs. FK) |
| Dec 12 Wed | Project 3 Due. Critique. |

Students Repeating the Course

If you are taking the course for the second time, you will be working more independently on the following projects. Attendance in class, however, is required.

Project 1: Character Development and Design.

Begin by verbally describing your character. Write a description of his or her *characteristics*. Are they smart or stupid, evil or good, slovenly, clumsy, heroic, afraid of heights, vain, proud, shy, confident, athletic, prissy, etc. These characteristics will determine the way your character looks.

Gather research material. For example, if your character happens to be a bunny rabbit, find pictures of rabbits that you can use as reference.

Do sketches of your character. The character must have two legs and walk on them. Otherwise it may be anything. Try to create a character that has some of the qualities in your description in the way he or she looks. Don't be satisfied with your first drawing. Do it several times, refining it each time. When you are happy with your character, draw it with a variety of expressions (happy, sad, etc).

Project 2: Modeling the Character.

In Maya, create a Model of the Character, give it skeleton, surfaces, and prepare it for animation.

Project 3: Walk Cycles.

Create three different walk cycles that can be looped.

The walk cycles should express different ways the character is feeling. For example a normal walk, an exhausted walk and a perky walk.

Render the three walks.

Project 4: Compositing.

Videotape a scene as an environment for your character. Animate the character in this environment. For example, videotape a room with a chair and have the character walk in and sit down. (Try to be more interesting than that, but remember to keep it simple enough that it remains in the realm of possibility.) Or videotape a tree and have your character swing from a vine, or jump out of it.

Each Project is worth 25% of the final grade. They must be turned in by the deadline for full credit.