GAME 2026 3D Modeling I

Course: GAME 2026 3D Modeling I
Semester: Fall 2007
Campus: Northridge (NRG)
Room #: 4269
Class meets: Sat 9am-12pm
Prerequisite: None
Lab hours: On classroom door

Instructor: Andrew Collins
Office Hours (walk-in):
Office Hours (by apt. only):
Office Location:
Phone:
Email:

Course Description
This course will focus on architectural spaces and will expand on the students' fundamental modeling knowledge by introducing modeling in a real-time game editor (such as the Unreal Editor). Students will build, texture, and light a game level to function in real-time. Students will also build architectural objects in 3DSmax as well as smaller items to export from Max and then place them in the levels they have created in order to fully flesh out the look and feel of a scene. [Update?]

Prerequisites & Preferred Foundation
GAME 1030 Video Game Art, 3DSmax WB (class) or equivalent

Class Modules:
Specify…

Course Rationale
This course is aimed at furthering the student along the 3d art and visual side of the technical certificate for the continuing education game development program.

Its purpose is to familiarize the students with working in a 3-D environment and build a working knowledge of the basic tools used in modeling and rendering. This course will be required in for future "advanced" 3d related classes.

Student Objectives and Outcomes *[update]*
During the term of the course, students will learn to work within virtual 3-D space and animate volumetric objects including: transformations in positions, rotations, and scale. Most importantly for games, a student will get a fundamental understanding of interactive animation techniques and technical issues so that they create their best "in game" motions.

Students will learn these fundamental game tools: Animation controllers, hierarchies, exporting, and checking animations in-game. Students will also learn the importance of file backup and management.

Instructional Methodology
This is a 42 hour course from 09/09/06 – 12/16/06. Each class takes up approximately 3 of those hours. During each class, the instructor will present new information (lecture) and supervise assigned work to help students develop their 3d modeling skills (lab). Solutions to individual student problems are demonstrated for the entire group. The instructor's ability to evaluate students' progress is founded on observing their productivity in class as well as the quality of their work.

Supplies

During the semester, you will be required to have a pencil or pen, and a 3-ring notebook with paper and pockets (in which to keep notes, exercises, projects and information sheets). You will also need a Jump Drive to provide a temporary backup of your coursework, and (at least) one blank CD-R ("CD-R" Write, not "CD- RW" Re-Write) to provide a permanent backup.

Recommended Textbooks and dvds: [needs update. Web shows no books for the course.]

- Visual QuicksStart Guide: 3DS Max For Windows by Michele Matossian ISBN:073571391X (You might find updated versions to the max WE use!)
- "Man Walk cycle vol1" by Johnathon Abenheim www.cgchannel.com http://ex.cgchannel.com/product_info.php?products_id=51

Instructional Resources

Discreet's 3DS Max [8,9]: an industry standard software package used to create 3-D imaging and animation for multi-media, interactive-media, broadcast production, commercial television, and film.

Helpful Websites

Software & Tools

- http://www.discreet.com
- http://www.flay.com
- http://www.3drender.com
- http://www.3dcafe.com
- http://www.alias.com
- http://www.lightwave3d.com

Online News Media

- http://www.menithings.com
- http://www.awn.com
- http://www.cinefex.com
- http://www.cgtalk.com
- http://www.cgnetworks.com/
- http://www.highend3d.com
- http://www.postmagazine.com/post/

Game Development

- http://www.igda.org
- http://www.austingamedevelopers.org/
- http://www.gamasutra.com
- http://www.gamespy.com
- http://www.utexas.edu/students/egads/
- http://www.gamespot.com/
- http://www.gamers.com/egm/index.jsp

Online Broadcasting:

- http://www.atomfilms.com
- http://www.ifilms.com
- http://www.hotwired.com
- http://www.wildbrain.com
- http://www.cartoonnetwork.com

Grades

Students will be given 4 grades during the semester. These grades provide students with the opportunity to evaluate their standing in the class. Students can contact the instructor during the office hours listed at the beginning of this document if they need to discuss their progress, or to seek additional help. Students will be also be quizzed during the semester in preparation for the midterm and final exams. Though quiz results are not included in your final grade, they help students assess what skills need additional work before taking the exam.

Point total ranges:

A	(89.5% and up)
B	(79.5% to 89.4%)
C	(69.5% to 79.4%)

D (59.5% to 69.4%)
F (59.4% or less)

Student Evaluation

This course strengthens the student's 3D modeling and rendering skills through a series of exercises, each with assigned objectives and criteria. All exercises are graded using **four scales** (Focus, Principles, Craftsmanship, & Creativity). Each scale awards 4-0 points based on the student's effort to meet the exercise criteria (Superior – Unacceptable), for a total of **16 possible points per exercise**.

Scales:

A) **Focus** – (*criteria established in assignment*) ability to follow directions, make an effort to meet exercise objectives, work hard in & out of class, and complete the work on time.
4 – On time and meets or exceeds all criteria.
3 – On time with one criterion missing.
2 – On time with two criteria missing.
1 – On time with three or more criteria missing.
0 – Late or has inappropriate solution to the problem, incomplete

B) **Design Principles** – (*criteria established in assignment*) ability to understand and demonstrate the use of the elements & principles of design, as well as the 3D modeling principles.
   a. Elements of Design (line, shape, form, space, value, color, texture)
   b. Principles of Design (contrast, unity; dominance, balance; pattern, movement, rhythm)
   c. Modeling Principles (reference, proportion, exaggeration, weight, detail, functionality)

4 – Superior understanding and application of the design principles
3 – Good ability to utilize the principles of the design principles
2 – Several errors in regards to the application and understanding of the design principles
1 – Large number of errors in application and understanding of the design principles
0 – No regard to application and understanding of the design principles

C) **Craftsmanship & Technique** – (*criteria established in assignment*) *Craftsmanship* is aptitude, skill, and manual dexterity in use of media and tools – knowledge of interface & keyboard shortcuts, correct use of tools without the aid of notes, correct use of vocabulary. *Technique* is the manner and skill in which the student uses the tools to achieve the chosen effect – efficient use of geometry [no duplicate, hidden, or wasted geometry], proper use of surfaces [no Default surfaces; correct settings or textures in the appropriate surface channel], & well-organized files with properly placed pivots, labeled layers, and file type extensions.
4 – Great skill in manipulation of tools and technique used to express creative idea.
3 – Proficiency in manipulation of tools and technique used to express creative idea.
2 – Some degree of skill in manipulation of tools and technique used to express creative idea.
1 – Less than average ability or skill in manipulation of tools and technique used to express creative idea.
0 – Little or no apparent skill in manipulation of tools and technique used to express creative idea.

D) **Creativity, Inventiveness, and Independence** – (*criteria established in assignment*) ability to find unique solutions to assignment, elaborate on assigned theme, transfer concepts/techniques from previous exercises, work through problems/difficulties, originality of style & idea, and the ability to work independently.
   4 – Superior degree of originality throughout; very unique solution; theme has been elaborated on to a high degree; ability to take initiative in assignment that augments what is learned; self-initiated; complex solution.
   3 – Above average degree of originality throughout; theme is present with some elaboration; shows ability to work and think independently; May have sought additional material to accomplish assignment idea.
   2 – Above average degree of originality throughout; theme is present with little elaboration; some initiative in working and independent thinking.
   1 – Below average originality; theme is not fully developed; little initiative in working and independent thinking.
   0 – Lack of originality; theme is very trite, weak, stereotypical, or copied; very little or no initiative; student waits to be told what to do

Grading Rubric: **[here's a typical one]**

Attendance and Participation	30%
Essay/Reviews	20%
Projects	40%
Quizzes	10%

Attendance and Class Participation

Attendance is mandatory. In a 14-week course, students only have 42 contact hours with their instructor. This is roughly equivalent to one week on production in an industry studio. The level of a student's day-to-day class participation is evaluated and will be reflected in their final grade. Consistently late arrivals can add up. If you know you will need to arrive consistently late or leave consistently early, or if you know you will have to miss a large portion of the class, you should withdraw yourself and register again during a time when you can commit yourself to the work.

An instructor may drop you after 3 unexcused absences. I will drop you after 5 absences whether excused or not.

Lab Participation

Working with 3-D software can take a great deal of time and it may be necessary for students make time to come on campus and work during the open lab hours. Though lab time is not tracked, you are responsible for meeting project deadlines.

If you find you are having trouble getting all your work done in class, the classroom is open on Fridays and Saturdays. Lab hours are posted on the door outside the classroom.

World Building Course Modules: [update?]

Module 1

- ✓ Lexture: 3dsmax ui refresher. Class downloads www.candointeractive.com car game. Syllabus handout, contact the game programmer for the latest build.

- ✓ Lab: Students will make simple primitives and align, snap, and modify them as well as drag some simple max textures onto them to make a simple car model.
- ✓ Homework: Finish the low poly car.

Module 2

- ✓ Critique: Low poly Car assignment
- ✓ Lecture: "Making models in 3dsmax" I do a start to finish world prop model demo including making simple uvs and textures. Stress on keeping the poly/vert count to the minimum.
- ✓ LAB:Begin building assets for world for "car" game. My thinking is that the students need to start small with assets they can surely and easily build with primitive models or easy spline extrusion. Then, the students MUST assign textures for these models. This will include making the UVW mapping. The textures can be photo based or quickly made in photoshop using gradients, noise, and simple drawing techniques.
- ✓ Homework: 2 world models such as rocks, fences, trees, or simple buildings.

Module 3

- ✓ Critique: 2 world models
- ✓ Lecture: "UV-ing the textures and how to create models with UVs and textures in mind."
- ✓ Lab: Work with UVW maps and begin working with Unwrap. Continue making models for the car game world. Export the models and test their appearance in-game.

Module 4

- ✓ Critique 2 new world models inside the Cando interactive engine along with the other things made in previous assignments.
- ✓ Lecture: More advanced modeling and texturing techniques for world building. Continue to reiterate low poly counts, and the importance of texture to "sell" what the object is.
- ✓ Lab: Make more advanced low poly objects with "editable poly" tools , shell, and lofting techniques.
- ✓ Homework: 2 new COMPLEX world models such as a roadway, terrain, or set of buildings.

Module 5

- ✓ Critique new complex objects.
- ✓ Lecture: Complex modeling techniques such as Booleans (or other compound objects), Low-Poly "Turbosmoothed" objects, Multires polygon reduction. Floating topics to address class weakness.
- ✓ Lab: More assets for the car game.

Module 6

- ✓ Critique Boolean, TSmooth, Mres objects.

- ✓ Lecture: "First Pass" Get it working and looking good in game. Some slight discussion about "visual story" and game design for levels (very brief as this is not a design class). Floating topics to address class weakness.

- ✓ Lab: Students work on getting their car level to a "final pass" stage. This will be making the terrain, props, and simple static objects that sit around in the game in their proper places. The art objects should enhance the game play and all fit together in the world.
- ✓ Homework: Complete a first pass of the game with all the work completed so far.

Module 7
- ✓ Critique the first pass
- ✓ Lecture: Making it better. What isn't working, what's missing?
- ✓ Lab: Begin work on a 2nd pass.

Module 8
- ✓ Critique the 2nd pass.
- ✓ Lecture: "Extras" More texture work, shaders, extras, that visually add to the gameplay, such as working tail lights that turn red when you stop the car. Floating topics to address class weakness.
- ✓ Lab: Begin 3rd pass. This should be the homestretch. Most important things should be finished. Optimizing object or texture issues.

Module 9

Rendering to Texture and final pass. Baking lighting into objects with the use of advanced lighting gives a lot of mileage. Floating topics to address class weakness.

Lab: FINISH IT!

Module 10 Final Game presentations and critique. Pizza.

Withdrawal

Students are responsible for withdrawing themselves if they are unable or decide to not to continue coming to class. If a student simply stops coming to class, a failing grade will appear on his/ her transcript. Instructors may also withdraw you if you miss too many classes. Please contact the instructor if you know you must miss a class.

Incomplete

Meeting deadlines is one of the most important aspects of production. Therefore, all work must be completed within the class deadlines. If there is a lack of work, the student will be graded on the work that the instructor has received -- the instructor will not give incomplete grades. The skills taught in this class act as a foundation for subsequent classes. If a student knows he or she will not be able to complete the class, they should drop the class and register again during a time when they know they can complete the full course.

Scholastic Dishonesty

"Acts prohibited by the college for which discipline may be administered include scholastic dishonesty, including by not limited to cheating on an exam or quiz, plagiarizing, and unauthorized collaboration with another in preparing outside work. Academic work submitted by students shall be the result of their thought, research or self-expression. Academic work is defined as, but not limited to tests, quizzes, whether taken electronically or on paper; projects, either individual or group; classroom presentations, and homework" (Student Handbook 2002-

2003, p. 32). Students found in violation of this policy will be dropped from the class and a failing grade will appear on his/ her transcript.

Academic Freedom

Each student is strongly encouraged to participate in class. In any classroom situation that includes discussion and critical thinking, there are bound to be many different viewpoints. These differences enhance the learning experience and create an atmosphere where students and instructors alike will be encouraged to think and learn. On sensitive and volatile topics, students may sometimes disagree not only with each other but also with the instructor. It is expected that faculty and students will respect the views of others when expressed in classroom discussions.

Student Discipline

Everyone is expected and required to act in a scholarly, courteous, and appropriate manner during class. Inappropriate actions, behaviors, or remarks will not be tolerated and are grounds for removal from the class. Food and drink are never to be consumed near the computers.

OSD Statement

"Each ACC campus offers support services for students with documented physical or psychological disabilities. Students with disabilities must request reasonable accommodations through the Office of Students with Disabilities on the campus where they expect to take the majority of their classes. Students are encouraged to do this three weeks before the start of the semester" (Student Handbook, 2002-2003, p. 14).

Other Helpful Websites

http://www.austincc.edu/marketng/handbook/ (Student Handbook)
http://www.austincc.edu/resources_students/services.php (Student Services)

SCANS (Secretary's Commission on Achieving Necessary Skills)

A high performance workplace requires workers to not only have basic literacy, math, and personal skills, but also specific *competencies* – including the ability to manage resources, work well with others, research and process information, master complex systems and a variety of technologies. This list summarizes the SCANS skills and competencies addressed in this course.

1 Resources
- 1.1 Manages Time
- 1.2 NA
- 1.3 NA
- 1.4 NA

2 Interpersonal
- 2.1 NA
- 2.2 NA
- 2.3 NA
- 2.4 NA
- 2.5 NA
- 2.6 NA

3 Information
- 3.1 Acquires and Evaluates Information
- 3.2 Organizes and Maintains Information
- 3.3 Uses Computers to Process Information

4 Systems
- 4.1 Understands Systems
- 4.2 Monitors and Corrects Performance
- 4.3 Improves and Designs Systems

5 Technology
- 5.1 Selects Technology
- 5.2 Applies Technology to Task
- 5.3 Maintains and Troubleshoots Technology

6 Basic Skills
- 6.1 Reading
- 6.2 Writing
- 6.3 Arithmetic
- 6.4 Mathematics
- 6.5 Listening
- 6.6 Speaking

7 Thinking Skills
- 7.1 Creative Thinking
- 7.2 Decision Making
- 7.3 Problem Solving
- 7.4 Mental Visualization
- 7.5 Knowing How to Learn
- 7.6 Reasoning

8 Personal Qualities
- 8.1 Responsibility
- 8.2 Self-Esteem
- 8.3 Sociability
- 8.4 Self-Management
- 8.5 Integrity/Honesty

Please go to http://www.austincc.edu/mkt/scans.htm#whatis for a complete definition and explanation of SCANS.