ART/CSC/FST 220 3D Computer Graphics

Course Schedule

Classroom	CIS 2006
Lectures	MW 04:00 pm - 5:15 pm

Digital Art Lab (DA) is available to all students registered for ART/CSC/FST 220 in 24/7.

Instructor Information

Instructor	Office	Telephone	Email	Office Hours
Hua Li	CIS 2040	962.3247	lihua@uncw.edu	MW 10:00 am - 12:00 am

Notes: You can always send your instructor an email to make an appointment.

Teaching Assistants
TBA

Course Description
Project-based approach to learning fundamental principles of 3-D computer graphics using high level software tools. Modeling of objects, geometrical transformations, surface algorithms, lighting and shading, alternative rendering techniques and providing background skills necessary to create animated movies.

3-D Computer Graphics Tools and Literacy Prerequisites
CSC 105, 131 or permission of instructor.

Topics Covered
This course is an introduction to 3D computer graphics and helps students obtain basic skills of Maya software. The course covers the following topics, although some materials may be omitted due to time constraints:

- Introduction to computer graphics and Maya

- Basic concepts of image processing and graphics

- 3D space, transformation, vertices, edges, and faces

- Modeling basics

- Polygonal modeling and NURB surfaces

- Lighting, materials, and shading

- Texture mapping and UV layout

- Rendering basics and advanced rendering

- Maya architecture and animation

Recommended Materials

- Digital Modeling by William Vaughan, 2012

- Digital Lighting and Rendering (2nd Ed) by Jeremy Birn, 2013

- Mastering Autodesk Maya 2013 (or 2014) by Todd Palamar

- Maya Getting Started (2013 or 2014) (online lessons by AutoDesk)

Evaluation

Components	Weight	Due Dates	Notes
Homework	24%	Sep. 17, Oct. 15, Nov. 19	three, each 8%
Take-Home Tests	20%	Oct. 7, Nov. 11	two, each 10%
In-Class Quizzes	20%	weekly	10, each 2%, Fri.
Project 1	14%	Sep. 30	one, 6:00 PM
Project 2	22%	Dec. 2	one (in class)

Submission Notes

All submissions focuses on improving basic skills. They must be submitted on UNCW Blackboard (https://learn.uncw.edu/) BEFORE the due date and time. **two days late: 30% late fee; four days late: 60% late fee.**

Projects

- Project 1: 3-D modeling and lighting exercise [14%]

  - Marking scheme: submission 11% and presentation 3%

  - Choose a semi-complex object to model from options provided, such as items that could be a prop for a film or game. Use reference photos and/or drawings as image planes to aid modeling. Any techniques such as polygons, NURBs, or subdivision surfaces may be used. Model for detail, realism, and accuracy in regard to reference material. Also, complete basic lighting and rendering. Present the work to all students.

- Project 2: Final comprehensive project [22%].

  - Marking scheme: submission 17%, portfolio 2%, and presentation 3%

  - Complete a professional quality project demonstrating skills learned during the course. Choose from selections given which will likely include organic modeling with shading, lighting, and rendering objectives. Strive for detailed surface materials and expressive lighting and composition. Assemble a portfolio or reel of all course work for presentation.

In-Class Quizzes

In each week, if we do not have homework submission, we will have a weekly practicum. This quiz will be proposed on Monday or Wednesday and demonstrated in class. Show the results (models and renders) in Friday's class. Most of the quizzes follow the online lessons (Maya Getting Started by AutoDesk), including basic modeling, helmet modeling, NURBs, basic rendering, UV mapping for (cracker box and solider), and others.

Take-Home Tests

Two take-home tests are self-learning tests. Learn tutorials from digitaltutors.com or YouTube. Follow the tutorials and create models and render models. Submit two things: a) submit a written report of the instructions used in the tutorials; b) submit the up to date model you learned and three best renders.

Attendance

Course slides will be made available before the lectures, but these will only contain the outlines for the lectures. Class attendance is **strongly** recommended. If you must miss any lectures, please contact your instructor in advance with written notices based on special circumstances. More than **four (4)** absences will result in class failure.

Collaboration Policy

Students are encouraged to discuss and aid each other in learning, but all work for project submission must be the individual work of the submitting student.

Undergraduate Academic Resources

- University Learning Center (ULC) (http://uncw.edu/ulc/): The ULC offers a different type of learning opportunity for those students who want to polish their learning skills. ULC services are free to all UNCW students and include the following: learning services, math services, study sessions, study skills, writing services, and others.

Academic Honor Code

- It is the responsibility of every student to uphold and maintain the UNCW Academic Honor Code (http://uncw.edu/odos/honorcode/) (see your Student Handbook). You violate the honor code when you represent someone else's work as your own. Programming assignments may be discussed at a conceptual level with other students but details and your work must be your own. Copying and team collaboration is prohibited.

Students with Disabilities Requiring Academic Accommodations

- If you have a disability and need reasonable accommodation in this course, you should inform your instructor of this fact in writing within the first week of class or as soon as possible. If you have not already done so, you must register with the Office of Disability Services (http://uncw.edu/disability/) in Westside Hall (extension 3746) and obtain a copy of your Accommodation Letter. You should then meet with your instructor to make mutually agreeable arrangements based on the recommendations of the Accommodation Letter.

Student Learning Outcomes (SLO)

1. Demonstrate the ability to critically analyze, appreciate, and make cogent judgments regarding form, lighting, shading, composition, and other visual elements.

2. Demonstrate an understanding of visual concepts, their development, and their application for creating works with computer graphics tools.

3. Demonstrate an understanding and appreciation of the significance of major historical, cultural, and technological developments for the medium of computer graphics, as well as its importance to modern visual art and communication.

4. Demonstrate knowledge of the importance of the medium of computer graphics as a tool for expression, communication, and visualization of meaningful ideas.

5. Students gain experience in presenting, discussing, and critiquing visual works.

6. Students gain the artistic and technical knowledge necessary to create their own computer graphics works.

Relationship between Evaluations and SLO

SLO	1	2	3	4	5	6
Project# 1	✓	✓	✓	✓	✓	✓
Project# 2	✓	✓	✓	✓	✓	✓
Homework	✓	✓	✓	✓	✓	✓
In-Class Quizzes	✓	✓	✓	✓	✓	✓
Take-Home Tests	✓	✓	✓	✓	✓	✓

Grade Conversion

Numeric Score	Letter Grade
93-100	A
90-92	A-
87-89	B+
83-86	B
80-82	B-
77-79	C+
73-76	C
70-72	C-
67-69	D+
63-66	D
60-62	D-
0-59	F

*This syllabus may be subject to change with reasonable notice.