

ART/CSC/FST 320 Computer Animation

Course Schedule

Classroom	CIS 2006
Lectures	MWF 10:00 am - 10:50 am

Digital Art Lab (DA) is available to all students registered for ART/CSC/FST 320 in 24/7.

Instructor Information

Instructor	Office	Telephone	Email	Office Hours
Hua Li	CIS 2040	962.3247	lihua@uncw.edu	MW 9:00 am - 10:00 am

Notes: You can also come on MW 12:00 - 2:00 pm. But priority will be given to the students who registered for CSC 131. You can always send your instructor an email to make an appointment.

Teaching Assistants

TBA

Course Description

Basic principles of animation using 3-D computer-generated animation and basic processes for animating synthetic objects through structured exercises. Principles of designing and producing 3-D computer-generated animation through the creation of advanced motion studies. Projects focus on developing higher-level skills in model building, animation and color, and lighting.

Computer Animation Tools and Literacy Prerequisites

ART/CSC/FST 220, or permission of instructor.

Topics Covered

This course continues material introduced in ART/CSC/FST 220 and concentrates on character animation using computers and the related theory, production techniques, and industry practices. Modeling, rigging, shading, rendering, and character-design skills are developed in conjunction with narrative, cinematography, lighting, and animation concepts. Students complete individual projects and also work as a team to produce at least one short animated movie during the semester. The course covers the following topics, although some materials may be omitted due to time constraints:

- Introduction to computer animation
- 12 principles of computer animation and digital production
- Keyframe animation and graph editor
- Path animation
- Animation with deformers
- Rigging and muscle system

- Animation of human and animal walks and runs
- Animation of acting: facial expression
- Lip-Sync

Recommended Materials

- Character Animation Fundamentals by Steve Roberts.
- How to Cheat in Maya 2014: Tools and Techniques for Character Animation by Eric Luhta & Kenny Roy.
- Rig it Right! Maya Animation Rigging Concepts (Computers and People) by Tina O’Hailey
- The Animators Survival Kit by Richard Williams.
- Maya Python for Games and Film by Adam Mechtley & Ryan Trowbridge.
- An Essential Introduction to Maya Character Rigging by Cheryl Cabrera.

Useful Tools

Maya, ZBrush, Mudbox, Photoshop, Illustrator, Final Cut Pro, etc. on computers in the Digital Arts Lab.

Maya Resources housed in the Randall Library, including these and more:

- The Art of Maya Maya Cloth Courseware
- MEL Fundamentals Courseware Learning Maya: Foundations
- Learning Maya: Character Rigging and Animation Learning Maya: Dynamics
- Learning Maya: Games and Interactive Learning Maya: Rendering
- Maya Seminars: Optimizing a Production Pipeline Patch Modeling for Visual Effects
- Rendering 2D Effects in a 3D Environment Integrating a Creature Animation Rig
- Particles for Visual Effects Understanding Maya Shading Networks
- Exploring Advanced Shading Networks MELBot Wars: Virtual Fighting Robots
- Polygon Texturing, Lighting, and Shading RigidBody Simulations for Visual Effects
- Inside the Maya Architecture Hyper-Realistic Modeling
- Hyper-Realistic Body Setup Hyper-Realistic Facial Setup
- Digital Tutors discs and online subscription covering a variety of related topics.

Evaluation

Components	Weight	Due Dates	Notes
Homework	21%	Jan. 28, March 18, April 8	three (1st: 7%, 2nd: 7%, and 3rd: 7%)
Take-Home Tests	20%	Feb. 20 (Fri.), April 1 (Wed.)	two, each 10%
In-Class Quizzes	15%	weekly	10, each 1.5%
Project 1	14%	Feb. 25	one, Wed. (6:00 PM)
Project 2	30%	April 27	one, Mon. (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.**

Homework and short exercises focused on improving basic skills. Quizzes, possibly unannounced – based on readings, web material, and class material.

Projects

- Project 1: Design and build a complete, original character ready for animation independently. [14%]
 - Marking scheme: submission 12% and presentation 2%
 - Story Development (treatment, script, shot-list, storyboards, animatic, etc.). Character Animation Practice (walk cycles, lip-sync, performance). Character Pack (design, maquette, model, rigging, shading, turntable, tests). Present the work to all students.
- Project 2: Final comprehensive project [30%].
 - Marking scheme: submission 20%, portfolio 2%, presentation 3%, and teamwork 5%
 - Participation in animated production. 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.

Take-Home Tests

Two take-home tests are self-learning tests. Learn tutorials from digitaltutors.com or YouTube. Follow the tutorials and create animations.

Attendance

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.

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.

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

Student Learning Outcomes (SLO)

1. Students gain understanding in mathematical, algorithmic, and conceptual techniques related to animating computer-graphics models and environments.
2. Students develop the ability to model and rig objects and characters in three dimensions using constraints, expressions, and scripting in computer animation software.
3. Students learn aspects of the topology of polygon, NURBs, and subdivision-surface modeling that relate to deformations used in animation.
4. Students understand and apply concepts of narrative structure and animation technique.
5. Students model, rig, shade, and animate characters of their own creation, presenting their work for class critique.
6. Students work together as a large, coordinated group to complete a fully realized animated-short- film project from concept through to post-production and screening.
7. Students learn aspects of digital production and workflow as applied in current industry

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