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DIG 4306C ADVANCED 3D DIGITAL ANIMATION TECHNIQUES
Spring 2026

Course Meetings M | Period 5 - 6, W | Period 6 (NRG 0120)
Course Modality: Face-to-Face (F2F) Live, Online Asynchronous (OA)

Course Description

Practical principles and techniques of 3D software environments for animation. Includes triangular mesh design and editing, splines (NURBS), shading techniques and lighting, different camera projection models, rendering techniques, and efficient use of GPU for photo realistic real-time 3D animation. This course focuses on advanced work in the practical principles and techniques of 3D software animation environments. Includes quad mesh design and editing for complex motions, shading techniques and lighting, various camera projection models, rendering techniques, and efficient use of GPU resources for photorealistic real-time 3D animation.

Course Prerequisites: (Digital Arts and Sciences BA major and DIG 3305C with minimum grade of C) or instructor permission.

Course Objectives and/or Goals:

By the end of this course, students will be able to:

- Demonstrate knowledge of the complete workflow for 3D character animation in the film and video game industries
- Articulate the differences between animation aesthetics for motion graphics and film
- Create 3D digital environments utilizing parametric modeling workflow in Cinema 4D
- Create key framed animation for complex body motions and character performances in Maya

Materials & Books

Technology Requirements

- Cinema 4D 2025/Maxon One (Educational version is $60.00 for one year) DOWNLOAD
- Autodesk Maya 2024 or 2025 (Educational version is free for students) DOWNLOAD
- Adobe Photoshop CC
- Adobe After Effects CC
- Adobe Media Encoder
- Adobe Premiere
- 3 Button Mouse

Course Schedule

This schedule is only a guide and is subject to change. Unless otherwise indicated, assignments and readings are due the day they are listed on the syllabus, not the following day.

Week	Subject	Assignment Quizzes	Assignments Due
1	-Instructor Introduction -Course Intro -Canvas Walkthrough -Introduction to Motion Graphics -The Cinema 4D Workspace -Cinema 4D Environments and Examples	**Course Orientation Quiz** **Assignment 1: Cinema 4D Environment**	**Discussion: A1 Project Ideas and Mood boards**
2	-Mood board Creation and Reference Gathering -Using References in Cinema 4D -Using Generator Objects in Cinema 4D -Maya Refresher 1	**Quiz: Maya Refresher 1**	**Discussion: A1 Project Progress Update 1**
3	-Instance Objects in C4D -Booleans and Volume Building in C4D -Modeling Complex Objects		**Discussion: A1 Project Progress Update 2**
4	-Basic Component Modeling in C4D -Phase Breakdown of a Cottage Modeled in C4D -Applying and Editing Materials -Lighting and Rendering in C4D -Maya Refresher 2 -Submitting Assignment 1	**Quiz: Maya Refresher 2**	**Assignment 1: Cinema 4D Environment** **Discussion: Texturing and Lighting**
5	-12 Principles of Animation Review -Maya Review and Malcolm Rig Overview -Installing and Using Pickers for Animation -Analyzing and Creating a Character Pose from a Reference Photo -Reference Filming Advice and Analyzation -Assignment 2 Overview	**Assignment 2: Chair Animation**	**Discussion: Character Pose 1** **Discussion: Assignment 2 Reference Footage Discussion**
6	-Weight Analysis -Blocking Pass Overview and Planning Documents -Believable Movements & Interactions: Effective Use of IK, FK, Constraints, & Parenting -IK, FK, & Constraints: Use & Implementation -IK, FK, & Constraints: Scene Analysis -The Dailies Review Process	**Quiz: IK/FK Parenting/Constraints** **Dailies Group A (Assignment 2)**	**Dailies Group A (Assignment 2)** **Discussion: Dailies Group A Response**
7	-Breakdown Pass Implementation	**Dailies Group B (Assignment 2)**	**Dailies Group B (Assignment 2)**

			Discussion: Dailies Group B Response
8	-Polish Pass Implementation -Advanced Animation Planning Documents for Complex Animation	**Assignment 3: Advanced Motion Part 1: Planning Document**	**Assignment 2: The Acting Chair** **Assignment 3: Advanced Motion Part 1: Planning Document**
9	-Camera Animation Fundamentals -Blocking Passes for Complex Animation -Final Project Proposal Overview and Concept Development for Multi-shot Films in 3D -Assignment 4 and Dailies Overview	**Assignment 4: Advanced Motion Part 2: Blocking** **Final Project Proposal**	**Discussion: Final Project Proposal**
10	-Breakdown and Polish Passes for Complex Animation -Production Planning for Multi-shot Films in 3D	**Assignment 5: Advanced Motion Part 3: Breakdown/Polish** **Dailies Group B (Assignment 2)**	**Final Project Proposal** **Dailies Group B (Assignment 4)** **Discussion: Dailies Group B Response**
11	-Basic Acting Overview -Complex Animation Wrap Up -Advanced Face Posing for Advanced Character Rigs	**Dailies Group A (Assignment 5)**	**Dailies Group A (Assignment 5)** **Assignment 5: Advanced Motion Part 3: Breakdown/Polish** **Discussion: Dailies Group A Response** **Discussion: Character Pose 2**
12	-Exploring Other Advanced Character Rigs -Performance Techniques and Reference Footage	**Quiz: Assessing New Rigs** **Dailies Group A: (Final Project)**	**Assignment 5: Advanced Motion Part 3: Breakdown/Polish** **Dailies Group A:**

			(Final Project) **Discussion: Dailies Group A Response**
13	-Production Level Rendering	**Dailies Group B: Final Project**	**Assignment 6: Face Animation Exercise** **Dailies Group B: (Final Project)** **Discussion: Dailies Group B Response**
14	-Demo Reels and Art Careers	**Final Project: Playblast Version**	**Final Project: Playblast Version** **Discussion: Demo Reels and Career Focuses**

Grading Criteria

Assignment / Assessment	Total Points	% of Grade
Participation Students are expected to actively participate in class discussions, both in class as well as in class online forums outside class meetings. All students must be active participants in the critique process during "Dailies" (either through in-class sessions, or online discussions) Online students will be given discussions to complete and respond to that pertain to the subject matter we are reviewing in class	100	10
Assignments 1-5 Animation assignments are multi-week projects that are reviewed in the "Dailies" process for feedback and critique. Assignments will be due at the end of the week (unless otherwise noted). Work submitted after 11:59 PM on that date will be counted late, at 10 pts per day.	100	40
Dailies Presentations/Pose Exercises/Quizzes Students will be assigned "Dailies" submissions to be reviewed in-class. These "Dailies" sessions are important learning devices for each student. They are due before the start of class and cannot be turned in late. Pose exercises allow the students to familiarize themselves with the rig and with proper posing workflow. Quizzes will be assigned throughout the semester for important technical/animation knowledge retention.	100	25

Final Project	100	25
The Final Project is the result of a semester long effort in learning. It is expected that in this final project, students employ the principles and techniques they have learned during the semester.		

Grading Scale

Letter Grade	% Equivalency
A	94 – 100%
A-	90 – 93%
B+	87 – 89%
B	84 – 86%
B-	80 – 83%
C+	77 – 79%
C	74 – 76%
C-	70 – 73%
D+	67 – 69%
D	64 – 66%
D-	60 – 63%
E, I, NG, S-U, WF	0 – 59%

More information on grades and grading policies is here: https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/

Materials, Supply, and Equipment Fees
Material and supply and equipment use fee information are available from the academic departments or from the schedule of courses (Florida Statutes 1009.24). The total course fee for this class is $0.00. The total course fee for each course is listed on the UF Schedule of Courses. (https://registrar.ufl.edu/soc/)

Academic Policies and Resources:
Information about grading and attendance policies, support for students with disabilities, course evaluations, the Honor Code, and other campus resources can be found at https://syllabus.ufl.edu/syllabus-policy/uf-syllabus-policy-links/

Attendance Policy, Class communicating Expectations, and Make-Up Policy
The UF Digital Worlds Institute is committed to the idea that regular student engagement is essential to successful scholastic achievement. No matter if the class is held in a traditional classroom, an online classroom, or a combination of the two, interaction with your peers and the instructor will empower you to greater achievement. *The instructor is responsible for the specific details of what percentage of your grade (if any) will be assigned to participation, and how class participation will be measured and graded. If the course includes participation grades, the syllabus must include a rubric to show how participation will be evaluated.*

In our course, attendance is taken at the beginning of each class period, and is calculated as the Participation element which makes up 10% of your overall grade. Any unexcused absences are factored into the Participation grade total. Exempt from this policy are only those absences involving university-sponsored events, such as athletics and band, and religious holidays, family emergencies, and health issues for which you must provide appropriate documentation in advance of the absence.

All assignments are due by the stated date and time. Late submissions will incur a 10-point deduction (This has no

maximum). Assignments will close 5 days after the due date. Students are expected to proactively communicate with the instructor if they are unable to submit an assignment by the deadline for an excused reason. Students are also expected to communicate about assignment submissions to develop strategies that best help them succeed.

Additionally, tardiness will not be tolerated. If you are tardy for three class periods, you will receive an unexcused absence.

Course Technology
The students will be required to have access to and use a personal computer with access to the Internet. Word editing software will be required for written assignments. The University of Florida and Digital Worlds require that students have access to and ongoing use of a laptop/mobile computer for DIG courses in order to be able to function in the current learning environment. Digital Worlds requires each DAS major's laptop computer to meet certain minimum specs for heavy graphics use, the requirements documented below must be met.
https://digitalworlds.ufl.edu/programs/ba-in-digital-arts-sciences/technology-requirements/.

Course Communications
Students can communicate directly with the instructor regarding the course material through the course management system (CANVAS) using "Canvas E-Mail".

Creation of Original Content Ethics
For original projects and all assignment deliverables, students should remember that representations of acts of violence, coarse and offensive language, sexual behavior, bodily function and ability, neurodiversity, and personal identity are likely to cause extreme audience response, regardless of the creator's intentions. In addition, the recreation of such actions and subjects for fictional purposes may unintentionally traumatize or negatively impact those who collaborate in the creation of the images. While the university encourages students to explore themes and tell stories that may include this difficult subject matter, they should be cautioned against modes or styles of representation that might be considered unnecessarily offensive or potentially triggering. Instructors, faculty, and university administrators reserve the right not to show or share any student work they feel is inappropriate for their classroom or for public exhibition, as there may be concerns about the impact of such work on the community. Please consult with the faculty when producing work that might be considered controversial, and err on the side of being cautious when it comes to making decisions about a project's content - in other words, make the PG-13 version of your story, not the R version, and certainly not the "unrated" version. This is also to help students understand that most professional creative situations have strict guidelines and limitations on such content and how it is produced: your ability to tell stories effectively with "less" is a strong professional skill that will aid in the dissemination of your work to a broader audience.

University Policies
Information about university-wide policies and resources can be found here: https://syllabus.ufl.edu/syllabus-policy/uf-syllabus-policy-links/

Disclaimer: This syllabus represents the instructor's current plans and objectives. As we go through the semester, those plans may need to change to enhance the class learning opportunity. Such changes, communicated clearly, are not unusual and should be expected.