

DIG4306 ADVANCED DIGITAL ANIMATION TECHNIQUES

SPRING 2022

Course Meetings: Mondays 11:45 AM – 1:40 PM, Wednesdays 12:50 PM – 1:40 PM
Course Mode: Real-time/Online
Course Location: NRG 0120/Online

Course Description

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

DIG 3305 3D Digital Animation Techniques

Learning Outcomes

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

Required Software and Materials

- Cinema 4D R23 (Educational version is free for students plus \$2.99 service fee) [DOWNLOAD](#)
- Autodesk Maya 2020 or 2022 (Educational version is free for students) [DOWNLOAD](#)
- Adobe Photoshop CC
- Adobe After Effects CC
- Adobe Media Encoder
- Adobe Premiere
- 3 Button Mouse

- Two-monitor setup for software instruction (Online students only)

Recommended Books

- *The Animator's Survival Kit – Revised Edition: A Manual of Methods, Principles, and Formulas for Classical, Computer, Games, Stop Motion, and Internet* Williams, Richard 2012, 2nd 978-0865478978

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	-Overview of course and objectives	Class Procedures Quiz	
2	-Cinema 4D Interface Introduction -Parametric Modeling Fundamentals -Modeling Workflow -Maya Refresher 1	Assignment 1: Basic 3D Environment	
3	-Cinema 4D Modeling Continued -Splines, NURBS, hyperNURBS, Booleans -Materials, Lighting, and Rendering -Maya Refresher 2	Basic 3D Knowledge Quiz 1	
4	-Cinema 4D Wrap-Up -Reintroduction to Maya and Character Animation	Basic 3D Knowledge Quiz 2 Assignment 2: Chair Animation Dailies Group A/B Presentations (Assignment 2)	
5	-Malcolm Rig Overview -Setup of Animated Shots -Reference Footage	Character Pose 1: Body	Assignment 1: Basic 3D Environment
6	-Character Weight and Movement -The "Blocking" Pass -IK/FK and Constraints -The "Dailies" Process and Critiques	Malcolm Rig Quiz	Character Pose 1: Body

7	-Dailies Group A Critique (Assignment 2) -The “Breakdown” Pass	IK/FK and Constraints Quiz	Dailies Group A (Assignment 2)
8	-Dailies Group B Critique (Assignment 2) -The “Polish” Pass -Advanced Motion -Advanced Planning Documents	Assignment 3: Advanced Motion Part 1: Planning Document	Dailies Group B (Assignment 2)
9	-Final Project Introduction -Camera Animation in 3D -Blocking Pass for Advanced Animation	Assignment 4: Advanced Motion Part 2: Blocking Pass Dailies Group A/B Presentations (Assignment 4)	Assignment 2: Chair Animation Assignment 3: Advanced Motion Part 1: Planning Document
10	SPRING BREAK		
11	-Breakdown Pass for Advanced Animation -Polish Pass for Advanced Animation -Animating the Face	Assignment 5: Advanced Motion Part 3: Breakdown/Polish Assignment 6: Face Animation Exercise Character Pose 2: Face	Final Project Proposal Dailies Group B (Assignment 4)
12	-Film Production in 3D -Acting and Performance	Final Project Dailies A/B	Dailies Group A (Assignment 5) Character Pose 2: Face
13	-Character Performance Blocking/Breakdowns -Exploring Other Character Rigs		Assignment 5: Advanced Motion Part 3: Breakdown/Polish

14	-Lighting/Rendering Review		Assignment 6: Face Animation Exercise Dailies Group A: Final Project
15	-Final Project Wrap-Up -Professional Demo Reels		Dailies Group B: Final Project
16			FINAL PROJECT DUE

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 1-6 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 3 "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 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.	100	25

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 and Supply 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/>)

Course Policies

Attendance Policy, Class Expectations, and Make-Up Policy

The instructor is responsible for communicating 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. Interaction with your peers and the instructor will empower you to greater achievement.

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.

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at: <https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/>

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 requires 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 student'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 Mail".

Course Recordings

Our class sessions may be audio-visually recorded for students in the class to refer back and for enrolled students who are unable to attend live. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared. As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited.

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 to not 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. We encourage students to consult with their faculty when producing work that might be considered controversial, and to 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.

Course Technology Support

Technology Support Center

The [Technology Support Center](http://digitalworlds.ufl.edu/support) provides computer support for Digital Worlds students who access Zoom, lecture recordings, student equipment, facilities, and other technology-based resources.

<http://digitalworlds.ufl.edu/support>

For computer assistance related to Zoon, lecture recordings, student equipment, and facilities requests please email support@digitalworlds.ufl.edu.

UF Computing Help Desk

For support related to account services, technical consulting, mobile device services, software services, administrative support, application support center, and learning support services, please contact the [UF Computing Help Desk](mailto:helpdesk@ufl.edu) available 24 hours a day, 7 days a week at 352-392-4357 or helpdesk@ufl.edu.

University Policies

University Honesty Policy

UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (<https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Class Demeanor

Students are expected to arrive to class on time and behave in a manner that is respectful to the instructor and to fellow students. Please avoid the use of cell phones and restrict eating to outside of the classroom. Opinions held by other students should be respected in discussion, and conversations that do not contribute to the discussion should be held at minimum, if at all.

Students Requiring Accommodations

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center by visiting <https://disability.ufl.edu/students/get-started/>. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

Netiquette Communication Courtesy

All members of the class are expected to follow rules of common courtesy in all email messages, threaded discussions and chats, more information can be found at: <http://teach.ufl.edu/wp-content/uploads/2012/08/NetiquetteGuideforOnlineCourses.pdf>

Software Use

All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold

ourselves and our peers to the highest standards of honesty and integrity.

Student Privacy

There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see: <https://catalog.ufl.edu/UGRD/academic-regulations/ferpa-confidentiality-student-records/>

Course Evaluation

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>

Campus and Academic Resources

U Matter, We Care: If you or someone you know is in distress, please contact umatter@ufl.edu, 352-392-1575, or visit [U Matter, We Care website](#) to refer or report a concern and a team member will reach out to the student in distress.

Counseling and Wellness Center: [Visit the Counseling and Wellness Center website](#) or call 352-392-1575 for information on crisis services as well as non-crisis services.

Student Health Care Center: Call 352-392-1161 for 24/7 information to help you find the care you need, or [visit the Student Health Care Center website](#).

University Police Department: [Visit UF Police Department website](#) or call 352-392-1111 (or 9-1-1 for emergencies).

UF Health Shands Emergency Room / Trauma Center: For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; [Visit the UF Health Emergency Room and Trauma Center website](#).

E-learning technical support: Contact the [UF Computing Help Desk](#) at 352-392-4357 or via e-mail at helpdesk@ufl.edu.

Career Connections Center: Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services.

Library Support: Various ways to receive assistance with respect to using the libraries or finding resources.

Teaching Center: Broward Hall, 352-392-2010 or to make an appointment 352- 392-6420. General study skills and tutoring.

Writing Studio: 2215 Turlington Hall, 352-846-1138. Help brainstorming, formatting, and writing papers.

Student Complaints On-Campus: [Visit the Student Honor Code and Student Conduct Code webpage for more](#)

[information.](#)

Online Students Complaints: [View the Distance Learning Student Complaint Process.](#)

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.