

DIG4354C 3D CHARACTER ANIMATION

Instructor

Mr. Aaron Karlson

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Email

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Office Location

NRG

Office Hours

TBA

Course Number

DIG4354C

Semester/Year

Fall 2021

Course Credits

3 credits

Course Location

NRG 205

Course Meeting Times

TUES Period 4

THUR Period 4-5

Course Description

This course teaches students practical techniques for implementing three-dimensional digital character animations into digital animation. Students will develop skills in these advanced animation principles by learning and practicing character development, pipeline management, procedural framework simulation, and basic rigging. Students will also perform frame-by-frame studies of traditional and contemporary motion picture animation. By the end of the course, students will be able to fluently use both industry-standard and open-source tools to animate basic 3D object and 3D bipedal motion as well as perform key-framing in 3D.

Pre-Requisites

DIG 3313C, DIG 3305C, and DIG 4306C or Instructor Permission

Objectives: Through directed projects in each learning objective, students will be able to:

- Practice timing, slow ins and slow outs, blocking, breakdowns, spline, as well as polish passes for arcs and secondary action.
- Translate straight ahead and pose to pose 3D animation.
- Analyze and implement shot based character development and appeal, acting reference filming, and follow through and overlapping action
- Evaluate and apply real life reference into action lines and using pushed poses, incorporating squash and stretch and exaggeration
- Expand upon foundations of solid drawing, anticipation, and staging to create dynamic shot compositions

Required Materials

- Autodesk Maya 2020 Educational Version (Free for students) [DOWNLOAD](#)
- Adobe Photoshop CC
- Adobe After Effects CC
- Adobe Media Encoder
- Two-monitor setup (ONLINE students only)
- 9" x 12" Sketchbook
- 3 Button Mouse
- QuickTime

Recommended Materials

- Acting for Animators
- Ed Hooks
- 2017, 4th Edition
- 978-1138669123

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	Objectives	Assignment/Discussions/Quizzes	Assignments Due
Week 1	<ul style="list-style-type: none"> • Orientation Module <ul style="list-style-type: none"> -Instructor Introduction -Course Format • Week 1 Module <ul style="list-style-type: none"> -Bouncing Ball with Tail Animation Assignment Description -Project-1 What's in the Box? -Rig principles 	<p>Discussion: Student Introduction</p> <p>Assignment 1: Bouncing Ball with Tail Animation</p> <p>Project 1 Part A: "What's in the Box?" Story Synopsis and Thumbnails.</p>	<p>Discussion: Student Introduction</p> <p>Assignment 1: Bouncing Ball with Tail Animation</p>
Week 2	<ul style="list-style-type: none"> • Week 2 Module <ul style="list-style-type: none"> -The 7 Acting Principles -Basic Planning Documents -Basic Box Rigging and Character Constraints -Character Pose Angles from Reference -Project 1 Part B Assignment Description 	<p>Project 1 Part B: "What's in the Box?" Reference Footage and Blocking</p> <p>Posing Exercise 1: Full Body Dynamic Poses</p>	<p>Project 1 Part A: "What's in the Box?" Story Synopsis and Thumbnails.</p> <p>Posing Exercise 1: Full Body Dynamic Poses</p>
Week 3	<ul style="list-style-type: none"> • Week 3 Module <ul style="list-style-type: none"> -Advanced Blocking Pass, Constraints, and IK/FK Switching Review -Breakdown Pass Fundamentals -Using Deformers on Rigs -Project 1 Part C Overview -Understanding Facial Posing 	<p>Project 1 Part C: "What's in the Box?" Refined Blocking and Breakdown Passes</p>	<p>Project 1 Part B: "What's in the Box?" Reference Footage and Blocking</p>
Week 4	<ul style="list-style-type: none"> • Week 4 Module <ul style="list-style-type: none"> -Polish Pass -Project 2 Intro -Project 1 Part D Overview 	<p>Project 2 Part A "Realistic Dialogue Animation" Story Synopsis and Thumbnails</p> <p>Project 1 Part D: "What's in the Box?" Polish Pass</p>	<p>Project 1 Part C: "What's in the Box?" Refined Blocking and Breakdown Passes</p> <p>Posing Exercise 2 Facial Poses</p>

Week	Objectives	Assignment/Discussions/Quizzes	Assignments Due
		Posing Exercise 2 Facial Poses	
Week 5	<ul style="list-style-type: none"> Week 5 Module -Emotional Ranges 	Project 2 Part B “Realistic Dialogue Animation” Reference Footage and Blocking	Project 2 Part A “Realistic Dialogue Animation” Story Synopsis and Thumbnails Project 1 Part D: “What’s in the Box?” Polish Pass
Week 6	<ul style="list-style-type: none"> Week 6 Module -Character Motivations and Goals -Understanding Hand and Finger Poses -Project 2 Part C Overview 	Project 2 Part C “Realistic Dialogue Animation” Refined Blocking and Breakdown Passes Posing Exercise 3 Hand and Finger Poses	Project 2 Part B “Realistic Dialogue Animation” Reference Footage and Blocking Posing Exercise 3 Hand and Finger Poses
Week 7	<ul style="list-style-type: none"> Week 7 Module -Studying Live Action Acting -Project 3 Intro -Project 2 Part D Overview 	Project 3 Part A “Cartoony Sound Reaction” Story Synopsis and Thumbnails Project 2 Part D “Realistic Dialogue Animation” Polish Pass	Project 2 Part C “Realistic Dialogue Animation” Refined Blocking and Breakdown Passes
Week 8	<ul style="list-style-type: none"> Week 8 Module -Character Reactions -Cartoony Poses -Project 3 Part B Overview 	Project 3 Part B “Cartoony Sound Reaction” Reference Footage and Blocking Posing Exercise 4 Cartoony Poses	Project 3 Part A “Cartoony Sound Reaction” Story Synopsis and Thumbnails Project 2 Part D “Realistic Dialogue Animation” Polish Pass

Week	Objectives	Assignment/Discussions/Quizzes	Assignments Due
Week 9	<ul style="list-style-type: none"> Week 9 Module <ul style="list-style-type: none"> -Smear Frames and Multi-limb Animation -Using Bendy Controllers -Project 3 Part C Overview 	<p>Project 3 Part C “Cartoony Sound Reaction” Refined Blocking and Breakdown Passes</p>	<p>Project 3 Part B “Cartoony Sound Reaction” Reference Footage and Blocking</p> <p>Posing Exercise 4 Cartoony Poses</p>
Week 10	<ul style="list-style-type: none"> Week 10 Module <ul style="list-style-type: none"> -Cartoony Polish Pass -Project 3 Part D Overview 	<p>Project 3 Part D “Cartoony Sound Reaction” Polish Pass</p> <p>Posing Exercise 5 Putting it All Together</p>	<p>Project 3 Part C “Cartoony Sound Reaction” Refined Blocking and Breakdown Passes</p> <p>Posing Exercise 5 Putting it All Together</p>
Week 11	<ul style="list-style-type: none"> Week 11 Module <ul style="list-style-type: none"> -11 Second Club Competition 	<p>Project 4 Part A “11 Second Club Animation Competition” Story Synopsis and Thumbnails</p>	<p>Project 3 Part D “Cartoony Sound Reaction” Polish Pass</p>
Week 12	<ul style="list-style-type: none"> Week 12 Module <ul style="list-style-type: none"> -Compiling and Editing Reference -Demo Reel Fundamentals -Assessing Areas to Work on in the Future -Project 4 Part B Overview 	<p>Project 4 Part B “11 Second Club Animation Competition” Reference Footage and Blocking</p> <p>Discussion: Demo Reel/Strengths and Weaknesses</p>	<p>Project 4 Part A “11 Second Club Animation Competition” Story Synopsis and Thumbnails</p> <p>Discussion: Demo Reel/Strengths and Weaknesses</p>
Week 13	<ul style="list-style-type: none"> Week 13 Module <ul style="list-style-type: none"> -Animation Layers and Complex Edits -Project 4 Part C Overview 	<p>Project 4 Part C “11 Second Club Animation Competition” Refined Blocking and Breakdown Passes</p>	<p>Project 4 Part B “11 Second Club Animation Competition” Reference Footage and Blocking</p>

Week	Objectives	Assignment/Discussions/Quizzes	Assignments Due
Week 14	<ul style="list-style-type: none"> Week 14 Modules <ul style="list-style-type: none"> -Polishing a Scene -Curating Feedback -Project 4 Part D Overview 	Project 4 Part D “11 Second Club Animation Competition” Polish Pass	Project 4 Part C “11 Second Club Animation Competition” Refined Blocking and Breakdown Passes Project 4 Part D “11 Second Club Animation Competition” Polish Pass
Week 15	<ul style="list-style-type: none"> Week 15 Module <ul style="list-style-type: none"> -Lighting and Rendering Refresher -Rigging, nCloth, and Topology -Final Project Overview 	Final Project “Refine and Render” Discussion: Rigging, nCloth, and Topology	Final Project “Refine and Render” Discussion: Rigging, nCloth, and Topology

Evaluation of Grades

Assignment	Total Points	% of Grade
Participation – Students are expected to actively participate in class discussions and provide timely peer reviews on the work of others on Canvas.	100	10%
Assignment 1 Bouncing Ball with Tail Animation Students will animate the provided rig of a bouncing ball with a tail navigating through an obstacle course.	100	10%
Project 1 What’s in the Box? [4 Parts] - Students will animate a character interacting with and opening a box. Particular attention will be paid to the physicality of the performance and the emotional responses of the character at the beginning, middle, and end of the piece.	100	17.5%
Project 2 Realistic Dialogue [4 Parts] – Students will animate a piece of dialogue with 2 characters utilizing acting principles with focus on realistic movement and emotions.	100	17.5%
Project 3 Cartoonish Reaction [4 Parts] – Students will animate a character reacting to a sound in a cartoonish way. Characters will be utilizing extreme exaggeration and motion with focus on arcs and solid posing.	100	17.5%
Project 4 11 Second Club Animation Competition [4 Parts] – Students will participate in the November 11 Second Club Animation Competition using their provided audio for the month.	100	17.5%

Assignment	Total Points	% of Grade
Final Project – This turn-in will be a fully rendered version of one of the 4 weekly projects with sound effects and title cards.	100	10%

Grading Scale

Letter Grade	% Equivalency	GPA Equivalency
A	94 – 100%	4.0
A-	90 – 93%	3.67
B+	87 – 89%	3.33
B	84 – 86%	3.00
B-	80 – 83%	2.67
C+	77 – 79%	2.33
C	74 – 76%	2.00
C-	70 – 73%	1.67
D+	67 – 69%	1.33
D	64 – 66%	1.00
D-	60 – 63%	.67
E, I, NG, S-U, WF	0 – 59%	0.00

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 is 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 Polices

Attendance Policy, Class Expectations, and Make-Up Policy

We value participation more than mere attendance. 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.

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 the 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 on-going 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.

[DW 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 subject for fictional purpose 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

The [Technology Support Center](#) 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 request please [Submit a Help Ticket](#) or email support@digitalworlds.ufl.edu.

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](#) available 24 hours a day, 7 days a week at 352-392-4357 or helpdesk@ufl.edu.

UF 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. [Click here to get started with the Disability Resource Center](#). 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:

<http://registrar.ufl.edu/catalog0910/policies/regulationferpa.html>

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. [Click here for guidance on how to give feedback in a professional and respectful manner](#). 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 ufl.bluera.com/ufl/. [Summaries of course evaluation results are available to students here](#).

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.](#)

On-Line 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.