

# DIG4306 ADVANCED DIGITAL ANIMATION TECHNIQUES

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**Instructor**

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**Office Location**

NRG

**Office Hours**

Wednesdays 1 – 3 PM

**Course Number**

DIG4306

**Semester/Year**

Spring 2020

**Course Credits**

3 credits

**Course Location**

NRG 0120 (ORC)

**Course Meeting Times**

MON Period 4

WEDS Periods 4/5

**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.

**Pre-Requisites**

DAS major and DIG 3305C with minimum grade of C or written permission of Instructor.

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

- Demonstrate a complete workflow for 3D character animation in the film and game industries
- Articulate the differences between animation pipelines for films and those for video games
- Create a simple dynamic simulation in Maya
- Create a key framed animation with a complex body motion
- Export game-biped animation for video games

**Required Materials**

- Autodesk Maya 2019 (Educational version is free for students) [DOWNLOAD](#)
- Adobe Photoshop CC
- Adobe After Effects CC
- Two-monitor setup for software instruction (ONLINE students only)
- 3 Button Mouse

**Recommended Materials**

- *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
Week 1	Course Objectives Overview of course and objectives Reviews from the introduction to 3D animation course <ul style="list-style-type: none"> <li>● Maya 2019</li> <li>● Recommended reading</li> <li>● Online Help</li> </ul>	Review the class lecture  Be familiar with the Maya interface  Getting ready for the first assignment	
Week 2	Reviews on animation principles <ul style="list-style-type: none"> <li>● Timing</li> <li>● Spacing</li> <li>● Breakdowns</li> <li>● In-betweens</li> </ul>	Assignment 1: Motion Practice	
Week 3	Game Biped Animation Part I <ul style="list-style-type: none"> <li>● Animations in game development</li> <li>● Looping animation</li> </ul>	Assignment 2: Create a looping stationary animation	Assignment 1: Motion Practice
Week 4	Game Biped Animation Part II <ul style="list-style-type: none"> <li>● Actions for interactions</li> </ul>	Assignment 3: Create an action move	Assignment 2: Create a looping stationary animation
Week 5	Reviews on Lip Sync <ul style="list-style-type: none"> <li>● Dialogue Animation</li> <li>● Face controls</li> <li>● Emotion study</li> </ul>	Assignment 4: Short Dialogue	Assignment 3: Create an action move
Week 6	Animation with Paint Effects <ul style="list-style-type: none"> <li>● Organic Plant Animation</li> </ul>	Assignment 5: Time Lapse	Assignment 4: Short Dialogue
Week 7	Liquid simulation Part I <ul style="list-style-type: none"> <li>● Basic fluid effects in Maya</li> <li>● Working with particles</li> </ul>	Assignment 6: Dynamic Simulation Part 1	Assignment 5: Time Lapse

Week	Subject	Assignment/Quizzes	Assignments Due
Week 8	Liquid Simulation Part II <ul style="list-style-type: none"> <li>• Liquid simulation for realistic drinks</li> </ul>	Assignment 7: Dynamic Simulation Part 2	Assignment 6: Dynamic Simulation Part 1
Week 9	Dynamics <ul style="list-style-type: none"> <li>• Maya nCloth</li> <li>• Reviews/Critiques</li> </ul>	Assignment : Final project Treatment	Assignment 7: Dynamic Simulation Part 2
Week 10	Advanced Action Part I <ul style="list-style-type: none"> <li>• Blocking Stage</li> <li>• Draw a planning sheet</li> </ul>	Assignment 8: Advanced Movement	Assignment : Final project Treatment
Week 11	Advanced Action Part II <ul style="list-style-type: none"> <li>• Adding in-betweens</li> <li>• Refining animation</li> </ul>	Assignment 9: Adding breakdowns	Assignment 8: Advanced Movement
Week 12	Advanced Action Part III <ul style="list-style-type: none"> <li>• Rendering and Finalizing</li> <li>• Getting ready for the Final Project</li> <li>• In-class Presentation</li> </ul>	Assignment 10: Finish up and render	Assignment 9: Adding breakdowns
Week 13	Final Project Proposal Review	Assignment 11: Working on the Final Project	Assignment 10: Finish up and render
Week 14	Staging for a short film <ul style="list-style-type: none"> <li>• Stage setup for a final scene</li> <li>• Setup lights</li> </ul>		Assignment 11: Working on the Final Project
Week 15		Critiques for the Final Project Progress	Online Students must submit their progress for the Final Project via Canvas as MP4/MOV format
Week 16	FINAL PROJECTS DUE  Final movie file and project folder must be submitted by Due Date		Final Project Due

## Evaluation of Grades

Assignment	Total Points	% of Grade
<b>Participation</b> – Students are expected to actively participate in class discussions, both in class as well as in class online forums outside class meetings. Students will be assigned a “Dailies Group” to allow them to submit project checkpoints and receive in-class feedback. All students must be active participants in the critique process.	100	10%
<b>Weekly Assignments</b> – Weekly assignments are due the first session of each week unless otherwise noted. The work will be uploaded to CANVAS prior to the beginning of class otherwise the work will be considered late.	100	55%
<b>Final Project</b> – Final Project is the final result of the 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	35%

## 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 Policies

### 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.

Three unexcused absences will result in the drop of one letter grade (i.e. the student will now only be able to obtain a maximum grade of 'B' for the course). Students should contact the Instructor 24 hours before class time (If possible) if they wish to be considered for an excused absence. Upon return to class, students must provide documentation for their absence. Students should communicate with the instructor about their absences and be proactive about their course work.

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: <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 Technology Support**

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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 request please [Submit a Help Ticket](#) or email [support@digitalworlds.ufl.edu](mailto: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](mailto: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 requesting accommodations should first register with the Disability Resource Center (352-392-8565, <https://www.dso.ufl.edu/drc>) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure 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. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.ua.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.bluer.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.ua.ufl.edu/public-results/>.

## Campus Resources

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### **U Matter, We Care:**

If you or a friend is in distress, please contact [umatter@ufl.edu](mailto:umatter@ufl.edu) or 352 392-1575 so that a team member can reach out to the student.

**Counseling and Wellness Center:** <http://www.counseling.ufl.edu/cwc>, and 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

### **Sexual Assault Recovery Services (SARS)**

Student Health Care Center, 392-1161.

**University Police Department** at 392-1111 (or 9-1-1 for emergencies), or <http://www.police.ufl.edu/>.

### **E-learning Technical Support**

352-392-4357 (select option 2) or e-mail to Learning- [learning-support@ufl.edu](mailto:learning-support@ufl.edu)

### **Career Connections Center**

Reitz Union, 392-1601. Career assistance and counseling. <https://career.ufl.edu>

### **Library Support**

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

<http://cms.uflib.ufl.edu/ask>

### **Teaching Center**

Broward Hall, 392-2010 or 392-6420. General study skills and tutoring. <http://teachingcenter.ufl.edu/>

### **Writing Studio**

2215 Turlington Hall, 846-1138. Help brainstorming, formatting, and writing papers.

<http://writing.ufl.edu/writing-studio/>

### **Student Complaints Campus**

<http://regulations.ufl.edu/wp-content/uploads/2012/09/1.0063.pdf>

### **Online Students Complaints**

<http://www.distance.ufl.edu/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.*