3D DIGITAL ANIMATION TECHNIQUES (3DAT)

COURSE NUMBER: DIG3305C	CREDIT HOURS: 3.0
SEMESTER/YEAR: FALL 2016	CLASS LOCATION: OORC, NORMAN (NRG) 0120
	CLASS MEETING TIME(S): T 10:40-11:30 / R 10:40-12:35
INSTRUCTOR: Seunghyuk Jang (Hyuk) Aeron Karlson	**OFFICE LOCATION/HOURS:** Thursday 5:00 – 6:00 pm Office 116
	CONTACT EMAIL: Contact via Canvas Inbox
CONTACT PHONE: **(352) 294-2000**	**COURSE WEBSITE:** **DIGITALWORLDS.UFL.EDU/PROGRAMS/BA-IN-DAS/**

COURSE DESCRIPTION
Practical and design techniques for the implementation of three-dimensional digital animations. Basic principles of 3D vector transformations, virtual camera calibration, modeling and 3D rendering. Work on interaction event handling, graphical interface design and key-framing using both industry-standard and open-source tools to perform a frame-by-frame study of traditional and contemporary motion picture animation.

PREREQUISITE KNOWLEDGE AND SKILLS: DAS major and DIG 3313C with minimum grade of C or instructor permission.

PURPOSE OF COURSE
To familiarize students with the methodology and software used in creating 3D digital art. Students will gain practical experience through modeling and texturing simple geometry, animating using key frames, and finalizing projects through lighting and rendering. This course is intended to introduce students to 3D workflow and practices used in the film industry.

COURSE GOALS AND/OR OBJECTIVES: By the end of this course, students will be able to:
1. Understand basic transformations as vector algebra, calibrate virtual cameras, render animations.
2. Design 3D graphical User Interfaces.
3. Apply materials that control 3D surface appearance.
4. Effectively create original polygon objects, simple characters and digital environments using Maya.
5. Create/manage key frame animation for films and for video games.

COURSE SCHEDULE:
This course incorporates lecture, discussion, group learning projects and student-created presentations. Individual assignments will be explained in detail as the course progresses.

The FINAL EXAM TIME SCHEDULED FOR THIS COURSE will be announced in advance of each semester by the University of Florida Registrar's Office at http://www.registrar.ufl.edu/soc/

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Week	Class Topics + Objectives	Assignments + Readings
1	Course Objectives Overview of course and objectives • History of 3D Animation • Foundational terms Introduction to 3D Animation • Maya 2016 GUI • Primitive objects • Basic 3D transforms • Basic Animation "key" • *Connection to After Effects	Review the class lecture Be familiar with the Maya interface Assign 1: Primitives in 3D
2	Review: Basics of Maya Further introduction to Maya GUI • Polygons vs NURB • Navigating views • Polygon components • Organizing object (Outline) • Soft Selection	Assign 2: Primitive Landscape DUE Assign 1: Primitives in 3D
3	Review: Basics of Maya Part II Modeling in Maya • Smooth Mesh Preview • Parenting in outline • Image Plane • More tools for mesh	Assign 3: Modeling with image plane DUE Assign 2: Primitive Landscape
4	Review: Modeling in Maya Materials and Texturing I • Materials overview • Unwrapping the UV • UV Tools	Assign 4: Texturing and UV PART I DUE Assign 3: Modeling with image plane
5	Review: Unwrapping UVs Materials and Texturing II • Exporting UV • Painting in Photoshop • More UV Tools • Cut & Sew the UV edges	Assign 5: Texturing and UV PART II DUE Assign 4: Texturing and UV PART I
6	Review: Materials and Texturing Setting up a render scene in Maya • 3 Point Lighting • Linear Workflow • Color Management	Assign 6: Lighting and Rendering

	• Apply a bump map • Mental Ray render setting for realistic render. • Final Gather / Global Illumination	DUE Assign 5: Texturing and UV PART II
7	Review: Lighting and Rendering Motion Path in Maya • Maya to AE • NURBS Curves • Non-Linear Deformers • Apply Motion Path • Graph Editor in Maya	Assign 7: Solar System Animation. DUE Assign 6: Lighting and Rendering
8	Review: Animation in Maya Part II 3D Bouncing Ball in Maya • Review the 2D bouncing ball • Major principles in bouncing ball • 3D Environment setup	Assign 8: Bouncing Ball in 3D Final Project Proposal DUE Assign 7: Solar System Animation
9	Review: Bouncing Ball In-class Critique Character Animation Part I • Pre-rigged character overview • Norman/Morpheus Rig • Viewport 2.0	Assign 9: Character Walk Cycle (Legs) DUE Assign 8: Bouncing Ball in 3D Final Project Proposal
10	Review: Character Walk Cycle(Legs) Character Animation in Maya Part II • Unique walk cycle • Tweaking graph editor	Assign 10: Characteristic Walk Cycle DUE Assignment 9: Character Walk Cycle (Leg)
11	Review: Characteristic Walk Cycle Character Animation in Maya Part III • Constraint • Using Locator	Assign 11: Final Project Progress (Part I) DUE Assign 10: Characteristic Walk Cycle
12	Review: Character Animation in Maya Part II • Lip Sync in Maya	Assign 12: Lip Sync Animation DUE Assign11: Final Project Progress (Part I)

13	Review: Lip Sync Animation • Outdoor Lighting • Work on Final project • Rendering Image sequences	Assign 13: Final Project Progress (Part II) DUE Assign 12: Lip Sync Animation
14	Review: Final Project Progress • Camera Animation • Work on Final project • Final Critiques in Class	FINAL PROJECT DUE Assign 13: Final Project Progress (Part II)
15	FINAL PROJECTS DUE Final movie file and project folder must be submitted by Due	DUE : FINAL PROJECT

REQUIRED TEXTBOOKS AND SOFTWARE:

- Williams, Richard. *The Animator's Survival Kit--Revised Edition: A Manual of Methods, Principles and Formulas for Classical, Computer, Games, Stop Motion and Internet*. Faber & Faber, 2012.

Williams, Richard. *The Animator's Survival Kit App:*
https://itunes.apple.com/us/app/the-animators-survival-kit/id627438690?mt=8

*UF Bookstore: http://www.bkstr.com/floridastore/home

- Autodesk Maya 2016 (Educational version is free for students) DOWNLOAD
- Adobe Photoshop CS6/CC
- Adobe After Effects CS6/CC
- Two-monitor setup for software instruction (ONLINE students only)
- Edited lectures will be available for your viewing within 24-48 hours after the end of the each of class meetings.

RECOMMENDED MATERIALS:

- Mastering Autodesk Maya 2015 : Autodesk Official Press by Todd Palamar

ISBN-13: 978-1118862513 / ISBN-10: 1118862511 Edition: 1st
Also View in iTunes
https://itunes.apple.com/us/book/mastering-autodesk-maya-2015/id899976591?mt=11

- Lynda.com, Online tutorial *(FREE access for UF students)*

MATERIALS AND SUPPLIES FEES:

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Material and supply fees are assessed for certain courses to offset the cost of materials or supply items consumed in the course of instruction. A list of approved courses and fees is published in the Schedule of Courses each semester. (UF-3.0374 Regulations of the University of Florida)

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 M&S for this class is $54.26

EVALUATION OF GRADES

Assignment	Percentage 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.	10%
Weekly Assignments and Group Projects – Weekly assignments and group projects are due the Tuesday 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.	55%
Final Project – 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.	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		0.00

More information on grades and grading policies is here:
https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

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COURSE POLICIES:

PARTICIPATION / ATTENDANCE POLICY
We value participation more than mere attendance. Each 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. Real Time [RT] interaction with your peers and the Instructor will empower you to greater achievement.

MAKE-UP POLICY
Presentations may not be presented late. Documented emergencies or medical situations may be the only accepted reasons for an excused absence on the day of a presentation.

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.

COURSE COMMUNICATIONS
Students can communicate directly with the Instructor regarding the course material through the course management system (CANVAS).

UF POLICIES:

UNIVERSITY HONESTY POLICY
UF students are bound by The Honor Pledge that 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-conducthonor-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

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Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, 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

VIDEO LECTURE CAPTURE
High-quality video lecture capture of this course is available only for enrolled students. These video captures are edited and posted within 24-48 hours of the class meeting for the benefit of the Your Own Time [YOT] students and to offer the potential for review by on-campus and Real Time [RT] on-line students. For the on-campus and RT students, watching lectures in lieu of attending and participating in class is NOT acceptable.

Your Instructor will provide you with this semester's login information during the first week of class. It is not permissible to share or distribute video login information to anyone other than officially enrolled students of this course. Lecture videos can be found at https://vimeo.com/digitalworlds.

ONLINE COURSE EVALUATIONS
Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at https://evaluations.ufl.edu. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at https://evaluations.ufl.edu/results/.

CAMPUS RESOURCES

HEALTH AND WELLNESS
U Matter, We Care
If you or a friend is in distress, please contact 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/Default.aspx, 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, 392-1111 (or 9-1-1 for emergencies). http://www.police.ufl.edu/

ACADEMIC RESOURCES

E-learning technical support, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu. https://lss.at.ufl.edu/help.shtml.

Career Resource Center, Reitz Union, 392-1601. Career assistance and counseling. http://www.crc.ufl.edu/

Library Support, http://cms.uflib.ufl.edu/ask. Various ways to receive assistance with respect to using the libraries or finding resources.

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

Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers. http://writing.ufl.edu/writing-studio/

Student Complaints Campus: https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf

On-Line 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.