ATEC 3328 Rigging I

Eric Farrar
Term: Fall 2016
Meeting Time: Th 1:00pm – 3:45pm
Room: ATC 3.910

Contact Info

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Office Hours: Mondays 12:00pm – 2:00pm (and by appointment)

Course Description:
This course is an introduction to the concepts, tools and techniques used in 3D animation for setting up clean and efficient 3D rigs that are easily able to be animated. Topics will include hierarchical structures, joints and bones, constraints, creating useful and predictable deformations and setting up simple and intuitive control structures for use in animation. Introductory animation techniques will also be covered.

Course Requirements:
Students must have completed the ATEC 2326.

Course Structure:
Class sessions will consist of lectures, demonstrations, critiques, and class discussions focusing on assignments. The class format will take on a variety of styles as the subject dictates, and examples will be presented for discussion in lectures, videos and demonstrations. Attendance is required and students are expected to be participating and working in each and every class. Students are encouraged to collaborate in solving difficult technical and conceptual problems that are a part of each project.

Course Objectives:
Through the successful completion of this course students will:

- Establish an understanding of the basic principles of creating moveable 3D computer-generated forms
- Develop a new set of vocabulary of terms and concepts related to the creation and manipulation of computer graphics
- Develop specific character setup animation skills for both collaborative and independent work in animation
- Establish a methodology for analyzing and problem solving as it relates to 3D computer-generated forms
- Continue to develop the ability to offer informed and constructive, technical and aesthetic critiques of the work of peers and of self
- Develop a practical understanding of the specific computers and software used in the course

Textbooks:
There is no required text for this course. There are a couple of recommended books that go into the subject of character rigging for those interested in additional reading material:

Inspired 3D Character Setup by Michael Ford & Alan Lehman, ISBN 1-931841-51-9
An Essential Introduction to Maya Character Rigging by Cheryl Cabrera, ISBN 978-0-240-52082-7

Both books are available on Amazon.com

The primary learning resources for this course will be video material available at Vimeo.com. Links will be provided for each assignment.

Student Materials:
Pen/Pencil and Notebook/Sketchbook
Archive materials (flash drive, etc.)
Headphones or ear buds with 1/8th in stereo plug

Course Materials:
Assignments and all other electronic documents related to the course will be posted at regular periods on UTDallas' Exchange service located at **Box.com**. You should check regularly for updates to assignments and homework exercise files. The eLearning website will be used for special class announcements and posting of grades only. All student assignments, including homework, should be placed in the class dropbox at Box.com.

Grading Policy:
Students must demonstrate satisfactory achievement of course objectives through fulfillment of course assignments and by contributing to class discussions and critiques. Course assignments will require students to use software and equipment available at the ATEC computer labs. Course evaluation will be based upon the following.

Points Required for Grade:

A	93 - 100
A-	90 - 92
B+	87 - 89
B	83 - 86
B-	80 - 82
C+	77 - 79
C	73 - 76
C-	70 - 72
D+	67 - 69
D	63 - 66
D-	60 - 62
F	Below 60 is failing

Assignment Point Values:

- Assignments 1 – 4: 10 points each
- Assignment 5: 25 points
- Final Project: 35 points
- Total: 100 points

Class Attendance: All students are required to be on time and in attendance for each and every class. Two (2) absences are allowed as personal or sick leave for this semester. Students will receive one letter grade reduction for three (3) absences. Students who accumulate four (4) absences or more should withdrawal from the course due to four (4) absences resulting in a failing grade ("F ") for the course.

Punctuality: It is important to attend class on time. Persistent and reoccurring tardiness is disrespectful to the instructor and to your peers. Arriving to class more than 15 minutes late twice will be counted as one (1) absence. Every additional late arrival will result in one (1) absence. Students may leave early with instructor's permission; however, such occurrences should be very infrequent.

Late Assignments: Adherence to deadlines is expected. It is the individual student's responsibility to keep track of the goals and deadlines and to present the work to the class and instructor on the specified dates. For most assignments, late submissions will have one letter grade deducted *for each day late*. No late assignments will be accepted for the Final Project. Students will be expected to make a formal presentation of their progress on dates specified by the course timeline.

Class Participation and Classroom Citizenship:

- Cell phones and pagers must be powered off during formal class hours.
- Do not talk when others (the instructor, guests, and fellow students) are talking.
- Students will not use the computers for personal reasons (e.g, check personal email, surf web) during class time.
- Participate in critique sessions and class discussions. You can learn a great deal from critique on other students' work as well on yours.

While the instructor or a guest is lecturing or demonstrating, you should be listening to the lecture or observing the demonstration, *AND TAKING NOTES*, instead of emailing or web surfing. Not paying attention to lectures or demonstrations will affect your grade directly or indirectly.

UT Dallas Syllabus Policies and Procedures

The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus.

Please go to http://go.utdallas.edu/syllabus-policies for these policies.

Comet Creed

This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:

"As a Comet, I pledge honesty, integrity, and service in all that I do."

The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.

COURSE SCHEDULE
– this schedule is subject to change!

To access all video materials for class:
Password: PolyVert

Week 1 (Aug. 25): Introductions, Maya review, Simple Hierarchical Structures, Basic Animation

- Assignment 1, Ball and Pendulum
  - Watch and work through all videos:
  Week 1 - https://vimeo.com/album/4102438
  Assignment 1 - https://vimeo.com/album/4102508

Week 2 (Sep. 1): Constraints, Indirect Animation, Non-linear Deformers, Motion Path Animation

- **Assignment 1, Ball and Pendulum Due**
- Assignment 2, Constraint Exercises
  - Watch and work through all videos:
  Week 2 - https://vimeo.com/album/4107738
  Assignment 2 - https://vimeo.com/album/4107741

Week 3 (Sep. 8): Intro to Character Animation

- **Assignment 2, Constraint Examples Due**
- Assignment 3, Walk Cycle Animation
  - Watch and work through all videos:
  Week 3 - https://vimeo.com/album/4107740

Week 4 (Sep. 15): Review Indirect Animation Techniques

- Assignment 3, (cont.) Walk Cycles WIP
  - Watch and work through all videos:
  Week 4 - https://vimeo.com/album/4107803

Week 5 (Sep. 22): Intro to Joints, Control Structures, Kinematics

- **Assignment 3, Walk Cycle Animation Due**
- Assignment 4, Juggling Animation
  - Watch and work through all videos:
  Week 5 - https://vimeo.com/album/4107813

Week 6 (Sep. 29): Review IK Setup, Spline IK Setup

- Assignment 4, (cont.) Juggling WIP

Week 7 (Oct. 6): Custom Channels, Reverse Foot Setup, Cleaning Up Channels

- **Assignment 4, Juggling Animation Due**
- Assignment 5, Biped Rig
  - Watch and work through all videos:
  Week 7 - https://vimeo.com/album/4109315

Week 8 (Oct. 13): Intro to Binding, Component Editor, Weight Painting Tool

- Assignment 5, Biped Rig Continued
  - Watch and work through all videos:
  Week 8 - https://vimeo.com/album/4109316

Week 9 (Oct. 20): IK/FK Switching, Simple Facial Controls, BlendShapes

- Assignment 5, Biped Rig Continued
  - Watch and work through all videos:
  Week 9 - https://vimeo.com/album/4109302

Week 10 (Oct. 27): Assignment 5 Presentations, Planning Your Final Character Rig

- **Assignment 5, Biped Rig Due**
- Assignment 6, (a) 2nd Bi-ped Character Rig and (b) Mechanical Device
  - videos as announced in class

Week 11 (Nov. 3): Advanced Deformations, GUI control systems

- Assignment 6, (cont.) 2nd Bi-ped Character Rig
- videos as announced in class

Week 12 (Nov. 10): Final Project WIP

- Assignment 6, (cont.) 2nd Bi-ped Character Rig

Week 13 (Nov. 17): Final Project WIP

- **Assignment 6a, 2nd Bi-ped Character Rig Due**

Week 14 (Nov. 17): Fall Break – No Classes

Week 15 (Nov. 24): Final Project WIP

- Assignment 6b, (cont.) Mechanical Device

Week 16 (Dec. 1): Final Project WIP

- Assignment 6b, (cont.) Revised Character Rig interacting with Mechanical Device

Finals Week (Date TBA): Final Project Presentations