ANI-179 Special Topics - Character Rigging

Course Information

Instructor Contact Information

Instructor	Eric Mead
Email	Canvas email
Office Hours	By appointment (generally after class ~ half hour)

Course Modality, Meeting Time & Location

Modality/Delivery	☐ On-campus	☐ Hybrid	☐ Online, asynchronous	✓ **Online, synchronous**
Meeting Day & Time	Mon / Wed 6:00pm – 8:50pm			
Classroom OR Virtual Platform	VIRTUAL - Zoom link on Homepage (Canvas)			

Course Description

Introduction to animation software modules with emphasis on character rigging techniques: joints, surface binding, articulation, forward and inverse kinematics (FK and IK), and hierarchical node structures. Students apply these techniques to develop 3D characters. Includes a summary of the animation software module, graph editor, setting key frames, and tangents for basic animation.

Course Credits & Prerequisites

Credits	
Prerequisites	Modeling and Animation preferred

Course Learning Outcomes

Upon completion of this course, students will be able to:

CLO1 Students create animate-able rigs for simple assets that exhibit constraints, expressions, render nodes, set driven keys.
CLO2 Students create rigs that illustrate efficient usage of joints and setting aspects such as proper placement, correct orientation and rotation order.
CLO3 Students determine animators' usage needs from a rig to accommodate animation workflows.

Program Learning Outcomes

Please visit the Program Learning Outcomes page to learn more about them.

Academic Policies and Student Resources

- Academic policies and links to various student resources can be found in Canvas.

University Grading Scale

Letter Grade	Grade Points/Credit
A+, A	4.0
A-	3.7
B+	3.3
B	3.0
B-	2.7
C+	2.3
C	2.0
C-	1.7
D+	1.3
D	1.0
D-	0.7
F	0.0
WU, NC, CR, I, IC, AU, W, WB , RP	0.0

Assignment Group Weighting

Assignment Group	% of Grade (Weight)
Assignments	50%
Exercises	10%
Midterm	10%
Final Project	20%
Participation	10%
Total:	100%

Course Protocol and Grading Policies

Course Protocol

1. Attendance is required at all class meetings online. Your attendance will affect your participation since you will be unable to participate if you are not in class.

2. Students are expected to participate actively asking and answering relevant questions in class. Students are also encouraged to help their classmates as a part of participation. These behaviors will be noted and incorporated into the 10% participation component of their grade at the discretion of the teacher.

3. Mobile devices may not be used during class for anything except (potentially) connecting to the class meeting itself. Any emergency usage of a mobile device must be taken offline. Computers may be used only for class related work.

4. **Cameras and microphones must remain ON in the meeting during class time.**

   You will not be counted as in attendance if you are not visible on your camera in the meeting. You must make certain you are in a quiet environment in which you can focus on the class during class time. Excessive distractions or turning off your camera will result in you being asked to leave the meetings.

5. You must know how to operate the “push-to-talk” functions of the meeting software (in the event muting is required) and how to share your screen for presenting your work to the instructor and the class during meetings. Familiarize yourself with the meeting software thoroughly BEFORE the course begins.

Late-Homework / Assignment Policy

1. This course does not allow late homework/assignments.

2. **Late / missed assignments will not be accepted for credit and will receive ZERO points.**

   Late / missed assignments can be turned in to receive feedback (but will receive zero points).

3. "Makeup" Extra Credit is offered to make up for late/missed assignments, and it must be arranged per missed assignment with the instructor. The student will need to propose an assignment, and, upon instructor approval, complete it within one week to receive any credit. Makeup Extra Credit assignments will generally be worth 50% of the associated missed/late assignment –meaning that you will only be able to make up half the total credit missed. Additionally, there are generally "Open Extra Credit" projects which can be considered Makeup Extra Credit for makeup purposes, but they will only count for makeup purposes in that case. That is, open extra credit opportunities cannot count for both open extra credit and makeup extra credit.

4. Midterm and Final projects/assignments will NOT be accepted late for credit, and there will be no Makeup Extra Credit allowed for them. Additionally, no assignments will be accepted for credit after the last day of classes (as per the academic calendar) in the semester.

5. **RESUBMISSION POLICY:**

   Assignments may be re-submitted with corrections/completions, provided they were initially turned in by the deadline. These re-submissions will be re-graded, and your overall grade for the assignment will be computed as follows:

   ([1st attempt] * 0.2) + ([2nd attempt] * 0.8)
   OR
   The 1st attempt grade if that is higher.

   For example: 1st attempt = 70%, 2nd attempt = 100%
   ----> (0.7 * 0 .2) + (1.00 * 0.8) = 0.94 assignment grade

This policy applies to all homework/assignments submitted except in those cases of a medical or bereavement circumstances. These situations need to be documented and communicated in writing to a Student Life Advisor. In the case of medical or bereavement, the student is responsible for contacting their faculty to arrange new deadlines for homework and assignments.

Course Supplies and Materials

Textbooks

A camera and a microphone for use in the meeting is **REQUIRED**. They must be turned on and used throughout the course.

There are no required textbooks for this course.

An ability to access the internet and connect to the class meeting and Canvas is required, and you must know how to navigate them both well.

(Zoom) https://zoom.us/

(Canvas) https://sjsu.instructure.com/

Required Software

Any version of Autodesk Maya is required

(free education licenses are available: https://knowledge.autodesk.com/customer-service/accountmanagement/education-program/create-education-account)

The college usually uses the most recent version in the on-campus and virtual labs. However, any version is acceptable for this course. Please let the instructor know if you are using the MOST recent versions (occasionally there are mid-year updates available that will not be installed yet on Campus, and the instructor does not follow updates generally).

Software required for coursework may be provided in on-campus/virtual computer labs. Students are advised that many applications are available for free or at a reduced cost for educational use. Students may also be able to access campus computer labs. Please check with the department and/or IT for access.

Suggested Resources (not required):

www.3dtotal.com and similar websites have an enormous amount of free tutorials and information

http://www.jahirulamin.com/introduction-to-rigging-in-maya contains free rigging tutorials from Jahirul Amin

The Art of Rigging (A Definitive Guide to Character Technical Direction with Alias Maya, Volume 1)

Excellent book, but not necessary at all for this course. However, very thorough and timeless, and there are three volumes which take rigging to a very sophisticated level.

ISBN-13: 978-0976800309

ISBN-10: 0976800306

(Series: The Art of Rigging, Volume 1-3 Author Kiaran Ritchie, Jake Callery, and Karim Biri)

Course Schedule – tentative - topics may not be covered in exact week below

Week	Topics	Assignments
1	What/Why/When of Rigging. Basic concepts, practices and terms. Basic tools.	Pizza Box type rig. Final Project Description. Extra Credit Description. Advanced Work Description.
2	Skeletons, Joints, and Controls. Orientation, placement. Related tools and best practices.	Skeleton Building.
3	Forward Kinematics (FK). Self-grouped Controls. Skinning / Weight Painting.	FK Rigging.
4	Inverse Kinematics (IK) Arm Setup. Rotate Plane (RP) IK. IK/FK Switches.	IK Rigging.
5	Hand setup. Set Driven Keys.	Hands.
6	Feet setup. Groups and Nodes.	Feet.
7	Midterm TEST. Putting It All Together.	MIDTERM. Putting It All Together.
8	Spines. Spline IK.	Spine.
9	Faces. Blend Shapes. Clusters, Joints, etc.	Face – Part One.
10	Faces. Surface Controls. Deformers. Eye Gaze and Pistons.	Face – Part Two.
11	Corrective Blend Shapes.	Corrective Blendshapes.
12	Advanced Topics and Final Project.	TBA.
13	Advanced Topics and Final Project.	TBA.
14	Advanced Topics and Final Project.	TBA.
15	Final Project Presentations.	Final Presentation.