

ARTG 132

3D Character Rigging and Animation for Video Games

Quarter: Summer 2022 Online

Units: 5

Instructor: Ed Gregor

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Syllabus

Course Description

This is a hands-on studio course, intended to give students an in-depth understanding of the techniques of 3D Character Rigging and Animation for Video Games. Through this course, students will understand and develop the skills necessary to be an effective technical artist and animator with a focus on industry standard methods for animating characters to be implemented into a game engine. The course will provide students with video and written lectures, video demonstrations and tutorials, assignments and discussion boards aimed at giving them historical understanding of game animation, the evolution of these techniques, hands-on work to become proficient as a Video Game Digital Artist, as well as give them the ability to communicate online with other students, the Teaching Assistant and the instructor to answer questions and further their knowledge.

This syllabus is a living document. The course subject is final, although the instructor may adjust content based on student feedback, advances in techniques, as well as changes in updates to software capabilities. The instructor wants to ensure students are getting the most accurate and current material.

Course Learning Objectives

- Skills and techniques to rig and animate 3D characters
- Production of a fully rigged and animated 3D character, ready to implement in any game engine and add to your portfolio
- Proficiency and competence within a 3D software package
- Understanding of the Game Rigging and Animation pipeline

Weekly Class Sessions will include

- Video and written lectures providing concept overviews, techniques and relevant links to further information on the subject.
- Video of Instructor-led technical demonstrations and step by step instructions to guide students through learning the software and techniques required to complete assignments.
- Weekly assignments to develop the student's understanding and mastery of demonstrated techniques.
- Discussion board access for peer critiques and access to the instructor

Course Requirements

- Commitment, motivation and hard work
- Completion of all weekly assignments, midterm and final on the scheduled due dates
- Spend a minimum of 30 hours per week on written and video lectures and demonstrations, as well as reference material and studio assignments
- Participation in Discussion board peer critiques

Materials Required

- Autodesk Maya 2019 (or higher) software installed on a computer that meets the minimum requirement
(<https://knowledge.autodesk.com/support/maya/learn-explore/caas/sfdcarticles/sfdcarticles/System-requirements-for-Autodesk-Maya-2018.html>)
- Three-button mouse and keyboard

Materials Suggested

- Drawing tablet such as wacom or huion with pressure sensitive stylus

Materials Provided

- A 3D character model ready to be rigged. (you may provide your own model if you wish, but it should be a single mesh object and any problems related to it would be your responsibility)

Assignments

Weekly Assignments:

Based on lectures and video demonstrations, students will be required to turn in weekly assignments reflecting their knowledge and proficiency in the topics and techniques taught that week.

Midterm and Final:

There will be no discreet Midterm or Final. Your grade will be a culmination of the Summer Session long project graded as weekly assignments and participation.

Submission Policies and Late or Incomplete Assignments

All weekly assignments must be turned in by their due date as described per assignment. Submission format will be either screenshots or video screen capture as indicated in the assignment instructions and must be submitted electronically through the Canvas system.

Late submissions will only be allowed if the student submits proof of illness or family emergency.

Assignment Rubric includes 1 point for turning in your assignment by the due date. Those assignments that are not completed by the due date, do not receive the 1 point. There are no other accruing penalties for late assignments.

Participation

Students are expected to participate in the online Discussion Board (Discord) by posting work in progress and providing helpful critique to other students, as well as communicating with the TA and instructor, to seek answers to questions and seek clarity of techniques or subjects.

Grading

Weekly Assignments are graded on a point system based on completing the specifics of the assignment Rubric as well as effort.

Grade:	Range:	
A+	100 %	to 99.99%
A	< 99.99 %	to 95.0%
A-	< 95.0 %	to 90.0%
B+	< 90.0 %	to 87.0%
B	< 87.0 %	to 83.0%
B-	< 83.0 %	to 80.0%
C+	< 80.0 %	to 77.0%
C	< 77.0 %	to 73.0%
C-	< 73.0 %	to 70.0%
D+	< 70.0 %	to 67.0%
D	< 67.0 %	to 63.0%
D-	< 63.0 %	to 60.0%
F	< 60.0 %	to 0.0%

Final Grade

The final grade for the course will be determined by the percentage of the total Assignment points possible, including participation.

Schedule

Week 1

Lecture: Syllabus Review. Introduction to Rigging and Weighting concepts

Tutorial: Introduction to Maya interface

Tutorial: Maya Project Setup with 3D Model

Assignment: Maya project setup with 3D model

Week 2

Lecture: Deformation Joints

Tutorial: Deformation Joint Placement

Assignment: Deformer Joint Placement

Week 3

Lecture: Skin Binding and Weight Painting

Tutorial: Skin Binding and Weight Painting

Assignment: Skin Binding and Weight Painting

Week 4

Lecture: Arm Controls

Tutorial: FK Arm controls, IK Arm controls, IK FK Blending and Finger controls

Assignment: Arm Controls

Week 5

Lecture: Mirror Arm Controls, Creating Spine and Leg Controls

Tutorial: Mirror Arm Controls, Creating Spine and Leg Controls

Assignment: Right Arm, Spine and Left Leg Controls

Week 6

Lecture: Reverse Foot Controller, Mirror Leg Controls, Rig Organization

Tutorial: Setting keyframes, adjusting timing, manipulating curves in the graph editor and creating loops. How to make an Idle Cycle animation.

Assignment: Create an Idle animation

Week 7

Lecture: Introduction to Maya and Creating an Idle Animation

Tutorial: How to make an Idle animation.

Assignment: Create an Idle Animation

Week 8

Tutorial: How to make a Run Cycle animation

Assignment: Create a Run Cycle

Week 9

Lecture: Character Animation Move List

Tutorial: Sword Attack Example

Assignment: Create your own Animation

Week 10:

Lecture: Animation Layers and Class Review

Tutorial: How to use Animation Layers to augment keyframe animation

Assignment: Extra Credit: Use Animation Layers to adjust a previous animation

Important Summer Session Remote Information:

Summer is unique. **You will not be dropped for non-attendance or non-payment.** You must drop yourself. Dropping before the deadline results in a full-tuition reversal/refund. Withdraw posts a W for the grade and full tuition is charged (no refund).

For all dates and deadlines, including 'change of grade option' (P/NP) and grades due, here is the summer academic calendar: <https://summer.ucsc.edu/studentlife/index.html>

For questions about dropping, requesting a W grade for a course, or withdrawing from the summer quarter, email summer@ucsc.edu.

DRC Remote Accommodations:

The Disability Resources Center reduces barriers to inclusion and full participation for students with disabilities by providing support to individually determine reasonable academic accommodations. Operations continue via remote appointments. If you have questions or concerns about exam accommodations or any other disability-related matter, email the DRC Schedulers at drc@ucsc.edu for an appointment.

Small Group Tutoring

Small Group Tutoring (SGT) supports students academically to advance educational equity by designing inclusive learning environments outside of the classroom. In SGT, you can expect the Tutor to facilitate cooperative group activities designed to have students work together on the course content and develop study skills for the course. SGT is offered at least three times each week for the entire quarter. The Tutor is an undergraduate student who took the class, did well, and is trained to facilitate group sessions to focus on students' needs to succeed in the course. SGT is open to all students enrolled in the class and they must sign up on our online system: TutorTrac. When students sign up for SGT, they are committing to attend every week. For Summer 2020, students can begin signing up for tutoring on **Monday, June 22rd** and tutoring will begin **Wednesday, June 24th**. Students only have to sign up once for tutoring and their appointments will repeat weekly. Sign-ups will close on **Friday, August 14th** for all Summer Session Sign-Ups. This means that after **August 14th**, no new students can sign up for tutoring.

Want SGT to be successful for you? Bring your books, lecture notes, questions, and be open to working collaboratively with your peers. You can sign up using this link: <https://ucsc.go-redrock.com/tracweb40/NoAccess.4sp?errText=insufficient%20credentials%20to%20view%20content>

You can also find the link on our website: <https://lss.ucsc.edu/index.html>

ACADEMIC INTEGRITY

All members of the UCSC community benefit from an environment of trust, honesty, fairness, respect, and responsibility. You are expected to present your own work and acknowledge the work of others in order to preserve the integrity of scholarship.

Academic integrity includes:

- Following exam rules
- Using only permitted materials during an exam
- Viewing exam materials only when permitted by your instructor
- Keeping what you know about an exam to yourself
- Incorporating proper citation of all sources of information
- Submitting your own original work

Academic misconduct includes, but is not limited to, the following:

- Disclosing exam content during or after you have taken an exam
- Accessing exam materials without permission
- Copying/purchasing any material from another student, or from another source, that is submitted for grading as your own
- Plagiarism, including use of Internet material without proper citation
- Using cell phones or other electronics to obtain outside information during an exam without explicit permission from the instructor
- Submitting your own work in one class that was completed for another class (self-plagiarism) without prior permission from the instructor.
- Violations of the Academic Integrity policy can result in dismissal from the university and a permanent notation on a student's transcript. For the full policy and disciplinary procedures on academic dishonesty, students and instructors should refer to the [Academic Misconduct page](#) at the [Division of Undergraduate Education](#).

ACCESSIBILITY

UC Santa Cruz is committed to creating an academic environment that supports its diverse student body. If you are a student with a disability who requires accommodations to achieve equal access in this course, please affiliate with the DRC. I encourage all students to benefit from learning more about DRC services to contact DRC by phone at 831-459-2089 or by email at drc@ucsc.edu. For students already affiliated, make sure that you have requested Academic Access Letters, where you intend to use accommodations. You can also request to meet privately with me during my office hours or by appointment, as soon as possible. I would like us to discuss how we can implement your accommodations in this course to ensure your access and full engagement in this course.

- **DRC online:** <https://drc.ucsc.edu>
- **DRC Frequently Asked Questions for prospective and current DRC Students, faculty and Staff, and parents:** <https://drc.ucsc.edu/resources-and-forms/faqs.html>
- **Frequently Asked Questions regarding Service and Support animals:** <https://drc.ucsc.edu/services-and-accommodations/sa-overview/other-accommodations/service-animals-faqs.html>
- **UC Santa Cruz Service/Support Animal Policy:** <https://policy.ucsc.edu/policies/student-affairs/dss-0003.html>

RELIGIOUS ACCOMMODATION

UC Santa Cruz welcomes diversity of religious beliefs and practices, recognizing the contributions differing experiences and viewpoints can bring to the community. There may be times when an academic requirement

conflicts with religious observances and practices. If that happens, students may request the reasonable accommodation for religious practices. The instructor will review the situation in an effort to provide a reasonable accommodation without penalty. You should first discuss the conflict and your requested accommodation with your instructor early in the term. You or your instructor may also seek assistance from the [Dean of Students office](#).

ALL-GENDER RESTROOMS

UC Santa Cruz is committed to the well-being of all students and cares about all students feeling safe and welcome, regardless of their gender identity, expression, and/or embodiment. The [Lionel Cantú Queer Center](#) has worked with students and campus staff to create more safe and accessible restrooms for transgender and genderqueer students, staff, faculty, alumni, and UCSC visitors. A [complete list of all-gender restrooms](#) on campus was compiled and is maintained by the Cantú Queer Center.

UC POLICY ON SEXUAL VIOLENCE AND SEXUAL HARASSMENT / RESOURCES

TITLE IX/CARE ADVISORY

UC Santa Cruz is committed to providing a safe learning environment that is free of all forms of gender discrimination and sexual harassment, which are explicitly prohibited under Title IX. If you have experienced any form of sexual harassment, sexual assault, domestic violence, dating violence, or stalking, know that you are not alone. The Title IX Office, the Campus Advocacy, Resources & Education (CARE) office, and Counseling & Psychological Services (CAPS) are all resources that you can rely on for support.

Please be aware that if you tell me about a situation involving Title IX misconduct, I am required to share this information with the Title IX Coordinator. This reporting responsibility also applies to course TAs and tutors (as well to all UCSC employees who are not designated as “confidential” employees, which is a special designation granted to counselors and CARE advocates). Although I have to make that notification, you will control how your case will be handled, including whether or not you wish to pursue a formal complaint. The goal is to make sure that you are aware of the range of options available to you and that you have access to the resources you need.

Confidential resources are available through [CARE](#). Confidentiality means CARE advocates will not share any information with Title IX, the police, parents, or anyone else without explicit permission. CARE advocates are trained to support you in understanding your rights and options, accessing health and counseling services, providing academic and housing accommodations, helping with legal protective orders, and more. You can contact CARE at (831) 502-2273 or care@ucsc.edu.

In addition to CARE, these resources are available to you:

- If you need help figuring out what resources you or someone else might need, visit the [Sexual Violence Prevention & Response \(SAFE\) website](#), which provides information and resources for different situations.
- [Counseling & Psychological Services \(CAPS\)](#) can provide confidential counseling support. Call them at (831) 459-2628.
- You can also report gender discrimination and sexual harassment and violence directly to the University's [Title IX Office](#), by calling (831) 459-2462 or by using their [online reporting tool](#).
- Reports to law enforcement can be made to the UC Police Department, (831) 459-2231 ext. 1.
- For emergencies, call 911.

DIFFICULT CONVERSATIONS

In our in-class and online discussions and dialogues, we will have the opportunity to explore challenging, high-stakes issues and increase our understanding of different perspectives. Our conversations may not always be easy. We sometimes will make mistakes in our speaking and our listening. Sometimes we will need patience or courage or imagination or any number of qualities in combination to engage our texts, our classmates, and our own ideas and experiences. We will always need respect for others. Thus, an important aim of our classroom interactions will be for us to increase our facility with difficult conversations that arise inside issues of social justice, politics, economics, morality, religion, and other issues where reasonable people often hold diverse perspectives. This effort will ultimately deepen our understanding and allow us to make the most of being in a community with people of many backgrounds, experiences, and positions.

REPORT AN INCIDENT OF HATE OR BIAS

The University of California, Santa Cruz is committed to maintaining an objective, civil, diverse and supportive community, free of coercion, bias, hate, intimidation, dehumanization or exploitation. The Hate/Bias Response Team is a group of administrators who support and guide students seeking assistance in determining how to handle a bias incident involving another student, a staff member, or a faculty member. To report an incident of hate or bias, please use the following form: [Hate/Bias Report Form](#).

GENERAL CONDUCT

In this class we abide by the **UCSC Principles of Community**, so please familiarize yourself with these: <https://www.ucsc.edu/about/principles-community.html>.

STUDENT SERVICES

Counseling and Psychological Services

Many students at UCSC face personal challenges or have psychological needs that may interfere with their academic progress, social development, or emotional wellbeing. The university offers a variety of confidential services to help you through difficult times, including individual and group counseling, crisis intervention, consultations, online chats, and mental health screenings. These services are provided by staff who welcome all students and embrace a philosophy respectful of clients' cultural and religious backgrounds, and sensitive to differences in race, ability, gender identity and sexual orientation.

Student Success and Engagement Hub

The Division of Student Success provides campus-wide coordination and leadership for student success programs and activities across departments, divisions, the colleges, and administrative units.

Tutoring and Learning Support

At Learning Support Services (LSS), undergraduate students build a strong foundation for success and cultivate a sense of belonging in our Community of Learners. LSS partners with faculty and staff to advance educational equity by designing inclusive learning environments in Modified Supplemental Instruction, Small Group Tutoring, and Writing Support. When students fully engage in our programs, they gain transformative experiences that empower them at the university and beyond.

Slug Support Program

College can be a challenging time for students and during times of stress it is not always easy to find the help you need. Slug Support can give help with everything from basic needs (housing, food, or financial insecurity) to getting the technology you need during remote instruction.

To get started with SLUG Support, please contact the Dean of Students Office at 831-459-4446 or you may send us an email at deanofstudents@ucsc.edu.

Slug Help/Technology

The ITS Support Center is your single point of contact for all issues, problems or questions related to technology services and computing at UC Santa Cruz. To get technological help, simply email help@ucsc.edu.

On-Campus Emergency Contacts

For all other help and support, including the health center and emergency services, Click here to go to UCSC's Emergency Services page. Always dial 9-1-1 in the case of an emergency.

MATURE COURSE CONTENT

In university courses you may be assigned images, films or other material that could contain difficult ideas, uncomfortable language, or graphic depictions of sex or violence. You will be asked to treat these portrayals critically, to consider what is being expressed by the maker, or to examine the potential social impact, and to evaluate the works in a given context. Instructors are always happy to speak with you about the course content and/or your work, and might direct you to CAPS (Counseling and Psychological Services) at 831-459-2628 or the Disability Resource Center (drc@ucsc.edu, 831-459-2089) should you need additional support in order to participate and do your best work.

GRADE DISPUTES

If you have questions about the grading of your work, please make arrangements to meet with your teaching assistant (TA) if the course has one. If the course does not have a TA, or if your questions are not resolved, please see the course instructor during office hours. If the matter still remains unresolved, you will be advised on further options.

ACADEMIC MISCONDUCT POLICY

Academic misconduct includes but is not limited to cheating, fabrication, plagiarism, or facilitating academic dishonesty. Acts of academic misconduct during the course, including plagiarism, can and usually do result in failure of the course, at the sole discretion of the instructor of record. Your case will be reported to the College Provost as per the Academic Integrity guidelines found on the web at: https://www.ue.ucsc.edu/academic_misconduct

STUDENT EXPERIENCE OF TEACHING SURVEYS (SETs) (FORMERLY ONLINE COURSE EVALUATIONS/OCEs)

The Theater Arts Department collects feedback from students at the end of each course in the form of Student Experience of Teaching Surveys (SETs). You will receive an email when the evaluation/survey is available. The email will provide information about the evaluation as well as a link to it online. When you receive the email, please click the link, log in, and complete the evaluation. Student submissions are anonymous and confidential. Instructors cannot identify which submissions belong to which students and will only be able to review the data collected after all grades have been submitted. Please give serious thought to your comments. This survey will become part of the instructor's personnel file to be reviewed by colleagues and administration when considering the instructor's future teaching assignments and promotions. Your comments will be available by the instructor only after grading your work and may be used to improve future offerings of the course.

LAPTOP COMPUTERS AND MOBILE DEVICES:

Laptops can be a useful tool in the service of teaching and learning when used productively and respectfully.

A few common sense rules:

1. Always set up your laptop before the beginning of class. Setting up the computer and booting it up can take a few minutes depending on what applications are set to open at startup. Turn off all other mobile devices before lecture begins.
2. Disable sound.

3. During lecture and classroom discussion, you should not be connected to network resources. Being online invites many distractions - web surfing, email, chats, etc. Chatting or emailing during class is no more acceptable than talking on a cell phone during class time. Additionally, your networked screens are distracting to those sitting near and behind you.

If you are found to be doing anything other than note-taking (or sanctioned network activity) you will be asked to leave the class immediately and will be marked as absent for that day. Your instructor reserves the right to further limit laptop use in their classes. For example, you may be asked to close your computer during screenings or be asked to sit in a certain area of the room if you are actively using your laptop.