VCT176 Introduction to
3D MODELING & ANIMATION

Class Location: Online and Hybrid (Online and Tuesdays 2:30-4pm in Room 2009).
10724 and 29327
5 Credits
Instructor: Al Yates ayates@shoreline.eduWinter Zoom
Office Hours: MW 9am-10:30am. On campus: Tuesdays 11am-12:30pm in room 2054

COURSE DESCRIPTION
This course is designed for visual art students to survey the world of 3D and all of the different ways 3D technology is changing our world. Prepare to be changed forever with greatly expanded skills to create visual art. We will start with learning basic modeling techniques using a variety of 3D software. This course will help remove the perceived "wall of intimidation" that sometimes exists when a student enters the world of CGI. Once we have covered the foundational concepts of 3D, we will begin to look at texturing, modeling techniques, and animation in Strata3D, Maya, Sculptris, Mudbox, and other 3D software. We will also look at game engines like Unity and Unreal Engine 4, as well as new innovations in 3D virtual reality and 3D Printing. Projects will address a broad range of workflows used in a variety of visual design industries: Graphic Design, Industrial Design, Game Design, Animation, Web Design, and Visual Effects. Welcome to the incredible world of 3D modeling and animation.

STUDENT OUTCOMES

• Conceive, plan and render photo realistic illustrations using 3D modeling software.

• Replicate real objects in 3D virtual space using a variety of modeling tools and
  techniques including polygon, bezier and NURBS.

• Make objects move using compound animation functions
  with a keyframe-based timeline.

• Integrate 3D content into applied graphic design solutions.

• Prepare final solutions for portfolio presentation.

• Understand and explain how 3D is changing our world.

To access course content, go to the modules page in the Canvas course. There you will find all of the lectures in written and video format. Follow the direction in each assignment.

NO TEXTBOOK REQUIRED

LEARNING RESOURCES:
linkedin.com/learning *(Subscription provided)*
All students receive access to Linked In Learning that includes Essential training in Maya and Mudbox. Use this resource to preview and review content covered in class.

This point system corresponds to Shoreline Community College's decimal grading system as follows:

Points	Grade
950-1000	(4.0-3.9) A
900-949	(3.8-3.5) A-
850-899	(3.4-3.2) B+
800-849	(3.1-2.9) B
750-799	(2.8-2.5) B-
700-749	(2.4-2.2) C+
650-699	(2.1-1.9) C
600-649	(1.8-1.5) C-
550-599	(1.4-1.2) D+
500-549	(1.1-0.9) D
450-499	(0.8-0.7) D-
Below 450	(0.6-0.0) F

VCT176 Quarter Schedule by Week

Week 1 Welcome to Class/Exploring Maya/The Power of Realism in 3D
In week 1 we will introduce the course and we will start learning the basics of Maya with some easy-to-follow introductory videos on how to use the interface. We will create our first Maya scene and we will render it photorealistically. We will also look at 3D technology in general, and the increasing power of realism and how it is changing our world.

Week 2 Polygon Modeling in Maya
This second week we will focus on the basics of polygon modeling in Maya to create both hard surface and organically modeled 3D objects. We'll learn how to set up projects and work through the modeling process from concept to finish.

Week 3 Orthographic Image Planes/Project 1
This week we will focus concepts for project 1 by learning how to research and thumbnail out ideas, followed by the creation of image planes we will use to model with. Project 1 begins.

Week 4 Bezier Curves and NURBS Modeling/Project 2
This week it's all about learning a different method of modeling using curves. We work in Adobe Illustrator to create modeling "profiles" as a shortcut to create elaborate 3D models in Maya using NURBS. Project 2 begins.

Week 5 Materials and UVs / Project 3
In week 5 we will shift gears from modeling to focus on creating imagery to apply to the surface of our models using materials applied to objects using UVs. You will learn the best techniques for creating UV shells. We will begin project 3.

Week 6 Digital Sculpting, 3D Scanning and 3D printing / Project 4
This week we will start in Maya, but we will quickly migrate to Autodesk Mudbox to create a creature head sculpt. This will be our 4th project. We will also learn about 3D printing and scanning.

Week 7 3D Animation and Effects / Project 5
Week 7 is animation week. First we will learn the basics of keyframe-based animation, followed by a fun, "StarWars"-themed animation project.

Week 8 Project 5 Development time
This week we will finish up our animation project 5. We will also start the transition to learning about game engines by looking at an additional new method for animation: Physics-based animation.

Week 9 Game Engines / Project 6
In week 9 we will start learning about game engines. We'll lookout a few popular ones like Unreal Engine, Unity and Cry Engine. For our final project we'll be using Unity to create a basic environment. Lastly, we learn a bit about VR (virtual reality) and AR (augmented reality), together now referred to as XR. The final project begins in week 10.

Week 10-11. Project 6 Worktime
The last two weeks of the quarter will be for lab time to work on your Final project 3D environments, and last learning summaries

Welcome to the Introduction to 3D Modeling and Animation course. This quarter we are going to survey the world of 3D. In ten weeks, we will learn to model some great objects, texture and render them with photorealistic surfaces, and make them move in Maya. We will sculpt creatures in Mudbox and create walkable environments in the Unity Game Engine. Since we're doing this all online, all of the presentations and tutorials will be in video and slideshow format. We are going to do several small projects and a couple larger ones. My hope for all of you is that by the time you have completed the work, you'll have a better understanding of the world of Maya and 3D in general.

The exercises and projects will be presented in smaller chunks to be completed step by step, week by week. This should make it easier for all of you and more helpful as you'll be able to watch my lectures and tutorials as many times as you wish. Some presentations will be slideshows with audio. Assessments of these assignments will be brief with clear, simple rubrics so that you know how I will grade.

EXTREMELY IMPORTANT INFORMATION ON DEADLINES:

• Due to this course being fully online, unless I say otherwise, deadlines will be enforced to keep a healthy pace throughout the quarter. You don't want to let deadlines slide as this may cause the "snow-plow" effect.

• If deadlines are relaxed to the last day of the quarter, I would most likely have over 600 assignments to grade at the end. This is not reasonable.

• Also, I have in the past allowed students to rework projects for a regrade at the end of the quarter. This has changed: **The new policy is that you are allowed to rework a maximum of two assignments and resubmit them only once.** Otherwise, what happens is students keep reworking projects and resubmit them to keep increasing their grade with the expectation of an eventual perfect score. In order to receive an A, the project must meet that criteria with the first submission. The highest grade a project resubmission can receive is 85%. So, if you received an 85% or higher on the first submission, there's no point in redoing it for more more points. However, I might suggest you redo it for your portfolio, which in truth, is more important in the long run.

LECTURE/PRESENTATION QUIZZES

• All quiz posts will include the lecture and/or presentation content that the quiz will cover.
• Quizzes will be very short with only three to five questions, multiple choice or T/F
• All quizzes will be open book with no time limit. Only one attempt will be allowed.
• Quiz deadlines will be strictly enforced. You will have until 11:59pm on the due date, at which time correct answers will be available.

EXERCISES
• Exercises are used to introduce new concepts and software techniques. Results must be submitted in the form of a screen capture PNG or JPG file.
• Grading is High Pass 100%/Pass 80%/low pass70%/fail 60% and below. If results are unsatisfactory, reasons will be given in a short comment.
• Exercises are designed to replace in-class software and concept-based learning.

LEARNING SUMMARIES

Occasionally, there will be some videos to watch to reinforce some learning themes. For those assignments, watch the videos and then write either a short narrative a list of bulleted points that summarizes what you learned for the video(s).

PROJECTS

The purpose of projects in my courses are to apply and demonstrate what you have learned, and to explore creative solutions using the tools and processes that are covered in the course. Each project will have a process to follow. Sometimes there will be step-by-step video tutorials to complete each phase. Projects will be graded by percentage of points possible: 90-100% Excellent, 80-89% Good, 70-79% Fair, below 70% unsatisfactory. For example: if the project is worth 80 points and you score 85%, your point score would be 68.
Comments will be provided on projects either via Zoom and/or in the grading feedback on Canvas. Late projects will only be accepted if there is an extremely good reason.

Now with all of that out of the way. Let me just say I'm here to help you all become better designers. Identity and logo design skills are so important. Brand is reflected in all visual communications. That is what this course is all about.

OTHER COURSE POLICIES

Plagiarism
Plagiarism is the intentional submission of an-other's work as one's own. Getting so much help on a paper that it is no longer your own also constitutes plagiarism. This will result in a failing grade for the assignment. Students are expected to give credit to the creators of all work. When doing research, you must always give credit and sources for any material that is not your own.

Cheating
Students who are found cheating on a quiz (that is, copying another person's answers, giving quiz answers to another student, etc.) will receive a 0% on the quiz and may result in failing the class.

Copying of Software
Copying of licensed software is illegal and can result in failing the class.

Students with Disabilities
Students with additional needs should:
1. Register with the Shoreline Counseling Center Office of Services for Student with Disabilities.
2. Confirm each quarter that instructors in courses where special needs are called for have been notified.
Please note: In all of my courses, quizzes and exams are open book and have no time limit.

College Web Page
http://www.shoreline.edu
Minimum Grade Requirements
There is a new requirement for VCT students pursuing, or switching to, the AAAS degrees (Graphic Design and Production Art; Animation/Video for Multimedia; or Marketing). Students are now required to maintain a final grade of 2.0 (75%) in each VCT or ART course in order to progress to the next class.

If you receive a grade below 2.0, and you are taking this class as a requirement for the new VCT degrees, you will be required to retake this class (or pursue an advisor's waiver).

GROUP CRITIQUES
One of the greatest learning opportunities is to have others comment on your work, and vice versa. Group critiques provide peer and instructor feedback and discussion that will make us all better designers, communicators, and thinkers. It's great practice for the real world, where clients and audiences are free to criticize your work. You will have opportunities to informally present your work in Zoom-based peer critiques this quarter. Campus policy is that all Zoom sessions are optional, but I highly recommend you participate, as it will make your project result better. This is what critiques are all about: helping eachother create the best work we can, in a supportive atmosphere.
All critique comments should be made with respect and politeness. Students earn points by participating in the critique discussions.

REQUIRED SOFTWARE

• Adobe CC (subscription is currently supplied by SCC. Download and activate/login with your student email and password. See the instructions on Canvas for downloading.

• Autodesk Maya 2020 and Mudbox 2018 (subscription is free to all students. See the instructions on Canvas for downloading and installing.

RECOMMENDED TOOLS AND MATERIALS LIST

• Sketch book w/removable pages

• One tablet of grid paper

• #2 Pencils

• 2 black fine point markers

• 12" ruler

• Tracing paper

• 4-16GB Thumbdrive