Master Course Syllabus

For additional course information, including prerequisites, corequisites, and course fees, please refer to the Catalog: https://catalog.uvu.edu/

Semester: Spring
Year: 2025
Course Prefix: ART 3280
Course and Section #:01
Course Title: 3D Texturing and Rendering
Credits: 3

Course Description

Teaches techniques in texturing, lighting, and rendering of 3D models and scenes with a special emphasis upon aesthetics and composition. Includes texture painting, UV mapping, and HDRI lighting in addition to the standard techniques.

Course Attributes

This course has the following attributes:

☐ General Education Requirements
☐ Global/Intercultural Graduation Requirements
☐ Writing Enriched Graduation Requirements
☒ Discipline Core Requirements in Program
☐ Elective Core Requirements in Program
☐ Open Elective

Other: *Click here to enter text.*

Instructor Information

Instructor Name: Ben Wasden

Student Learning Outcomes

1. Utilize different rendering software;
2. Apply indirect illumination techniques;
3. Use HDR images to illuminate a scene;
4. Integrate UV mapping into renderings;
5. Integrate texture painting software into the material-creation workflow;
6. Use camera angles and techniques for effective compositions.

Course Materials and Texts

Blender 3D, Substance Painter, Adobe After Effects

Course Requirements

Course Assignments, Assessments, and Grading Policy

Assignments

A large part of the practice, instruction and critique will happen in the classroom; attendance is mandatory. (1 pt. per class = 30 points)

There are a total of 3 projects. Each project has 4 stages and a final deliverable. Performance on each stage of the project will be considered as a part of the total project points. (25 pts each x 3 projects = 75 points)

You are required to start and/or maintain a blog and document your class work throughout the semester. Blog posts of each stage are due every Friday at Midnight. (Each post is worth 1 pt. = 15 points) Instructions for setting up your blog can be found here: http://uvudesignportfolio.blogspot.com

Every student is required to critique 1 other students blog post every week. Comments are due each Sunday by Midnight. (1 point per post for critique = 15 points).

Assessments

There are a total of 120 points for the class. 30 points for class participation (1 point per day), 60 points for projects (25 points for each project), 1 point for each blog post = 15 points, 1 point per week for critique = 15 points. No late assignments will be accepted. Missing more than 4 class days without basis results in a failing grade.

Grading Policy

Grade	Percentage Range
A	91-100%
A-	90%
B+	89%
B	81-88%
B-	80%
C+	79%
C	71-78%
C-	70%
D+	69%
D	61-68%
D-	60%
F	<60%

Required or Recommended Reading Assignments

N/A

General Description of the Subject Matter of Each Lecture or Discussion

Project 1: Rendered Vehicle (Due Day 10)

Day 1: Introduction to 3D Texturing and Rendering in Blender – Overview of Blender interface, tools, and basic 3D concepts.

Day 2: 3D Modeling Basics – Learn the fundamentals of creating and modifying 3D meshes for vehicle design.

Day 3: UV Mapping Overview – Introduction to unwrapping meshes and preparing them for texturing.

Day 4: Texturing with Image Maps – Apply basic textures to your vehicle model using image maps and UV coordinates.

Day 5: Advanced UV Mapping Techniques – Explore more complex unwrapping methods for better texture application.

Day 6: Shading and Materials – Learn how to create and assign realistic materials using Blender's shader system.

Day 7: Lighting for 3D Scenes – Set up effective lighting for your vehicle model to enhance texture visibility and realism.

Day 8: Rendering Settings and Optimization – Understand the settings required for high-quality rendering and performance optimization.

Day 9: Project Review and Refinement – Finalize textures, materials, and render settings based on instructor feedback.

Day 10: Project 1 Submission and Review – Submit your rendered vehicle project and participate in a peer critique.

Project 2: Rendered Scene (Due Day 20)

Day 11: Introduction to Environment Modeling – Learn techniques for building 3D environments, focusing on scene composition.

Day 12: Modeling Background Elements – Begin modeling basic scene elements such as buildings, trees, and terrain.

Day 13: Texturing Scene Models – Apply textures to background and foreground models using various techniques and image maps.

Day 14: Lighting for Environmental Scenes – Experiment with different types of lighting setups to create atmosphere in your scene.

Day 15: Advanced Material Creation – Create realistic materials for natural and artificial objects within the scene (e.g., glass, metal).

Day 16: Camera Angles and Composition – Set up camera views and experiment with composition to enhance the visual impact of your scene.

Day 17: Particle Systems and Effects – Learn how to create particle systems for environmental effects like smoke, rain, or fog.

Day 18: Rendering and Post-Processing – Understand how to render the full scene and apply post-processing techniques in Blender.

Day 19: Scene Review and Feedback – Refine your scene based on instructor feedback and prepare for final rendering.

Day 20: Project 2 Submission and Review – Submit your rendered scene project and engage in peer critique and discussion.

Project 3: Rendered Character (Due Day 30)

Day 21: Introduction to Character Modeling – Begin creating a basic 3D character model, focusing on anatomy and proportions.

Day 22: Sculpting Techniques for Characters – Use Blender's sculpting tools to add detail and refine the character's form.

Day 23: UV Mapping for Characters – Unwrap the character model for efficient texturing.

Day 24: Texturing Characters – Apply skin, clothing, and accessory textures, focusing on realistic detail and surface variation.

Day 25: Creating Materials for Characters – Develop shaders and materials for skin, fabric, and other elements of the character.

Day 26: Rigging Basics – Learn the basics of rigging to pose and animate your character for rendering.

Day 27: Lighting for Character Rendering – Set up lighting to enhance the character's features and create depth.

Day 28: Rendering with Final Touches – Refine the scene and render settings for a high-quality final image of the character.

Day 29: Post-Processing and Final Adjustments – Apply finishing touches through Blender's compositor, adjusting colors and contrast.

Day 30: Project 3 Showcase and Reflection – Present your final rendered character, reflect on your progress, and discuss lessons learned throughout the course.

Required Course Syllabus Statements

Generative AI

AI programs are not a replacement for your human creativity, originality, and critical thinking. Writing, thinking, and brainstorming are crafts that you must develop over time to develop your own individual voice. At the same time, you should learn how to use AI and in what instances AI can assist you.

The use of generative AI tools (e.g. ChatGPT) is permitted in this course for the following activities:

- Brainstorming and refining your ideas;
- Finding information on your topic;
- Refining Style direction.

The use of generative AI tools is not permitted in this course for the following activities:

- Impersonating your work in classroom contexts, such as by using AI tools to compose discussion board prompts/responses assigned to you or content that you put into a Teams/Canvas chat.
- Generating artwork for class assignments.
- Generating final artwork.

You are responsible for the information you submit and that it does not violate intellectual property laws, or contain misinformation or unethical content. Your use of AI tools must be properly documented and cited in order to stay within university policies on academic honesty.

Any student work submitted using AI tools should clearly indicate what work is the student's work and what part is generated by the AI. In such cases, no more than 25% of the student work should be generated by AI. If any part of this is confusing or uncertain, please reach out to me for a conversation before submitting your work.

Using Remote Testing Software

☒ This course does not use remote testing software.

☐ This course uses remote testing software. Remote test-takers may choose their remote testing locations. Please note, however, that the testing software used for this may conduct a brief scan of remote test-takers' immediate surroundings, may require use of a webcam while taking an exam, may require the microphone be on while taking an exam, or may require other practices to confirm academic honesty. Test-takers therefore shall have no expectation of privacy in their test-taking location during, or immediately preceding, remote testing. If a student strongly objects to using test-taking software, the student should contact the instructor at the beginning of the semester to determine whether alternative testing arrangements are feasible. Alternatives are not guaranteed.

Required University Syllabus Statements

Accommodations/Students with Disabilities
Students needing accommodations due to a permanent or temporary disability, pregnancy or pregnancy-related conditions may contact UVU Accessibility Services at accessibilityservices@uvu.edu or 801-863-8747.

Accessibility Services is located on the Orem Campus in BA 110.

Deaf/Hard of Hearing students requesting ASL interpreters or transcribers can contact Accessibility Services to set up accommodations. Deaf/Hard of Hearing services can be contacted at DHHservices@uvu.edu

DHH is located on the Orem Campus in BA 112.

Academic Integrity
At Utah Valley University, faculty and students operate in an atmosphere of mutual trust. Maintaining an atmosphere of academic integrity allows for free exchange of ideas and enables all members of the community to achieve their highest potential. Our goal is to foster an intellectual atmosphere that produces scholars of integrity and imaginative thought. In all academic work, the ideas and contributions of others must be appropriately acknowledged and UVU students are expected to produce their own original academic work.

Faculty and students share the responsibility of ensuring the honesty and fairness of the intellectual environment at UVU. Students have a responsibility to promote academic integrity at the university by not participating in or facilitating others' participation in any act of academic dishonesty. As members of the academic community, students must become familiar with their rights and responsibilities. In each course, they are responsible for knowing the requirements and restrictions regarding research and writing, assessments, collaborative work, the use of study aids, the appropriateness of assistance, and other issues. Likewise, instructors are responsible to clearly state expectations and model best practices.

Further information on what constitutes academic dishonesty is detailed in UVU Policy 541: *Student Code of Conduct*.

Equity and Title IX
Utah Valley University does not discriminate on the basis of race, color, religion, national origin, sex, sexual orientation, gender identity, gender expression, age (40 and over), disability, veteran status, pregnancy, childbirth, or pregnancy-related conditions, citizenship, genetic information, or other basis

protected by applicable law, including Title IX and 34 C.F.R. Part 106, in employment, treatment, admission, access to educational programs and activities, or other University benefits or services. Inquiries about nondiscrimination at UVU may be directed to the U.S. Department of Education's Office for Civil Rights or UVU's Title IX Coordinator at 801-863-7999 – TitleIX@uvu.edu – 800 W University Pkwy, Orem, 84058, Suite BA 203.

Religious Accommodation

UVU values and acknowledges the array of worldviews, faiths, and religions represented in our student body, and as such provides supportive accommodations for students. Religious belief or conscience broadly includes religious, non-religious, theistic, or non-theistic moral or ethical beliefs as well as participation in religious holidays, observances, or activities. Accommodations may include scheduling or due-date modifications or make-up assignments for missed class work.

To seek a religious accommodation, a student must provide written notice to the instructor and the Director of Accessibility Services at accessibilityservices@uvu.edu. If the accommodation relates to a scheduling conflict, the notice should include the date, time, and brief description of the difficulty posed by the conflict. Such requests should be made as soon as the student is aware of the prospective scheduling conflict.

While religious expression is welcome throughout campus, UVU also has a specially dedicated space for meditation, prayer, reflection, or other forms of religious expression.