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| **Subject:** | ART |
| **Course Number:** | 244A |
| **Descriptive Title:** | Intermediate 3D Modeling & Animation |
| **Division:** | Fine Arts |
| **Department:** | Art |
| **Course Disciplines:** | Multimedia |
| **Catalog Description:** | This course focuses on the intermediate principles of 3D modeling and animation as applied to 3D props, vehicles and characters. Techniques such as subdivision surface modeling, 3D sculpting and texture mapping will be explored. Students will also be introduced to more advanced character animation techniques to achieve more complex animations. In addition to completing weekly exercises, students will apply the skills they learn to create a short, animated film. |
| **Prerequisite:** | Art 144 with a minimum grade of C |
| **Co-requisite:** | |
| **Recommended Preparation:** | |
| **Enrollment Limitation:** | |
| **Hours Lecture (per week):** | 2 |
| **Hours Laboratory (per week):** | 4 |
| **Outside Study Hours:** | 4 |
| **Total Course Hours:** | 108 |
| **Course Units:** | 3 |
| **Grading Method:** | Letter Grade only |
| **Credit Status:** | Credit, degree applicable |
| **Transfer CSU:** | Yes |
| **Effective Date:** | Pending |
| **Transfer UC:** | Yes |
| **Effective Date:** | Pending |
| **General Education ECC:** | |
| **Term:** | |
| **Other:** | |
| **CSU GE:** | |
| **Term:** | |
| **Other:** | |
| **IGETC:** | |
| **Term:** | |

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| **Other:** | |
| **Student Learning Outcomes:** | **SLO #1 Modeling and Assets**<br><br>Students will be able to model, design shaders, and texture custom models for organic characters, environments, and hard surfaces at an intermediate to advanced level of proficiency and use pre-existing assets to populate a scene.<br><br>**SLO #2 Animation**<br><br>Students will creatively apply animation technique using rigs, poses, and keyframes at an intermediate to advanced level of proficiency.<br><br>**SLO #3 Storytelling**<br><br>Students will apply principles of visual storytelling using lighting, cinematography, textures, and editing to produce final rendered short videos that communicate mood and emotion. |
| **Course Objectives:** | 1. Collaborate with peers to apply principles of storytelling to create aesthetic and narrative structure for a short video clip.<br>2. Use storyboards to create a narrative framework for a short video clip.<br>3. Create a reasonably consistent visual theme across characters props and environments.<br>4. Create 3D models using appropriate polygonal surface modeling techniques for both hard surface models and organic models.<br>5. Texture models using procedural materials and image textures with UV maps.<br>6. Detail models using 3D sculpting techniques.<br>7. Paint 3D models to enhance visual characteristics.<br>8. Apply principles of animation to cameras, characters, and vehicles or other mechanical models.<br>9. Effectively use and modify existing assets to detail a scene or environment.<br>10. Apply lighting techniques and visual effects to create a specific mood.<br>11. Use appropriate compositing techniques to blend 3D models with existing 2D scenery.<br>12. Edit and assemble a short, animated film from multiple scenes using video editing techniques. |
| **Major Topics:** | I. **Story and Visual Development (6 hours, lecture)**<br>    A. Collaboration and Storytelling<br>        1. Work collaboratively to brainstorm and develop concepts for stories based on characters, environments, and scenes.<br>    B. Storyboards<br>        1. Sketch and draw basic story boards to define key moments and scenes in a narrative sequence.<br>    C. Visual Development<br>        1. Identify and source visual reference materials to create a consistent visual theme for a chosen narrative.<br>II. **Modeling Characters, Props, and Environments (18 hours, lecture)**<br>    A. Modeling<br>        1. Use modeling and sculpting technique to create characters, props and scenery elements<br>        2. Use pre-existing assets to detail a scene<br>    B. Texturing |

            1. Use procedural materials to create detailed characters, props and environments

            2. Use 3D painting to enhance character, prop and scene textures

      C. Lighting

            1. Apply lighting techniques to create mood within a scene

III. **Rigging and Animation (8 hours, lecture)**

      A. Characters

            1. Use rigging techniques to pose animate characters

            2. Use animation techniques to animate characters in a scene

      B. Props

            1. Use animation techniques to animate props in a scene

      C. Cameras and lighting

            1. Use animation techniques to animate cameras and lights in a scene

IV. **Compositing and Editing (4 hours, lecture)**

      A. Use composting and editing techniques to bring multiple camera shots together into a final edited video.

V. **Story and Visual Development (12 hours, lab)**

      A. Collaboration and Storytelling

            1. Work collaboratively to brainstorm and develop concepts for stories based on characters, environments, and scenes.

      B. Storyboards

            1. Sketch and draw basic story boards to define key moments and scenes in a narrative sequence.

      C. Visual Development

            1. Identify and source visual reference materials to create a consistent visual theme for a chosen narrative.

VI. **Modeling Characters, Props, and Environments (36 hours, lab)**

      A. Modeling

            1. Use Modeling and sculpting technique to create characters, props and scenery elements

            2. Use pre-existing assets to detail a scene

      B. Texturing

            1. Use procedural materials to create detailed characters, props and environments

            2. Use 3D painting to enhance character, prop and scene textures

      C. Lighting

            1. Apply lighting techniques to create mood within a scene

VII. **Rigging and Animation (12 hours, lab)**

      A. Characters

            1. Use rigging techniques to pose animate characters

            2. Use animation techniques to animate characters in a scene

      B. Props

            1. Use animation techniques to animate props in a scene

      C. Cameras and lighting

            1. Use animation techniques to animate cameras and lights in a scene

VIII. **Compositing and Editing (12 hours, lab)**

      A. Use composting and editing techniques to bring multiple camera shots together into a final edited video.

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| **Total Lecture Hours:** | 36 |

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| **Total Laboratory Hours:** | 72 |
| **Total Hours:** | 108 |
| **Primary Method of Evaluation:** | 3) Skills demonstration |
| **Typical Assignment Using Primary Method of Evaluation:** | Demonstrate understanding of core modeling and animation concepts by presenting a short animatic of a scene. Further develop this animatic into a finished, rendered, and edited animated sequence. |
| **Critical Thinking Assignment 1:** | Research and develop two highly detailed characters of contrasting archetypes. Give consideration to physical characteristics and supporting wardrobe and props.<br><br>Develop story arc of an animated sequence based on a visual story board as well as a written script describing a conflict between the two characters. |
| **Critical Thinking Assignment 2:** | Execute animations based on the developed storyboards using advanced animation techniques.<br><br>Assemble, edit and export out film from video editing software (Adobe Premiere). |
| **Other Evaluation Methods:** | Class Performance, Completion, Homework Problems, Multiple Choice, Quizzes, True/False |
| **If Other:** | Art and design projects<br>Technical procedures<br>Technical demonstrations |
| **Instructional Methods:** | Demonstration, Discussion, Group Activities, Lab, Lecture, Multimedia presentations |
| **If other:** | |
| **Work Outside of Class:** | Problem solving activity, Required reading, Skill practice, Study |
| **If Other:** | |
| **Up-To-Date Representative Textbooks:** | |
| **Alternative Textbooks:** | |
| **Required Supplementary Readings:** | |
| **Other Required Materials:** | Computer and studio tools |
| **Requisite** | Prerequisite |
| **Category** | sequential |
| **Requisite course:** | ART 144 |
| **Requisite and Matching skill(s): Bold the requisite skill. List the corresponding course objective under each skill(s).** | **Prior knowledge of 3D Modeling**<br><br>ART 144 - Design and model a 3-D environment.<br><br>**Prior design and production of a digital 3D Animation project.**<br><br>ART 144 - Creation of short, animated film demonstrating the character's type and personality. |
| **Requisite Skill:** | |

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| **Requisite Skill and Matching skill(s): Bold the requisite skill(s). if applicable** | |
| **Requisite course:** | |
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| **Enrollment Limitations and Category:** | |
| **Enrollment Limitations Impact:** | |
| **Course Created by:** | Joyce Dallal |
| **Date:** | 10/25/2017 |
| **Original Board Approval Date:** | 12/18/2023 effective SP 2024 |