Course Acronym:	DART
Course Number:	155
Descriptive Title:	3D Game Art and Interaction
Division:	Fine Arts
Department:	Digital Art and Design Technology
Course Disciplines:	Digital Art and Design Technology
Catalog Description:	In this course, students will create static and animated assets for 3D games using current, industry-standard, software and game engines. Students will create a 3D game prototype with original game art and animation, UI wireframe, sound, and procedural visual effects (VFX). Existing game assets from trusted sources will be incorporated as needed. Students will engage in a design and prototyping process to imagine a cohesive visual style, create 3D environments, models, animations, and more. Through the application of basic scripting and visual scripting concepts students will create a working game prototype that can be published to multiple platforms (e.g. mobile, PC, web) for play testing from a current game engine such as (but not limited to) Unity, Unreal, or Godot.
Prerequisite:	
Co-requisite:	
Recommended Preparation:	DART 104
Enrollment Limitation:	
Hours Lecture (per week):	2
Hours Laboratory (per week):	3
Outside Study Hours:	4
Total Course Hours:	90
Course Units:	3
Grading Method:	Letter Grade and Pass/No Pass
Credit Status:	Credit, degree applicable
Transfer CSU:	Yes
Effective Date:	Proposed
Transfer UC:	No
Effective Date:	
General Education: ECC	
Term:	
Other:	
CSU GE:	
Term:	
Other:	

IGETC:	
Term:	
Other:	
Student Learning Outcomes:	Upon completion of this course students will be able to: 1. create 3d assets for video games that include geometry, material, and animation data using standard workflows from industry standard modeling and animation software 2. create user interaction in 3D game prototypes with standard scripting or visual scripting techniques 3. incorporate 3D animation in game prototypes in standard 3D game engines
Course Objectives:	1. Analyze and assess the visual style of of 3D games through interactive presentations and discussions of 3D game aesthetics, mechanics, and entertainment value 2. Work with existing game assets in a contemporary game engine (3D models, script, animations, etc) to quickly build game prototypes and change the visual qualities of a game world 3. Design a simple 3D game concept, and visual theme, to create a 3D game prototype in a group project setting 4. Use industry standard software to create static 3D game assets such as environments, props, buildings, sound, etc 5. Use industry standard software to create animated 3D game assets such as animated props, models, characters, and cutscenes 6. Refine the visual aspects of static and animated game assets through iterative design process and play testing 7. Learn and apply knowledge of logic and programming for game engines to create game interactions an UI navigation with visual scripting or basic scripting (such as C#, Python, etc.). 8. Plan and execute a working and playable game prototype from original assets in a contemporary game engine. 9. Organize and present final assets in a high quality clip reel for future opportunities
Major Topics:	**Lecture Topics:** I. **Analysis** A. Discuss and present existing game aesthetics for 3D games B. Discuss and present existing game mechanics for 3D games C. Discuss and present existing game entertainment value for 3D games II. **Game Engine and Assets** A. Navigating game engine editor UI B. Installing game engine packages C. Importing and managing assets D. Game Engine Objects and Hierarchy E. Engine Components F. Rigging workflow for 3D animation in game engine G. 3D animation workflow in game engine III. **Visual and Game Design** A. Game Concept Style and Mechanics B. Game concept visual development for 3D games IV. **3D Game Asset Creation** A. Low to medium poly environment asset creation

	B. Low to medium poly character asset creation C. 3D rigging, export/import for game assets D. Texturing, and visual effects assets V. **Game Interaction Scripting** A. Scripting concepts for 3D game prototypes B. Game engine architecture C. Game object scripting D. Visual scripting concepts and process VI. **Project Planning and Execution** **Lab Topics:** I. **Game Analysis Presentation** A. Present analysis of existing game aesthetics B. Present analysis of existing game mechanics C. Present analysis of existing game entertainment value II. **3D Asset Development for Individual or Group Game Prototype Projects** III. **Visual Design for Group or Individual Game Prototype** A. Individual or team-based work on a cohesive set of concepts for a game demo, single level, or short play experience. B. Character design C. Environment design D. Prop and Visual Effects design IV. **Game Interaction Scripting and Implementation** A. Create scripts for user interaction, player control, game progression, UI, NPC behavior and other game related actions. V. **Project Planning and Execution** A. Game Project Asset Creation (individual or group project driven) B. Game Project Mechanics and Scripts C. Game Project UI Wireframes D. Game Project Prototypes
Total Lecture Hours:	36
Total Laboratory Hours:	54
Total Hours:	90
Primary Method of Evaluation:	3) Skills demonstration
Typical Assignment Using Primary Method of Evaluation:	Develop a 3D character asset for a 3D game prototype. Work with a group of peers to refine a concept and use industry standard modeling software to create the base asset including textures and materials and a suitable rig for animation. Then export the asset for use in a standard game engine and verify the asset renders in a scene.
Critical Thinking Assignment 1:	Provide peer feedback on a playable game prototype. Consider the story, interaction, and game mechanics to provide actionable feedback based on the cohesiveness and applicability to the original concept.
Critical Thinking Assignment 2:	Analyze an existing 3D game and present your findings to the class. Consider the art style, play style, game mechanics, and entertainment value of the game. Then present the game and what makes it fun and play-worthy with a short slideshow presentation and live playthrough in class. Be prepared to address questions from the class.
Other Evaluation Methods:	Class Performance, Completion, Multiple Choice, Quizzes, True/False
Instructional Methods:	Demonstration, Discussion, Lab, Lecture, Multimedia presentations,

If other:	
Work Outside of Class:	Other (specify), Problem solving activity, Skill practice
If Other:	Work on projects
Up-To-Date Representative Texts:	Marcos Romero (Author), Brenden Sewell (Author), Luis Cataldi (Foreword), Blueprints Visual Scripting for Unreal Engine 5, 3rd Edition, Packt Publishing, 2022 Nicolas Alejandro Borromeo, Juan Gabriel Gomila Salas, Hands-On Unity Game Development - Fourth Edition, Packt Publising, 2024
Alternative Texts:	
Required Supplementary Readings:	
Other Required Materials:	
Requisite:	None
Category:	
Requisite course(s): List both prerequisites and corequisites in this box.	
Requisite and Matching skill(s):Bold the requisite skill. List the corresponding course objective under each skill(s).	
Requisite Skill:	
Requisite Skill and Matching Skill(s): Bold the requisite skill(s). If applicable	
Requisite course:	DART 104
Requisite and Matching skill(s):Bold the requisite skill. List the corresponding course objective under each skill(s).	**Navigate, Locate, and Manipulate Objects in a 3D Virtual World** DART 104 - Explore fundamentals of 3d objects and space such as scale, proportion, geometry, topology.
Requisite Skill:	
Requisite Skill and Matching skill(s): Bold the requisite skill. List the corresponding course objective under each skill(s). If applicable	
Enrollment Limitations and Category:	
Enrollment Limitations Impact:	

Course Created by:	Joyce Dallal
Date:	11/5/2021
Original Board Approval Date:	06/20/2022
Last Reviewed and/or Revised by:	Arnold Martin
Date:	03/10/2024
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