Course Acronym:	DART
Course Number:	150
Descriptive Title:	2D Game Art and Interaction
Division:	Fine Arts
Department:	Art
Course Disciplines:	Multimedia
Catalog Description:	In this course students will create static and animated assets for 2D games using current, industry-standard, software and game engines. Students will create a 2D game prototype with original game art and animation, UI wireframe, sound, and procedural VFX. Students will engage in a design and prototyping process to imagine a cohesive visual style, create 2D environments, sprites, and more. Through the application of basic 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:	ART 141
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 only
Credit Status:	Credit, degree applicable
Transfer CSU:	Yes
Effective Date:	01/16/1996
Transfer UC:	Yes
Effective Date:	01/1997
General Education: ECC	
Term:	
Other:	
CSU GE:	
Term:	
Other:	
IGETC:	
Term:	

Other:	
Student Learning Outcomes:	**SLO #1 Multimedia software** Students will be able to demonstrate correct use of industry-standard multimedia software to create motion and interactive content for the internet and handheld devices. **SLO #2 Sound and User Interactivity** Students will demonstrate the ability to use a timeline to incorporate sound and user interactivity into two-dimensional animations. **SLO #3 Motion and Interactive Media** Students will demonstrate the ability to output motion and interactive media in appropriate formats for use with current technology. **SLO #4 Problem-Solving** Students will apply visual communication problem-solving skills and two-dimensional design concepts to creation of interactive media.
Course Objectives:	1. Analyze and assess the visual style of a variety of 2D games through interactive presentations and discussions of 2D game aesthetics, mechanics, and entertainment value. 2. Work with existing game assets in a contemporary game engine (2D tiles, sprites, and animations) to quickly build game prototypes and change visual qualities of a game world. 3. Design a game concept, character concepts, and visual theme, from inspiration and sketches through digital presentation boards by applying 2D design concepts. 4. Use industry standard software to create static 2D game assets such as environment tiles, props, and background images. 5. Use industry standard software to create animated 2D game assets such as animated tiles, sprite animations, and cutscene assets. 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.
Major Topics:	I. **Analysis (2 hours, lecture)** A. Discuss and present existing game aesthetics B. Discuss and present existing game mechanics C. Discuss and present existing game entertainment value II. **Game Engine and Assets (4 hours, lecture)** A. Navigating game engine editor UI B. Installing game engine packages C. Importing and managing assets D. Slicing sprite sheets E. Game Engine Objects and Hierarchy

	F. Engine Components III. **Visual and Game Design (4 hours, lecture)** A. Game Concept Style and Mechanics B. Game concept visual development IV. **2D Static Asset Creation (8 hours, lecture)** A. 2D Tile map assets B. 2D Prop assets C. 2D UI Assets V. **2D Animated Asset Creation (6 hours, lecture)** A. Animated Tile Assets B. Character Sprite Animations C. Animated Props D. Animated Visual Effects Assets VI. **Game Interaction Scripting (10 hours, lecture)** A. Programming concepts for game prototypes B. Game engine architecture C. Game object scripting D. Visual scripting concepts and process VII. **Project Planning and Execution (2 hours, lecture)** **VIII. Game Analysis Presentation (4 hours, lab)** A. Present analysis of existing game aesthetics B. Present analysis of existing game mechanics C. Present analysis of existing game entertainment value **IX. 2D Static Asset Creation and Implementation (8 hours, lab)** A. Create 2D tile map, prop, and UI assets **X. 2D Animated Asset Creation and Implementation (6 hours, lab)** A. Create Animated Tile Assets B. Create Character Sprite Animations C. Create Animated Props D. Create Animated Visual Effects Assets **XI. Visual Design for Game Prototype (6 hours, lab)** 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 **XII. Game Interaction Scripting and Implementation (10 hours, lab)** A. Create scripts for user interaction, player control, game progression, UI, NPC behavior and other game related actions. **XIII. Project Planning and Execution (20 hours, lab)** 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:	**Example 1:** Design a tileset for a 2D side scrolling game that includes floor, walls, obstacles, transition tiles, and backgrounds. Use the tileset to build a sample level in the game engine. **Example 2:** Design a main character for 2D top-down game with a full character sheet, description, character sketches, color palette, and a scale sprite in resting position.
Critical Thinking Assignment 1:	Choose a 2D video game from any era and make a presentation to describe the game play, mechanics, art style. Analyze the work for its significance and influence on the history of video games. How has it influenced other games? What about it is innovative now or was innovative for its time? Present the game and your analysis to the class.
Critical Thinking Assignment 2:	Develop a UI wireframe in the game engine. Begin with a Flow diagram to show the user journey through the UI to start a game, change game options, pause play, quit play, restart play on loss, and an end game state. Use the flow diagram to create a UI script in a visual scripting language.
Other Evaluation Methods:	Completion, Multiple Choice, Other (specify), Quizzes, True/False
Instructional Methods:	Demonstration, Discussion, Lab, Lecture, Multimedia presentations
If other:	
Work Outside of Class:	Problem solving activity, Required reading, Skill practice, Study
If Other:	
Up-To-Date Representative Texts:	**Digital Text (OER Text)** Majewski, Jarek *and the Unity 2D Team*. 2D game art, animation, and lighting for artists. Unity Technologies, 2022. https://resources.unity.com/games/2d-game-art-animation-lighting-for-artists-ebook?ungated=true
Alternative Texts:	
Required Supplementary Readings:	Game engine tutorials and articles from the game engine publisher.
Other Required Materials:	
Requisite:	
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:	Understanding of and comfort with modern operating systems and digital content creation software and UI.
Requisite Skill and Matching Skill(s): Bold the requisite skill(s). If applicable	**Understanding of and comfort with modern operating systems and digital content creation software and UI.**

	Work with existing game assets in a contemporary game engine (2D tiles, sprites, and animations) to quickly build game prototypes and change visual qualities of a game world.
Requisite course:	**ART 141**
Requisite and Matching skill(s):Bold the requisite skill. List the corresponding course objective under each skill(s).	**Demonstrate appropriate computer skills needed for the creation of digital art.** **Produce digital images and time-based work through various digital media input and output methods using vector and raster software.** ART 141 - Use industry standard software to create static 2D game assets such as environment tiles, props, and background images. ART 141 - Use industry standard software to create animated 2D game assets such as animated tiles, sprite animations, and cutscene assets. **Apply the elements and principles of design in finished digital images and time-based works.** ART 141 - Design a game concept, character concepts, and visual theme, from inspiration and sketches through digital presentation boards by applying 2D design concepts.
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:	10/30/1995
Original Board Approval Date:	01/16/1996
Last Reviewed and/or Revised by:	Arnold Martin
Date:	11/03/2023
Last Board Approval Date:	06/17/2024
Effective Term:	FALL 2025