



El Camino College
COURSE OUTLINE OF RECORD – Official

Course Acronym:	DART
Course Number:	101
Descriptive Title:	Digital Concept Design Principles and Tools
Division:	Digital Art and Design Technology
Department:	Digital Art and Design Technology
Course Disciplines:	Digital Art and Design Technology
Catalog Description:	This course develops the foundational skills for digital drawing for concept design. Students will learn the principles of concept design, perspective drawing and visual communication of concepts. Students will learn and practice hand based constructive drawing techniques with digital input tools and raster image software to develop visual concepts through drawings of hard surface objects, environments, and characters for use as concepts for 2D and 3D animation, video games, and other entertainment media.
Prerequisite:	
Co-requisite:	
Recommended Preparation:	
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:	FA 2024
Transfer UC:	Yes
Effective Date:	FA 2024
General Education: ECC	
Term:	
Other:	
CSU GE:	
Term:	
Other:	
IGETC:	
Term:	

Other:	
CalGETC:	
Term:	
Other:	
Student Learning Outcomes:	Upon completion of this course, students will be able to: 1. apply principles of art and design (perspective, volume, contrast, opacity/transparency, layers, etc.) to the creation of imagined environments, props, and other digital assets. 2. apply the use of value (light, shadow, and greyscale) to add contour to 2D digital drawings. 3. represent objects in both perspective and orthographic projections
Course Objectives:	1. Digitally draw hard surface environments, props, vehicles, characters, in perspective and orthographically. 2. Practice line drawing lighting and shading techniques through primitive constructions (cubic forms, cylinders, cones, spheres) in 1, 2, and 3-point perspective. 3. Use 1-, 2-, and 3-point perspective techniques to represent objects with 3-dimensional depth through 2-dimensional digital drawing 4. Use perspective, line, and greyscale shading techniques to create structured compositions of imagined concepts. 5. Use research, imagery, and creative inspiration to generate mood boards, inspiration boards, or concept documents to develop ideas. 6. Apply principles of concept design to develop visual concepts for hard surface objects 7. Examine the difference between cultural appreciation and cultural appropriation to avoid stereotypes and misrepresentation. 8. Provide, accept, and integrate constructive feedback at various stages of a project. 9. Use industry-standard asset tracking, file naming conventions, and storage/back-up protocols. 10. Create a body of work for an industry-ready portfolio.
Major Topics:	Lecture Topics I. Hardware and System Software Concepts A. File management including saving, save as, copying and renaming files, saving documents to the cloud B. Managing workflow C. Keyboard shortcuts and time saving techniques D. Digital Input Tools (graphic tablets and stylus use) II. Demonstrate Raster Graphics Software Principles and Techniques A. File size, resolution, pixel dimensions, etc. B. Raster selection methods C. Use of Layers in Raster Graphics D. Layer Masks and Layer Effects III. Demonstrate Principles of Composition A. Principles of Composition (examples) 1. Subdivision of the picture plane 2. Format (square, rectangular, etc.) 3. Framing elements 4. Focal points

5. Balance and Symmetry
6. "Leading" the eye
7. Rule of Thirds
8. Golden Ratio
9. Unity
- IV. **Demonstrate Perspective Drawing in a Digital Environment**
 - A. Perspective Drawing techniques in a digital environment
 1. Single Point Perspective
 2. Two Point Perspective
 3. Three Point Perspective
 4. POV: Worm's eye, bird's eye, and human eye view
 5. Digital Guides, Grids, and Rulers
 - B. Projecting Primitive Shapes in Two Point Perspective
 1. Plotting horizon, station point, cone of vision from plan view
 - C. Perspective Constructions
 1. Perspective Grids
 2. Projection from Plan View
 - D. Dividing planes
 - E. Dividing boxes
 - F. Perspective reflections / mirroring
 - G. Constructing ellipses – minor axis on vanishing lines
- V. **Demonstrate Principles of Light and Shadow**
 - A. Greyscales with Digital Tools
 - B. Light Sources
 - C. Shadow Projections
 - D. Shadow and highlight placement
 - E. Shading Primitives
 - F. Reflected light
 - G. Reflective Surfaces
- VI. **Constructive Drawing Techniques – Drawing from Reference and Imagination**
 - A. Primitive Constructions for Complex Shapes
 - B. Lofting of Complex Curved Forms
 - C. Drawing "Through" Objects
- VII. **Visual Development / Concept Design Principles**
 - A. Principles of Visual Development / Concept Design
 - B. Concept design as practice
 - C. Gathering and Using Inspiration Materials
 1. Composition of a mood board
 2. Curating a visual theme from reference images
 3. Presenting a theme through visual materials
- VIII. **Hard Surface Concepts: Environments, Props, Vehicles, & Characters**
 - A. Digital drawing styles
 - B. Responding to reference materials
 - C. Photo-bashing and Collage Techniques
 - D. Draw and Paint Over Techniques
 - E. Compression
 - F. Light, Shadow, Texture
- IX. **Analysis and Criticism of Visual Design**
 - A. Establishing and understanding design criteria
 - B. Methods for constructive feedback
 - C. Responding to feedback
- Lab Topics**
 - I. **Research and Present a Short Bio of an Existing Artist in the Concept Field**

	A. Develop awareness of concept and storyboard artist career possibilities
II.	Digital Collage with Layer Masks and Stock Photos A. Practice Digital File Structure and Management B. Practice Raster Selection Techniques C. Practice Source File Management D. Practice Layer Effects
III.	Hand Drawn Perspective Construction Practice A. Practice constructing perspective grids B. Practice dividing perspective planes C. Practice mirroring lines over arbitrary lines of symmetry D. Practice constructing ellipses in proper perspective
IV.	Hand Drawn Digital Construction of Primitives A. Practice constructing primitives in perspective B. Practice hand-drawn input with stylus C. Practice drawing primitives in perspective D. Practice drawing "through" primitive shapes E. Practice modifying primitives with holes, rounded corners, etc.
V.	Hand Drawn Digital Shading and Gradient on Primitives A. Practice shadow projection B. Practice placement of shadows C. Practice placement of highlights
VI.	Construction of Complex Hard-Surface Forms with Primitives A. Practice breaking complex objects into primitives B. Practice light and shadow on complex constructions C. Practice drawing through primitives D. Practice lofting complex forms through perspective construction
VII.	Visual Development and Concept Design Theme Development A. Practice collection of visual reference and inspiration B. Practice layout and presentation of visual references and thematic content C. Practice visual storytelling to communicate a cohesive visual concept
VIII.	Project to Develop Concepts for Hard-Surface Visual Assets (Environment, prop, vehicle, or character) A. Practice iterative sketching for form development B. Practice use of visual references to inspire new concepts C. Practice photobash and draw-over techniques D. Practice application of iterative development through compression and "pushing" designs E. Practice drawing multiple objects within a cohesive visual theme
Total Lecture Hours:	36
Total Laboratory Hours:	54
Total Hours:	90
A.1. Primary Methods of Evaluation (Part 1 - CCN courses only):	
A.2. Primary Method of Evaluation (Part 2 - all courses; choose one):	3) Skills demonstration

Typical Assignment Using Primary Method of Evaluation:	Based on a consistent visual theme, draw a prop for a character in a scene based on the selected theme. Show the entire process from thumbnail sketching and blocking for proportional development to the constructed and detailed final object. Use line and value to detail the object and express the concept visually with only minimal written text or callouts. The final result will be assessed based on the concept's relevance to the chosen visual theme and inspiration materials, the technical quality of the drawing, and the clarity of the form and details.
Critical Thinking Assignment 1:	Create a visual theme from a specific prompt and intended genre of movie, game, or animation. Show the entire development process from initial visual research to a consistent, curated, inspiration or mood board. Incorporate keywords that describe and relate to the visual theme. The final results will be assessed for completion of process, the consistency of the final curated mood and inspiration boards, and the coherence and relevance of the descriptive keywords to the visual theme.
Critical Thinking Assignment 2:	Select a series of hard surface forms, characters, props, environments, etc and create overlay sketches that break the complex objects into simple positives. Critically assess the forms to use a minimal number of primitives to express the overall form. Show your entire process from the original sketches to a final series of drawings of the objects from various points of view, in perspective, built from primitives with appropriate use of line weight and greyscale shading to show the contour based on series of fixed light sources. The final results will be assessed based on the technical quality and clarity of the final drawings, full engagement with and expression of the process, and the consistency of the line weights and light/shadow in the final drawings.
Other Evaluation Methods:	Completion, Presentation
Instructional Methods:	Demonstration, Discussion, Guest Speakers, Lab, Lecture, Multimedia presentations
If other:	
Work Outside of Class:	Skill practice, Written work (such as essay/composition/report/analysis/research)
If Other:	
Up-To-Date Representative Texts:	Robertson, Scott, Bertling Thomas, How to Draw: drawing and sketching objects and environments from your imagination, 2013 (discipline standard)
Alternative Texts:	
Required Supplementary Readings:	
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:	
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:	Arnold Martin
Date:	09/01/2023
Original Board Approval Date:	06/17/2024
Last Reviewed and/or Revised by:	Arnold Martin
Date:	01/20/2026
Last Board Approval Date:	04/16/2026
Effective Term:	FA 2026