

GAME DESIGN AND DEVELOPMENT

INDUSTRY SECTOR | Arts, Media and Entertainment

PATHWAY | Visual and Media Arts



COURSE ESSENTIAL QUESTION:

Do you have what it takes to work in a game studio?

COURSE OVERVIEW:

This course introduces students to the analysis, design and creation of interactive 2D/3D games and animation. This is a hands-on course that begins with an extensive overview of creating digital games. The basic components of video game design; modeling, texturing, lighting, animation, and rules of game play will be addressed. Students will also learn skills to create traditional and digital art which will serve as conceptual directions for the games that they create. Using industry software, students will compete individual and group projects that require the problem solving and practical application of course competencies to create challenging games. Integrated throughout the course are Common Core State Standards and Career Technical Education Standards, which include safety, communication, technology, ethics, career planning and other employability skills.

INFORMATION:

- A. **Pre-requisite:** 16 years old or a 11th/12th grader
- B. **Abilities Required:** Basic math and reading comprehension
- C. **Dress Requirement and Grooming:** as required by Industry Standards
- D. **Students must master 70% of the certificate competencies to receive a certificate.**
- E. **Fee:** None
- F. **Course Length:** 180 hours
- G. **Textbook:** None
- H. **UC a-g Approved:** Yes
- I. **Industry Certification:** No
- J. **Sequencing to Include a Capstone:** Yes
- K. **Community College Articulation:** No
- L. **Common Core Alignment:** Yes
- M. **Community Classroom:** No
- N. **Career Technical Student Organization:** No
- O. **Work-Based Learning:** No

THEME: UNIT 1. DESIGN FUNDAMENTALS AND TRAINING

ENGAGING TITLE:

INSTRUCTIONAL HOURS: *30 HOURS*

Common Core Unit Objective

This unit provides students with an overview of the 2D/3D game artist profession. Students will also learn the basic design fundamentals through lecture notes and internet resources.

Key Assignments

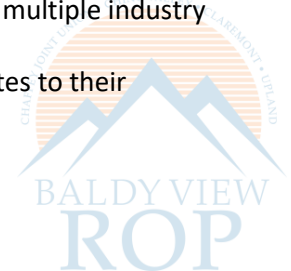
- Common elements, Companies and their styles, Various traditional drawing practices, Game analysis

Anchor Standards

- 2.0 **Communications:** Acquire and accurately use Arts, Media, and Entertainment sector terminology and protocols at the career and college readiness level for communicating effectively in oral, written, and multimedia formats.
- 2.5 Communicate information and ideas effectively to multiple audiences using a variety of media and formats.
- 5.0 **Problem Solving and Critical Thinking:** Conduct short as well as more sustained research to create alternative solutions to answer a question or solve a problem unique to the Arts, Media, and Entertainment sector, using critical and creative thinking, logical reasoning, analysis, inquiry, and problem-solving techniques.
- 5.6 Read, interpret, and extract information from documents.

Pathway Standards

- A1.0 Demonstrate ability to reorganize and integrate **visual art elements** across digital media and design applications.
- A1.2 Identify and use the principles of design to discuss, analyze, and create projects and products across multiple industry applications.
- A1.5 Research and analyze the work of an artist or designer and how the artist's distinctive style contributes to their industry production.



Common Core Standards

- RIST 11-12.4. Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze how an author uses and refines the meaning of a key term or terms over the course of text.

RESOURCES:

Resources

Resources



THEME: UNIT 2. DESIGN IMPLEMENTATION TO GAME ASSETS

ENGAGING TITLE:

INSTRUCTIONAL HOURS: 30 HOURS

Common Core Unit Objective

Using internet resources and lecture notes, students will apply design principles to create game assets that contributes to the overall game look and style.

Certificate Competencies

- Identify design elements and its functions on the aesthetics of the game art.
- Distinguish styles of various artists and the way their designs are implemented.
- Understand various techniques employed by the significant game artists.

Key Assignments

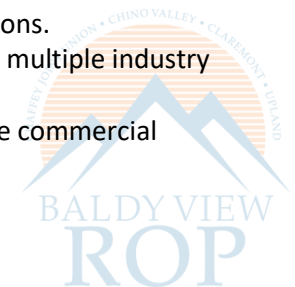
- Walk-cycle diagram & animation, Power move animation, OTS traditional animation, Card Illustration, Board Games, Character reaction

Anchor Standards

- 2.0 **Communications:** Acquire and accurately use Arts, Media, and Entertainment sector terminology and protocols at the career and college readiness level for communicating effectively in oral, written, and multimedia formats.
- 4.0 **Technology:** Use existing and emerging technology to investigate, research, and produce products and services, including new information, as required in the Arts, Media, and Entertainment sector workplace environment.

Pathway Standards

- A1.0 Demonstrate ability to reorganize and integrate visual art elements across digital media and design applications.
- A1.2 Identify and use the principles of design to discuss, analyze, and create projects and products across multiple industry applications.
- A1.3 Describe the use of the elements of art to express mood in digital or traditional art work found in the commercial environment.



Common Core Standards

- RIST 11-12.4. Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze how an author uses and refines the meaning of a key term or terms over the course of text.

RESOURCES:

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THEME: UNIT 3. PRE-VISUAL DEVELOPMENT

ENGAGING TITLE:

INSTRUCTIONAL HOURS: 60 HOURS

Common Core Unit Objective

Students will apply their understanding of design implementation process to create pre-visuals that will guide the overall look of the game and the game visual direction.

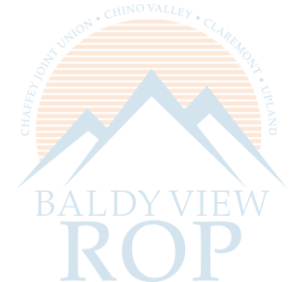
Key Assignments

- References collection, Plot/Script, Idea sketching, Character Development/Model Sheet, Character Expressions, Environment
- Digital Painting, Prop/Weapon Design, Storyboarding, Sculpting, Character painting.

Anchor Standards

Pathway Standards

- A1.0 Demonstrate ability to reorganize and integrate visual art elements across digital media and design applications.
- A1.3 Describe the use of the elements of art to express mood in digital or traditional artwork found in the commercial environment.
- A2.0 Apply artistic skills and processes to solve a variety of industry-relevant problems in a variety of traditional and electronic media.
- A2.5 Compile a portfolio of multiple original two- and three-dimensional works of art that reflect technical skills in an industry relevant application.
- A2.6 Create an artistic product that involves the effective use of the elements of art and the principles of design.
- A3.0 Analyze and assess the impact of history and culture on the development of professional arts and media products.
- A3.1 Identify and use the principles of design to discuss, analyze, and create projects and products across multiple industry applications.



Common Core Standards

- RIST 11-12.4. Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze how an author uses and refines the meaning of a key term or terms over the course of text.

RESOURCES:

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THEME: UNIT 4. GAME ASSETS CREATION

ENGAGING TITLE:

INSTRUCTIONAL HOURS: 40 HOURS

Common Core Unit Objective

Students will create art assets and animations that will be powered by the code functions.

Key Assignments

- In-Game Animations, Level Design, Event Sheet, Game Over/Start Screen, Coding exam,

Anchor Standards

Pathway Standards

- A2.0 Apply artistic skills and processes to solve a variety of industry-relevant problems in a variety of traditional and electronic media.
- A2.2 Demonstrate personal style and advance proficiency in communicating an idea, theme, or emotion in an industry-relevant artistic product.
- A2.6 Create an artistic product that involves the effective use of the elements of art and the principles of design.

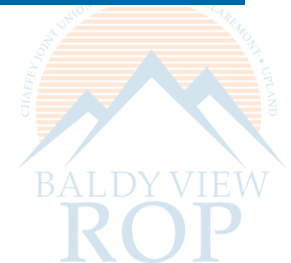
Common Core Standards

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THEME: UNIT 5. GAME PORTFOLIO PRESENTATION

ENGAGING TITLE:

INSTRUCTIONAL HOURS: 10 HOURS

Common Core Unit Objective

Using presentation techniques and professionalism, students will showcase artworks and game play to audiences.

Key Assignments

- Pitch Packet

Anchor Standards

- A1.0 Demonstrate ability to reorganize and integrate visual art elements across digital media and design applications.
- A1.3 Describe the use of the elements of art to express mood in digital or traditional art work found in the commercial environment.

Pathway Standards

- A1.0 *Demonstrate ability to reorganize and integrate **visual art elements** across digital media and design applications.*
- D4.0 Students will demonstrate mastery of game art and multimedia, including music, sound, art, and animation.
- D4.1 Demonstrate understanding of the elements of art, including line, shape, color, value, texture, space and balance, to set the mood and feel of a scene.

Common Core Standards

- RIST 11-12.4. Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze how an author uses and refines the meaning of a key term or terms over the course of text.

RESOURCES:

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THEME: UNIT 6. *GAME EVALUATION*

ENGAGING TITLE:

INSTRUCTIONAL HOURS: *10 HOURS*

Common Core Unit Objective

Students will be evaluating the games addressing the quality, game play and various game tangibles in order to help improve the overall game experience.

Key Assignments

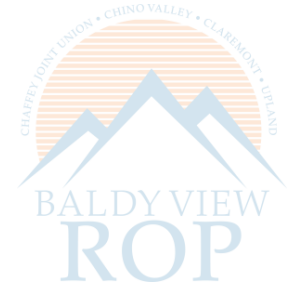
- Evaluation/Feedback

Anchor Standards

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- 5.6 Read, interpret, and extract information from documents.

Pathway Standards

- A1.0 Demonstrate ability to reorganize and integrate visual art elements across digital media and design applications.
- A1.2 Identify and use the principles of design to discuss, analyze, and create projects and products across multiple industry applications.
- D4.0 Students will demonstrate mastery of game art and multimedia, including music, sound, art, and animation.



Common Core Standards

- RIST 11-12.4. Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze how an author uses and refines the meaning of a key term or terms over the course of text.

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