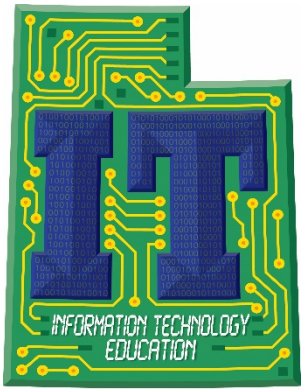
STRANDS AND STANDARDS

GAME DEVELOPMENT FUNDAMENTALS 2



Course Description

This course is designed to provide students with knowledge and project based experience of fundamental gaming development concepts relating to STEM. These concepts include game design, scripting, creation of digital assets, graphic resources, animations, understanding hardware, problem solving, critical thinking, collaboration, and project management.

Intended Grade Level	9-12
Units of Credit	0.5
Core Code	35.02.00.00.046
Concurrent Enrollment Core Code	35.02.00.13.046
Prerequisite	Computer Programming 1, Game Development Fundamentals.
Skill Certification Test Number	Unity Certified Developer
Test Weight	1.0
License Type	CTE and/or Secondary Education 6-12
Required Endorsement(s)	
Endorsement 1	Computer Science Level 1, or
Endorsement 2	Computer Science Level 2, or
Endorsement 3	Computer Programming (Historical), or
Endorsement 4	Multimedia

CTE® Learning that works for Utah

ADA Compliant: July 2018

STRAND 1

Video Game History: Students will review the relevant history of video games.

Standard 1

Relevant History -- The student will be able to discuss the relevant history of gaming including; arcade, console, computer, mobile, and modern devices.

- Identify Key figures and designers in the history of gaming
- Identify early games
- List important milestones in gaming

Standard 2

Game Ratings -- Students will be familiar with the ESRB ratings categories.

- Understand child and youth ESRB ratings: eC - early childhood, E - Everyone, E 10+ - Everyone 10 and up, T - Teen
- Understand what makes the adult ratings: M - Mature, AO - Adults only, RP - Rating pending

STRAND 2

Communication Features and Game Interface Design. Students will review communication features and game interface design

Standard 1

Game Design and Functionally -- Students will understand the design concept and importance of game functionality.

- Understand game feedback to user
- Understand game control for user

Standard 2

Design Feedback -- Students will understand the design feedback concepts.

- List game strategies
- Understand duration
- Describe game success

Standard 3

Design Control -- Students will understand the design control concepts

- Understand design functionality
- List usability in design control
- Describe accessibility
- Understand immersion
- Describe design aesthetics

Standard 4

Player View -- Students will understand the importance of "Player View" in game design

- Understand the following view options:
    - Two dimensional
    - Isometric
    - First Person
    - Third Person

Standard 5

Interface Elements -- Students will understand the classifications of interface elements

- Understand diegetic & non-diegetic elements
- Understand spatial elements
- List meta

STRAND 3

Game Platforms-Students will review and identify various gaming platforms and develop at least one game on one of those platforms.

Standard 1

Consoles and Generations -- Students will be able to identify console and console generations.

- Describe Atari and its generations
- Describe Nintendo and its generations
- Describe Sega and its generations
- Describe PlayStation and its generations
- Describe Microsoft and is generation

Standard 2

Computer Platforms -- Students will be able to identify computer platforms and features.

- Identify Windows features
- Identify Macintosh features
- Identify Linux features

Standard 3

Mobile Platforms --Students will be able to identify and describe mobile platforms and features.

- Identify phones and describe features (Android, iOS, Windows)
- Identify tablets and describe features (Android, iOS, Windows)
- Identify Nintendo and describe features (Gameboy, DS, 3DS)
- Identify Playstation and describe features (PSP, Vita)

STRAND 4

Game Genres and Types-Students will review and identify various game genres and types and develop at least one game using a game genre.

Standard 1

Game Genres -- Students will be able to identify game genres Action, Adventure, Role playing (RPG), Simulation, Strategy. Multiplayer.

Standard 2

Game Genre Development -- Students will be able to use a selected game genre to develop a game.

STRAND 5

Game Design Production Cycle-Students will be able to create a Game using the Game Design Production Cycle

Standard 1

Implement Project Management -- Students will be able to implement project management (such as Agile, Scrum, etc.).

- Create an analog or digital prototype version of a game
- Create a game using the design production process
- Work in a team
- Utilize project management skills

Standard 2

Game Concept Development -- Students will be able to develop and game concept.

- Create a game proposal - "Pitch Document"
- Develop a concept with considerations for plan, cost, and time

Standard 3

Pre-Production (Design) -- Students will be design documents as part of the Pre-Production (Design) of the game.

- Write a script - writing the storyline script
- Create storyboards
- Design the game
- Select a game engine
- Plan game play mechanics
- Put together a comprehensive design document detailing the game's goals
- Plan level designs, rooms
- Sketch and plan characters
- Build an overall blueprint

Standard 4

Production (Create) -- Students will be able to create the assets and incorporate them in a game.

- Create a prototype of game
- Create art and text
- Develop sounds for the game
- Implement scripting as needed
- Create game animations

STRAND 6

Insert strand text Post Production - Game Testing and Release. Students will implement game testing and release the game after it has been developed.

Standard 1

Alpha Testing - Students will alpha test games

- Find and repair bugs and glitches
    - Make needed adjustments

Standard 2

Beta Testing --Students will beta test games

- Implement beta testing
- Receive feedback from beta testers
- Make needed adjustments

Standard 3

Game Release -- Students will publish/release games.

Standard 4

Game Maintenance – Students will provide for maintenance of the game

STRAND 7

Understanding Careers-Students will explore careers and training in the game design and production world.

Standard 1

Career Awareness – Students will develop career awareness related to working in the gaming industry.

- Identify personal interests and abilities related to Gaming, such as: 1) Identify personal creative talents 2) Identify organizational and leadership skills 3) Identify special interest areas
- Identify the members of the Gaming industry's job titles, such as: Programmer, Level Artist, Character Artist, Texture Artist, Animator, Programmer, Texture Artist, Animator, GUI Designer, and Sound Designer.

- Investigate career opportunities, trends, and requirements related to Gaming Industry careers.

Standard 2

Educational Pursuits – Students will develop a realistic Plan for College and Career Readiness to help guide further educational pursuits

- Identify factors for employability and advancement in the gaming industry.
- Survey existing Game Development businesses to determine what training is required
- Survey universities and colleges to determine programs, degrees and training availability
- Develop employability competencies/characteristics: responsibility, dependability, ethics, respect, and cooperation
- Achieve high standards of personal performance with a positive work ethic and attitude

Performance Skills

- Understand careers related to the gaming industry.
- Design characters, levels, puzzles, art and animation. Write code, using various computer programming languages and integrate assets created into a functional digital platform. Perform tasks including project management and testing early versions of video games. Detail using commonly practiced reporting and feedback of discoveries.

Work Place Skills

Communication, Problem Solving, Teamwork, Critical Thinking, Dependability, Accountability, Legal requirements/expectations