Game Development Fundamentals 2

Exam Information

Exam number
897

Items
22

Points
33

Prerequisites
Game Development Fundamentals 1

Recommended course length
One semester

National Career Cluster
Information Technology

Performance standards
Included (Optional)

Certificate available
Yes

Description

The aim of this course is to enable students to learn and apply fundamental game development concepts that are relevant to STEM/industry. Through project-based work, students will gain skills in game design, scripting, digital asset creation, graphic resources, animations, hardware comprehension, problem solving, critical thinking, collaboration, and project management. Students will also experience the Game Development Production Pipeline, a process that guides them from the initial idea to the final product of a game.

Exam Blueprint

Standard	Percentage of exam
1. Pre Production: Evaluate game concept	23%
2. Production: Create and incorporate assets in a game	48%
3. Post- Production: Game testing and marketing strategy	29%

Standard 1

Pre Production: Students will be able to evaluate what the game concept is, why it should be made, and what resources are required to make it.

Objective 1 Game Concept Development—Students will be able to develop a game concept.

1. Create a game proposal - "Pitch Document"
    a. goal
    b. characters (protagonist, antagonist)
    c. environment
    d. obstacles
    e. platform
    f. storyboard sketch
    g. market research
2. Develop a concept with considerations for plan, cost (not a budget, but cost to student and time
3. outside of class), and project hours.

Objective 2 Pre-Production (Design)—Students will create a Game Design Document (GDD) as part of the Pre-Production (Blueprint) of the game.

1. Create a Storyline (Narrative/story structure)
2. Write Dialogue (Barks)
3. Create detailed storyboard
4. Design concept of the game
5. Select a game engine
6. Plan gameplay mechanics
7. Put together a comprehensive GDD detailing the game's goals
8. Plan level designs, rooms
9. Sketch and plan characters

Standard 1 Performance Evaluation included below (Optional)

Standard 2

Production: Students will be able to create assets and incorporate them in a game as part of a team (game designer, programmer, project manager, art director, animation director, & audio designer).

Objective 1 Implement Project Management—Students will implement project management skills in developing a game.

1. Understand the concept of iterative development
2. Create an analog or digital prototype version of a game
3. Work in a team
4. Utilize project management skills

Objective 2 Aesthetic Game Development Components—Students will be able to explain and implement key aesthetic components of game development:

1. Animation
2. Sprites or 3D models
3. Environment (player view, surroundings, camera, lighting)
4. Music and Sound Effects
5. User interface/UI components (eg inventory, score, health bar, lives, navigation, powerbar, text indicators, maps, level, sound on/off)

Objective 3 Functional Game Design Components—Students will explain and implement key functional components of game design:

1. Physics (motion, gravity, collision, drag)
2. User Input
3. Game Feedback
4. Scripting

Objective 4 Design Usability and accessibility—Students will implement the design control concepts.

1. Create usability in design control (implement the ability for the player to change movements, switching views.)
2. Describe accessibility (describe how game controls will accommodate users with disabilities and / or refer to what is used to play the game: touch screen, adaptive controller, motion control)
3. Understand immersion (feeling part of the game, emotions)

Objective 5 Interface Elements—Students will implement classifications of interface elements.

1. Understand diegetic elements (skins, weapons, overlays, dashboard of car)
2. Understand non-diegetic elements (HUD (Heads-Up Display), life meter, action bar, stats)
3. Understand spatial elements (racing lines, directional arrows, floating texts, tool tips)
4. Understand meta elements (color filters, subtitles, environmental effects)

Standard 2 Performance Evaluation included below (Optional)

Standard 3

Post-Production—Students will implement marketing strategies, engage in game testing, and release the game.

Objective 1 Beta Testing—Students will beta test games.

1. Implement beta testing
2. Receive feedback from beta testers
3. Make needed adjustments

Objective 2 Marketing—Students will use marketing strategies to successfully advertise their game.

1. Identify target market
2. Research different marketing platforms
3. Research and choose licensing options
4. Understand the role of community management in marketing
5. Develop advertisements using at least two different mediums (online, social media, print)
6. Understand different sales (monetization) strategies (free download / paid content (freemium), upfront purchase, subscription model)

Objective 3 Game Release—Students will publish/release game(s).

1. Research intellectual properties
2. Explain piracy and copyright
3. Understand the process of publishing a game to your platform

Objective 4 Game Maintenance—Students will provide for maintenance of the game.

1. Develop strategies for post release content, bug fixes, and updates.

Standard 3 Performance Evaluation included below (Optional)

Workplace Skills

1. Communication
2. Problem Solving
3. Teamwork
4. Critical Thinking
5. Dependability
6. Accountability
7. Legal Requirements/Expectations

Performance standards rating scale

0	Limited skills	2	→	4	Moderate skills	6	→	8	High skills	10

Standard 1 – Pre Production: Evaluate game concept **Score:**

- Game Concept Development—Students will be able to develop a game concept.
- Pre-Production (Design)—Students will create a Game Design Document (GDD) as part of the Pre-Production (Blueprint) of the game.

Standard 2 – Production: Students will be able to create assets and incorporate them in a game as part of a team (game designer, programmer, project manager, art director, animation director, & audio designer). **Score:**

- Implement Project Management—Students will implement project management skills in developing a game.
- Aesthetic Game Development Components—Students will be able to explain and implement key aesthetic components of game development:
- Functional Game Design Components—Students will explain and implement key functional components of game design:
- Design Usability and accessibility—Students will implement the design control concepts.
- Interface Elements—Students will implement classifications of interface elements.

Standard 3 – Post- Production—Students will implement marketing strategies, engage in game testing, and release the game. **Score:**

- Beta Testing—Students will beta test games.
- Marketing—Students will use marketing strategies to successfully advertise their game.
- Game Release—Students will publish/release game(s).
- Game Maintenance—Students will provide for maintenance of the game.

Performance standard average score:

Evaluator Name: _____

Evaluator Title: _____

Evaluator Signature: _____

Date: _____