

Game Development Fundamentals 2

Exam Information	Description
Exam number 897 Items 22 National Career Cluster Information Technology Certification available Yes	The aim of this course is to enable candidates to learn and apply fundamental game development concepts that are relevant to STEM/industry. Through project-based work, candidates will gain skills in game design, scripting, digital asset creation, graphic resources, animations, hardware comprehension, problem solving, critical thinking, collaboration, and project management. Candidates 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 and Performance Skills

Standard	Percentage of exam score
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%

*Includes performance skill evaluation

Standard 1 - Pre Production: Evaluate Game Concept

Pre Production: Candidates 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—Candidates 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 candidate and time
3. outside of class), and project hours.

Objective 2 Pre-Production (Design)—Candidates 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

Optional: Standard performance evaluations on the final page of this document

Standard 2 - Production: Create And Incorporate Assets In A Game

Production: Candidates 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—Candidates 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—Candidates 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—Candidates 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—Candidates 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—Candidates 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 3 - Post-Production: Game Testing And Marketing Strategies

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

Objective 1 Beta Testing—Candidates will beta test games.

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

Objective 2 Marketing—Candidates 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—Candidates 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—Candidates will provide for maintenance of the game.

Optional: Standard performance evaluations on the final page of this document.

Performance Skills Evaluation

Exam name: Game Development Fundamentals 2

Candidate Name: _____

Performance assessments may be completed and evaluated any time before the certification is issued. The following performance skills can be used in connection with the associated standards and exam. The evaluator will function as the subject matter expert to determine if the candidate meets the skills requirements with a Yes/No for passing.

Standard 1 – Pre Production: Evaluate game concept

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

Pass:

Standard 2 – Production: Candidates 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).

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

Pass:

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

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

Pass:

Evaluator Name:

Date:
