

ICT Gaming Essentials

Objectives Matrix

The ICT Gaming Essentials course focuses on fundamentals of interactive computer game creation. Students will learn about the design process for creating a gaming program, including criteria and constraint identification, content research and storyboard creation. They will also study computer programming concepts that are essential to game development, including program flow modeling, program code creation, and result evaluation and modification practices.

ICT Domain 10: Gaming Essentials Learning Objective	ICT Gaming Essentials Courseware Lesson(s) and Section(s)
Domain 10.1: Identify principles of gaming.	
10.1.1: Describe the role of games in modern society (e.g., education, task training, social networking, therapy, recreation).	Lesson 1: Introduction to Game Design - Why We Play Games
10.1.2: Identify various types of games (e.g., chance, skill, knowledge, role playing, storytelling).	Lesson 1: Introduction to Game Design - Why We Play Games
Domain 10.2: Describe the design process and apply it to game development.	
10.2.1: Identify the steps of the design process for creating a game.	Lesson 1: Introduction to Game Design - The Design Process for Creating Games
10.2.2: Apply the design process to solving a problem.	Lesson 1: Introduction to Game Design - The Design Process for Creating Games
10.2.3: Analyze (deconstruct) existing games.	Lesson 1: Introduction to Game Design - The Design Process for Creating Games
10.2.4: Identify the tools and skills needed for creating games.	Lesson 1: Introduction to Game Design - The Design Process for Creating Games
10.2.5: Identify design criteria and constraints.	Lesson 1: Introduction to Game Design - The Design Process for Creating Games
10.2.6: Create storyboards to model a game's program flow and functionality.	Lesson 1: Introduction to Game Design - The Design Process for Creating Games

ICT Domain 10: Gaming Essentials Learning Objective	ICT Gaming Essentials Courseware Lesson(s) and Section(s)
Domain 10.3: Describe programming concepts and apply them to game development.	
10.3.1: Identify the programmer's role in creating games.	Lesson 2: Introduction to Programming for Games - How the Programmer Interacts with the Computer
10.3.2: Identify common programming languages and applications used to create computer games.	Lesson 2: Introduction to Programming for Games - How the Programmer Interacts with the Computer
10.3.3: Compare sequential, iteration (loop) and selection programming structures.	Lesson 2: Introduction to Programming for Games - Understanding Algorithms
10.3.4: Define the term algorithm (i.e., a set of repeatable steps) and how it applies to problem-solving.	Lesson 2: Introduction to Programming for Games - Understanding Algorithms
10.3.5: Create an algorithm to solve a problem or complete a task.	Lesson 2: Introduction to Programming for Games - Understanding Algorithms
10.3.6: Use pseudocode to model a game program's flow.	Lesson 2: Introduction to Programming for Games - Introduction to Flow Charts and Pseudocode
10.3.7: Define logic errors and identify them in a game program or model.	Lesson 2: Introduction to Programming for Games - Introduction to Flow Charts and Pseudocode
10.3.8: Explain the types and uses of variables in game programming.	Lesson 3: Basic Programming Concepts - Introduction to Programming Concepts
10.3.9: Describe basic Boolean concepts, including logical operators, order of precedence, expressions.	Lesson 3: Basic Programming Concepts - Introduction to Programming Concepts
10.3.10: Describe the use of events, event handlers and functions in game programming.	Lesson 3: Basic Programming Concepts - Introduction to Programming Concepts
10.3.11: Describe the use of parameters and arguments in game programming.	Lesson 3: Basic Programming Concepts - Introduction to Programming Concepts
10.3.12: Describe the use of objects, classes and instances in game programming.	Lesson 3: Basic Programming Concepts - Introduction to Programming Concepts
10.3.13: Describe the use of properties and methods with objects in game programming.	Lesson 3: Basic Programming Concepts - Introduction to Programming Concepts

ICT Domain 10: Gaming Essentials Learning Objective	ICT Gaming Essentials Courseware Lesson(s) and Section(s)
Domain 10.4: Create an interactive game program.	
10.4.1 Write the appropriate code to create a simple game using structured programming.	Lesson 4: Creating Interactive Games - Creating an Interactive Game
10.4.2: Test and evaluate the game program you created.	Lesson 4: Creating Interactive Games - Creating an Interactive Game
10.4.3: Modify the game program as needed to solve a problem.	Lesson 4: Creating Interactive Games - Creating an Interactive Game
10.4.4: Create an animated object (i.e., sprite) to be used in a game program.	Lesson 4: Creating Interactive Games - Creating an Interactive Game
10.4.5: Use programming code to control the behavior of an animated object (i.e., sprite) in a game program.	Lesson 4: Creating Interactive Games - Creating an Interactive Game