CS Applications: Game Development

Grades 6-12

Programming Language:
GodotScript

Software used in Course:
Godot

Supported Devices
Mac
Windows

Instructional Models:
Direct Instruction
Instructional Scaffolding
Use of Learning Objectives
Relevant Vocabulary
Bloom's Taxonomy or Questions
Inquiry-Based Instruction
Project-Based Instruction
Cooperative Learning
Independent Study

Supported Learning Models:
Classroom
Blended
Hybrid
Synchronous
Asynchronous

Standards Aligned:
National and State Computer Science Standards

Reinforces:
Math
ELA
Social-Emotional Learning

Course Description

In this course, students will learn the fundamentals of game theory and design using the Godot game engine. In Unplugged and Coding lessons, students will apply gaming constructs and processes to plan and develop their own video games. Students will delve into game psychology, security measures, and troubleshooting techniques in Digital Citizenship lessons. STEM Career lessons focus on careers within the gaming industry. By the end of this course, students will be able to navigate the Godot gaming environment, have an understanding of industry careers and ethical considerations, and be able to create their own games using game design principles.

Learning Objectives

Each lesson plan is designed to enable students to achieve specific learning outcomes related to course aligned computer science competencies. For example, at the end of this course students will be able to:

- Analyze the evolution of video game culture while considering innovations relative to game design.
- Analyze and explain components of a video game by decomposing scenes and scripts.
- Use creative expression to iteratively develop a game and implement enhancements, such as lives and levels.
- Describe the impacts video games have on individuals and society.
- Describe how various security issues might compromise video games and how to avoid them.