

Video Game Design 10156

Rationale Statement:

In video game design, students will extend their knowledge of computer programming and design. Students will be given opportunities to design, implement, and present meaningful programs through a variety of media.

Grade Level: 10-12

Course Topics:

- Elements of design
- Image rendering
- Project management
- Programming

Indicator #1: Demonstrate basic game design elements	
Bloom's Taxonomy Level	Standards & Examples
Understanding	VGD 1.1 Understand basic game design elements. Examples: <ul style="list-style-type: none"> • conceptual ideas • storyline • visualization • sound elements • game play
Understanding	VGD 1.2 Understand the fundamentals of game art. Examples: <ul style="list-style-type: none"> • Look & feel • Shading • Basics of color & color palettes
Understanding	VGD 1.3 Understand image rendering. Examples: <ul style="list-style-type: none"> • Transparency • Hardware acceleration • Animations
Indicator #2: Organize video game design projects	
Bloom's Taxonomy Level	Standards & Examples
Applying	VGD 2.1 Design and implement procedures and timelines. Examples: <ul style="list-style-type: none"> • track progress and evaluate a video game project

Applying	<p>VGD 2.2 Demonstrate knowledge and appropriate use of program development tools.</p> <p>Examples:</p> <ul style="list-style-type: none"> • use of the operating system • network resources
Analyzing	<p>VGD 2.3 Understand and evaluate online technologies.</p> <p>Examples:</p> <ul style="list-style-type: none"> • online interactions • multi-player games
Indicator #3: Demonstrate knowledge of the software development process.	
Applying	<p>VGD 3.1 Demonstrate knowledge of software development methodology.</p> <p>Examples:</p> <ul style="list-style-type: none"> • Demonstrate knowledge of system analysis issues related to design, testing, implementation, and maintenance. • Identify roles on team members/customers in the software development process. • Demonstrate knowledge of how to use software methodologies to analyze a real-world problem. • Identify constraints of the current project. • Demonstrate knowledge of modeling and analyzing functional requirements (e.g., dataflow diagrams, process specifications, and a data dictionary).
Applying	<p>VGD 3.2 Apply tools for developing software applications.</p> <p>Examples:</p> <ul style="list-style-type: none"> • Demonstrate knowledge of software development environment. • Use prototyping techniques. • Use desk checking • Demonstrate knowledge of reuse and components • Analyze real world problems for the applicability of structured, object oriented, event-driven logical design methods. • Design system input, output, processing, and interfaces.
Applying	<p>VGD 3.3 Apply language specific programming tools/techniques.</p> <p>Examples:</p> <ul style="list-style-type: none"> • Develop programs using appropriate language. • Make use of appropriate development environment for the selected language. • Demonstrate knowledge of the basics of structured, object-oriented, and event-driven programming • Demonstrate knowledge of the concepts of data and procedural representation.

Indicator #4: Create a computer application by writing code.	
Creating	<p>VGD 4.1 Develop an application using selected programming language or software.</p> <p>Examples:</p> <ul style="list-style-type: none"> • Translate logical design into code in an appropriate language argument. • Demonstrate knowledge of specific language syntax
Applying	<p>VGD 4.2 Demonstrate knowledge of basic software systems implementation.</p> <p>Examples:</p> <ul style="list-style-type: none"> • Compile and debug code. • Prepare code documentation. • Conduct code walkthrough and/or inspection. • Troubleshoot unexpected results. • Access needed information using company and manufacturers' references.
Indicator #5: Explore safety, cultural, and legal issues related to video game design.	
Applying	<p>VGD 5.1 Understand intellectual property.</p> <p>Examples:</p> <ul style="list-style-type: none"> • privacy and sharing of information • copyright laws • software licensing agreements
Applying	<p>VGD 5.2 Demonstrate proper etiquette and safe behaviors when using network resources.</p> <p>Examples:</p> <ul style="list-style-type: none"> • use of software • acceptable use policies
Analyzing	<p>VGD 5.3 Evaluate the cultural aspects of video game design fundamentals.</p> <p>Examples:</p> <ul style="list-style-type: none"> • Rationale for games • Types of games • Stereotypes • Societal impacts of gaming industry