

## Approved Innovative Course

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Course: Video Game Programming  
PEIMS Code: N1300994  
Abbreviation: VIDEOGD2  
Grade Level(s): 10-12  
Number of Credits: 1.0

### Course description:

Video Game Programming expands on the foundation created in Video Game Design through programming languages such as: C# programming, XNA game studio, Java, and Android App. In this course, students will investigate the inner workings of a fully functional role-playing game (RPG) by customizing playable characters, items, maps, and chests and eventually applying customizations by altering and enhancing the core game code.

### Essential knowledge and skills:

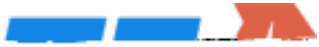
#### Video Game Programming

- (a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Video Game Design. Students shall be awarded one credit for successful completion of this course.
- (b) Introduction.
  - (1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.
  - (2) The Information Technology (IT) Career Cluster focuses on building linkages in IT occupations for entry level, technical, and professional careers related to the design, development, support, and management of hardware, software, multimedia, and systems integration services.
  - (3) Video Game Programming expands on the foundation created in Video Game Design through programming languages such as: C# programming, XNA game studio, Java, and Android App. In this course, students will investigate the inner workings of a fully functional role-playing game (RPG) by customizing playable characters, items, maps, and chests and eventually applying customizations by altering and enhancing the core game code.

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- (B) analyze and solve program errors individually or in teams and collaborate with classmates in problem solving and debugging program errors; and
  - (C) apply technical writing skills to explain game design concepts, document programming logic, and document development processes.
- (6) The student applies the use of appropriate and available digital tools for research and learning. The student is expected to:
- (A) review and research websites, wiki's, and blogs for appropriate content, ideas, and best practices to engage other users; and
  - (B) investigate websites to explain concepts learned and to reference coding syntax.
- (7) The student applies engineering, physics, and mathematical concepts critical to game development. The student is expected to:
- (A) discuss and describe the principles of software engineering design within complex functional games;
  - (B) apply the principles of software engineering to enhance a complex functional game including multiple movements and multiple controls;
  - (C) apply the principles of software engineering within a complex fully-functional game/bug free program;
  - (D) reverse engineer existing game functionality to understand game design; and
  - (E) demonstrate the use of mathematics and physics to evaluate behavior in an existing game to enhance core logic.

Description of specific student needs this course is designed to meet:

These courses give students the opportunity to investigate further into gaming development and provide them with real-world processes and systems used in the professional world of video games and simulations.



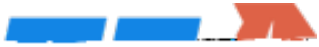
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display; Recommended graphics card that supports DirectX 10, with a supporting WDDM 1.1 driver; DVD-ROM Drive; Projector/Printer /Copier

Resources: Gaming and programming resources such as: Stempfuse.com; Microsoft Developers Network; [http://msdn.microsoft.com/en-us/library/ms228593\(v=vs.100\)](http://msdn.microsoft.com/en-us/library/ms228593(v=vs.100)); XBox Indie Games; <http://xbox.create.msdn.com/en-US>

Recommended course activities:



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Additional information: