

Advanced Video Game Programming

Knowledge and Skills. [VIDE0GD3](#)

- 1 The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:** [VIDE0GD3.1](#)
 - A** identify and demonstrate positive work behaviors and personal qualities needed to be employable; [VIDE0GD3.1A](#)
 - B** demonstrate skills related to seeking and applying for employment such as building a resume and identifying potential job opportunities; [VIDE0GD3.1B](#)
 - C** create a career portfolio to document information such as work experiences, licenses, certifications, and work samples; and [VIDE0GD3.1C](#)
 - D** compare and evaluate employment opportunities in the game programming industry. [VIDE0GD3.1D](#)

- 2 The student applies technical skills related to software development, computer programming, and graphic design. The student is expected to:** [VIDE0GD3.2](#)
 - A** develop an application development for mobile application technology; [VIDE0GD3.2A](#)
 - B** create a program using any code; [VIDE0GD3.2B](#)
 - C** interpret technical and increasingly complex programming instructions in order and in detail; [VIDE0GD3.2C](#)
 - D** design and program real working education-based mobile application projects; [VIDE0GD3.2D](#)
 - E** apply digital design resources and color theory to draw and animate sprites, objects, platforms, backgrounds, and loops; [VIDE0GD3.2E](#)
 - F** examine common mobile application technologies and platforms; [VIDE0GD3.2F](#)
 - G** create and program original material; [VIDE0GD3.2G](#)
 - H** integrate separate files into a mobile application project; [VIDE0GD3.2H](#)
 - I** create and edit audio sound effects and music; and [VIDE0GD3.2I](#)
 - J** create user instructions, application rules, and document development processes using technical writing as part of a development team. [VIDE0GD3.2J](#)

- 3 The student applies creativity, innovation, and critical-thinking skills to video game programming methodology. The student is expected to:** [VIDE0GD3.3](#)
 - A** identify and discuss the steps of the engineering design cycle; [VIDE0GD3.3A](#)

- B explain how to solve practical problems using the engineering design cycle; [VIDE0GD3.3B](#)
 - C apply technical skills to improve mobile application projects; [VIDE0GD3.3C](#)
 - D apply technical skills to create, design, and program original applications; [VIDE0GD3.3D](#)
 - E evaluate applications and discuss viable solutions for improving performance quality; [VIDE0GD3.3E](#)
 - F review and critique applications for performance quality; [VIDE0GD3.3F](#)
 - G explain the findings of reviewed applications to peers; [VIDE0GD3.3I](#)[VIDE0GD3.3G](#)
 - H evaluate the projects of self and of peers using established criteria; and [VIDE0GD3.3H](#)
 - I display an understanding of marketing as a part of the video game design industry. [VIDE0GD3.3I](#)
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4 The student applies communication and collaboration skills as an individual and as part of a team. The student is expected to: [VIDE0GD3.4](#)

- A assemble and collaborate in mobile application development groups; [VIDE0GD3.4A](#)
 - B develop and adhere to project timelines; [VIDE0GD3.4B](#)
 - C use the engineering design cycle as a guide for product development; [VIDE0GD3.4C](#)
 - D manage a project, lead a development team, assign tasks, evaluate progress, facilitate communication among team members and ensure that project is completed within time deadline; and [VIDE0GD3.4D](#)
 - E conduct in-class presentations including demonstration of application. [VIDE0GD3.4E](#)
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5 The student applies the use of appropriate and available digital tools for research and learning. The student is expected to: [VIDE0GD3.5](#)

- A research and document information related to current topics such as mobile application development, marketing statistics, and color and design theory; and [VIDE0GD3.5A](#)
 - B develop appropriate ways to use wikis and blogs to engage users of mobile applications. [VIDE0GD3.5B](#)
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6 The student applies engineering, physics, and mathematical concepts to mobile application development. The student is expected to: [VIDE0GD3.6](#)

- A discuss the process used in designing and developing software and how it can be applied to other design and development projects such as bridges, buildings, and machines; [VIDE0GD3.6A](#)
- B explain how basic physics concepts such as gravity, acceleration, velocity, speed, trajectory, Newton's Laws of Motion, force, and elasticity are used in mobile application development; [VIDE0GD3.6B](#)

- C** compare the interconnections between mathematical techniques and physics calculations used in mobile application development and the real world; [VIDE0GD3.6C](#)
 - D** compare the use of mathematics and physics to evaluate behavior within applications in the “virtual world” and in the “real world.” [VIDE0GD3.6D](#)
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7 The student applies post-secondary and career options and resources related to mobile application development and STEM. The student is expected to: [VIDE0GD3.7](#)

- A** research how technical and communication skills used in mobile application design translates to other technology industries and businesses; [VIDE0GD3.7A](#)
- B** research postsecondary requirements such as, diplomas, certificates, and degrees needed to gain employment in game development and other technology-based industries; and [VIDE0GD3.7B](#)
- C** research career trends such as wage data, experience required, job demand, job descriptions, and potential employers related to employment opportunities in mobile application development and technology based industries [VIDE0GD3.7C](#)