

## ***CS 4173: Video Game Development***

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**Required Course:** Elective

**Course Number:** CS 4173

**Course Name:** Video Game Development

**Credit Hours:** 3

**Lecture Hours:** 3

**Lab Hours:** 0

**Instructors:** Dr. Blayne E. Mayfield  
Dr. Douglas Heisterkamp

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**Book Title(s):** *Unity in Action: Multiplatform game development in C# with Unity 5*

**Book Author(s):** Joseph Hocking

**Book Year(s):** 2018

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**Course Description:** Theory and pragmatics of game design including game mechanics, storytelling, and types of game play. The relationship between human/computer interaction and the user experience. A survey of game genres. An overview of the video game industry from a design perspective.

**Course Prerequisites:** CS 2133 (Computer Science II), CS 2433 (C/C++ Programming), and MATH 2144 (Calculus I).

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**Course Goals:** By the end of the course, students should have learned the following:

- Sources of current and upcoming news and trends related to video game development and evaluating your own design and development practices in terms of what you discover there.
- The use of the Unity IDE (Interactive Development Environment) to develop, test, and debug both 2D and 3D video games.
- The use of related software tools, such as those for developing art and audio assets.
- The syntax and semantics of the C# programming language, as it is used in Unity 3D.
- Several fundamental Android APIs necessary to develop apps.

**Student Outcomes:**

<b>Student Outcome</b>	<b>Course Outcome</b>
1	<ul style="list-style-type: none"><li>• Learn the computer graphics, audio and AI concepts in video game development.</li></ul>
2	<ul style="list-style-type: none"><li>• Students will be able to use Unity IDE to develop video games.</li></ul>
3	<ul style="list-style-type: none"><li>• Students will be able to learn to work as a team.</li></ul>

5	<ul style="list-style-type: none"><li>• Working as part of a multi-campus team to develop video games effectively and efficiently.</li></ul>
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**Course Topics:**

- History of video games.
- A survey of various game platforms.
- Computer graphics, audio tools and techniques.
- Artificial intelligence for game development.
- Game engines.
- Game development tools and techniques.
- An overview of the video industry from a development perspective.