Miami Dade College

Course Description

DIG1729C | Game Engines |4.00 credits

This course is an introduction to game engines and their uses. Students will learn the basic techniques for creating interactive applications and how these techniques can be used for Virtual Reality (VR) and Augmented Reality (AR) projects.

Course Competencies

Competency 1: The student will demonstrate ability to prepare Assets for Implementation by:

1. Defining how polygon counts can influence performance in real time visualizations
2. Listing the steps involved in the creation of 3D objects
3. Recognizing valid file formats to exchange 3D information between applications
4. Defining optimal polycount limits for different platforms

Competency 2: The student will demonstrate ability to build and deploy game engine projects by:

1. Defining best practices while compiling for different platforms
2. Identifying steps on how to debug an application
3. Recognizing data structures and its uses on a program
4. Defining how to access different app distribution platform

Competency 3: The student will demonstrate ability to incorporate 3d models into interactive experiences by:

1. Identifying proper geometry for game engine use
2. Defining game compatible image formats and their differences
3. Recognizing when to use high resolution textures and when to tile lower resolution images
4. Identifying how to use lighting in a 3d scene to create mood and exaggerate depth

Competency 4: The student demonstrates how to add GUI elements such as menus and player controls by:

1. Distinguishing between GUIS and HUDS and their respective applications
2. Recognizing GUI elements created inside the engine and interface elements created using external applications
3. Defining relationships between in game data and graphic elements inside the GUI
4. Defining variables and using them to control game outcomes

Learning Outcomes:

- Use quantitative analytical skills to evaluate and process numerical data
- Solve problems using critical and creative thinking and scientific reasoning
- Use computer and emerging technologies effectively
- Demonstrate an appreciation for aesthetics and creative activities