I. Description of Course:

1. Department/Course: MM - 119

2. Title: Video Game Development

3. Cross Reference:

4. Units: 4
   - Total Lecture Hours: 36.00
   - Total Lab Hours: 108.00
   - Total Contact Hours: 144.00
   - Total Outside-of-Class Hours: 72.00
   - Total Student Work Hours: 216.00

5. Repeatability: No

6. Grade Options: Grade Only (GR)

7. Degree/Applicability: Credit, Degree Applicable, Transferable - CSU (T)

8. General Education:

9. Field Trips: Not Required

10. Requisites:
    - Prerequisite
        - MM 118 Introduction to Video Game Design
    - Advisory
        - MM 114 Textures for 3D
        - MM 121A 3D Modeling

11. Catalog Description:
    This course focuses on producing video games using 3D software and game engines. Students work individually and in a team environment and follow production practices employed in the video game industry. Topics include 2D and 3D game development processes, graphics, game scripting, motion control, narratives in games, interface design for game development, Virtual Reality, music, and sound.

12. Class Schedule Description:
    Develop video games using 3D software and game engines.

13. Counselor Information:
    This course can be included as an elective in the Certificate of Achievement and AA degree in Multimedia. This course is required for the Certificate of Accomplishment in Video Game Development.

II. Student Learning Outcomes
Students will be able to:

1. Develop fluency in video game terminology.
2. Demonstrate an understanding of the development process employed in the video game industry.
3. Recognize the commonalities and differences of game engines.
4. Collaborate in a team environment while following production practices employed in the video game industry.
5. Incorporate research, creative thinking, innovation, inquiry, and analysis to game design projects and when critiquing the work of peers.

III. Course Content:
A. Introduction to the different game engines

1. Terminology and technology
2. Tools employed to develop a game

B. The game development process

1. Introduction to using a level editor

   Lab:

   1. Using a level editor to create a simple map
   2. Importing 3D models
   3. Developing ideas
   4. Creating 3D models
   5. Optimizing 3D models for games engines

C. Project planning

1. Determine the design document for the game

   Lab:

   1. Creating a team project
   2. Developing an artistic style for the game
   3. Character development
   4. Schedule and a timeline

D. Building a level

1. Assets

   Lab:

   1. Creating and importing assets

E. Visual Atmosphere

1. Create a visual atmosphere and an overall look of the game to keep players playing

   Lab:

   1. Creating a visual atmosphere in the level with lights and textures

F. Sound

1. Introduction to sound in games

   Lab:

   1. Adding sound FX

G. Interactive elements

   Lab:
1. Creating interactive elements: trigger elements
2. Testing the level

H. Completing the video game
1. Creation of an executable game

I. Looking into the future:
1. Job industry tips
2. Need for networking
3. Marketing student's skills

IV. Course Assignments:
   A. Reading Assignments
      1. Textbook
      2. Behind-the-scenes articles on a specific video game
   B. Projects, Activities, and other Assignments
      1. Team project: Create an executable game and accompanying website. Students are asked to form a development team and divide labor to accomplish the modeling, optimize assets, and import 3D models into the game engine. In addition, the team needs to create the lighting, textures, sound FX, interactive elements such as trigger elements and test the game level for possible bugs.
      2. Oral presentation: Project planning process, game demonstration.
   C. Writing Assignments
      1. Write a proposal for developing a video game, include timeline, roles assigned to team members and storyboard or prototype.

V. Methods of Evaluation:
   A. Review and assessment of assignment. Grading is based on concept, completion, complexity, collaborative effort and craftsmanship. (SLOs 2,3,4, 5).
   B. Participation in class and online group discussions related to concepts and techniques introduced in class (SLOs 1, 2, 5).
   C. Evaluation of oral, in-class presentations and participation/contributions to group critiques. (SLOs 1, 2, 5).
   D. Assessment of proposal and storyboard/prototype. Grading of project takes into consideration the quality and complexity of idea. (SLO 1, 2, 5).
   E. Completion of lab activities. (SLO 2, 3, 4 and 5).

VI. Methods of Instruction:
   A. Lecture
   B. Laboratory
   C. Discussion
   D. Demonstration
   E. Collaborative Learning
   F. Other
1. Critiques

VII. Textbooks:

   Recommended

   1. Michelle Menard *Game Development with Unity, 1st Edition, Course Technology PTR*

   Supplemental

VIII. Supplies:

   A. USB Flash drive or CD-ROM (approximate cost $20)

   Approval Date: 03/07/2017
   CCC Number: CCC000573850
   TOP Codes: 0614.40
   C-ID Number: