SCHOOL OF COMPUTER SCIENCE & ENGINEERING

CALIFORNIA STATE UNIVERSITY, SAN BERNERADINO

Fall Term 2016

Course No. : CSE 440

Course Title : Game Design

Prerequisite : CSE 330 (Data Structures)

Units : 4 units

Meetings : 12:00 – 12:50 pm Lec, TR, JB 360

12:50 – 01:50 pm Lab, TR, JB 360

Instructor/Office/Phone & Fax/E-mail/Office Hours/Lab Assistant and Office Hours:

Dr. A.I. Concepcion

JB343

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04:00 – 06:00 pm, Tue/Thu

Objectives:

The creation of video games has become an area of much focus. Games are being used as a platform for entertainment, education, and training among many other disciplines and recreational activities. This course will introduce topics revolving around how an idea of a game is transformed into an actual game. The course describes how an understanding of core concepts in video games are put together, and will provide adequate information and training necessary toward becoming a professional Game Designer.

The general objective of the course is to introduce the different game design and programming concepts, tools, and methodologies to enable the students to write a game design document and build a prototype of their proposed video game.

The specific objectives of the course are:

(a) To learn how to write game design documentation.

(b) To develop a prototype of the proposed video game.

(c) To specify game play and mechanics.

(d) To learn about game design principles.

(e) To learn the use of Unity game development tool and the C# programming language.

(f) To introduce several video games under development by students of CSUSB.

(g) To understand the concept of computational thinking in game development.

Text:

“Fundamentals of Game Design,” 3rd Edition, Ernest Adams, New Riders*,* 2014.

Requirements:

* Completion and submission of assigned lab exercises.
* Completion and submission of game design document.
* Presentation and demo of prototype of proposed video game.
* Attendance.

Each class meeting will be divided down into two parts, a lecture period and a lab session. The lectures will consist of traditional lectures taken from textbooks and references. There could be invited guest speakers of alumni giving presentations and demonstrations.

The lab sessions will consist of exercise activities focused on learning the Unity3D game engine and then later, proposing and designing a video game complete with documentation.

Lab assignments and exercises are to be done and turned in individually via the GitHub accounts you will create. Collaboration in the lab periods for problem solving and gaining further knowledge are encouraged.

Plagiarism will not be tolerated and the grade for plagiarizing is zero. Cheating on lab assignments and exercises, which is defined as directly and obviously copying someone else’s code or utilizing the exact same scene/game layout from another student or team, will be considered plagiarism.

Presentations will be conducted both at the middle and end of the course. Each team will present the game design document in a professional manner, which is complete with powerpoint slides and demo of the game prototype. Areas of grading for the presentation will include quality, professionalism, and content.

Deadlines consist of completed lab work, required documentations, and submitted prototype of proposed video game. As there are designated due dates, late work will incur a penalty of 10% per school day late.

If you are in need of an accommodation for a disability in order to participate in this class, please contact Services to Students with Disabilities at UH-183, 909.537.5238.

Grading:

The following is the formula to be used in computing your final average in the course:

*FA = 0.30 Prototype + 0.30 GameDesignDocument* + *0.35 LabWork*

+ *0.05 Attendance*

where *FA* = final average.

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| **Final Average** | **Grade** |
| *94 and above* | A |
| 90-93.9 | A- |
| 87-89.9 | B+ |
| *84-86.9* | B |
| *80-83.9* | B- |
| 77-79.9 | C+ |
| *74-76.9* | C |
| 70-73.9 | C- |
| 67-69.9 | D+ |
| 64-66.9 | D |
| 60-63.9 | D- |
| Below 59.9 | F |

COURSE OUTLINE

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| WEEK | TOPICS | REQUIREMENTS |
| 22 Sep | Lecture  -- Games and Video Games | -- Read Chapter 1 |
| 27 Sep  29 Sep | Lecture  -- Designing and Developing Games  -- The Major Genres  Lab  -- Introduction to Unity  -- Unity tutorials and exercises | -- Read Chapters 2 and 3  -- Unity assignments |
| 04 Oct  06 Oct | Lecture  -- Understanding Your Player  -- Understanding Your Machine  Lab  -- Unity tutorials and exercises | -- Read Chapters 4 and 5  -- Unity assignments |
| 11 Oct  13 Oct | Lecture  -- Making Money from Your Game  -- Game Concepts  Lab  -- Unity tutorials and exercises | -- Read Chapters 6 and 7  -- Unity assignments |
| 18 Oct  20 Oct | Lecture  -- Game Worlds  -- Creative and Expressive Play  Lab  -- “Hello World”, Input and Movement, Textures and Assets | -- Read Chapters 8 and 9  -- Unity assignments |
| 25 Oct  27 Oct | Lecture  -- Character Development  -- Storytelling  Lab  -- Creating a Game World | -- Read Chapters 10 and 11  -- Present game design of  proposed game  -- Unity assignments |
| 01 Nov  03 Nov | Lecture  -- Creating the User Experience  -- Gameplay  Lab  -- Physics, Collisions, Triggers | -- Read Chapters 12 and 13  -- Unity assignments |
| 08 Nov  10 Nov | Lecture  -- Core Mechanics  Lab  -- Audio and GUI | -- Read Chapter 14  -- Unity assignments |
| 15 Nov  17 Nov | Lecture  *--* Game Balancing  Lab  -- Develop prototype of proposed game | -- Read Chapter 15  -- Show progress on proposed  game |
| 22 Nov  24 Nov | Lecture  *--* General Principles of Level Design  Lab  -- Develop prototype of proposed game | -- Read Chapter 16  -- Show progress on proposed  game |
| 29 Nov  01 Dec | Lecture  *--* Design Issues for Online Gaming  Lab  -- Develop prototype of proposed game | -- Read Chapter 17  -- Show progress on proposed  game |
| 08 Dec | Finals day (12 – 1:50 pm) | Demo of game prototype |