SCHOOL OF COMPUTER SCIENCE & ENGINEERING
CALIFORNIA STATE UNIVERSITY, SAN BERNERADINO
Fall Term 2014

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
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04:00 – 06:00 pm, Mon - Thu

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JB360
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02:00 – 03:00 pm Tue, 01:00 – 02:00 pm Wed or by email / appointment

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:

"Introduction to Game Development," 2nd Edition, Edited by S. Rabin, Charles River Media, 2010.

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.

The class will be a collaboration with ART 326 (Interactive Multimedia Design) where every Tue the ART students will join CSE 440 from 12 – 12:50 pm and every Thu, CSE students will join ART 326 from 12 – 12:50 pm. The goal is for CSE students to learn about interactive multimedia design in game development and the ART students to learn about game design principles. To prove that the collaboration works, a combined team made up of students from both CSE 440 and ART 326 will work together on producing a game design document and a prototype of the proposed video game to be presented on finals day.

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 some guest speaking sessions and demonstrations.

The lab sessions will be project-oriented and will consist of activities focused on learning the Unity3D game engine and then proposing and designing a game complete with documentation. The lab assignments are posted online, at http://mcswedo.github.io/CSE440-2014.

Lab assignments are to be done and turned in individually via the GitHub accounts you will create, but collaboration in the lab periods for the sake of problem solving and gaining further knowledge is encouraged.

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

Presentations will be conducted both at the middle of the course and at the very end as a final. These presentations will consist of your team discussing work completed in the lab in a professional manner, complete with powerpoint presentations and demos. Areas of grading for the presentation include quality, professionalism, and content.

Deadlines consist of completed lab work, required documentations, and 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.

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

WEEK	TOPICS	REQUIREMENTS
25 Sep	**Lecture** -- History of Video Games **Lab** -- Introduction to GitHub and Unity	Read Chapter 1.1
30 Sep **02 Oct**	**Lecture** -- Art Asset Creation Overview -- Interactive Multimedia Design **Lab** -- Introduction to GitHub and Unity -- Unity tutorials and exercises	Read Chapters 6.1 – 6.7 Unity exercises
07 Oct **09 Oct**	**Lecture** -- Studying Games from an Academic Perspective -- Interactive Multimedia Design **Lab** -- Unity tutorials and exercises	Read Chapter 1.3 Unity exercises
14 Oct **16 Oct**	**Lecture** -- Game Design -- Interactive Multimedia Design **Lab** -- Unity tutorials and exercises	Read Chapters 2.1 and 2.2 Unity exercises
21 Oct **23 Oct**	**Lecture** -- Game Design (continuation) -- Interactive Multimedia Design **Lab** -- “Hello World”, Input and Movement, Textures and Assets	Read Chapters 2.1 and 2.2 Unity exercises

28 Oct **30 Oct**	**Lecture** -- Influence of AI and Audio in Game Design -- Interactive Multimedia Design **Lab** -- Creating a Game World	Read Chapters 5.3, 5.5, and 6.8 Present game concept of proposed game Unity exercises
04 Nov **06 Nov**	**Lecture** -- Production and Teams -- Interactive Multimedia Design **Lab** -- Physics, Collisions, Triggers	Read Chapters 3.1 and 7.1 Unity exercises
13 Nov	**Lecture** -- Interactive Multimedia Design **Lab** -- Audio and GUI	Unity exercises
18 Nov **20 Nov**	**Lecture** -- *Collaboration on proposed game* **Lab** -- Develop prototype of proposed game	Show progress on proposed game
25 Nov	**Lecture** -- *Collaboration on proposed game* **Lab** -- Develop prototype of proposed game	Show progress on proposed game
02 Dec **04 Dec**	**Lecture** -- *Collaboration on proposed game* **Lab** -- Develop prototype of proposed game	Show progress on proposed game
09 Dec	Finals day (12 – 1:50 pm)	Demo of game prototype