USC
SCHOOL OF
ENGINEERING

Video Game Production
ITP 280 (4 Units)

Spring 2008

Objective The purpose of this course is to gain a hands-on understanding developing video games. Students will be introduced to various facets of video game production: design, art, programming, and management. The course will include various hardware and software tools that aid in the video game production process.

Concepts The video game production process incorporates various methodologies for programming, designing, and managing games. Students will be introduced to a variety of software tools that involve creating and designing 3D-Worlds, level design, character and background modeling, textures, and animation. Programming concepts in this course will address the role of AI, game logic, network and multiplayer concerns, graphic effects, sound effects, and scripting languages when creating video games. Students will learn the project lifecycle of video game development including concept development, project proposal, functional specs, gameplay design, prototyping, production and testing.

This is a project-based course. Students will be responsible for creating a detailed functional specification for an assigned game by midterm and the final project will be a small working game or level. The tools and concepts needed to complete the projects will be addressed during lectures and detailed during labs.

Instructor Dr. Anthony Borquez
Office hours: Wednesday 3-5pm, (or by appointment)
Email:anthonyb@usc.edu

Prerequisite ITP 101 or equivalent

Lecture Wednesdays 5:00 PM to 8:00 PM

Sign up for one of the three Friday labs:
10 AM to 11:50, Noon to 1:50 PM, or 2 PM to 3:50 PM.

Reading Introduction to Game Development, Steve Rabin, Charles River Media, ISBN:1-58450-377-7

Smartbomb, Heather Chaplin & Aaron Ruby; ISBN:13:978-1-56512-545-2

Grading The following point structure will be used in determining the grade for the course. Final grade will be based upon the total points received.

Lab Assignments/Lab Attendance: • Lab 1 – Gamemaker 50 pts • Lab 2 – Game Design 30 pts • Lab 3 – Maya 30 pts • Lab 4 – Game Modding 30 pts • Attendance – 10 pts	150
In Class Assignments 10 pts each	30
Midterm	100
Group Project	50
Online Discussion Boards 5 pts each	50
Final Exam/Project/Game Docs	120
TOTAL POSSIBLE POINTS	**500**

Lab Assignments: Lab assignments will be posted on Blackboard and will contain instructions on due dates, requirements, etc. Your scheduled lab time is when lab assignments should be worked on/completed. Students can also do their lab assignments from home or an alternative facility.
In-class Assignments: In-class assignments will consist of game demonstrations requiring written feedback from students. In-class assignments present students a variety of questions pertaining to different in-class game demonstrations. The instructor will provide handouts to the students that will require written responses. Students do not need to prepare in advance for the in-class assignments.
Midterm Examination: The midterm examination will be an in-class exam consisting of multiple choice, short answer, and essay questions. Students are only required to bring a pen or pencil to class.
Group Project: Each student will be required to participate in a group project. At the beginning of the semester, the instructor will randomly assign each student to a group. Each group will be assigned a topic related to video games. It is the responsibility of the group to research and present a paper/presentation to the class on the scheduled date listed in the syllabus. Presentations will typically be between 25-35 minutes, with a question and answer summary. Groups will be graded based upon the quality of the paper/presentation, as well as individual participation.

Online Discussion Boards: Students will be required to participate with the online discussion boards located at the class website (blackboard.usc.edu). The online discussion board consists of a variety of weekly topics/questions that each student will respond to. Students are required to post their own discussion board thread, as well as respond to **at least two student postings** to receive full credit.

Final Exam / Project: At the end of the semester, there will a final examination/final project. The final project will be a semester-long project including a written high-concept pitch, design documents, and a playable demo of a game. Students will be given direction throughout the semester preparing for the final project.

Policies

Make-up policy for exams: To make up for a missed exam, the student must provide a satisfactory reason (as determined by the instructor and university policy) along with proper documentation. Make-up exams are only allowed under extraordinary circumstances.

Projects: It is the student's responsibility to turn in projects on or before deadlines as set by the instructor.

Late Projects: There will be a 2% reduction of the project's grade for each day it is late.

Academic Integrity

- The use of unauthorized material, communication with fellow students during an examination, attempting to benefit from the work of another student, and similar behavior that defeats the intent of an examination or other class work is unacceptable to the University. It is often difficult to distinguish between a culpable act and inadvertent behavior resulting from the nervous tension accompanying examinations. When the instructor determines a violation has occurred, appropriate action, as determined by the instructor, will be taken.

- Though working together is encouraged, the projects must be your own effort. "Duplicate" projects will all receive zero points and possible referral to the Office for Student Conduct.

- All students should read, understand and abide by the University Student Conduct Code http://www.usc.edu/dept/publications/SCAMPUS/governance/gov03.html

Students with Disabilities

Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me (or to your TA) as early in the semester as possible. DSP is located in STU 301 and is open 8:30 a.m. - 5:00 p.m., Monday through Friday. The phone number for DSP is (213) 740-0776.

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Week 1
1/16/08

Lecture:
Introduction and Course Overview

- Syllabus
- http://blackboard.usc.edu
- Instructor/Lab Assistant Backgrounds
- Current Industry Trends
- Brief overview of final project

Lab: No Labs this week
Reading: n/a
Discussion Board #1

Week 2
1/23/08

Lecture:
History of Video Games

- Timeline
- Pong, Atari – ET, Nintendo, Sega, Sony, Microsoft
- Milestone games and cycles in the industry

Game genres, game platforms, and management considerations.

- Action, RPG, RTS, FPS, MMO, Serious Games etc.
- Xbox 360, PS3, Wii

Lab 1: GameMaker 6 (Recreating the Classics)
Reading: Rabin; Section 1.1, 1.2, 1.3; Chaplin 1 & 2
Discussion Board #2

Week 3
1/30/08

Lecture:
The Development Team

- Who's the TD? Ask the EP….
- Team versus Group organization
- The multi-game worker
- Communication

In Class Assignment #1: Video Games and Peripherals

The Game Production Process

- Communication and meeting schedules
- Managing the assets and resources
- Software and documents used to manage the production

Guest lecturer: TBD

Lab 1: GameMaker 6 Recreating the Classics - continued
Reading: Rabin; Section 3.1, 7.1, 7.2, 7.4
Discussion Board #3

Week 4 02/06/08

Lecture:
Design Overview Part 1: Creating Something Cool

- Knowing your target audience
- Gameplay and Mechanics
- Understanding how different platforms influence game design
- The key elements: game play, visual style, characters and setting/story

Guest Lecturer: TBD

Lab: Lab 1 due; overview of Lab 2 – High Concept Pitch
Reading: Rabin: Section 2.1; Chaplin 3
Discussion Board #4

Week 5 02/13/08

Lecture:
Group Presentation #1 – "Fear" in Games

Elements of Game Design

- Game Design Principles
  - Objectives vs. Goals
  - Choices and Outcome
  - Interface Design/HUDs
  - Balancing
- What is fun?
- Game Design research reviewed
- Game Design documents

Lab : Presentations from Assignment #1; Lab #2
Reading: Rabin: Section 2.2; Chaplin 5
Discussion Board #5

Week 6 02/20/08

Lecture:
The role of the Game Producer

- Internal vs. External production
- Producer vs. Designer
- Schedules
- Contracts
- Budgets
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Review of the Previous Readings;

In Class Assignment #2: Video Game Design

Lab: Assignment 2
Reading: Chaplin 4

Week 7 02/27/08

Lecture:
Group Presentation #2 – Second Life
Online Games

Casual Games
- Overview of Market/Industry
- Pogo, Popcap, Miniclip, Yahoo, Aol, etc.
- XBLA

MMOs (Massively Multiplayer Online Games)
- Overview of Market/Industry
- World of Warcraft, Everquest

Guest Lecture: TBD

Lab: Assignment #2 – due
Reading: Rabin: Section 6.1-6.8; Chaplin 6
Discussion Board #6

Week 8 3/05/08

Lecture:
2D Graphics
- Overview of 2D Graphics
- Vector Graphics
- Cell Shading
- Creating Sprites

3D Modeling and Animation
- Animation in games vs. other media
- Designing with the programmer and artist in mind
- Overview of Maya

Lab: Assignment #3 – Maya hands-on modeling
Reading: Rabin: Section 7.4, 7.5, 7.6; Chaplin 7
Discussion Board #7

Week 9 03/12/08

Lecture:
Group Presentation #3 – Violence in Games
Marketing Video Games
- The Marketing Team
- Marketing Channels
- The role of retail distribution
- Guest Speaker - TBD

Legal Aspects of Gaming
- Value of IP
- Contracts, NDA's, Developer Agreements
- Infringement, Trademarks, Patents, Copyright

Lab: Assignment #3 – due
Reading: Rabin: Section 3.3 – 3.4; Chaplin 8
Discussion Board #8

03/19/08 **SPRING BREAK**

Week 10 **MIDTERM EXAMINATION**
03/26/08 **Lab:** Assignment 4 – Game Modding

Week 11 **Lecture:**
04/02/08 Mobile Game Development

- Mobile Game Design and Form Factor
- Development Consideration
- Guest Speaker: TBD

Handheld Games and Platforms

- Market Overview
- Technology Overview
- PSP vs. DS

Lab: Assignment #4 - continued
Reading: Instructor Mobile handouts
Discussion Board #9

Week 12 **Lecture:**
04/09/08 ***Group Presentation #4 – Advertising in Games***

Game Physics

- Academic research
- Use of physics in games
- Exemplary uses of physics

Game AI – Artificial Intelligence

- Academic research
- Use of AI in games
- Exemplary uses of game AI

Lab: #4 due; Final Project
Reading: none
Discussion Board #10

Week 13 **Lecture:**
04/16/08 **Konami Field Trip**

Lab: Final Project
Reading: Rabin; Section 5.3, 5.4, 4.3

Week 14 04/23/08

Lecture:
Group Presentation #5 – Digital Distribution

Audio Design and Creation

- Completing (or making) the experience
- Music and Sound Effects creation
- Dialog directing and recording
- Tools
- Guest Lecturer: TBD

In class Assignment #3 – Audio Design in Games

Lab: Final Project
Reading: Rabin; Section 6.9

Week 15 04/30/08

Lecture:
Final Pitch Presentations to class

Final Project Document Due (Functional Spec, Game Design Doc, High Concept Pitch)

- Final project strategy preparation
- The future of games
- closing words

Lab: Final project
Reading: No reading.

Final Exam **Wednesday May 7th, 2008 from 4:30 to 6:30 in KAP 160**