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 2D and/or 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 participating in class game jams and the final project will be a working game / prototype. The tools and concepts needed to complete the projects will be addressed during lectures and detailed during labs.

Instructor  Dr. Anthony Borquez, anthonyb@usc.edu
Office hours: Wednesday 4-6pm, (or by appointment)

Lab Assistant  Conrad Kurth, conradku@usc.edu
Vansh Jain, vanshjai@usc.edu

No formal pre-requisite. Computer literacy or ITP 101 recommended.

Lecture  Wednesdays 6:00 PM to 8:50 PM
Sign up for one of the three Friday labs:
11am to 12:50 PM or 1 PM to 2:50 PM or 3pm to 4:50pm

Reading  •  ITP 280 Course Reader
•  Other lecture notes to be distributed by Instructor
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.

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lab Assignments/Lab Attendance</td>
<td>35%</td>
<td>300</td>
</tr>
<tr>
<td>Lab 1 – Gamemaker</td>
<td></td>
<td>(100)</td>
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<tr>
<td>Lab 2 – Game Design Treatment</td>
<td></td>
<td>(80)</td>
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<tr>
<td>Lab 3 – Game Play Enhancement</td>
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<td>(120)</td>
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<tr>
<td>Midterm</td>
<td>20%</td>
<td>150</td>
</tr>
<tr>
<td>Online Discussion Boards</td>
<td>10%</td>
<td>100</td>
</tr>
<tr>
<td>Discussion Board 1</td>
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<td>(5 points)</td>
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<td>Discussion Board 2</td>
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<td>Discussion Board 8</td>
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<td>(10 points)</td>
</tr>
<tr>
<td>Final Project/Game Docs</td>
<td>35%</td>
<td>300</td>
</tr>
</tbody>
</table>

**TOTAL POSSIBLE POINTS** 850

**Grading scale:**

- A 94-100
- A- 90-93
- B+ 87-89
- B 84-86
- B- 80-83
- C+ 77-79
- C 74-76
- C- 70-73
- D+ 67-69
- D 64-66
- F < 60

**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.
**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.

**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.

Note: some discussion boards will not require 2 postings. Read the discussion boards carefully as they will list out the details.

**Final Project**: At the end of the semester, there will a 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 10% reduction of the project’s grade for each day it is late.

Before logging off a computer, students must ensure that they have emailed or saved projects created during the class or lab session. Any work saved to the computer will be erased after restarting the computer. ITP is not responsible for any work lost.

ITP offers Open Lab use for all students enrolled in ITP classes. These open labs are held beginning the second week of classes through the last week of classes. Please contact your instructor for specific times and days for the current semester.

- You are required to attend Lab attend each week (except Week 1).

- Laptops are permitted in lecture for note taking purposes. Using your laptop to play games, Facebook, etc. is not allowed.
**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 professor determines that a violation has occurred, appropriate action, as determined by the instructor, will be taken.

Although working together is encouraged, all work claimed as yours must in fact be your own effort. Students who plagiarize the work of other students will receive zero points and possibly be referred to Student Judicial Affairs and Community Standards (SJACS).

All students should read, understand, and abide by the University Student Conduct Code listed in SCampus, and available at: [http://www.usc.edu/student-affairs/SJACS/nonacademicreview.html](http://www.usc.edu/student-affairs/SJACS/nonacademicreview.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.
Video Game Production
ITP 280 (4 Units)

Exact details of each lecture subject to change based on events, guest speaker schedules, technical difficulties, etc.

Week 1
01/14/15

Lecture:
Introduction and Course Overview
- Syllabus
- http://blackboard.usc.edu
- Instructor/Lab Assistant Backgrounds
- Current Industry Trends
- Brief overview of final project
- Blogs, Online Forums, Magazines, etc.

Lab: No Labs this week
Reading: Course Reader Week 1
Week 2  Lecture:  
01/21/15 History of Video Games  
- Historical Timeline  
- Pong, Atari – ET, Nintendo, Sega, Sony, Microsoft  
- Milestone games and cycles in the industry  
  
Game genres, game platforms, and development considerations.  
- Action, RPG, RTS, FPS, MMO, MOBA, etc.  
- Xbox 360/720, PS3/PS4, WiiU, PC, Mobile  

The Development Team  
- Roles & Responsibilities  
- Emerging positions  
- Communication  

Lab 1: GameMaker (Recreating the Classics)  
Reading: Course Reader: Chapter 10 Specific Genres 175-194; Historical Elements 4-35  
Discussion Board #1 – Favorite Game of All Time  

Week 3 Lecture:  
01/28/15 The Game Production Process  
- AGILE Methodologies  
- AGILE/SCRUM for Game Development  
- Software and documents used to manage the production  
- Games as a Service (Live Team Support)  

CLASS EXERCISE: SCRUM  

Lab 1: GameMaker Recreating the Classics - continued  
Reading: Course Reader Chapter 5 What is a Game Made Of 39-63; Production & Management 352-369
Week 4 02/04/15

Lecture:
Game Design Overview
• What is fun?

CLASS EXERCISE: Game Design / Sissy Fight

• Understanding Your Audience
• Game Design Principles
  o Objectives vs. Goals
  o Choices and Outcome
  o Interface Design/HUDs
  o Progression
  o Balancing/Tuning (worksheet examples)
  o Polish
• Game Design documents

Guest Lecturer: TBD

Lab: Lab Assignment #1
Reading: Course Reader Chapter 1 The Crisis Facing Game Development 3 – 32; Part II Scrum and Agile Planning Chapter 3 35-40; Understanding the Product Owner 1 - 15

Discussion Board #2

Week 5 02/11/15

Lecture:
Overview of Assignment #2 / Group Assignments

Level Design – Game Design Tools and Demonstrations (iPad demo)

Game Design Considerations
• Next Gen Consoles (PS3/PS4, Xbox 360/720, WiiU)
• Handhelds (PSVita, 3DS)
• iOS / Android
• PC / Downloadable Platforms

Working with 1st Party Publishers
• Development Environments
• Microsoft – Xbox
• Sony – Playstation
• Nintendo - Wii

Lab: Lab Assignment #1 Due Fri 02/13/15 (midnight);
Reading: Course Reader Chapter One In the Beginning, There is the Designer 1 – 7; Chapter 4 The Game Consists of Elements 39 – 46; Chapter 7 The Game Improves Through Iteration 75-95

Discussion Board #3 – Game Design
Lecture: Mobile Games

Lecture on giving Effective Presentations

Lab 1 Demonstrations

Mobile Game Production
- History of Mobile Gaming
- Feature Phones vs. Smart Phones
- Languages: Java, Obj-C, HTML5
- iPhone/Android Development
- Development considerations
  - Touch, LBS, Accelerometers
  - Asynchronous

*In Class Assignment – Game Jam: Game Design*

Tablet Gaming
- Development considerations
- Emerging platforms
- Production Process

*Reading:* Course Reader Chapter 14 The Design Document 394-412;
Chapter 1 A Revolutionary Game Platform 1 – 19 (toward back of Course Reader)
*Lab:* Assignment 2
Week 7  02/25/15

Lecture:
Freemium Game Model

Balancing for Monetization
Consumables vs. Decorative items

Overview of Riot Games
The Producer Role at Riot

How to get content in League of Legends
Concept Art Phase
Creating 3D Models
Texturing Models
Incorporating Animation into Splash Screens

How to make money with Free Games

Freemium Online Games & MMOs
  • Game Mechanics
  • Business model
  • Game styles: DOTA, MOBA

Reading: Course Reader Chapter 3 The Look and Feel of Your Interface 27-41; Chapter 14 Designing the HUD 145-154; Chapter 9 Polishing 159-161 (instructor to hand out additional content)
Lab: Assignment 2 due 03/04/15
Discussion Board #4
Week 8  Lecture:  Digital Marketing
03/04/15
If you build it, will they come?

User Acquisition Strategies
- Organic vs. Paid traffic
- Best practices for creating viral apps
- How to acquire traffic to your game/app
- Understanding KPIs (Key Performance Indicators)

Lab 2 Presentations

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

Midterm Review

Lab: Assignment #3 – GamePlay Enhancement
Reading: Course Reader Mobile Gaming 2012 Casual Games Sector Report; Freemium Gaming Metrics 2012; Chapter 5. A Primer on Intellectual Property 1-51
Discussion Board #5

Week 9  MIDTERM EXAMINATION  Lab: Assignment #3
03/11/15 03/18/15

NO CLASS SPRING BREAK
**Week 10**  
03/25/15

**Lecture:**
Working in 3D Environments

Midterm Results

Final Project Overview
Final Project Sample presentations

Unity 3D
- Introduction to Unity
- Understanding the development environment
- Sample Projects
- Basic Physics of Unity
- Introduction to Scripting

**Lab:** Assignment #3  
**Reading:** Course Reader Week 10

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**Week 11**  
04/01/15

**Lecture:**
Working in 3D Environments

Lab 3 Presentations

Level Design
- Laying out levels in 3D
- Balance and Progression in 3D
- Importing 3D Assets
- Protoyping
- Iteration techniques

**Lab:** Assignment #3 due 04-03-15  
**Reading:** Course Reader Week 11  
**Discussion Board #6**
Week 12  
04/08/15  
**Lecture:**  
Online MMO Games  

**BLIZZARD Game Jam**  

Overview of MMO Games  
- Game Design for MMO  
- Approaches to Game Design  
- Good Game Design  

MMO Game Design Principles  
- Prototyping and Iteration  
- Level Design  
- Game Balancing  

**Lab:** Work on Final Project  
**Reading:** Course Reader Week 12  
**Discussion Board #7**

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Week 13  
04/15/15  

**Lecture:**  
How to build your own game studio  

Setting up a game company  
- Legal Items  
- Selecting a Corporate Entity  
- Business Plan / Executive Summary  
- Budgeting & Business Models  
- Company Culture  
- Seeking out Investors  
- Valuation of a Business  
- Running Operations of a Startup  

**Game Audio**  
- Where to find great sound bytes for your game  
- Integration techniques  
- Custom Sounds  
- Establishing a pipeline  

**Lab:** Final Project  
**Reading:** Course Reader Week 13
**Week 14**  
04/22/15  

**Lecture:** Physics and AI  

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

**In Class Assignment – Game Jam: Physics**

**Lab:** Final project  
**Reading:** Week 14 Reader

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**Week 15**  
04/29/15

**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.  
**Discussion Board #8 - Semester Reflection Piece**

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**FINAL PROJECT DEMONSTRATION IS DURING EXAM PERIOD:**  
Wednesday May 6th, 2015, 7:00pm to 9:00pm KAP160