

Game Programming

Media 399, Fall 2010, Friday 10:10 A.M.-1:00 P.M.

Room: 406 Hunter North

Class Website: <http://gameprogramming.covertrobot.com>

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Office Hours: By appointment HN515

Course Description

This class is an introduction to the practical and conceptual aspects of electronic game creation. Students will have the opportunity to learn a variety of game-development tools and approaches, while exploring a variety of theoretical, social, and other aspects of modern game culture.

Video games have moved from the realm of entertainment and recreation to a place of cultural distinction. As the rates of gameplay increase worldwide, the conversation around gaming is becoming increasingly complex, controversial, and eclectic. Games are swiftly merging into the territories of art, education, and activism. The opportunities for game development are increasing as well because of the growth of new game platforms and the expansion of accessible hardware and programming resources. The goal of this course is to develop the rudimentary programming skills necessary to create games, while simultaneously grounding these skills in the larger theoretical framework of play-based interaction.

Objectives

- Develop familiarity with both Adobe Flash and Unity development platforms and an understanding of Object-Oriented Programming structure.
- Foster an understanding of the process of game design
- Gain knowledge of existing games and participate in class-game critique sessions
- Formulate and execute two unique game concepts

Student Responsibilities

- Turn in work on time. Late work will NOT be accepted.
- Spend the appropriate amount of time and effort completing assignments. Time working outside of class is required.
- Participate in class and adequately prepare for class by completing the readings and assignments.
- Be present! Attendance is mandatory. Four absences = a failing grade.
- Come to class on time. Three late appearances = one full absence.

Course Requirements

Reading:

Each class will have a set of assigned readings to be completed by the student before class begins. During our first class, each student will choose two readings that he or she will summarize, present to the class, and lead a class discussion. The dates due will be established when the readings are selected. The majority of the readings will be pulled from Katie Salen and Eric Zimmerman's book, *Rules of Play*, available at Shakespeare and Co. on Lexington and 68th. All students must purchase this book for the course. The rest of the readings will be provided in advance of their due date.

Game Projects:

Over the course of the semester, each student will complete two game projects. Each game project will require a written concept to be approved by the instructor prior to the projects' completion.

Project 1: Building a Web Game

Your goal for this project is to develop a game that is playable online. The suggested platform for this project is Adobe Flash; however, for students with previous experience in programming, other platforms and languages are acceptable with the stipulation that the game is still web-ready. Your game must be a casual game (we will discuss the definition of a casual game in class prior to the start of this project)- This article explains the definition:

<http://unity3d.com/support/resources/articles/casual-business>

A key requirement for this project is that your game must parody, critique, or subvert an existing casual game. We will discuss this requirement in greater detail and view examples when the project is assigned.

Project 2: A Game from Memory

For the second project, you will develop and implement a three-dimensional game. The recommended platform for this project is Unity. Students with previous experience may explore other gaming engines and platforms if they wish. There is no required genre or format for this game; however, your game concept itself must reference a personal memory. Your challenge will be to shape a single individual experience into the foundation for a successful interactive real-time experience. There is no restriction on the manner in which you achieve this. Creativity is encouraged.

Critiques

At the completion of each project, an in-class critique will be held for students to present their games and receive feedback from their classmates. During the critique, it is the responsibility of the presenter to have their finished project ready to show, and to clearly explain their concept and execution to the rest of the class. It is the responsibility of the reviewers to give the presenter their full attention and respect and offer constructive criticism and comments relevant to the work. The importance of maintaining a respectful and attentive atmosphere is paramount. Any student who deviates from this requirement will be asked to leave the class. Your participation during critiques is a significant part of your final participation grade.

Grading

Your grade will be based on attendance and class participation during reading discussions and the quality and execution of your two games.

Grades will be based on the following percentages:

Participation and Attendance 30%

Project 1 20%

Project 2 50%

Extra Credit

Throughout the semester, I will notify you of upcoming events, performances, and lectures that relate to the course. These events are usually free and open to the general public. They provide invaluable supplemental content to our in-class work. You can attend these events, and for each attended, submit a 2-page maximum written response about the event. You will receive 1%

point of extra credit on your grade for each paper submitted, up to a maximum of a 5% increase.

Course Schedule

9.3- Introduction to class, Introduction to Flash

Review syllabus and requirements
Assign reading requirements
Begin exploration of Flash coding interface and file structure
Explanation of OOP.
Building and executing your own functions
Loops

PROJECT 1 ASSIGNED

Required Reading:

RoP chapter 5: Systems pg 49
Design and Testing of the Board Game- Lord of the Rings
Reiner Knizia RoP pg 22

9.10- Flash Continued

Examination of Flash Graphic User Interface.
Asset preparation
Timeline animation
Controlling assets with code

PROJECT 1 PROPOSAL DUE

Required Reading:

RoP chapter 3: Meaningful Play pg 31
RoP chapter 4: Design pg 39

9.17- No Class

9.24- Advanced Flash Techniques

Flash libraries and frameworks
Programmatic animation
Sound classes
XML Flash integration and dynamic content
Preloading and web optimization
Review

Required Reading:

RoP chapter 6: Interactivity pg 57
Videogames and Computer Holding Power by Sherry Turkle

10.1- First Critique

PROJECT 1 DUE

In-class presentation and critique of projects

10.8- Introduction to Unity

PROJECT 2 ASSIGNED

Unity Interface
Unity project workflow
Basic Unity overview
Required Reading:
RoP chapter 8: Defining Digital Games pg 85
Gaming, Essays on Algorithmic Culture:

Origins of the First Person Shooter by Alexander R. Galloway

10.15- **Scene Creation**

GameObjects
Components
Cameras and Lights
Particle Systems

Required Reading:

Hanging Out, Messing Around, Geeking Out: Gaming by Mizuko Ito and Matteo Bittanti

10.22- **Asset Creation 1:**

Basic three-dimensional modeling
Importing Assets
Textures
Materials and Shaders
Audio

Required Reading:

RoP chapter 10: The Primary Schemas pg 101
RoP chapter 13: The Rules of Digital Games pg 141
RoP chapter 20: Games as Systems of Conflict pg 248

10.29- **Asset Creation 2:**

Basic three-dimensional animation
Physics
Character animation
Game Interface Elements

Required Reading:

RoP chapter 23: Games as the Play of Experience pg 312
RoP chapter 24: Games as the Play of Pleasure pg 328
RoP chapter 25: Games as the Play of Meaning pg 362

11.5- **Coding in Unity 1**

Basics of Javascript
Javascript for Unity

Required Reading:

RoP chapter 14: Games as Emergent Systems pg 151
Turtles Termites and Traffic Jams by Mitchell Resnick

11.12- **Coding in Unity 2**

Advanced coding practices

Required Reading:

RoP chapter 26: Games as Narrative Play pg 376
RoP chapter 28: Games as Social Play pg 460
RoP chapter 31: Games as Open Culture pg 536

11.19- **Publishing in Unity**

Publishing builds
Web optimization
Preloading
Publishing for mobile platforms

Required Reading:

A Game of One's Own: Towards a New Gendered Poetics of Digital Space by Tracy Fullerton, Jacquelyn Ford Morie, Celia Pearce
Gaming, Essays on Algorithmic Culture:

Counter gaming by Alexander R. Galloway

11.26- **Thanksgiving Break – Work on your games!**

12.3- **Work session and in-progress review**

In-progress versions of student's games will be reviewed by the class.

Michael Sicart- The Ethics of Computer Games

Chapter 3: Players as Moral Beings

Chapter 2: Computer Games as Designed Ethical Systems

12.10- **Work Session**

Class is devoted to working on final projects and addressing issues you may have encountered in your games

12.17- **Second Critique**

PROJECT 2 DUE

In-class presentation and critique of projects