

Game Development

Course Introduction

Who we are...

- Georgios Yannakakis
 - Specialty: AI, AI in games, cognitive modeling
 - Favorite games: Othello, Ms. Pac-Man, Heroes of Might and Magic
- Aki Järvinen
 - Specialty: Game design
 - Favorite games: Shadow of the Colossus, Animal Crossing, NHL09, World of Goo, Zooloretto

TAs

- Lawrence Johnson
- Michael Schmidt

Who you are...

... and what do you expect
from *Game Development*?

What you should expect from this course

- Built a solid theoretical (academic) background on Game Development as a whole
- Get some of the practical wisdom
- Produce a game under time constraints – an academic demo
- Advice: be creative; it is your last chance before you hit **real** game development
- Those skills require effort 😊
- Technical difficulties are part of your training!

Tips for happy group work

- Group forming : This is tricky – humans are altruistic by nature but...
- Group forming : Any DADIU students ?
- Living far away? Does the engine work from your PC @ home? Make sure early...
- Everybody works with Unreal Editor (even project managers) – top editor existing out there!
- Play Unreal 3! Now! See levels, weapons, AI... design possibilities
- No textbook in class (*Mastering Unreal Technology 3* is out in June) – Invest you money on UT 3, Limited Edition instead (recommendation)
- Help your team – we can't fire you!

Lecture Plan

Tuesdays 10:00-12:00, 3A12 (or GameLab)

Phase 1: Introduction

- Week 1 : Introduction
- Week 2 : Development Methodology & Teams
- Week 3 : Introduction to the Unreal Engine
- Week 4 : Unreal Engine in More Detail

Phase 2: Development Process

- Week 5 : Story Design
- Week 6 : Advanced Game Design
- Week 7 : Project Management

Lecture Plan (cont.)

Tuesdays 10:00-12:00, 3A12 (or GameLab)

Phase 2: Development Process (cont.)

- Week 8 : Character Design
- Week 9 : Game AI (basic)
- Week 10 : Game AI (advanced)
- Week 11 : Game Workshop
- Week 12 : User Testing and QA

Phase 3: Launch Process

- Week 13 : Crunchtime and working in the Games Industry
- Week 14 : Game Business Development

Lecture Format

- Cover theory – academic content – practical industrial wisdom
- Game Examples
- Hints + Tips (nowhere in your readings)
- Being in class matters (even if known topic) – Coherence
- Late-comers: you might disturb your colleagues; you might lose the coherence

Lab Sessions @ GameLab

- Tuesdays and Fridays 13:00-15:00
 - Starting next week
- TAs available for help... lecturers too!
- GameLab is booked all day

Communication

- E-mailing list:
 - Are you **all** registered there?
- Messages to Georgios and Aki
 - To Michael and Lawrence
- Blog is there... Useful to you?

What you should make in this course:

- A game, playable for at least 20 minutes
 - Quick sessions okay, but then repeatability becomes a factor.
 - Should stand alone, so that someone could download it from the web and give coherent feedback besides “this is not playable”
- Graphically 3D
- Created in Unreal, or another platform, if given permission by the instructions
- Roughly the size and scope of a game entered into the Independent Games Festival.
(<http://www.igf.com/>)

Tips for scoping design & process:

- Focus on a specific core mechanic, setting, etc. Don't simulate the entire universe.
- Focus on making a project of a size that can reach "beta" stage. I.e. functionally complete and playable by end of semester.
- Game designers, get to know the Unreal editor so that you get a grasp of what can and cannot be done, in the given time
- Project managers; Identify the amount of graphics/animation/sound assets in an early stage
- All: Read and discuss the specifications; or, work on simple prototypes of game mechanics to communicate design intent, ideas and features!

Tips for roles, in Phase 1: Intro

- *All* – participate in game concept brainstorming & sparring
- *Programmers* – learn to build models, scripts
- *Level designers* – learn to build levels with editor
- *Game designers* – learn editor features, document game concept, including story design
- *Artists* – produce concept art, learn editor features
- *Sound designers* – learn editor features
- *Project Managers* – set up development method, write a project plan, assign tasks

How this course differs from Game Design

- The game design course is about preproduction processes, mostly.
- Game development is about the entire development process
 - Preproduction
 - Production planning
 - Production
 - Testing and Q/A
 - Marketing

How this course differs from Game Design (cont.)

- Yet, it is also about game design substance: build the best and most innovative game you can within the constraints of the process!
- Story & Character design aspects are emphasized; you have a chance to expand your knowledge from Game Design course to these areas, and understand how they integrate into the dev process

Preferred Development Platform: Unreal Engine 3

- It is possible to work in other tools, but you have to demonstrate evidence that you can complete the task... No technical support available...
- Why not ...
 - open-source (e.g. Torque)?
 - other commercial (e.g. XNA, Source)?
 - my own engine?

Preferred Development Platform: Unreal Engine 3 (cont.)

- Because Unreal is
 - the most popular game engine used among game developers
 - Games: *Unreal Tournament*, *Mass Effect*, *Tom Clancy's Rainbow Six 3: Raven Shield*, *America's Army*, *Tom Clancy's Rainbow Six: Vegas*, *Gears of War 1&2*, *BioShock*, *Tactical Ops*, *Halo Wars* ... and so on
 - has level design and scripting tools, extensibility, and a large community
 - very well documented and tested
 - very powerful
 - tried and tested in Georgia Tech, Michigan State and ITU for Game Development courses... it works!
- Goal is *to get something done in a semester!*

Is it possible in a semester? Yes!

Student Projects – Game Dev class 2008

- [Chronicles of Steel-O-Mall](#)
- [KATAMA](#)
- [Cubes of Serenity](#)
 - 4th Place in [Make Something Unreal Contest!](#)
(Physics Category)

Other Unreal mods

- Alien Swarm (UT 2004) ([trailer](#))

Other game examples from www.igf.com

Scope

- Set clear **goals** and a **target audience** for your game; Project managers & game designers – guard this!
- Build something your team is really passionate about
- Don't create a 'copycat' game — make something unique and drawing upon your team's strengths and interests
- Look also outside of the FPS genre and 3D conventions

For next time

- Read article (handout) "Team Roles and the Pipeline"
- Buy/borrow & play Unreal Tournament - at minimum, look at Unreal in the Game Lab
- Get a Gamasutra account (if you don't have one already)
- Take a look at Lawrence's (TA) Unreal [page](#)
- Course homepage:

<http://www.itu.dk/courses/MSU/F2009/>