Administrative

IMGD 4000

Professor Background (Who am I?)
• Mark Claypool (professor, “Mark”)
  – Computer Science
  – Interactive Media and Game Development
• Research interests
  – Multimedia performance
  – Congestion control (protocols, AQM)
  – Wireless networking
  – Network games

Student Background (Who are you?)
1. Year?
2. Major?
3. Background?
   a. IMGD3000
   b. CS3733
4. Platform of Choice?
   a. Windows
   b. Mac
   c. Linux
5. Expertise (low 1 to 5 high)?
   a. C/C++
   b. Java
   c. Other
6. Familiarity with UE4?

Topics
• Background
• Admin Stuff
• Motivation
• Objectives
• Class material!
Nuts and Bolts

- [http://www.cs.wpi.edu/~imgd4000/d15](http://www.cs.wpi.edu/~imgd4000/d15)
- Class: Tu, Fr 1:2-5:00pm (SL 407)
- Lab: We 2-2:50pm (IMGD Lab - FL222)
- TA: Caitlin Malone
  - Office hours, email, grading
- SA: Evan Polekoff
  - Office hours, email, Lab
- SA: Michael Racine
  - Office hours, email, Lab
- Office hours:
  - On Web page
  - Or by appointment
- Email
  - claypool@cs.wpi.edu (me)
  - imgd4000-staff@cs.wpi.edu (me + TA + SA)
  - imgd4000-all@cs.wpi.edu (class + staff)

Text Book

- None
- Online documents for UE
- Programming books

Class Topics

- Game Engines
- Scripting
- Decision Trees
- Basic Physics
- Steering
- Advanced Pathfinding
- Advanced Camera Control
- Shader/GPU Programming
- Network Games
- Game Audio
- Procedural Content Generation
- Novel Input Controls

Assumed Knowledge

- Functional programming (e.g., CS 1101 or CS 1102).
- Object-oriented design and programming (e.g., CS 2102).
- Systems programming concepts (e.g., CS 2303).
- Software engineering (e.g., CS 3733).
- Basic technical game development skills (e.g., IMGD 3000), including:
  - Game engine architecture
  - Iterative technical game development process
  - Scene management
  - Input controls
  - Simple AI
Grading

- Quickstart 10%
- Game Project 60%
- Mid-term 15%
- Final 15%

*(Details on each, next)*

QuickStart

- Get up to speed on UE4
  1. Setup UE4
  2. Work through guides
     - A. Editor
     - B. Programming
     - C. FPS
  3. Extend on your own
     - 10%

Game Project

- Game from scratch
  - In UE4
- Of your own design
  - With constraints
- Done in teams
  - 2 Tech (IMGD 4000)
  - 2 Art (IMGD 4500)
- All term
  - Start second day of term, end final day of term

Exams

- Mid-term
- Final
  - Non-cumulative
- Closed book, closed note, closed friend
- Test important concepts not adequately demonstrated by team-programming alone
Slides

• On the Web (usually before class)
• PPTX and PDF
• Caution! Don’t rely upon slides alone! Use them as supplementary material — (come to class)

Timeline

• On the Web
  http://web.cs.wpi.edu/~imgd4000/d15/timeline.html
• Tentative, but may help you plan
• Shows Tech (IMGD 4000), Art (IMGD 4500) and Both (typically lab sessions)
• Items in CAPS → you turn something in
• Items in lower → internal milestones only — But strongly encouraged!

Why this Class?

Goals
• Participate effectively as tech devs with artists
• Quickly become proficient with new game engine
• Expand tech skills
  — Implement some
  — Be conversant in others

Objectives
• Member of team, 2 tech and 2 art
  — Produce game
  — Schedule with milestones
  — Coordination using source version control.
• C++ code for UE
• Implement game elements with new tech skills (e.g., physics, networking)
• Individually test knowledge of skills (e.g., camera control)

Why Else This Class?

• Fulfill WPI IMGD requirements
  — Gotta take IMGD 4000
• Get ready for MQP
  — Whether in UE4 or another engine
• Learn UE4
  — Only one engine, but popular
• Become better programmer
  — Programming is critical
  — The more you do, the better you get
  — IMGD Tech students need to be the best programmers (particularly C++)
• Make a game
  — Potential portfolio piece
• Fun!