Syllabus
Game Development - COMP 475
3:00 – 4:15 MW Science 207
Spring 2015

Instructor: Frank McCown
Contact: 501-279-4826, HU Box 10764, fmccown@harding.edu
Home Page: http://www.harding.edu/fmccown/ classes/comp475-s15/ (Syllabus, useful links)
Office Hours: Science 208: 2 – 3 MW, 2 – 5 TR, 2 – 4 F, or by appointment

Course Description

This course is an introduction to the theory and practice of video game design and programming. Concepts include: game design, 2D and 3D computer graphics and animation, game physics, and artificial intelligence. Programs will mostly be written using C# and the XNA platform and with Unity. Prerequisites: COMP 245 and 345.

Recommended: *Learning XNA 4.0: Game Development for the PC, Xbox 360, and Windows Phone 7* by Aaron Reed (2010)
Recommended: *Introduction to Game Development*, 2nd Edition, edited by Steve Rabin (2010)

Exams

A midterm and final exam will be given covering the first half and second half, respectively, of the material presented in the semester. If for **any** reason you are not able to take an exam, you must notify me **before** the exam (or as soon as you are physically possible). Failure to do so may result in a **zero** for the exam. Makeup exams for excused absences will be given, but a penalty of up to 75% will apply for unexcused absences, at the teacher's discretion. If an official school function takes you out of class on an exam date, it is your responsibility to make arrangements one week prior to the exam as to when you will take the exam. Usually it will be given early, not late. **Phones must be turned off and put away.**

Homework Assignments

Homework assignments will be given throughout the semester to give you practice implementing topics discussed in class. You will submit your homework solutions to Easel.

Programming Projects

There will be three major programming projects which will be completed in teams of two. Teams will be assigned by the instructor, and different teams will be formed for each project. The work may be divided between the two group members in any way you choose, but both members should write an equal amount of code. You may use pair programming where both programmers work on the same computer together and time is split evenly between the two "driving" (typing in the code). Teams will utilize git for software version control and will use a central repository on GitHub.com.

Extra Credit

1. The McChallenge: **1%** will be added to your final grade for the completion of a program which will be made available to you later in the semester. The program will be due the Friday before final exams. You can skip the program and still get the 1% added to your final grade if you beat me in a game of basketball, tennis, racquetball, Halo, chess, Trivia Pursuit, or any other sport/game

that I know how to play. If you lose, you still may complete the program to get your 1%. Only one challenge per semester, and all challenges must be made *before* the final week of class. Come by my office to schedule a time to play.

2. Giving Blood: Donating at the Red Cross blood drives will earn you **0.2%** added to your final grade each time you donate. Donate as many times as you'd like, and give me a signed note confirming your donation each time you donate.

Grades

Final grades will be computed as follows:

Homework	20%
Projects	50%
Midterm Exam	15%
Final Exam	15%

Standard letter grades: A = 90-100%, B = 80-89% C = 70-79%, D = 60-69%, F = 0-59%

Late work: A maximum of 10% will be taken off *each day* (not each class period) a program or assignment is late, up to 50%. Every day is counted, including weekends. Nothing late more than 1 week will be accepted.

Miscellaneous

1. Notes for each day will be made available to you on Easel. If you want to print them out, please do so *before* class so you don't disrupt others.

2. To be successful in this course, be prepared to spend at least **two hours outside of class** for every hour in class studying, reading, completing quizzes and homework, working on projects, and preparing for exams. This works out to about 9 hours a week. If you do not have this much time to dedicate to the course, you should take it some other semester when you can make that commitment.

3. You must register for our course on Piazza and **check it regularly**. This is where you can ask questions and give help to others on homework, labs, and projects. This is also the best way to communicate with the class outside of the classroom.

4. Everyone is expected to hold to the **highest standard** of personal conduct and **integrity**. Cheating in all its forms is inconsistent with Christian faith and practice and will result in sanctions up to and including dismissal from the class with a failing grade. Homework and quizzes should be completed *individually* (not in teams or pairs), and it should be *your* work, not the work of someone else. One thing that you should *never do* is give someone your source code as this often leads to cheating. Come by during office hours (or we'll arrange a time) for assistance on programs.

5. Please adhere to the **dress code** as spelled out in the Student Handbook. This includes (men) removing caps while in class. Please wear shoes to class (flip flops are OK).

6. There is **no food or drink** permitted in the lab. However, I will allow you to bring in a drink with a lid until we have a spill.

7. Lab computers may be used during class to **take notes and write programs** when specifically allowed by the instructor. Until the instructor gives you permission, your monitor is to remain **off**. Students who use lab computers for other purposes will not be allowed to use the lab computers.

8. Silence your phones, and **put them away**. It is very distracting to me and those around you when you text in class.

This course covers a broad array of topics, and it will take significant effort, persistence and practice to master all the concepts. Make sure you have allocated sufficient time in your daily schedule for working on homework and projects. Students who do the best in this course attend class regularly, turn in homework and assignments on time (because they don't procrastinate), and seek help from me when in a rut. Remember that I am here to help you.

Students with Disabilities

It is the policy for Harding University to accommodate students with disabilities, pursuant to federal and state law. Therefore, any student with a *documented disability* condition (e.g. physical, learning, psychological, vision, hearing, etc.) who needs to arrange reasonable accommodations, must contact the instructor and the Disabilities Office at the *beginning* of each semester. (If the diagnosis of the disability occurs during the academic year, the student must self-identify with the Disabilities Director *as soon as possible* in order to get academic accommodations in place for the remainder of the semester.) The Disabilities Office is located in Room 102 of the Lee Academic Center, telephone, (501) 279-4019.

Schedule

The following schedule is subject to change but gives you an idea of how the class will progress:

Week 1 Introduction
Jan 12 C# intro
        XNA intro

Week 2 *MLK Day – no school*
        Git intro
        Collision detection

Week 3 Project 1 – Pong
        Sounds

Week 4 Physics engines
Feb 2

Week 5 3D graphics
        Modeling & transformations

Week 6 Project presentations
        Project 2 – Platforrmer

Week 7 More 3D graphics

Week 8 Review for exam
Mar 2   **Midterm Exam**

Spring Break

Week 9 Unity

Week 10 Project presentations
        More Unity

Week 11 Project 3 – Final project

Week 12 More Unity
Apr 6

Week 13 Misc

Week 14 Path-finding algorithms

Week 15 Project presentations

Week 16 **Final Exam**
May 4

 "Whatever you do… do it all to the glory of God." – 1 Cor 10:31