

COSC 438 - Game Design and Development

Fall 2019

Syllabus

Think back to your reasons for wanting to be a computer science major. Was it really your dream to become some database programmer working in a cube? No! Well, maybe, but if you were like me, then what you really wanted to do was make games, play games and live games. In a cube.

Just the Facts

Course Number: COSC 438

Title: Game Design and Development

Semester: Fall 2019

Meeting Time: MWF 10:40 - 11:50 am

Locale: Schaefer 160

Instructor: Alan Jamieson

Office: Schaefer 154

Office Hours: TR 10 - 11:30am, or by appointment

Email: acjamieson@smcm.edu

Google Messenger: acjamieson@smcm.edu

Slack: via COSC438 Group

Online Office Hours: Most evenings and weekends

Textbook: None required. Woohoo! I will provide a list of resources that you can rely on during the class during the first week.

Website: <http://ripark.github.io/f19/cosc438.html>

Catalog Description: This course serves as an introduction to game design and game development. Topics include: game engine usage; game genre analysis; artificial intelligence in games; game development lifecycle; various game design strategies; network architecture in games; and game development in a current programming language. Students will complete a major game development project. Prerequisites: COSC201; and MATH 200 or MATH 281.

Overview: In this course you will be learning the basics of game design and development. We will go over topics including artificial intelligence, sprite manipulation and user interactions. You will come out of the course with enough knowledge of Unity so that you should be able to design and develop a game on your own from scratch. You will learn some of the background into the industry including some history and the challenges the industry faces. The course will cover some of the topics noted in the Core Topics section of the International Game Developer's Association's Education Committee's Curriculum Framework.

Purpose: Videogame design and development theory has existed almost as long as videogames have existed (1958 for those that are wondering), however it has only been in recent years that academia has realized the power and contribution ability of this traditionally computer science subject. It is my hope that you'll gain a deeper appreciation of the effort that goes into the games that you possibly play on a daily basis, and how the tools you have already mastered can help you in developing your own games.

Grade Distribution:

Quizzes, Homework and Participation - 15%

Miniprojects (2) - 15% each

Final Project Proposal - 10%

Final Project Professor Evaluation - 20%

Final Project Peer Evaluation - 15%

Final Project Gala Presentation - 10%

This class will have a major half-term project in addition to 2 smaller projects. The last week of classes, we will hold an evening demo session where you will demo your game to your peers both in

the class and in the department as well as any interested attendees from the school. Also, everyone's project will go up on the website for download, so make them good! You will be expected to participate in class by asking questions and answering questions posed by myself and those in class. Rather than a drab lecture, the class sessions will be run in a discussion style environment. Activity and debate are highly encouraged.

Learning Objectives: At the completion of COSC 438, students will be able to:

- design a complex (multi-class, multi-function) piece of software.
- use current game design techniques.
- construct a complex (multi-class, multi-function) piece of software.
- demonstrate development progress on a long-term project.
- develop a technical design document.
- formulate an approach to implementation from design to development.
- create solutions to many software development problems that occur during a long-term project.

Final Information: What, the term project wasn't hard enough? We don't need no stinkin' final! However, all students are expected to attend a post-action meeting held during the final period at 2pm Thursday, December 19th in Schaefer 160.

Assignments: The main project will be a team-project to create a game utilizing the Unity development environment. The game should bring something original to the table and be fun for a general audience. You should be ready to defend your originality during your presentation at the end of the semester. You will work in teams, and you will evaluate each other as part of the conclusion of the project. Each person should be pulling his or her own weight. Aside from the major project, there will be a single written assignment related to the major project. You will need to provide to me a proposal for your game concept including a review of games similar to your concept that have seen retail release. Your proposal will indicate what kind of game you want to make, the basic rules, how difficult you think the development of the game will be and what resources you think you will need.

Blackboard Use: I will be utilizing Blackboard primarily for your grades in this course. Course materials will be provided on the course website.

GitHub Use: Major project files will be maintained on GitHub. Any questions, concerns or objections should be noted during the first week of classes. You will be given a primer on how to use GitHub during the first part of the semester.

Policies

Cell Phones: Please, turn off or turn to silent any cell phones prior to getting to class. If they go off in class they are distraction not only to myself, but to everyone else in the class as well. Habitual offenders will be excused from the class with a 0 for any quizzes and class participation for that day.

Computer Use: Computer use in this lab is for academic use only. If you bring a laptop with you to this class I expect you to be only using it for purposes related to this class. The same goes for the computers in this lab.

Attendance and Tardiness: Attendance is highly recommended. Missing a class not only causes you to miss the information disseminated in that lecture, but can cause you to miss important information in regards to assignments and the potential of receiving a 0 for a quiz that day. I start class promptly on the hour and expect the students to be in class at that time. If you have circumstances that can prevent you from being in class on time, please let me know as soon as possible. Habitual offenders will be excused from the class with a 0 for any quizzes and class participation for that day.

Exams and Quizzes: There will not be a midterm or a final exam in this class. Every class has the potential of having a quiz to reinforce the ideas from the lecture the previous class. These will

not be announced ahead of time. They will be 1-3 question quizzes that can be easily done in 15 minutes either at the start or the end of the class period.

Assignments: Assignments and other outside of class work should be done on an individual basis unless otherwise specified in the description of the assignment. Assignments and other outside of class work will not be taken late except under extraordinary and documented circumstances.

Late Policy: You are allowed 2 "slip-days" throughout the semester. This means that you may turn in an assignment late, where each day it is late will reduce your number of slip-days by 1. So, you could turn in a mini-project 2 days late, but then you wouldn't have any further slip-days left for the rest of the semester. Once you are out of slip-days, if you turn in the assignment late, you will earn a 0 for that assignment. As a further encouragement to turn in assignments on-time, each slip-day you have left at the end of the semester will add 0.5% to your final average. You may only use slip-days on the miniprojects, homework, and the final project proposal. Group turnins that are late deduct slip-days from all members of the group. If there is a member of the group that does not have any slip-days, they earn a 0 for that assignment.

Extra Credit: I will not be offering any extra credit opportunities in this class.

Communication: The simplest way to get in touch with me is by coming by my office during my office hours or contacting me via email. The easiest way to get in touch with me "after hours" is to send me an email. I habitually check my St. Mary's email account all hours of the day. If you come by my office and the door is open, feel free to stop in to chat. The open door indicates that I'm not working on anything that has to keep my undivided attention at that time so do not feel that you are interrupting me or anything like that. I do make appointments if you have a certain time that you'd like to meet with me. If it fits in my schedule (meaning I'm not teaching class during that time) I will be happy to meet with you.

Academic Honesty: Academic misconduct policies are covered in the Student Code and Student Rights and Responsibilities, Article III. Pay close attention to the definitions of academic misconduct noted in Section 1. This can be found in the Student Handbook.

Disability: If you have any kind of disability that can affect your performance in this class, please let me know privately through email or stopping by my office.

Title IX and Sexual Misconduct: As stated in the St. Mary's Way, the College is a place where we strive to foster relationships based upon mutual respect, honesty, integrity, and trust. As such, we are committed to providing an educational, living, and working environment free from all forms of harassment and discrimination for all members of our community. The College prohibits all forms of sexual or gender-based harassment, discrimination or misconduct, including sexual assault, sexual harassment, relationship violence, and stalking.

If you or someone you know has experienced sexual misconduct, you may find information about resources and options on the Campus Rights webpage (www.smcm.edu/campus-rights) or by contacting the College's Title IX Coordinator, Michael Dunn (mkdunn@smcm.edu or 240-895-4105). Under College policy, faculty members are required to share any reports of sexual misconduct with Michael in order to make sure that the College is responding appropriately to address the health and safety needs of members of our community.

There are on-campus confidential resources available, including the counselors at the Wellness Center (240-895-4289) and the Sexual Misconduct Advocacy and Resource Team student-run 24/7 hotline (301-904-2015). More information about on- and off-campus confidential resources, as well as medical treatment, law enforcement, and other support services, may be found on the Campus Rights webpage.

Schedule: The schedule for the class will be posted to the class website. The schedule is subject to change (multiple times).

Closing: The most important thing in any of my classes is that you are learning and expanding your horizons. If you are having any undue difficulty with your work as it pertains to this class, please contact me as soon as possible. Always remember that professors win when you don't need us any longer. I want you to be bouncing ideas off of each other throughout the class and it is my hope that by the end of the semester that you are driving the class session rather than me.