CSCE 552: COMPUTER GAME DEVELOPMENT

General Information for Fall 2024

Instructor

Dr. J.J. Shepherd
Office: Horizon II 2215
Email: shephejj@cse.sc.edu
Office Hours: Virtually Via MS Teams
Class Website: http://www.cse.sc.edu/~shephejj/csce552
CSCE Dropbox Link: dropbox.cse.sc.edu

Academic Bulletin Description

Design and development of computer games, with emphasis on the technologies used. Hands-on development of computer games.

Learning Outcomes

1. Apply commonly used game development techniques to create a computer game.
2. Generate a Game Design and associated documentation from an Idea.
3. Implement a Computer Game from a Game Design using modern game technologies by creating both a 2D and 3D game.
4. Demonstrate the use of common data structures, algorithms, and software engineering patterns in game development.
5. Effectively communicate with group members and supervisors regarding game development.

Prerequisite or Corequisite

C or better in CSCE 240 and CSCE 350

Course Description

This course presents and demonstrates the common principles and practices used to develop computer games. This includes the process of designing a game from an idea, and then using a design and game technologies to create a computer game. This course also demonstrates the use of previously introduced data structures, algorithms, and software engineering patterns and how they are used for creating games.

Course Overview

- This course will be delivered via in-person lectures. Links to all materials will be found at the course's website.
- *Lectures* present and demonstrate common principles and practices used for Game Development. Lectures occur during the scheduled lecture times at the scheduled location. Materials that accompany the lectures are posted to the course's website regularly.
- The instructor will reply to all feedback in a reasonable amount of time; the same is expected of the students. Specifically,
  - Communication: Responses to email communication and questions will be provided within a day or two. More details can be found in the section labeled, "Email and Communication Expectations".
  - Grading: Grades for assignments will be returned within 1 week of due date. More details can be found in the section labeled, "Grading".

Class Website

You are responsible for checking the class website regularly. Announcements and assignments will be posted. The URL is: http://www.cse.sc.edu/~shephejj/csce552

Recommend Text

Tekinbas, Katie Salen, and Eric Zimmerman. Rules of play: Game design fundamentals. MIT press, 2003.

Rabin, Steve. Introduction To Game Development (Game Development). Charles River Media, Inc., 2005.

Nystrom, Robert. Game programming patterns. Genever Benning, 2014.

Caillois, Roger. Man, play, and games. University of Illinois press, 2001.

Huizinga, Johan. Homo ludens: A study of the play-element in culture. Routledge, 2014.

Bogost, Ian. Persuasive games: The expressive power of videogames. mit Press, 2010.

Flanagan, Mary. Critical play: Radical game design. MIT press, 2009.

Expectations

A strong software engineering and programming background is assumed. Knowledge of software engineering principals, practices, and patterns along with the concepts of common algorithms and data structures are expected. Programming assignments must function with minimal errors and must demonstrate good software engineering practices. Written assignments and presentations must demonstrate clear and professional communication abilities.

Expected Technology

Programming assignments require the use of a preapproved Game Engine and Editor, and a list of these are provided on the class's website. Some assignments require a word processor such as Microsoft Word, OpenOffice Writer, or Google Docs.

This course requires regular, reliable computer and internet access. Computers for this course must be capable of creating and displaying 3D geometries, and must have the required hardware, such as a graphics card. Assignments are to be developed on a computer and submitted via the CSCE Dropbox by their designate date and time. The college recommendations for a computer are found here https://www.sc.edu/study/colleges_schools/engineering_and_computing/supportservices/support/

If you have tech-related questions or need help with the software, please contact the Division of Information technology (DoIT) at https://www.uts.sc.edu/support/servicedesk.shtml"https://sc.edu/about/offices_and_divisions/division_of_information_technology/index.php

Attendance Policy

Students are expected to keep track of the course materials regularly, and log into the CSCE Dropbox to submit assignments before the due time.

Face Coverings

Per university policy, face coverings are optional but encouraged and voluntary masking is supported.

Class Meeting Times

- Lectures

Section	Days	Time	Location
1	MW	02:20 pm-03:35pm	300MN B112

*MTWRF is Monday, Tuesday, Wednesday, Thursday, and Friday respectively

Email and Communication Expectations

- Before sending an email, check the Frequently Asked Question's section on the course's website.
- All communications are expected to be conducted professionally.
- The instructor check emails regularly during the week from 9:00am till 5:00pm Monday through Friday. Any email sent outside of those stated times may not receive a response until the next day or week.
- Email responses may take a few days or longer, due to the large volume of students.
- Communication is assumed to be about the course and its subject matter, and anything outside of the course's material may not receive a response.
- Communication that does not follow the above guidelines or are unprofessional may be ignored or reported to the Office of Student Conduct.

Grading

- Students are expected to keep track of all course materials including but not limited to the syllabus, announcements, lectures, assignments, emails, grades, etc. Instructions or requirements that are not followed in these materials may result in points being deducted.
- All assignments are expected to be uploaded to the CSCE Dropbox before their due date and time. It is strongly encouraged to submit assignments early, and if there are problems then the instructor needs to be made aware immediately.
- We do not accept late work in this course. Assignments are made available to everyone at the same time and are due at the same time. No credit will be given for late assignments. Exceptions to the late policy may be made on an emergency basis.
- Homework assignments are programs, written assignments, and/or presentations to be completed outside of class. They are to be sent in *electronically* before the indicated time on the day they are due.
- Assignments are expected to be completed in groups of at most 4 students who are currently enrolled in the course. This applies to ALL PARTS of the assignment including but not limited to the game's source code, all game's assets, and any written or presentation materials.
- Groups are determined before each homework assignment. Once formed, the groups MUST NOT CHANGE (add, remove, or replace members) until the completion of the assignment. Exceptions to this may only happen in the most severe instances which warrant a Code of Conduct Violation for offending members of the group. In these rare cases, previous grades will still apply, and additional assignments may be required.
- All students in a group share all grades equally for the assignment.
- Games must be developed using an approved Game Engine, such as Unity, Unreal, PyGame, Godot. Any Game Engine not specifically named must be approved by the instructor in writing before its use. Penalties for failing to disclose this information may include deduction of points and/or an Academic Integrity Violation.
- Game source code and assets must ONLY be created by students within their group. Any source code or assets created by anyone outside of the group must be approved by the instructor in writing before its use. Penalties for failing to disclose this information may include deduction of points and/or an Academic Integrity Violation.
- All games developed and its content must be rated **E - EVERYONE** based on the ESRB rating scale. Games whose themes, content, or other related materials that fall outside of this scale will **NOT BE ACCEPTED** and will receive no credit. For more details about the ESRB ratings consult https://www.esrb.org/
- Games created may not feature the likeness of anyone without their direct, written permission.
- All programming assignments require the source code to be submitted along with **two executables** and all required assets. The executables must be built for a **Windows 10 (and above) Operating System** and a **WebGL Platform** and must include all necessary files and assets.
- All written assignments are to be submitted in a common word processor format (DOC, DOCX, or PDF file extensions).
- All presentation assignments must include all materials presented. This including but not limited to presentation slides (PPT, PPTX, PDF file extensions), videos (MP4, MOV, AVI), images (JPG, PNG, GIF).
- Students are expected to keep track of grades regularly. Grades are available on the CSCE Dropbox.
- Regrade requests may only be made within **ONE WEEK** after the assignment has been graded. These requests must be done *electronically* via email to the instructor. Regrade requests only apply to previously submitted work and we do not accept additional work after the fact. Multiple, frivolous regrade requests will disqualify future regrade requests.
- No work or regrade requests can be accepted after the **last day of class.** If there are grades missing by the **last day of class** those assignments will automatically be assigned a 0.
- A grade of Incomplete ("I") is only given in extreme cases when a student is unable to complete some portion of the assigned course work because of a significant incident. These may include an unanticipated illness, accident, work-related responsibility, family hardship, or verified learning disability. An incomplete will only account for 20% of the overall course grade, and it only applies to work **after** the reported incident. In addition, a student must be in good grade standing, a "C" or greater, at the time of the incident to qualify.
- Grades are assigned based on the following criteria:

Letter Grade	Earned Points Percentage
A	90% - 100%
B+	85% - 89%
B	80% - 84%

C+	75% - 79%
C	70% - 74%
D+	65% - 69%
D	60% - 64%
F	0% - 59%

Grade Breakdown

Undergraduate Students

Assignment Name	Assignment Type	Percentage of Overall Grade
Homework00 – Game Analysis	Written	5%
Homework01 – Physical Game	Written	10%
Homework02 – 2D Game Proposal	Written	5%
Homework03 – 2D Game	Programming and Written	20%
Homework04 – 3D Game Proposal	Programming, Written, and Presentation	5%
Homework05 – 3D Game Weekly Update Part 01	Written	5%
Homework06 – 3D Game Weekly Update Part 02	Written	5%
Homework07 – 3D Game Weekly Update Part 03	Written	5%
Homework08 – 3D Game Proof of Concept	Programming, Written, Presentation	10%
FINAL EXAM – 3D Game	Programming, Written, Presentation	20%
FINAL EXAM – Post Mortem	Written	5%
FINAL EXAM – Game Trailer	Presentation	5%

Graduate, Accelerated Masters, or Dual Credit Students

Assignment Name	Assignment Type	Percentage of Overall Grade
Homework00 – Game Analysis	Written	5%
Homework01 – Physical Game	Written	10%
Homework02 – 2D Game Proposal	Written	5%
Homework03 – 2D Game	Programming and Written	20%
Homework04 – 3D Game Proposal	Programming, Written, and Presentation	5%
Homework05 – 3D Game Weekly Update Part 01	Written	5%
Homework06 – 3D Game Weekly Update Part 01	Written	5%
Homework07 – 3D Game Weekly Update Part 01	Written	5%
Homework08 – 3D Game Proof of Concept	Programming, Written, Presentation	10%
FINAL EXAM – 3D Game	Programming, Written, Presentation	20%
FINAL EXAM – Post Mortem	Written	5%
FINAL EXAM – Game Trailer	Presentation	2%
FINAL EXAM – Game Topic Research Paper	Written	3%

Exam Dates

Final Exam	**12/13/2024 by 11:55PM**

Accommodating Disabilities

Reasonable accommodations are available for students with a documented disability. If you have a disability and may need accommodations to fully participate in this class, contact the Student Disability Resource Center: 803-777-6142, TDD 803-777-6744, email sadrc@mailbox.sc.edu, or stop by LeConte College Room 112A. All accommodations must be approved through the Student Disability Resource Center. See https://www.sa.sc.edu/sds/.

- Library Services (http://www.sc.edu/study/libraries_and_collections)
- Writing Center (http://www.cas.sc.edu/write)
- Carolina Tech Zone (http://www.sc.edu/technology/techstudents.html)

Honor Code / Cheating

All students must review the Office of Academic Integrity sanctions. This information may be found at https://sc.edu/about/offices_and_divisions/student_conduct_and_academic_integrity/hearings/hearing_outcomes/honor_code_sanctions/inde
One or more of the following sanctions may be imposed for Academic Integrity violations: 1) Expulsion from the University; 2) Suspension from the University for a period of no less than one semester; and/or Probation. A combination of the above sanctions may be implemented.

Furthermore, cheating is defined as giving or receiving unauthorized aid on any assignment, test, or project. The only authorized materials to be used on assignments are supplied by the instructor. Offenses will be reported in accordance with the *Carolina Community* student handbook.

Academic sanctions for this course are as follows. For every offense, the student will be notified, and the evidence will be sent to the Office of Student Conduct and Academic Integrity. Upon confirmation the student will receive a grade of 0 for the assignment for the first offense - that cannot be made up for any reason including exams. Any other confirmed violation(s) will result in an automatic grade of "F".

*****Everything is subject to change*****