CSCE 4220 Game Programming II
CSCE 5260 3D Game Programming

Instructor Contact

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Communication Expectations: The best way to reach me outside of class/office hours is via email. During the week I will respond to your email within 24 hours. During the weekend, response time may be longer. This includes personal concerns or questions about the class or an assignment. The TA's and I strive to get grades back between 1-1.5 weeks from the due date, though that is not always possible when the class is large. Communication is expected to be professional and respectful. Online Communication Tips (https://clear.unt.edu/online-communication-tips) are available. **Please include "CSCE 4220" or "CSCE 5260" in the subject line of all emails.**

Course Description

This class will cover 3D game programming with the Unreal Engine 5.3. Students will have access to the full Unreal source code. Class meetings will generally consist of a lecture and a hands-on tutorial. Class attendance is mandatory. Grades will be based on completing tutorial assignments and a project.

Course Prerequisites or Other Restrictions

The prerequisites for CSCE 4220 are CSCE 4210 (Game Programming I) and CSCE 4215 (Game Math and Physics). The prerequisite for CSCE 5260 is CSCE 5250 (Intro to Game Programming). These may be waived if sufficient proficiency in game programming can be demonstrated. It is recommended that you take CSCE 4230 (Intro to Computer Graphics) or have some knowledge of 3D graphics.

Course Objectives

Course outcomes are measurable achievements to be accomplished by the completion of a course. These outcomes are evaluated as part of our ABET accreditation process. By the end of this course, students will:

1. Have knowledge of the basic techniques of 3D game programming.
2. Have experience working with a commercial grade game engine.
3. Be able to program a 3D game.
4. Be able to work with the Git revision control system.

Required Materials

Access to a Windows 10-11 Gaming PC is mandatory.

Teaching Philosophy

In this course, we embrace a hands-on and immersive approach to learning that mirrors the challenges faced by professionals in technical fields. I believe that true mastery is achieved through direct engagement and active problem-solving. Just as industry professionals often encounter unfamiliar code bases and technologies, you will navigate the terrain of a new game engine. By working on a single project for the semester I believe you will gain depth and expertise, mirroring real world projects.

I am committed to fostering an environment where experimentation is encouraged, mistakes are valued as opportunities for growth, and collaboration thrives. As you embark on your project, you will not only gain proficiency in technical skills but also develop critical traits such as adaptability, resilience, and effective communication. Ultimately, this course aims to equip each of you with not only the practical abilities to excel in the realm of game development but also the confidence to tackle any new challenge you encounter in your professional endeavors.

Course Requirements

Grades will depend on the quality of your game demo. Other factors that can reduce that grade are: Performance on the labs, decision briefs, checkpoints, project presentations.

Grade Component	Percentage of Final Grade
Final Project	50%
Labs and other Written Assignments	25%
Decision Briefs	15%
Midterm Checkpoints	10%

If you believe that there is a mistake in the grading of one of your assignments, you must bring these inquiries to the professor within one week of when the assignment is returned. After this period, it is too late to consider, except for an arithmetic error in calculating the score.

Late work will not in general be accepted. Exceptions can be made for unavoidable and unforeseen circumstances such as serious illness, family emergency, zombie apocalypse, or civil war.

Tentative Course Calendar

It is unlikely that we will cover these topics in this order. But I need to put something down. We can discuss your preferences as the course goes on. And see how long we need to spend on individual topics.

Week	Date	Major Topics	Due
1	Jan 13 / 15	Unreal Engine Onboarding	
2	Jan 20 / 22	Movement and Physics	
3	Jan 27 / 29	Pitch Review, UI/UMG	
4	Feb 03 / 05	Animation Pipeline	
5	Feb 10 / 12	Animation	
6	Feb 17 / 19	Level Streaming & World Composition	
7	Feb 24 / 26	AI & NavMesh Basics	
8	Mar 03 / 05	Behavior trees & decision logic	
9	Mar 10 / 12	Spring Break	
10	Mar 17/19	C++ Blueprint Node Workshop	
11	Mar 17/19	Character controllers	
12	Mar 31 / Apr 02	Ability System & Modular Gameplay	
13	Apr 07 / 09	Audio	
14	Apr 14 / 16	Quest System	
15	Apr 21 / 23	Quest System	
16	Apr 28 / 30	Quest System	

Course Evaluation

Student Perceptions of Teaching (SPOT) is the student evaluation system for UNT and allows students the ability to confidentially provide constructive feedback to their instructor and department to improve the quality of student experiences in the course. When SPOT becomes available (generally in the last week or so of the course) you will receive an email. I offer a small amount of extra credit if class participation is over 80% of the students.

Course Policies

Attendance

Attendance during lectures is encouraged. Attendance will not be taken after the mandatory period. You are responsible for all material covered during lectures.

Syllabus Change Policy

The instructor reserves the right to change the course as needed.

UNT Policies

Academic Integrity Policy

Academic Integrity Standards and Consequences. According to UNT Policy 06.003, Student Academic Integrity, academic dishonesty occurs when students engage in behaviors including, but not limited to cheating, fabrication, facilitating academic dishonesty, forgery, plagiarism, and sabotage. A finding of academic dishonesty may result in a range of academic penalties or sanctions ranging from admonition to expulsion from the University.

Based on this policy, any form of "unauthorized assistance" constitutes cheating. If the use of artificial intelligence is not authorized for the assignment in question, then a violation has occurred.

ADA Policy

UNT makes reasonable academic accommodation for students with disabilities. Students seeking accommodation must first register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide a student with an accommodation letter to be delivered to faculty to begin a private discussion regarding one's specific course needs. Students may request accommodations at any time, however, ODA notices of accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of accommodation for every semester and must meet with each faculty member prior to implementation in each class. For additional information see the ODA website (https://disability.unt.edu/).

Emergency Notifications and Procedures

UNT uses a system called Eagle Alert to quickly notify students with critical information in the event of an emergency (i.e., severe weather, campus closing, and health and public safety emergencies like chemical spills, fires, or violence). In the event of a university closure, please refer to Canvas for contingency plans for covering course materials.