



CPCS-494 Syllabus

(Tentative)

Catalog Description

CPCS-494 Special Selected Topics

Credit: 3 (Theory: 3, Lab: 0, Practical: 0)

Prerequisite: CPCS 203 & CPCS 204

Principles for methodical game construction. Students in this course are expected to learn about Game Engines, the game loop, and math fundamentals for game development. In addition, students will learn about the main components of modern games, such as renderers, animations, audio, and physics. Students are expected to work in groups and apply the concepts they learn to develop a medium-sized game project.

Class Schedule

Monday and Wednesday from 11:00 – 12:20 pm

Textbook

Jason Gregory, “Game Engine Architecture”, CRC Press; 3rd edition (2018)

ISBN-13 978-1138035454

Jiadong Chen, “Game Development with Unity for .NET Developers”, Packet Publishing; (2022)

ISBN-13 978-1801078078

Student Assessment

Assessment	Grade %
Project	70
Quiz	10
Final Exam	20

Course Learning Outcomes (CLO)

By completion of the course the students should be able to

1. Learn about Game Engines.
2. Understand math fundamentals for game development.
3. Explain the game loop and scripting for game development.
4. Learn the main components in game engines, including rendering, physics, and audio.
5. Implement and present a game project

Instructors

Name: Dr. Emad Albassam

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Office Hours: Sunday 11:00am - 12:00 pm OR by appointment via email

Course Policies

- Students are encouraged to discuss the materials during lectures and labs. If you get stuck on an assignment, please ask the instructor for help instead of getting help from another student. The goal of the instructor is to provide the facilitation necessary for students.
- Students submissions (e.g., projects, assignments, etc.) must reflect their own work. Plagiarism will result a zero grade as well as applying related university policies.
- It is the students' responsibility to make sure that they are consistently checking their email or blackboard for important announcements. Blackboard will be a crucial element of the course. It is the students' responsibility to check Blackboard before every class meeting for any updates that may be posted. Additionally, some clarifications may only be given in class and won't be posted online at all.
- There will be NO make-up exams. Students must submit an official medical report to the academic affairs, within 5 days after the exam he/she was absent from. The Academic affairs must check the validity of the medical report, then send it to the concerned instructor. On that case, the marks will be considered from the average of the First/or the second and the final exam.
- Class attendance is mandatory and will be taken immediately at the beginning of each class. If you miss more than 25% of the lectures, you will receive a DN.

Topics Coverage

Topic
Introduction to Game Development
Overview of Game Engines
Math Fundamentals for Game Development
The Game Loop
Scripting Concepts for Game Development
Developing the UI
Creating Animations
Working with the Physics System
Integrating Audio and Video
Assets Management