GAME 5P10

Game Engine

Winter 2023

Instructor: Michael Winter
Office Hours: Mon & Thu, 11:00am - 01:00pm
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COURSE TIMES

Tuesdays, 02:00pm - 07:00pm, Fall 2023, TH269J

COURSE WEBPAGE

All additional material and the project can be found on the course webpage
http://www.cosc.brocku.ca/~mwinter/Courses/5P10/

COURSE DESCRIPTION

Working in game engines for interactive media. Includes scripting, asset implementation, camera, lighting, and manipulating objects in virtual environments.

COURSE OBJECTIVES

This course provides an introduction to C# programming with Unity 3D. Students will earn how to create and attach scripts to objects in the Unity editor. At the end of this course students will be able to write scripts in C# such as moving objects, displaying game related information, reacting on the players input, basic AI for NPCs, and relative position in the 3D environment.

Learning Outcomes

Students completing this course will have obtained programming skills in C# with Unity 3D. They will be able to implement scripts for interactive media objects. Students completing this course will

- have knowledge of object-oriented programming in C#
- will be able to place objects in the Unity editor and attach appropriate scripts to these objects
- will be able to design an object-oriented program within the Unity environment.
- Implement basic AI features for NPCs.

What is expected of students?

Students will be evaluated in an in-class test and a project. The in-class test covers basic C# as introduced in class. The project will combine several mechanics, tools, methods, and scripts discussed in this class in order to create a very simple dungeon crawler.

IMPORTANT DATES AND ACTIVITIES

Week	Date	Topic	Comment
1	Sep 12	Introduction, GameObjects and scripts, FPSController, Variables and scope	FPSController
2	Sep 19	FSMs, Moving of objects, Classes and inheritance	Door, SlamDoor
3	Sep 26	FSMs, Rigidbodies, Parameter passing	Zombie
4	Oct 03	Creation of a dungeon, Interaction between objects	
5	Oct 17	A* algorithm, coroutines	
6	Oct 24	Animations	
7	Oct 31	Lighting	
8	Nov 07	Miscellaneous topics	
9	Nov 14	Project presentation	In-class test
10	Nov 21	Work period	
11	Nov 28	Work period	
12	Dec 05	Work period	

EVALUATION

Deliverable	Percentage
In-class test (Tuesday, November 14, in class)	30%
Final Project (due Monday, December 11, @08:00am)	70%