

Course on Development of Computer Games prof. Rytis MASKELIŪNAS

Main aim: To introduce design, architecture, programming, rendering, control, audio integration principles of computer games.

Main outcomes: Will learn to design and develop an interactive computer game

Date	Theory lecture topic / Practice lecture topic	Duration (theory / practice*)
Oct 7, 2019	Introductory lecture; Game Planning and Design / Tutorial on the basics of Unity 3D – building your first game Discussion on possible individual tasks (<i>what game would you want to create</i>)	2 / 2hrs
Oct 8	Game resource mechanics; Assets and Tools / Tutorial on fundamental scripts	2 / 2hrs
Oct 9	Game architecture & Loop / Game Engines / Tutorial on interactive graphics	2 / 2hrs
Oct 10	Graphics pipeline and shaders / Tutorial on shaders	2 / 2hrs
Oct 11	Lighting & Optimization / Tutorial on lights Individual tasks finalized and set (<i>every student will have to develop a computer game</i>). Individual project development starts.	2 / 2hrs
-	Remote consultations (email, skype)	On demand
Nov 18	Animation and GUI / Tutorial on Character animation	2 / 2hrs
Nov 19	Environment elements, particles and special effects / Tutorial on Interactive particles	2 / 2hrs
Nov 20	Sounds / Tutorial on Interactive sounds	2 / 2hrs
Nov 21	Game physics & Collisions / Tutorial on forces	2 / 2hrs
Nov 22	"AI" and path-finding in computer games / Tutorial on simple AI and nav meshes Individual project development continues	2 / 2hrs
-	Remote consultations (email, skype)	On demand
Feb 7, 2020	Evaluation of individual project and Exam	3 hrs

***NB.** I suggest we occupy the labs for 2 lectures if the student schedule is busy and not everyone can come. If the overall number of students is lower, than the practice can also be one lecture (1.5 hrs).

Course requirements: Computer class with a screen or tv (or own students can use private laptops) with Unity3D installed (free). Students should have some basic knowledge of C# (for scripting in Unity3D).

Recommended references: Hocking J. - Unity in Action. Multiplatform Game Development in C.Sharp – 2015; Volodymyr Gerasimov - Building Levels in Unity – 2015; Dr. Edward Lavieri - Getting Started with Unity 2018 - Third Edition: A Beginner's Guide to 2D and 3D game development with Unity – 2018; Mike Geig - Unity 2018 Game Development in 24 Hours, Sams Teach Yourself (3rd Edition) - 2018