

2024 / 25

School of Science and Computing

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TU**

Ollscoil
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an Oirdheiscirt

South East
Technological
University

Module Descriptor

2D Game Development (Computing and Mathematics)

2D Game Development (A10866)

Short Title: 2D Game Development
Department: Computing and Mathematics
Credits: 5
Level: Introductory

Description of Module / Aims

This module aims to provide students with an understanding of the development of 2D video games and the game industry. It seeks to develop their technical skills so that they become proficient in high-level 2D game programming using the Unity Game Engine.

Programmes

			stage/semester/status
COMP-0624	BSc (Hons) in Applied Computing (WD_KACCM_B)		1 / 2 / E
COMP-0624	BSc (Hons) in Applied Computing (WD_KCOMP_B)		1 / 2 / E
COMP-0624	BSc (Hons) in Computer Science (WD_KCMSC_B)		1 / 2 / E

Indicative Content

- History of 2D games
- Key principles for interface design and player experience (PX)
- Game development using Unity2D (or equivalent)
- Structure of commercial game development teams
- Play testing
- Programming using Javascript
- Game design principles
- Game design documentation

Learning Outcomes

On successful completion of this module, a student will be able to:

1. Demonstrate a familiarity with Unity's (or similar software) interface (e.g., know common shortcuts and key actions necessary to the game development workflow or import and use assets for their game (e.g., audio, textures, or animations).
2. Code mechanics of a 2D game (in JavaScript or similar language) using standard coding structures (e.g., loops, conditional statements) and concepts (e.g., variables, variable scope, functions).
3. Code inputs (e.g., keys), output (e.g., visual and audio), tags and layers.
4. Code collisions based on 2D physics for realistic effects.
5. Demonstrate knowledge of the history of video games and the links between societal changes and game genres.
6. Communicate game design ideas and concepts using a game design document or equivalent.

Learning and Teaching Methods

- This module will be presented by lectures and practicals.
- The lectures will be used to introduce new topics and their related concepts.
- The practicals will be used to develop game development skills.
- Assignments will allow students to demonstrate proficiency in applying practical skills and concepts using a 2D game engine, e.g. Unity.

Learning Modes

Learning Type	F/T Hours	P/T Hours
Lecture	24	
Practical	24	
Independent Learning	87	

Assessment Methods

	Weighting	Outcomes Assessed
Continuous Assessment	100%	
Assignment	40%	1,2,3
Assignment	60%	2,4,6

Assessment Criteria

<40%: Cannot represent the conceptual design of the operating system components presented in class or explain its operation principles at a basic level.

40%–49%: Knows the role of each component addressed by the learning outcomes and can represent their conceptual design, supported with a basic narrative description of the operation principles.

50%–59%: As well as a clear understanding of the components operation principles, can describe some of the design alternatives covered in the lectures, showing awareness for some of their strengths and weaknesses.

60%–69%: Can demonstrate a comprehensive understanding of the material covered in the lectures.

70%–100%: Excellent understanding of the presented material and displays value added knowledge as a result of independent learning.

Supplementary Material(s)

- Blackman, S. and J. Wang. *Unity for Absolute Beginners*. NY: Apress, 2014.
- Rouse, R. *Game Design: Theory and Practice*. 2nd. NY: Publishing, 2001.
- Zimmerman, E. and K. Zalen. *Rules of Play: Game Design Fundamentals*. NY: MIT Press, 2003.

Requested Resources

- Equipment: MAC PCs
- Room Type: Computer Lab