University of the West of Scotland

Module Descriptor

Session: 2024/25

Title of Module: Game Engine 1							
Code: COMP08079	SCQF Level: 8 (Scottish Credit and Qualifications Framework)	Credit Points: 20	ECTS: 10 (European Credit Transfer Scheme)				
School:	School of Computing E	Engineering and Phys	sical Sciences				
Module Co-ordinator:	Marco Gilardi						
Summary of Module							
Game engines, such as significantly. By using ga industries from various s interactive application in	Unity and Unreal, have ame engines, individual sectors are capable to c a shorter period of time	e changed the creativ s and indie game con create professional ga e.	e industry mpanies and ames and				
The module will provide producing a game production them with soft-skills suc	students with the oppo uct from concept to high h as project and time m	rtunity to develop the -fidelity prototype, w anagement.	ir skills in hile will providing				
This module focuses on using the C# programm students to the prototyp develop their ideas from standard template to gree implementation.	providing object oriente ing language within the ing stages of a game us the development of a c ey-box prototyping and	ed programming con- Unity game engine, i sing a game engine, i design concept using finally into a high-fide	cepts for games introducing allowing them to an industry elity prototype				
The module discusses p as Unity as a game dev interfaces and editors.	The module discusses programming concepts and data structures using C#, as well as Unity as a game development environment, its architecture, how to configure the interfaces and editors.						
Programming, design pi discussed.	rinciples, physics, anima	ation, and state mach	nines are				
This module embeds	the key "I am UWS" gra	duate attributes and	in particular:				
 Universal (critical and analytical thinking, Emotionally-intelligent, Collaborative, Research-minded), 							
Work Ready (digitally Potential leader, Ambitic	literate, problem solver ous)	, effective communic	ator, Motivated,				
and Successful (Autor	nomous, Innovative, Dri	ven, Transformationa	al)				

Module Delivery Method							
Face-To- Face	Blended	Fully Online	HybridC	Hybrid 0	Work-Based Learning		
\boxtimes							
See Guidance Note for details.							

Campus(es) for Module Delivery

The module will **normally** be offered on the following campuses / or by Distance/Online Learning: (Provided viable student numbers permit) (tick as appropriate)

Paisley:	Ayr:	Dumfries:	Lanarkshire:	London:	Distance/Online Learning:	Other:
\boxtimes						Add name

Term(s) for Module Delivery							
(Provided viable student numbers permit).							
Term 1 Image: Marcolar matrix Term 2 Image: Term 3 Image: Image: Term 3							

Learning Outcomes: (maximum of 5 statements) These should take cognisance of the SCQF level descriptors and be at the appropriate level for the module. At the end of this module the student will be able to:						
L1	Demonstrate knowledge and understanding of programming and data structures					
L2	Demonstrate knowledge and understanding of good game design principles					
L3	Demonstrate ability of designing and planning of a grey box game prototype					
L4	Demonstrate the ability to implement a well-structured and documented hi-fidelity game prototype using an industry Game Engine					

Employability Skills and Personal Development Planning (PDP) Skills				
SCQF Headings	During completion of this module, there will be an opportunity to achieve core skills in:			
Knowledge and Understanding (K and U)	SCQF Level 8 Knowledge of software issues related to programming games Understanding of object oriented game design			
Practice: Applied Knowledge and Understanding	SCQF Level 8 Application of programming constructs to produce a desired outcome in a game development environment			
Generic Cognitive skills	SCQF Level 8 Planning and problem solving in a programming context			
Communication, ICT and Numeracy Skills	SCQF Level 8 Use of a game (software) development environment Specification writing			
Autonomy, Accountability and Working with others	SCQF Level 8 Work autonomously to Collaborate with other t	deliver a game product. o come up with individual solutions		
Pre-requisites:	Before undertaking the undertaken the follow	nis module the student should have ring:		
	Module Code: COMP07027 COMP07028	Module Title: Introduction to Programming Intro to Games Development		
	Other:			
Co-requisites	Module Code:	Module Title:		

*Indicates that module descriptor is not published.

Learning and Teaching

In line with current learning and teaching principles, a 20-credit module includes 200 learning hours, normally including a minimum of 36 contact hours and maximum of 48 contact hours.

Learning Activities During completion of this module, the learning activities undertaken to achieve the module learning outcomes are stated below:	Student Learning Hours (Normally totalling 200 hours): (Note: Learning hours include both contact hours and hours spent on other learning activities)
Lecture/Core Content Delivery	8
Laboratory/Practical Demonstration/Workshop	24
Tutorial/Synchronous Support Activity	16
Independent Study	152
	Hours Total 200

**Indicative Resources: (eg. Core text, journals, internet access)

The following materials form essential underpinning for the module content and ultimately for the learning outcomes:

- Harrison Ferrone. Learning C# by Developing Games with Unity Seventh Edition: Get to grips with coding in C# and build simple 3D games in Unity 2022 from the ground up. Packt Publishing
- Nicolas Alejandro Borromeo. Hands-On Unity 2022 Game Development. Packt Publishing
- Unity on-line tutorials (<u>https://learn.unity.com/</u>) and on-line documentation

Please ensure the list is kept short and current. Essential resources should be included, broader resources should be kept for module handbooks / Aula VLE.

Resources should be listed in Right Harvard referencing style or agreed professional body deviation and in alphabetical order.

(**N.B. Although reading lists should include current publications, students are advised (particularly for material marked with an asterisk*) to wait until the start of session for confirmation of the most up-to-date material)

Attendance and Engagement Requirements

In line with the <u>Student Attendance and Engagement Procedure</u>: Students are academically engaged if they are regularly attending and participating in timetabled on-campus and online teaching sessions, asynchronous online learning activities, course-related learning resources, and complete assessments and submit these on time.

For the purposes of this module, academic engagement equates to the following:

- Attend the in-person lectures and laboratories regularly
- Complete the required activities during the lectures and laboratories
- Submitting the required coursework on time

Equality and Diversity

The University's Equality, Diversity and Human Rights Procedure can be accessed at the following link: <u>UWS Equality, Diversity and Human Rights Code.</u>

(N.B. Every effort will be made by the University to accommodate any equality and diversity issues brought to the attention of the School)

Supplemental Information

Divisional Programme Board	Computing
Assessment Results (Pass/Fail)	Yes □ No ⊠
School Assessment Board	Creative Computing
Moderator	Thomas Hainey
External Examiner	Nicola Whitton
Accreditation Details	TIGA
Changes/Version Number	1.11

Assessment: (also refer to Assessment Outcomes Grids below)

This section should make transparent what assessment categories form part of this module (stating what % contributes to the final mark).

Maximum of 3 main assessment categories can be identified (which may comprise smaller elements of assessment). NB: The 30% aggregate regulation (Reg. 3.9) (40% for PG) for each main category must be taken into account. When using PSMD, if all assessments are recorded in the one box, only one assessment grid will show and the 30% (40% at PG) aggregate regulation will not stand. For the aggregate regulation to stand, each component of assessment must be captured in a separate box.

Please provide brief information about the overall approach to assessment that is taken within the module. In order to be flexible with assessment delivery, be brief, but do state assessment type (e.g. written assignment rather than "essay" / presentation, etc.) and keep the detail for the module handbook. Click or tap here to enter text.

The assessment for this module is based on authentic assessment and will be group based. The assessment will require students to produce a game design (25% of the total mark), a grey boxing game prototype (25% of the mark) and a high-fidelity game prototype (50% of the mark).

Assessment 1 – Game design (25%)

Assessment 2 – Grey boxing game prototype (25%)

Assessment 3 – High-fidelity game prototype (50%)

(N.B. (i) **Assessment Outcomes Grids** for the module (one for each component) can be found below which clearly demonstrate how the learning outcomes of the module will be assessed.

(ii) An **indicative schedule** listing approximate times within the academic calendar when assessment is likely to feature will be provided within the Student Module Handbook.)

Assessment Outcome Grids (See Guidance Note)

Component 1							
Assessme nt Type (Footnote B.)	Learning Outcome (1)	Learning Outcome (2)	Learning Outcome (3)	Learning Outcome (4)	Learning Outcome (5)	Weighting (%) of Assessment Element	Timetable d Contact Hours
Design/ Diagram/ Drawing/ Photograph/ Sketch		х				25%	0

Component 2							
Assessme nt Type (Footnote B.)	Learning Outcome (1)	Learning Outcome (2)	Learning Outcome (3)	Learning Outcome (4)	Learning Outcome (5)	Weighting (%) of Assessment Element	Timetable d Contact Hours
Creative output/ Audiotapes/ Videotapes/ Games/ Simulations	х		x			25%	0

Component	Component 3							
Assessme nt Type (Footnote B.)	Learning Outcome (1)	Learning Outcome (2)	Learning Outcome (3)	Learning Outcome (4)	Learning Outcome (5)	Weighting (%) of Assessment Element	Timetable d Contact Hours	
Creative output/ Audiotapes/ Videotapes/ Games/ Simulations	x			x		50%	0	
Combined Total for All Components					100%	o hours		

Change Control:

What	When	Who
Further guidance on aggregate regulation and application	16/01/2020	H McLean
when completing template		
Updated contact hours	14/09/21	H McLean
Updated Student Attendance and Engagement Procedure	19/10/2023	C Winter
Updated UWS Equality, Diversity and Human Rights Code	19/10/2023	C Winter
Guidance Note 23-24 provided	12/12/23	D Taylor
General housekeeping to text across sections.	12/12/23	D Taylor

Version Number: MD Template 1 (2023-24)