Module Descriptor

Title	Immersive Experiences Implementation		
Session	2025/26	**Status**	Published
Code	COMP10083	**SCQF Level**	10
Credit Points	20	**ECTS (European Credit Transfer Scheme)**	10
School	**Computing, Engineering and Physical Sciences**		
Module Co-ordinator	Marco Gilardi		

Summary of Module

The emergence of extended realities (XR) technologies, such as virtual reality (VR), augmented reality (AR), and mixed reality (MR), is opening new job opportunities for games developers in areas that are traditionally not related with computer games, such as manufacturing, architecture, engineering, film making, concerts, exhibitions, etc. As such individuals that are able to implement a design for an immersive experience are currently highly valuable in the job market.

This module will teach students how to implement the design of immersive XR experiences using commercial game engines.

After this module students will be able to:

- Setup a XR development pipeline

- Implement diegetic interactions and 3D user interfaces

- Optimise the scene for XR hardware

- Generate High-Fidelity implementations of a given design for an immersive experience

• Introduce students to how to implement immersive experiences through emerging immersive technologies that are influencing computer games development, visualization of data, cultural and social experiences, and communication of information in general

• Give students experience in how to transform a design for an immersive experience into working software

• Give students experience in implementing diegetic 3D interfaces and interactions, and optimize software to run on XR hardware

• This module embeds the key “I am UWS” graduate attributes and in particular: Universal, Work Ready and Successful. Attributes covered in this module are: Academic Universal (Critical Thinker, Analytical, Inquiring) Work Ready (Knowledgeable, Digitally Literate, Problem-solver) Successful (Autonomous, Innovative) Personal Universal (Ethically-

minded, Culturally aware) Work Ready (Effective communicator, Motivated) Successful (Creative, Imaginative, Resilient) Professional Universal (Collaborative, Research-minded) Work Ready (Enterprising, Ambitious) Successful (Driven, Daring, Transformational)

Module Delivery Method	**On-Campus**[1] ☒	**Hybrid**[2] ☐	**Online**[3] ☐	**Work -Based Learning**[4] ☐
Campuses for Module Delivery	☐ Ayr ☐ Dumfries	☐ Lanarkshire ☐ London ☒ Paisley	☐ Online / Distance Learning ☐ Other (specify)	

Terms for Module Delivery	Term 1	☐	Term 2	☒	Term 3	☐
Long-thin Delivery over more than one Term	Term 1 – Term 2	☐	Term 2 – Term 3	☐	Term 3 – Term 1	☐

Learning Outcomes	
L1	Implement the principles of HCI to immersive experiences
L2	Be able to implement an immersive experience given a design
L3	Be able to implement 3D interactions and interfaces for XR
L4	Be able to optimize a scene for XR devices
L5	

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 10** Demonstrate and/or work with: Knowledge in the issues pertaining the implementation of immersive experiences for entertainment, visualisation and communication. A critical understanding of the principal theories, concepts and principles that regulate the implementation of immersive experiences on XR hardware.

[1] Where contact hours are synchronous/ live and take place fully on campus. Campus-based learning is focused on providing an interactive learning experience supported by a range of digitally-enabled asynchronous learning opportunities including learning materials, resources, and opportunities provided via the virtual learning environment. On-campus contact hours will be clearly articulated to students.

[2] The module includes a combination of synchronous/ live on-campus and online learning events. These will be supported by a range of digitally-enabled asynchronous learning opportunities including learning materials, resources, and opportunities provided via the virtual learning environment. On-campus and online contact hours will be clearly articulated to students.

[3] Where all learning is solely delivered by web-based or internet-based technologies and the participants can engage in all learning activities through these means. All required contact hours will be clearly articulated to students.

[4] Learning activities where the main location for the learning experience is in the workplace. All required contact hours, whether online or on campus, will be clearly articulated to students

	Detailed knowledge and understanding in immersive experience implementation
Practice: Applied Knowledge and Understanding	**SCQF 10** Use a wide range of practical professional skills, techniques, and materials associated with immersive experiences. Use skills, techniques, practices and materials that are specialised and at the forefront of a immersive experiences implementation. Executing a defined project of research and design identifying and prototyping relevant outcomes. To practise in a range of professional level contexts that include a degree of unpredictability and specialism.
Generic Cognitive skills	**SCQF 10** Critically identify, define, conceptualise and analyse complex professional problems and issues. Offer professional insights, interpretations and solutions to problems and issues. Demonstrate some originality and creativity in dealing with professional issues. Critically review and consolidate knowledge, skills, practices and thinking in immersive experiences design. Make judgements where data and information is limited or comes from a range of sources
Communication, ICT and Numeracy Skills	**SCQF 10** Present or convey, formally and informally, information about specialised topics to informed audiences. Communicate with peers, senior colleagues and specialists on a professional level
Autonomy, Accountability and Working with Others	**SCQF 10** Exercise autonomy and initiative in professional/equivalent activities. Exercise significant managerial responsibility for a range of resources. Practise in ways that show awareness of own and others' roles and responsibilities. Work with others to bring about change, development and/or new thinking. Manage complex ethical and professional issues in accordance with current professional and/or ethical codes or practices.

	Recognise the limits of these codes and seek guidance where appropriate

Prerequisites	**Module Code**	**Module Title**
	Other	
Co-requisites	**Module Code**	**Module Title**

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** (Note: Learning hours include both contact hours and hours spent on other learning activities)
Lecture / Core Content Delivery	7
Tutorial / Synchronous Support Activity	28
Laboratory / Practical Demonstration / Workshop	13
Independent Study	152
Please select	
Please select	
TOTAL	200

Indicative Resources
The following materials form essential underpinning for the module content and ultimately for the learning outcomes: Steve Aukstakalnis (2016) Practical Augmented Reality: A Guide to the Technologies, Applications and Human Factors for AR and VR (Usability). Addison-Wesley Professional Jason Jerald (2015) The VR Book: Human-Centered Design for Virtual Reality. ACM Books LaViola J. J. Jr, Kruijff E., McMahan R. P., Bowman, D. A., Poupyrev I. (2017) 3D User Interfaces. Addison-Wesley Meta Documentation (2020) ONLINE URL: https://developer.oculus.com/learn/learn/ VIVE Open XR Documentation (2020) ONLINE URL: https://developer.vive.com/resources/openxr/
(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 Student Attendance and Engagement Procedure, 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:

The School of Computing, Engineering and Physical Sciences considers attendance and engagement to mean a commitment to attending, and engaging in, timetabled sessions. You will scan your attendance via the scanners each time you are on-campus and you will login to the VLE several times per week. Where you are unable to attend a timetabled learning session due to illness or other circumstance, you should notify the Programme Leader that you cannot attend. Across the School an 80% attendance threshold is set. If you fall below this, you will be referred to the Student Success Team to see how we can best support your studies.

Equality and Diversity
The University's Equality, Diversity and Human Rights Procedure can be accessed at the following link: UWS Equality, Diversity and Human Rights Code. Aligned with the University's commitment to equality and diversity, this module supports equality of opportunity for students from all backgrounds and learning needs. Using the VLE, material will be presented electronically in formats that allow flexible access and manipulation of content. This module complies with University regulations and guidance on inclusive learning and teaching practice. This module has lab-based teaching and as such you are advised to speak to the Module Co-ordinator to ensure that specialist assistive equipment, support provision and adjustment to assessment practice can be put in place, in accordance with the University's policies and regulations.
(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**
Overall Assessment Results	☐ **Pass / Fail** ☒ **Graded**
Module Eligible for Compensation	☐ **Yes** ☐ **No** **If this module is eligible for compensation, there may be cases where compensation is not permitted due to programme accreditation requirements. Please check the associated programme specification for details.**
School Assessment Board	Creative Computing
Moderator	Thomas Hainey
External Examiner	Sylvester Arnab
Accreditation Details	
Module Appears in CPD catalogue	☐ **Yes** ☐ **No**
Changes / Version Number	1.1

Assessment (also refer to Assessment Outcomes Grids below)
Assessment 1

Creative output/ Audiotapes/ Videotapes/ Games/ Simulations – Implementation of an Immersive Experience 100%
Assessment 2
Assessment 3
(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.)

Component 1							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
Creative output/ Audiotapes/ Videotapes/ Games/ Simulations – Implementation of an Immersive Experience 100%	☒	☒	☒	☒	☐	100	0

Component 2							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
	☐	☐	☐	☐	☐		

Component 3							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
	☐	☐	☐	☐	☐		
Combined total for all components						100%	0 hours

Change Control

What	**When**	**Who**
Updated Attendance and Engagement and EDI	29.08.25	A Adamson