

## University of the West of Scotland

## Module Descriptor

Session: 2024/25

<b>Title of Module: Games Console Programming</b>			
<b>Code: COMP10037</b>	<b>SCQF Level: 10 (Scottish Credit and Qualifications Framework)</b>	<b>Credit Points: 20</b>	<b>ECTS: 10 (European Credit Transfer Scheme)</b>
<b>School:</b>	School of Computing, Engineering and Physical Sciences		
<b>Module Co-ordinator:</b>	Paul Keir		
<b>Summary of Module</b>			
<p>This module provides a comprehensive technical coverage of modern games console platforms, including the hardware, software and development tools used in commercial environments. Students will gain a critical appreciation of the technical issues surrounding these technologies, including parallel processing, low-level programming, design techniques and optimisation strategies that are specific to fixed hardware platforms. UWS are a PlayStation® First partner, and students will use C++ to develop on a current Sony console devkit.</p> <p>This module will work to develop a number of the key 'I am UWS' Graduate Attributes to make those who complete this module: Universal (Research-minded, Analytical &amp; Critical Thinker), Work Ready (Problem-Solver &amp; Digitally Literate), and Successful (Autonomous, Innovative &amp; Imaginative).</p>			

<b>Module Delivery Method</b>					
<b>Face-To-Face</b>	<b>Blended</b>	<b>Fully Online</b>	<b>HybridC</b>	<b>Hybrid 0</b>	<b>Work-Based Learning</b>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>See Guidance Note for details:</b>					
<p>Face-To-Face</p> <p>Term used to describe the traditional classroom environment where the students and the lecturer meet synchronously in the same room for the whole provision.</p> <p>Blended</p> <p>A mode of delivery of a module or a programme that involves online and face-to-face delivery of learning, teaching and assessment activities, student support and feedback. A programme may be considered “blended” if it includes a combination of</p>					

face-to-face, online and blended modules. If an online programme has any compulsory face-to-face and campus elements it must be described as blended with clearly articulated delivery information to manage student expectations

#### Fully Online

Instruction that is solely delivered by web-based or internet-based technologies. This term is used to describe the previously used terms distance learning and e learning.

#### HybridC

Online with mandatory face-to-face learning on Campus

#### HybridO

Online with optional face-to-face learning on Campus

#### Work-based Learning

Learning activities where the main location for the learning experience is in the workplace.

### 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:
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Add name

### Term(s) for Module Delivery

(Provided viable student numbers permit).

Term 1	<input type="checkbox"/>	Term 2	<input checked="" type="checkbox"/>	Term 3	<input type="checkbox"/>
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### 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 a critical appreciation of the hardware architectures of modern games console platforms.
L2	Apply design techniques and optimization strategies for developing games software for a modern games console platform using a low-level API.

L3	Demonstrate a critical appreciation of the differences between coding for general purpose platforms (e.g. PC) and fixed hardware platforms with limited OS services.	
L4	Demonstrate critical awareness of the issues surrounding parallel processing, and its use on modern games console platforms.	
<b>Employability Skills and Personal Development Planning (PDP) Skills</b>		
<b>SCQF Headings</b>	During completion of this module, there will be an opportunity to achieve core skills in:	
Knowledge and Understanding (K and U)	<p><b>SCQF Level 10</b></p> <p>Having a critical awareness of current and future technologies used with games console platforms.</p> <p>Demonstrating innovation in the use of parallel processing features.</p>	
Practice: Applied Knowledge and Understanding	<p><b>SCQF Level 10</b></p> <p>Ability to make informed decisions relating to selecting algorithms and technologies for use in commercial console games.</p> <p>Ability to critically evaluate existing algorithms in terms of their efficiency.</p>	
Generic Cognitive skills	<p><b>SCQF Level 10</b></p> <p>Critically appraising information sources and academic papers, and assessing the suitability of new techniques in commercial software products.</p>	
Communication, ICT and Numeracy Skills	<p><b>SCQF Level 10</b></p> <p>Ability to decompose algorithms into independent parallel tasks for execution on parallel processors.</p>	
Autonomy, Accountability and Working with others	<p>SCQF Level Choose an item.</p> <p><a href="#">Click or tap here to enter text.</a></p>	
<b>Pre-requisites:</b>	Before undertaking this module the student should have undertaken the following:	
	<b>Module Code:</b>	<b>Module Title:</b>
	<b>Other:</b>	C++
<b>Co-requisites</b>	<b>Module Code:</b>	<b>Module Title:</b>

\*Indicates that module descriptor is not published.

<b>Learning and Teaching</b>	
<b>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.</b>	
<b>Learning Activities</b> During completion of this module, the learning activities undertaken to achieve the module learning outcomes are stated below:	<b>Student Learning Hours</b> (Normally totalling 200 hours): (Note: Learning hours include both contact hours and hours spent on other learning activities)
Lecture/Core Content Delivery	12
Laboratory/Practical Demonstration/Workshop	36
Asynchronous Class Activity	50
Independent Study	102
	200 Hours Total
<b>**Indicative Resources: (eg. Core text, journals, internet access)</b>	
<p>The following materials form essential underpinning for the module content and ultimately for the learning outcomes:</p> <p>PlayStation® console development kits are network connected with lab development PCs. Development on these machines for each coursework requires that students work within the UWS computing labs.</p> <p>Technical documentation for games console platforms (e.g. PlayStation® 5, Xbox Series X/S etc.)</p>	
<p>(**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)</p>	
<b>Attendance and Engagement Requirements</b>	
<p>In line with the <a href="#">Student Attendance and Engagement Procedure</a>: 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.</p>	

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

Students are expected to attend the on campus weekly teaching sessions. A record of attendance is kept, and timely submission of assignments is expected.

### 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](#).

Please ensure any specific requirements are detailed in this section. Module Co-ordinators should consider the accessibility of their module for groups with protected characteristics..

(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

<b>Divisional Programme Board</b>	Computing
<b>Assessment Results (Pass/Fail)</b>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
<b>School Assessment Board</b>	Creative Computing
<b>Moderator</b>	Marco Gilardi
<b>External Examiner</b>	N. Whitton
<b>Accreditation Details</b>	This module is accredited by TIGA as part of the Computer Games Development programme.
<b>Changes/Version Number</b>	2.12

### Assessment: (also refer to Assessment Outcomes Grids below)

Students will develop two software development group projects using C++, and libraries from the Sony PS5 SDK or a suitable game engine (as specified within each assignment specification). Each project includes an executive summary report. Together the two projects are worth 70% of the overall mark. There is also a closed-book class test worth 30%.

Assessment 1 – Software development group project including report (70%)

Assessment 2 – Closed book class test (30%)

(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							
Assessment Type (Footnote B.)	Learning Outcome (1)	Learning Outcome (2)	Learning Outcome (3)	Learning Outcome (4)	Learning Outcome (5)	Weighting (%) of Assessment Element	Timetabled Contact Hours
Laboratory/ Clinical/ Field notebook	✓	✓	✓	✓		70	

Component 2							
Assessment Type (Footnote B.)	Learning Outcome (1)	Learning Outcome (2)	Learning Outcome (3)	Learning Outcome (4)	Learning Outcome (5)	Weighting (%) of Assessment Element	Timetabled Contact Hours
Class test (written)			✓	✓		30	

<b>Combined Total for All Components</b>						<b>100%</b>	<b>XX hours</b>
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