ROBERT GORDON UNIVERSITY ABERDEEN

MODULE DESCRIPTOR

Module Title

Immersive Technology

Reference	CM4124	Version	1
Created	February 2019	SCQF Level	SCQF 10
Approved	May 2019	SCQF Points	15
Amended		ECTS Points	7.5

Aims of Module

To provide the student with the fundamental theories and principles of Immersive Technology, while developing an understanding of appropriate methodologies to design and develop an implementation using these technologies.

Learning Outcomes for Module

On completion of this module, students are expected to be able to:

1	Demonstrate a theoretical understanding of a number of immersive technologies.
2	Design, code and implement solutions using a number of different software packages and libraries for Virtual Reality and Augmented Reality.
3	Employ virtual environment design by using 3D modelling, texture and animation techniques.
4	Research new and upcoming technologies related to Virtual Reality and Augmented Reality.
5	Develop an understanding of designing user interactions for Virtual Reality and Augmented Reality in a number of contexts (e.g. gaming).

Indicative Module Content

Introduction to Virtual Reality, Augmented Reality and Mixed Reality technologies; Graphic Design for VR, AR and MR; Applications of VR, AR and MR, Unity programming; WebVR; Mobile AR design and development; VR gaming & user interactions.

Module Delivery

Key concepts are introduced and illustrated through lectures, workshops and directed reading. In the laboratories the students will progress through a sequence of exercises to develop sufficient knowledge of Unity programming and other applications such as ARCore, WebGL library, Autodesk products etc. to enable them to complete the practical design & implementation.

Indicative Student Workload

	Full Time	Part Time
Contact Hours	36	N/A
Non-Contact Hours	114	N/A
Placement/Work-Based Learning Experience [Notional] Hours	N/A	N/A
TOTAL	150	N/A
Actual Placement hours for professional, statutory or regulatory body		

ASSESSMENT PLAN

If a major/minor model is used and box is ticked, % weightings below are indicative only.

Component 1

Type:	Coursework	Weighting:	50%	Outcomes Assessed:	2, 3, 5
Description:	This is a coursework worth 50% of the total module assessment.				

Component 2

Type:	Coursework	Weighting:	50%	Outcomes Assessed:	1, 4
Description:	There will be a research report worth 50% of the total module assessment.				

MODULE PERFORMANCE DESCRIPTOR

Explanatory Text

There are two assessment componets: a coursework worth 50% and a research report worth 50%. The minimum grade to pass the module is D.

		Coursework:						
		A	**B**	**C**	**D**	**E**	**F**	**NS**
Coursework:	**A**	A	A	B	B	C	E	
	B	A	B	B	C	C	E	
	C	B	B	C	C	D	E	
	D	B	C	C	D	D	E	
	E	C	C	D	D	E	E	
	F	E	E	E	E	E	F	
	NS	Non-submission of work by published deadline or non-attendance for examination						

Module Requirements

Prerequisites for Module	None.
Corequisites for module	None.
Precluded Modules	None.

INDICATIVE BIBLIOGRAPHY

1   Steve Aukstakalnis, 2016. Practical Augmented Reality, a Guide to the Technologies, applications, and Human Factors for AR and VR;

2   Erin Pangilinan etc. 2019. Creating Augmented and Virtual Realities: Theory & Practice for Next ? Generation Spatial Computing;

3   Virtual Reality Journal, by Springer. https://www.springer.com/computer/image+processing/journal/10055

4   Tony Parisi, 2015. Learning Virtual Reality: Developing Immersive Experiences and Applications for Desktop, Web and Mobile;

5   Dieter Schmalstieg, 2016. Augmented Reality, Principles and Practice.