

Module Code	EEMT21
Module Name	INTRODUCTION TO XR: APPLICATIONS and TECHNOLOGIES
ECTS Weighting¹	5 ECTS
Semester taught	Semester 2
Module Coordinator/s	Dr Fionnuala Conway
Module Learning Outcomes with reference to the Graduate Attributes and how they are developed in discipline	<p>On successful completion of this module, students will be able to:</p> <p>LO1: Design and implement interactive environments in Unity and be able to develop these skills in an independent manner.</p> <p>LO2: Create, design and produce an interactive 3D environment in Unity that may be implemented on as Web-based VR or on a Virtual Reality headset.</p> <p>LO3: Create, design and produce an Augmented Reality environment using Unity.</p> <p>LO4: Produce demonstration film/presentation to showcase the environments.</p> <p>LO5: Create and develop environments that can be used in a variety of applications such as art, music and performance, health, gaming, training, and others.</p> <p>Graduate Attributes: levels of attainment</p> <p>To act responsibly - Enhanced</p> <p>To think independently - Enhanced</p> <p>To develop continuously - Enhanced</p> <p>To communicate effectively - Enhanced</p>
Module Content	<p>Extended reality (XR) is an umbrella term used to describe the different technologies that create a virtual experience or merge the virtual and physical worlds to varying degrees. Commonly discussed under the 'XR umbrella' are terms such as Virtual Reality (VR), Augmented Reality (AR), and Mixed Reality (MR). The module introduces this related set of XR (eXtended realities) applications and technologies through the Unity software and VR hardware. It focuses on the development of aesthetic and technological skills required to produce XR applications. This skillset ranges from content-creation to thinking about and designing user experience to the production of original interactive environments. The module provides an overview of applications in areas such as art, music, gaming, health, and training and encourages learners to develop with these areas in mind. This practice-based module requires the learner to produce 2 applications: 1 interactive environment (can be a VR application) and 1 Augmented Reality experience. At the end of the module, learners should be proficient in the</p>

¹ [TEP Glossary](#)

	<p>Unity software and associated VR hardware such as the Oculus Quest.</p> <p>Topics addressed will include: Broad overview of applications in Virtual Reality, Augmented reality, Mixed Reality Unity software Oculus Quest Web-based VR Introduction to programming in Unity</p>																				
<p>Teaching and Learning Methods</p>	<p>The teaching strategy comprises lectures, software and hardware tutorials, and critique classes on assignments. Lectures encourage participation through class discussion.</p>																				
<p>Assessment Details² Please include the following:</p> <ul style="list-style-type: none"> • Assessment Component • Assessment description • Learning Outcome(s) addressed • % of total • Assessment due date 	<table border="1"> <thead> <tr> <th>Assessment Component</th> <th>Assessment Description</th> <th>LO Addressed</th> <th>% of total</th> <th>Week due</th> </tr> </thead> <tbody> <tr> <td>Assignment 1</td> <td>Project + report</td> <td>1,2,5</td> <td>40%</td> <td>During Semester</td> </tr> <tr> <td>Assignment 2</td> <td>Project + report</td> <td>1,3,4,5</td> <td>60%</td> <td>During Semester</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Assessment Component	Assessment Description	LO Addressed	% of total	Week due	Assignment 1	Project + report	1,2,5	40%	During Semester	Assignment 2	Project + report	1,3,4,5	60%	During Semester					
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<p>Reassessment Requirements</p>																					
<p>Contact Hours and Indicative Student Workload²</p>	<table border="1"> <tr> <td> <p>Contact hours: 32 hours</p> </td> </tr> <tr> <td> <p>Independent Study (preparation for course and review of materials): 44</p> </td> </tr> <tr> <td> <p>Independent Study (preparation for assessment, incl. completion of assessment): 40</p> </td> </tr> </table>	<p>Contact hours: 32 hours</p>	<p>Independent Study (preparation for course and review of materials): 44</p>	<p>Independent Study (preparation for assessment, incl. completion of assessment): 40</p>																	
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<p>Recommended Reading List</p>	<p>Oliver Grau: Virtual Art: From Illusion to Immersion Jason Jerald: The VR Book: Human-Centered Design for Virtual Reality</p>																				

² [TEP Guidelines on Workload and Assessment](#)

	Website: Unity Learn tutorials, LinkedIn Learning – Unity tutorials.
Module Pre-requisite	n/a
Module Co-requisite	
Module Website	See Blackboard
Are other Schools/Departments involved in the delivery of this module? If yes, please provide details.	No
Module Approval Date	January 2020
Approved by	Curriculum Committee
Academic Start Year	2020
Academic Year of Date	2023/2024