Module Code	EEMT21
Module Name	INTRODUCTION TO XR: APPLICATIONS and TECHNOLOGIES
ECTS Weighting[2]	5 ECTS
Semester taught	Semester 2
Module Coordinator/s	Dr. Fionnuala Conway
Module Learning Outcomes Graduate Attributes	On successful completion of this module students will gain: LO1. Proficiency in the design and implementation of XR environments in Unity. LO2. An understanding of interaction design for creative applications of XR LO3. A strong foundation from which to continuously develop their Unity programming skills in an independent manner. LO4: 1 XR portfolio work that is an application of XR in art, digital heritage, music, health, education or other. Graduate Attributes: levels of attainment To act responsibly - Attained To think independently - Attained To develop continuously - Enhanced To communicate effectively – Enhanced
Module Content	This module introduces the related set of XR (eXtended realities) technologies through the Unity software, VR hardward and other established locative media softwares. A focus of the module is to develop the aesthetic and technological skills required for the production of Virtual reality, Augmented Reality and Mixed Reality, from content-creation to the planning user experience and finally, the production of an interactive environment. The module will provide an overview of applications of XR in areas such as gaming, health and training and encourage learners to develop with these areas in mind. At the end of the module, learners should be proficient in the Unity software and associated VR hardware . Topics addressed will include: Oculus Rift History of Virtual Reality Unity software VR hardware Oculus Quest HTC Vive Locative media softwares Web-based VR, Xr design and applications & Introduction to programming in Unity

Teaching and Learning Methods	The teaching strategy comprises of lectures, software and hardware tutorials and critique classes on assignments. Lectures encourage participation with emphasis on class discussions and debate. Assessment of this module is by practical assignment work. Students are required to complete 2 assignments. These assignments attract a mark of 40% and 60%, respectively. The first assignment requires the student to develop an interactive 3D environment in Unity. Students will be required to provide a written report detailing their conceptual understanding of their work. For this first assignment, marks are awarded as follows: Report – 10%; Environment: 30%. The second assignment requires that students design and implement a more complex XR environment, using VR, AR or mixed realities and with a specific application in mind. The student may, for example, wish to design an application for use in music performance or as a means to interact with a digital heritage exhibition. In this assignment, the student is expected to display the ability to innovate based on the material presented in class. A report detailing the conceptual framework employed and details of the design must be submitted. For this second assignment, marks are awarded as follows: Report: 10%; Environment: 50%.

Assessment Details[3]

Please include the following:

- **Assessment Component**
- **Assessment description**
- **Learning Outcome(s) addressed**
- **% of total**
- **Assessment due date**

Assessment Component	Assessment Description	LO Addressed	% of total	Week due
Assignment 1	Project + report	1,3	40	
Assignment 2	Project + report	1-4	60	

Reassessment Requirements

n/a

Contact Hours and Indicative Student Workload[3]

Contact hours: 22 x 1-hour lectures
Independent Study (preparation for course and review of materials): 33
Independent Study (preparation for assessment, incl. completion of assessment): 45

Recommended Reading List

Oliver Grau: Virtual Art: From Illusion to Immersion
Jason Jerald: The VR Book: Human-Centered Design for Virtual Reality

Website: LinkedIn Learning – Unity tutorials.

Module Pre-requisite

n/a

Module Co-requisite

n/a

Module Website

Yes

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 Year of Date 2019/20