Glasgow School of Art Course Specification
Course Title: Immersive Systems 1 - Applications

Image credit: Layla Hassani Watson, BSc Immersive Systems Design (2023)

Please note that this course specification is correct on the date of publication but may be subject to amendment prior to the start of the 2024-25 Academic Year.

Course Code	HECOS Code	Academic Session
		2024/25

Course Title	Immersive Systems 1 - Applications
Course Contact	Fraser Dougan / Dr. Jamie Iona Ferguson

Credits	40
SCQF Level	7
When Taught	Stage 1, Semester 2

Associated Programmes	BSc (Hons) Immersive Systems Design
Lead School	School of Innovation and Technology (SIT)
Other Schools	N/A
Date of Approval	PACAAG August 2024

Course Introduction

The course aligns with established processes in the Extended Reality (XR) disciplines (Virtual Reality, Mixed Reality, Augmented Reality) and serve as an introduction to the conceptualisation, planning, scheduling and development of assets and scripts towards the realisation of XR applications. Programming is a core practice in the production of Immersive Systems applications and through this course students are introduced to basic programming theories, contexts and practices which contribute towards the development of a simple XR application. The skills and knowledge taught in this course in terms of programming/scripting, 3D modelling and Interaction design are introductory and foundational and will further develop throughout the programme as students incorporate scripting and XR as part of their discipline specific creative process.

Course Aims

This course aims to introduce students to creative practice with programming, utilising the tools and techniques used for the development of extended reality (XR) technologies (i.e. Virtual Reality, Augmented Reality).
Students are tasked with writing simple code from scratch and developing a simple XR application using simple game engine XR functionalities. The overall aim of the course is to support students in developing proficiency in both programming and XR development.

Course Intended Learning Outcomes

By the end of this course students will be able to:

- Apply knowledge of basic object orientated coding practices
- Create 3D models and associated textures, suitable for implementation in an interactive XR environment.
- Apply design and compositional practices in the creation of a thematic XR environment.
- Apply basic user experience principles in the development of an interactive XR environment

Indicative Content
The class material introduces students to the foundations of programming and the use of XR tools and functionalities to develop a range of XR applications. **Indicative content includes:** • A brief history of computing • Programming fundamentals • Data types/structures • If and Switch statements • Calls and inputs • Object Oriented Programming • Virtual Reality worlds and interactions • Texture, maps and asset management • Lighting and cameras within a real-time game engine

Description of Learning and Teaching Methods
This course and its programme are situated within a contemporary Art School environment and self-directed studio activities and initiatives. These have a strong component of **individual student learning** contributing to the discovery and development of self and the discipline of study. As such briefs tend to be opened to interpretation and require students to critically reflect on the nature of their creative response and individual learning. **Lectures and seminars** are used to disseminate theoretical, contextual and historical knowledge and address specific issues underpinning practical work. Lectures also have the broad aim of generating further debate in seminars, tutorials or further enquiry in self-directed learning or research. **Labs, Tutorials, Workshops, and Practical sessions** provide students with hands-on experience. These sessions usually follow or relate to lectures and take place in computer laboratories as practical classes. Lecturers/Demonstrators will be on-hand during the sessions to help students and answer their questions. Tutorials vary between individual student-tutor tutorials, group tutorials and workshops. These provide opportunities for scaffolded problem solving and discussion, and for broader discussion of the programme themes and topics. Input from **visiting lecturers and guest speakers** enable students access to, and understanding of, relevant contemporary practice, research and commercial contexts, practices and expectations. This input contributes to aid students in developing their own professional practice and prepare for employment. **Supervised GameJams/Hackathons** provide Immersive Systems students with thematic technology focussed exercises where students work in groups to engage intensively in game or interactive technology development. This course is supported by a virtual learning environment tool (Canvas) for the dissemination, discussion and access to relevant course information, and signpost to other relevant teaching and learning platforms used by GSA.

Indicative Contact Hours	Notional Learning Hours
40	400

Description of Formative Assessment and Feedback Methods
Students are supported in their learning through a range of formative assessment activities as they progress through the course. These include: • Engagement in a range of peer review activities • Regular feedback from tutors through in-class discussion and question and answer activities • Written or verbal feedback from tutors on work in progress • Formal review point halfway through the course

Description of Summative Assessment arrangements
Summative assessment aligns with the learning outcomes of the course and is directly applicable to the student's individual and chosen pathway of study. Assessment is designed to support students to reflect upon their digital art practice, allowing them to not only demonstrate their learning through assessment, but also meaningfully apply their learning to their practice and developing their creative-practitioner identity. Students will be assessed on a range of activities for this course, namely, the timely delivery and production of functional code in the early stage of the course (individual) and the development of 3D assets (individual) and their implementation within an XR experience within a game engine (groupwork) Submissions will be assessed and moderated in line with the Code of Assessment. Reassessment opportunities where a student has not passed the course are outlined in the Code of Assessment.

Description of Summative Assessment Method	Weight %	Submission week
Programming Assignment	30 %	Week 4
3D assets (Assets + Media Portfolio)	30 %	Week 12
XR (project + build)	40 %	Week 12

Exchange/Study Abroad	
Can this course be taken by Exchange/Study Abroad students?	No
Are all the students on the course taught wholly by distance learning?	No
Does this course represent a work placement or a year of study abroad?	No
Is this course collaborative with any other institutions?	No
If yes, then please provide the names of the other teaching institutions	

Reading and On-line Resources
The course indicative Reading and on-line resource list is accessible via Keylinks: https://gsa.keylinks.org/new-ui/hierarchy/list/597 This list will be reviewed and updated annually to reflect course content and subject developments.