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Wrexham University

Module specification

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Module Code	GME707
Module Title	Game Analysis and Player Interaction
Level	7
Credit value	20
Faculty	FACE
HECoS Code	101268
Cost Code	GAGM

Programmes in which module to be offered

Programme title	Is the module core or option for this programme
MSc Computer Game Development	Core
MSc Computer Game Development (with Advanced Practice)	Core
MA Game Art	Core
MA Game Art (with Advanced Practice)	Core

Pre-requisites

None

Breakdown of module hours

Learning and teaching hours	21 hrs
Placement tutor support	0 hrs
Supervised learning e.g. practical classes, workshops	0 hrs
Project supervision (level 6 projects and dissertation modules only)	0 hrs
Total active learning and teaching hours	**21 hrs**
Placement / work based learning	0 hrs
Guided independent study	179 hrs
Module duration (total hours)	**200 hrs**

For office use only	
Initial approval date	28/11/2018
With effect from date	September 2023
Date and details of revision	10/05/2023 AB Approval of revalidated Games suite March 24 Change of module code from COM729
Version number	4

Module aims

This module is designed to cultivate innovative solutions to game design problems and interaction challenges by developing a deeper understanding of factors such as player experience, engagement, motivation, addiction and the various tools and techniques used to measure and enhance them.

The overall aim is to empower students to design and develop innovative game scenarios and mechanics by applying contemporary design techniques and current research developments, whilst further enhancing their technical competence with the latest tools and technologies.

The module will explore elements such as game balancing, optimisation, flow theory, alternate modes of interaction, affective computing, and their importance in the development of high-quality immersive experiences and engagement with players on an emotional level.

Module Learning Outcomes - at the end of this module, students will be able to:

1	Show a mastery of the design, implementation, and optimisation of a game application, in accordance with a set of requirements and constraints
2	Demonstrate a critical awareness of contemporary game techniques and their practical application
3	Integrate relevant theory in critically analysing a game application with respect to player immersion and experience

Assessment

Indicative Assessment Tasks:

The module will be assessed by way of two distinct pieces of coursework.

Working in a small team or individually, students will design and develop a prototype game scenario that demonstrates the practical application of contemporary elements that enhance player experience, emotional response and general immersive qualities. Supporting design documentation will outline the techniques utilised and the expected results of player interaction.

The fundamental objective is to empower students to incorporate an experiment, with an innovative solution, to one or more major contemporary game design problems. For example: the issues surrounding game addiction, emotional response, transgressive aesthetics, entrainment, or player immersion and flow theory. In concluding, students will

plan and execute a live user test event where the performance of their prototype application is evaluated.

Working individually, students will produce a report that critically analyses test data in order to evaluate the effectiveness of their prototype application and design solutions with respect to their chosen topic area, which was identified in previously. Students are expected to evidence their outcomes and findings and relate these to established and emerging theories in the field. This should inform plans for future refinement of the game. The quality of data gathered, method of analysis and presentation of findings play an important role in the grades awarded.

Assessment number	Learning Outcomes to be met	Type of assessment	Weighting (%)
1	1, 2	Coursework	60%
2	3	Coursework	40%

Derogations

None

Learning and Teaching Strategies

Lectures, supported by tutorials, and practical sessions where students have the opportunity to put theory into practice and experiment with current techniques and related technology. The lectures will focus on presenting key topics and concepts, whereas the practical/tutorial-based learning will provide directed training in industry standard hardware and developer environments for the design and development of game applications.

As the module progresses, students will be supported by way of supervised lab support during the development phase of the project. Formative, self-directed exercises will be used to support transfer of knowledge and understanding. The Moodle VLE system will form the primary platform for the dissemination of training videos, tutorials, lecture notes and reading material. Assessment material and supporting documentation will also be made available.

In line with the Active Learning Framework, this module will be blended digitally with both a VLE and online community. Content will be available for students to access synchronously and asynchronously and may indicatively include first and third-party tutorials and videos, supporting files, online activities any additional content that supports their learning.

Indicative Syllabus Outline

Indicative Syllabus and individual research areas will include:

Game Analysis

- Game Theory & Optimality Studies
- Player Modelling & Gamer Psychology
- Difficulty & Challenge (Strategy and balancing)
- Flow Theory

Testing Methods & Planning

- Functionality Test

- Beta Test
- Soak Test
- Regression Test
- Load Test

Affective Computing Techniques

- Models and theories of emotion
- Mechanisms for recognition of affect
- Sensors and systems for affect
- Integrating affect into game and interactive scenarios

Game Audio

- Spatial sound: recording and integrating.
- Adaptive and interactive music and sound

User Experience (UX) testing

- UX Design
- Ethical considerations
- UX Data Analysis

Game Development Techniques & Tools

- Unreal Engine 4
- Scripting & Blueprint modules
- Game Mechanics & Player Interaction

Indicative Bibliography:

Please note the essential reads and other indicative reading are subject to annual review and update. Please *ensure correct referencing format is being followed as per University Harvard Referencing Guidance.*

Essential Reads

Fullerton, T. (2018), *Game Design Workshop: A Playcentric Approach to Creating Innovative Games,* Fourth Edition, Boca-Raton: CRC Press.

Other indicative reading

Bromley, S. (2021), *How To Be A Games User Researcher: Run better playtests, reveal usability and UX issues and make videogames better*, New York: Steve Bromley.

Drachen, A. (2018), *Games User Research*, Oxford: Oxford University Press.

Roberts, G. (2023), *The Product Innovator's Handbook: How to design and manufacture a product that people want to buy,* London: Practical Inspiration Publishing.

Romero, M.F., Sewell, B., Cataldi, L. (2022), *Blueprints visual scripting for Unreal Engine 5*, Third Edition, Birmingham: Packt Publishing.

Stahlke, S., Mirza-Babaei, P. (2022), *The Game Designer's Playbook: An Introduction to Game Interaction Design*, Oxford: Oxford University Press.