# Module specification

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| Module Code | COM729 |
|---|---|
| Module Title | Game Analysis and Player Interaction |
| Level | 7 |
| Credit value | 20 |
| Faculty | FAST |
| HECoS Code | 101268 |
| Cost Code | GACP |

## 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** |

## 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.

# Employability skills – the Glyndŵr Graduate

Each module and programme is designed to cover core Glyndŵr Graduate Attributes with the aim that each Graduate will leave Glyndŵr having achieved key employability skills as part of their study. The following attributes will be covered within this module either through the content or as part of the assessment. The programme is designed to cover all attributes and each module may cover different areas.

**Core Attributes**

Engaged
Enterprising
Creative
Ethical

**Key Attitudes**

Commitment
Curiosity
Resilience
Confidence
Adaptability

**Practical Skillsets**

Digital Fluency
Organisation
Critical Thinking
Emotional Intelligence
Communication