



Module Specification

Gameplay Programming

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Part 1: Information

Module title: Gameplay Programming

Module code: UFCF7M-30-2

Level: Level 5

For implementation from: 2023-24

UWE credit rating: 30

ECTS credit rating: 15

Faculty: Faculty of Environment & Technology

Department: FET Dept of Computer Sci & Creative Tech

Partner institutions: None

Delivery locations: Not in use for Modules

Field: Computer Science and Creative Technologies

Module type: Module

Pre-requisites: Principles of 3D Environments 2022-23

Excluded combinations: None

Co-requisites: None

Continuing professional development: No

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: The role of a gameplay programmer is to write and control the code which directly creates the user's game experience. This hybrid role demands significant technical, software engineering and game design skills to create game features.

Level designers create interesting and engaging environments for game's mechanics

to play out in. This role also demands significant technical and game design skills to direct a player's interaction with game features.

In this way, both of these roles are responsible for the actual game rather than the engine or tools.

Features: Not applicable

Educational aims: This module will develop students to confidently build game features, mechanics, entities and systems, combined with tailor-made environments, to create a desired user experience in fast paced changing team working environments.

The addition of non-player characters and sequenced events is now significantly easier due to the availability of in-built in game engine tools. Gameplay programmers need a strong understanding of video game design principles as well as deep knowledge of the software and tools utilised to create game levels and content.

Outline syllabus: The aim of this module is to build on students' existing computer games design and technical programming skills by:

- Examining existing game features & level designs and deconstructing them into algorithms and patterns.
- Studying, analysing and implementing theoretical gameplay & level design principles, with particular reference to concepts such as engagement, motivation, feel, balance and polish.
- Studying existing technical approaches and solutions and current industry trends .
- Implementing their own versions of existing game features and iteratively developing them.
- Building a substantial portion of a game, integrating multiple gameplay systems in a complementary environment.
- Making practical use of third-party packages to create a small-scale game to given client brief.

Using an established game engine, scripting tools and languages, students will apply

developed gameplay features and level designs to create engaging interactive experiences, including scripted events that are triggered by gameplay.

Part 3: Teaching and learning methods

Teaching and learning methods: Teaching and Learning Methods:

- Lectures covering gameplay programming and level design concepts
- Studio sessions for developing gameplay features and designing levels
- Tutorials to support learning new technology

Module Learning outcomes: On successful completion of this module students will achieve the following learning outcomes.

MO1 Iteratively develop a variety of gameplay features to determine appropriate scripting techniques to fit in the production of a game.

MO2 Test functional prototypes of game play scenarios that are consistent with a given client brief.

MO3 Design of goals, challenges and rewards to fit with given genre and audience requirements.

MO4 Examine and assess established gameplay and level design techniques from current and historical games.

Hours to be allocated: 300

Contact hours:

Independent study/self-guided study = 228 hours

Face-to-face learning = 72 hours

Total = 300

Reading list: The reading list for this module can be accessed at [readinglists.uwe.ac.uk](https://uwe.rl.talis.com/modules/ufcf7m-30-2.html) via the following link <https://uwe.rl.talis.com/modules/ufcf7m-30-2.html>

Part 4: Assessment

Assessment strategy: Assessment is split into two parts: a project and technical report.

Project: Students will implement a variety of individual gameplay features using a selected engine/framework. Directed by a creative brief, students will be required to create a playable level/demo integrating multiple gameplay features, considering level design to complement and enhance user experience. The project will be assessed on quality (functionality, feel & polish), appropriate implementation techniques, adherence to brief and use of the taught theory, as well as creative innovation and their technical approach.

Technical report: Students are required to write a technical report analysing a single game level in a published game of their choice (subject to lecturer approval). This report should be aimed at other (fictional) members across a whole development team, e.g. testers, level designers, gameplay programmers, producers etc. It should include non-technical descriptions of gameplay features and level design, as well as technical analyses of the same and of the synergies between them. It should also include suggestions for improvements on the selected level and its game's mechanics, based on both taught theory and the student's personal experiences.

Assessment components:

Project (First Sit)

Description: Students will implement a variety of individual gameplay features using a selected engine/framework. Directed by a creative brief, students will be required to create a playable level/demo integrating multiple gameplay features, considering level design to complement and enhance user experience.

Weighting: 75 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3

Report (First Sit)

Description: Technical feature report (2000 words. +- 10%)

Students are required to write a technical report analysing a single game level in a published game of their choice (subject to lecturer approval).

Weighting: 25 %

Final assessment: No

Group work: No

Learning outcomes tested: MO4

Project (Resit)

Description: Students will implement a variety of individual gameplay features using a selected engine/framework. Directed by a creative brief, students will be required to create a playable level/demo integrating multiple gameplay features, considering level design to complement and enhance user experience.

Weighting: 75 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3

Report (Resit)

Description: Technical feature report (2000 words. +- 10%)

Students are required to write a technical report analysing a single game level in a published game of their choice (subject to lecturer approval).

Weighting: 25 %

Final assessment: No

Group work: No

Learning outcomes tested: MO4

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Games Technology [Frenchay] BSc (Hons) 2022-23

Games Technology {Foundation} [Sep][FT][Frenchay][4yrs] BSc (Hons) 2021-22

Games Technology {Foundation} [Sep][SW][Frenchay][5yrs] BSc (Hons) 2021-22