



## Programme Specification

Games Technology {Foundation} [Sep][SW][Frenchay][5yrs]

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## Section 1: Key Programme Details

### Part A: Programme Information

**Programme title:** Games Technology {Foundation} [Sep][SW][Frenchay][5yrs]

**Highest award:** BSc (Hons) Games Technology

**Interim award:** BSc Games Technology

**Interim award:** DipHE Games Technology

**Interim award:** CertHE Games Technology

**Awarding institution:** UWE Bristol

**Affiliated institutions:** Not applicable

**Teaching institutions:** UWE Bristol

**Study abroad:** No

**Year abroad:** No

**Sandwich year:** Yes

**Credit recognition:** No

**Department responsible for the programme:** FET Dept of Computer Sci & Creative Tech, Faculty of Environment & Technology

**Contributing departments:** Not applicable

**Professional, statutory or regulatory bodies:**

TIGA

**Apprenticeship:** Not applicable

**Mode of delivery:** Sandwich

**Entry requirements:** For the current entry requirements see the UWE public website.

**For implementation from:** 01 September 2018

**Programme code:** G61A-SEP-SW-FR-G611

## Section 2: Programme Overview, Aims and Learning Outcomes

### Part A: Programme Overview, Aims and Learning Outcomes

**Overview:** The BSc (Hons) Games Technology has the following general aims:

To enable students to embark upon professional careers by developing problem-solving and other transferrable skills.

To enable students to work effectively and productively as a member of a team.

To develop study skills that will enable students to become independent, lifelong learners.

To prepare students for progressing to study for higher degrees in computing and digital media.

To encourage the discerning use of reference material from a variety of sources.

**Educational Aims:** The BSc (Hons) Games Technology has the following specific aims:

To provide skills in the design and implementation of computer games, including an understanding of the mathematical and technological principles required, as well as an exploration of the creative potential presented within the development of electronic games, and the cultural and technological contexts out of which they arise.

To provide practical skills in computer games development, including high and low level programming for a variety of deployment environments, such as dedicated consoles, desktop computers and mobile devices.

To develop the students' ability to make efficient, innovative and robust contributions to companies engaged in the development of computer games entertainment and related digital media.

To develop the students' understanding of the importance and mechanisms of project management, and associated tools, within computing, with particular reference to the development of computer games.

**Programme Learning Outcomes:**

On successful completion of this programme graduates will achieve the following learning outcomes.

**Knowledge and Understanding**

- A1. Historical and cultural perspectives of computer game development, including principles and applications of games design, interactivity and user involvement, and related supporting technologies.
- A2. The mathematical foundations of computer games in 2D and 3D, and techniques used to simulate physical events.
- A3. Software design concepts, programming languages, methods, notations and algorithms, as applicable in modern Computer Games development.
- A4. The asset creation and level design process, its technical implications and the development of tools to support the computer games production pipeline.
- A5. Hardware architecture and supporting software technologies required for the production and deployment of contemporary computer games.
- A6. A range of advanced topics in Computer Games development, including physics and simulations, artificial intelligence (AI), networking, multi-core processing, low level programming and profiling/optimisation.
- A7. Professional, ethical and sustainability issues affecting the development and deployment of computer games within an international market place.

**Intellectual Skills**

- B1. Critical thinking
- B2. Analysis

- B3. Synthesis of different types of information
- B4. Evaluation
- B5. Problem solving
- B6. Appreciate problem contexts
- B7. Balance conflicting objectives
- B8. Creative and interpretive thinking

### **Subject/Professional Practice Skills**

- C1. Create high and low-level game designs corresponding to stated requirements.
- C2. Interpret game designs to form technical requirements and design code/software that meets them.
- C3. Write high and low-level games code that fulfill a given design.
- C4. Utilise professional standard tools and practices throughout the development process, to design, compile, debug, test, profile/optimize, package and quality assure their products.
- C5. Have a working knowledge of the fundamental mathematics underpinning the development of computer games.
- C6. Apply a range of techniques from key areas to games development, including: artificial intelligence; physics and simulations; graphics; memory management; multiprocessor and network programming etc.
- C7. (Re)use existing components and frameworks to build new applications.
- C8. Critically and comparatively evaluate games and their designs.
- C9. Employ a range of tools and notations to support the activities listed above, including: Software design packages; Programming languages (C++, C#, C, etc); Integrated Development Environments (IDEs), compilers, debuggers, profiling/optimisation tools; RAD, level design and asset creation software and associated scripting languages; Audio-visual production tools; Project management and source control software etc.

### **Transferable Skills and other attributes**

- D1. Communication skills: communicate orally or in writing.

- D2. Self-management skills: manage one's own time; meet deadlines and work with others.
- D3. IT skills in context: use software tools in the context of application development.
- D4. Logical reasoning skills: undertake analysis and interpretation of information in the context of Creative Technology and Computer Science.
- D5. Problem formulation: express problems in appropriate notations.
- D6. Progression to independent learning: gain experience of, and to develop skills in, learning independently of structured class work. For example, developing the ability to use on-line facilities to further self-study.
- D7. Comprehension of professional literature: read and to use literature sources appropriate to the discipline to support learning activities.

## Part B: Programme Structure

### Year 1

The student must take 120 credits from the modules in Year 1.

### Year 1 Compulsory Modules

The student must take 120 credits from the modules in Compulsory Modules.

Module Code	Module Title	Credit
UFCFQN-30-0	Computational Thinking and Practice 2021-22	30
UFCFRN-30-0	Creative Technology Studies 2021-22	30
UFCFPN-30-0	Information Practitioner Foundations 2021-22	30
UFCFTN-30-0	Web Foundations 2021-22	30

### Year 2

The student must take 120 credits from the modules in Year 2.

### Year 2 Compulsory Modules

Module Code	Module Title	Credit
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UFCFF5-30-1	Game Development Evolution 2022-23	30
UFCFWA-30-1	Games in C++ 2022-23	30
UFCFJL-30-1	Games Tech: 101 2022-23	30
UFCFY4-30-1	Principles of 3D Environments 2022-23	30

**Year 3**

The student must take 120 credits from the modules in Year 3.

**Year 3 Compulsory Modules**

Module Code	Module Title	Credit
UFCF9M-30-2	Game Engine Programming 2023-24	30
UFCF7M-30-2	Gameplay Programming 2023-24	30
UFCFXG-30-2	More Games in C++ 2023-24	30
UFCFC6-30-2	Play and Games 2023-24	30

**Year 4**

Year Out: Students on the Sandwich route complete a placement year.

**Year 4 Compulsory Sandwich Modules**

The student must take 15 credits from the modules in Compulsory Sandwich Modules.

Module Code	Module Title	Credit
UFCFWJ-15-3	International Experience 2024-25	15
UFCFE6-15-3	Professional Experience 2024-25	15

**Year 5**

The student must take 105 credits from the modules in Year 5.

**Year 5 Compulsory Modules**

The student must take 105 credits from the modules in Compulsory Modules.

Module Code	Module Title	Credit
UFCFW3-30-3	Advanced Technologies 2025-26	30
UFCFM4-30-3	Commercial Games Development 2025-26	30
UFCFHQ-45-3	Comprehensive Creative Technologies Project 2025-26	45

### **Part C: Higher Education Achievement Record (HEAR) Synopsis**

Graduates will be able to demonstrate knowledge and understanding of the historical and cultural perspectives of computer games and related supporting technologies. They will understand the principles and applications of games design, interactivity and user involvement, as well as games programming design concepts, methods, notations and algorithms.

They will have knowledge and understanding of hardware components and supporting software technologies required for the production and deployment of contemporary game environments. Graduates will also have acquired knowledge of the role of artificial intelligence (AI) within computer games and associated algorithms and programming techniques.

Furthermore they will understand the professional issues surrounding the development and deployment of computer games within an international market place.

These graduates will be creative, interpretative and critical thinkers, able to analyse, evaluate and to synthesise different types of information.

They will be able to appreciate problem contexts, balance conflicting objectives and solve problems.

Graduates of Games Technology will be able to write games programs that conform to designs and create high-level and low-level game designs that correspond to stated requirements. They will have the skills to evaluate games comparatively and

apply appropriate AI techniques to Games development.

They will be able to perform adequate tests and analysis of user involvement whilst developing programs and build mobile/distributed gaming systems. They will also know how to utilise existing components and frameworks to build new applications and be able to employ a range of tools and notations to support these activities, e.g. RAD environments, Maya, C, C++,Java etc.

Games Technology graduates will be good communicators, both orally and in writing, and will be able to write the results of technical investigations. They will have developed the skills to manage their own time; to meet deadlines and to work with others, having gained insights into the problems of team-based systems development. They will be able to learn independently of structured class work and to read and to use literature sources to support their learning.

They will also be able to use software in the context of problem-solving investigations and to interpret findings, as well as have the ability to express problems in appropriate notations.

#### **Part D: External Reference Points and Benchmarks**

In designing this programme, the faculty has drawn upon the following external reference points:

The QAA Framework for Higher Education Qualifications in England, Wales and Northern Ireland

The QAA Benchmark Statement for Computing

The SkillSet Undergraduate Course Accreditation Guidelines for Computer Games - Technical Path

UWE's Learning and Teaching Strategy

The QAA Framework for Higher Education Qualifications in England, Wales and

Northern Ireland: describes the attributes and skills expected of Honours graduates. The learning outcomes of this programme are fully consistent with the qualification descriptor in the Framework, and hence graduates will be able to demonstrate that they meet the expectations of the Framework.

The QAA Subject Benchmark Statement for Computing (2000, amended 2007):

The QAA Subject Benchmark Statement for Computing is applicable to this proposal. The proposal falls clearly within the scope of the Computing benchmark, in that it is precisely concerned with “the understanding, design and exploitation of computation and computer technology” (Benchmark Statement, p1, section 1). The Games Technology curriculum falls within the cognate area identified in the document and draws from the topics listed at Annex A of the document. In terms of the Statement’s high-level characterisation of Computing, the programme has at its heart practice and software with its application oriented approach focused on the development of Games. Nevertheless, theory and hardware are important and significant strands.

Great attention has been paid in the design of this programme to create a teaching and learning programme which will foster a good and effective mix of the cognitive, practical and generic (transferable) skills discussed in 3.2 of the Benchmark Statement. The programme matches well with the course design principles listed in 4.1 of the Statement.

UWE’s Learning and Teaching Strategy has informed the faculty’s policy for the delivery of its programmes.

## **Part E: Regulations**

Approved to University Regulations and Procedures.