



Module Specification

Games Tech: 101

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Part 1: Information

Module title: Games Tech: 101

Module code: UFCFJL-30-1

Level: Level 4

For implementation from: 2024-25

UWE credit rating: 30

ECTS credit rating: 15

College: College of Arts, Technology and Environment

School: CATE School of Computing and Creative Technologies

Partner institutions: None

Field: Computer Science and Creative Technologies

Module type: Module

Pre-requisites: None

Excluded combinations: None

Co-requisites: None

Continuing professional development: No

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: Games Tech 101 provides an introduction to tools, techniques, and technologies used in modern day game development. Students will develop an understanding of common and appropriate usage of the game development processes covered in the module while building problem-solving skills. The module focuses on core concepts and why they are used and provides a foundation for future years of study.

Features: Not applicable

Educational aims: Students who pass the module will have a clearer understanding of games development within the context of modern tools, technologies and development techniques. This will be achieved through the use of problem-solving and identifying solutions to game technology related problems. The knowledge acquired from successful completion will provide the foundations for coming years of study.

Outline syllabus: The following provides an indicative list of module content, which may vary with delivery to respond to current trends:

Introduction to tools and techniques:

Game engines

Jargon Busting: Terminologies

Problem-Solving skills

Dangers of over engineering

Introduction to algorithms:

Common algorithms used in a games context

Sorting algorithms

Big O Notation and an introduction to performance optimisation

Data Structures:

Collation of data in user managed container types

Discussion and implementation of common container types used in the games industry

Discussion of performance and related practical considerations

AI in games:

AI in the context of gaming and the role of AI in games

Approaches to game AI and the trade-off between them

Finite state machines

Agency in simulated worlds

The black-box model,

Pathfinding

A brief introduction to modern techniques

Rendering:

Overview of the typical rasterisation rendering pipeline

Primitive rendering techniques

Intro to Shaders

Window management

Part 3: Teaching and learning methods

Teaching and learning methods: Delivery

Lectures will be used to deliver new ideas and concepts to the students.

Studio time will be used throughout the module where students are offered the opportunity to practice the concepts they are introduced to. These sessions will be attended by module staff and are designed to encourage students to think beyond the scope of the materials presented. The scheduled lab sessions will offer the perfect opportunity for formative development, where students can interact with both lecturers and their peers alike.

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

MO1 Apply core algorithms and data structures used in computer games development.

MO2 Explain how games are rendered and the typical pipelines used in these processes

MO3 Identify and describe solutions to common AI related problems faced when developing typical video games

MO4 Reflect on and provide appropriate rationale as to which technologies are applicable to solve a given problem within the domain of games technology

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/ufcfjl-30-1.html) via the following link <https://uwe.rl.talis.com/modules/ufcfjl-30-1.html>

Part 4: Assessment

Assessment strategy: In order to achieve the learning outcomes, students will complete a range of tasks related to identified industry trends, technologies and practices, resulting in a portfolio of work that will demonstrate their understanding of each area.

Formative feedback

During all studio sessions the module team will be present. The team will look to engage with students as they progress throughout the semesters, providing support and guidance on the work being produced. By providing continual support and feedback, students should be better able to produce quality of work sufficient to pass the assessment.

The resit strategy is the same as for first sit.

Assessment tasks:**Portfolio (First Sit)**

Description: Portfolio of individual tasks, related to industry trends, practice and technologies.

Weighting: 100 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4

Portfolio (Resit)

Description: Portfolio of individual tasks, related to industry trends, practice and technologies.

Weighting: 100 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Games Technology [Frenchay] BSc (Hons) 2024-25

Games Technology {Foundation} [Frenchay] BSc (Hons) 2023-24