

## **COURSE SPECIFICATION DOCUMENT**

**Academic School / Department:** School of Liberal Arts

**Programme:** Computer Science

**FHEQ Level:** 6

**Course Title:** Games Technology

**Course Code:** DGT 6105

**Total Hours:** 160

Timetabled Hours: 45

Guided Learning Hours: 15

Independent Learning Hours: 100

**Credits:** 16 UK CATS credits  
8 ECTS credits  
4 US credits

### **Course Description:**

This course introduces programming skills specific to games development (eg. C#) and game engines such as Unity. This course will build on skills in object-oriented programming. The course will also walkthrough procedural content generation and its possibilities along with aspects of artificial intelligence applicable to games.

### **Prerequisites:**

DGT 5101 Programming for Industry.

### **Aims and Objectives:**

By the end of this course, students will have programming skills and game engine knowledge specific to developing games. Students will also understand procedural content generation and have the opportunity to use aspects of artificial intelligence within games programming.

### **Programme Outcomes:**

COMPSC: A2, A3, A5, A6, A7, B5, C2, C3 and C4

A detailed list of the programme outcomes are found in the Programme Specification.

This is located at the archive maintained by Registry and found at:

<https://www.richmond.ac.uk/programme-and-course-specifications/>

### **Learning Outcomes:**

By the end of this course, successful students should be able to:

- Understand and use programming languages specific to games such as C#.
- Demonstrate knowledge of procedural content generation.
- Understand and use effective shader coding within game engines.
- Apply existing skills in object-oriented programming, data structures and algorithms within a gaming context.

#### **Indicative Content:**

- Object oriented programming within games.
- Data structures and algorithms within games.
- Games specific programming language such as C#.
- Game engines for shader coding such as Unity.
- Procedural content generation.

#### **Assessment:**

This course conforms to the University Assessment Norms approved at Academic Board and located at: <https://www.richmond.ac.uk/university-policies/>

#### **Teaching Methodology:**

- Lectures, practical demonstrations and step-by-step software tutorials, class workshops, one-to-one tutorials.

#### **Indicative Text(s):**

“Learning C# by Developing Games with Unity 2020: An enjoyable and intuitive approach to getting started with C# Programming and Unity” by Harrison Ferrone, 5<sup>th</sup> Edition, Packt.

“Unity 2018 Shaders and Effects Cookbook: Transform your game into a visually stunning masterpiece with 70 recipes” by John Doran and Alan Zucconi, 3<sup>rd</sup> edition, 2018, Packt.

“Complete Unity 2018 Game Development: Explore techniques to build 2D/3D applications using real-world examples,” by Alan Thorn, John Doran, Alan Zucconi, Jorge Palacios, 2019, Packt.

#### **Journals**

Click here to enter text.

#### **Web Sites**

See syllabus for complete reading list

#### **Change Log for this CSD:**

| Nature of Change         | Date Approved & Approval Body (School or AB) | Change Actioned by Registry Services |
|--------------------------|----------------------------------------------|--------------------------------------|
| Revision – annual update | May 2023                                     |                                      |

| Total Hours Updated | April 2024 |  |
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