

# BSc (Hons) Computer Games Programming with Foundation

## Why choose this course:

The BSc (Hons) in Computer Games Programming:

- is an industry-led study programme, that focuses on the software engineering aspect of the Computer Games industry;
- provides a broad and fundamental knowledge of computing technologies;
- educates students in game programming, development and technology, with a special emphasis on the technical aspects of game production with an emphasis on skill-based training;
- equips students with the skills (especially programming) and knowledge necessary to pursue a successful career in industries specializing in the creation and distribution of leisure and entertainment computing technologies;
- uses games programming methods and techniques as a vehicle for introducing the theoretical, intellectual, creative and dynamic aspects of games computing.

## What you will study:

### Year 0

- Fundamentals of Programming
- Logical Analysis and Problem Solving
- Foundation Mathematics
- Foundation Project
- Computers in Society
- Academic Skills and PDP (Personal/Professional Development Plan)

### Year 1

- Scholarship
- Games Mathematics
- Introduction to Games Programming
- Object Orientated Games Programming
- Mechanics and Metrics
- Introduction to Level Design 2

### Year 2

- Games Hardware Architecture and Peripherals
- Data Structures for Games
- Software Engineering
- Applied Physics
- Portfolio Project
- Employability and Enterprise

### Year 3

- Research Methods
- Advanced Games Techniques
- Advanced Game Engine Architecture
- Advanced Game Implementation
- Major Project

## At a Glance:

**Award:** BSc Honours

**Duration:** 4 Years Full-Time with Foundation

**Start date(s):** October

### Entry requirements:

High School Completion Certificate with a good grade. A good standard of English (IELTS 5.5 or a recognised equivalent).

An interview is required to consider applicants' suitability for the programme.

**Assessment:** Modules are assessed with coursework such as practical project reports; design and analysis assignments; case studies; oral presentations; and examinations.

### Learning & Teaching

**Strategies:** The methods employed include lectures; workshops; tutorials (group and individual); guest speakers; work experience in the form of a period of work placement; development of employability skills; information literacy skills development; and personal development planning (PDP).

**Application Procedure:** The Admissions Team is available to help with questions about application to the University of Bolton, fees, and financial assistance, as well as to arrange a meeting with the Programme Manager.

# BSc (Hons) Computer Games Programming with Foundation

## What you will learn:

**Level 0** will provide you with the required fundamentals about the subject area of computer games and most importantly about the computer programming essentials. You will be also introduced to the essential mathematics, computing, personal development skills and problem solving techniques that you will need for the remaining three years of your study. A project will complete your year 0 studies.

**Level 1** will introduce you to the industrial aspects of the games programming business. You will also be introduced to Games Programming and Object Oriented programming in that constitute the pillars of the software engineering area. C# and Unity Game Engine will also become more familiar as you progress. Additionally, games mathematics and level design will also provide you with essential knowledge for your very first games; scholarship courses will enhance your academic performance and effectiveness.

**Level 2** explores both the advanced games programming methodologies, practices and skills as well as the business opportunities, entrepreneurship as well as professional ethics and business context within and around the thriving Computer Games Industry. The former are covered by Games Hardware Architecture and Peripherals, Data Structures for Games, Software Engineering and Applied Physics modules and the latter is covered by Employability and Enterprise module. The Portfolio project will be your first showcase of a functional game while being supervised by your tutors.

**Level 3** delves into the advanced computer games programming methodologies and practices that will enable you to create more enhanced and engaging computer games that utilize cutting-edge technologies in the same manner as their "Triple-A" counterparts. Furthermore, along with Advanced Games Techniques and Advanced Games Implementation, you will also study the Advanced Game Engine Implementation that will strengthen your coding skills further. Research Methods and Major Project will be the last stages before you ascend to the status of a graduate, but most importantly, to the status of a skilled computer games programmer.

## What career opportunities you will have:

The Computer Games Software Development (CGSD) course is for students who are interested in working in the exciting and stimulating games industry. The course is aimed at students have an interest in the more technical aspects of game development. Most of your time will be spent programming using industry standard software.

By the end of this programme, you will have a portfolio of games that you have created. The Advance Games Technology module gives you the opportunity to work for year on a major game implementation. You will be well prepared for working in the games industry, but your programming skills will serve you well in any area of computing. In fact, transferrable skills are one of the most important assets that you will bring to the market and as such, a graduate of the study programme can also be employed in the business software industry, in academia and research ("Serious Games" - Simulation), in the automotive industry and the mobile phone (smartphone) industry as well.

As the software requirements for a variety of electronic products increases, a graduate of the programme can also be employed to the e-sports industry, either directly as a programmer for the computer game itself or as a meta-product programmer or infrastructure programmer and developer. Graduates of the BSc (Hons) Computer Games Programming will also know no bounds in terms of professional localization as they have a global professional scope and they are well versed in Computer Games Programming and Software Engineering disciplines.