

**Getting to Grips with Game  
Development      4-Week  
Summer School Outline**

Game Development is an exciting, multidisciplinary application of the principles of computer science. It challenges us to leverage our understanding of performant code, our knowledge of user interface and user experience design, while encouraging us to indulge our imaginations and creativity. It's also the only aspect of computer science which creates programs we want to share with our non-programmer friends!

Over the course of this four-week summer school, you'll learn how to apply the principles of programming you've already explored to the creation of your own game experiences. The first three weeks are about building and consolidating new knowledge; the final week is about applying all of those skills to generate a video game project that you and your peers will be proud of.

Here's a week-by-week breakdown of what we'll cover while you're with us:

<b>Week 1: Programming in C#</b>
You'll already have some familiarity with the fundamentals of programming from your studies this year. This week will introduce a game-relevant programming language built on the principles of C- style programming. C# is a useful language to have in your toolkit in general - it's a well-supported language intended to allow the fast prototyping of Windows applications, with a wealth of integrated plug-ins courtesy of Microsoft's .NET Framework. It's useful in game development because the Unity Game Engine relies upon it as a means of scripting the behaviors of our game entities.
<b>Week 2: Introduction to Game Design</b>
Game Design is its own specialist discipline, but the basic principles can be explored relatively simply. During this week you'll get a crash-course in what makes a game a game, what you should keep in mind when turning an 'idea' into a 'game concept', and how you translate a concept in your head into a fun, playable experience.
<b>Week 3: Fast Prototyping in Unity</b>
Over the course of the third week you'll be introduced to the Unity Game Engine. This is a popular engine for general application development - not just game development - but the focus for this Summer School is its use in the creation of Games. Unity has a user-friendly, drag-and-drop interface for the creation of entities within our game world, and an intuitive scripting system build upon the C# programming language we introduced in week 1. This is the last thing we need in order to prepare for...
<b>Week 4: The Project</b>
During the final week of the Summer School, you will gather into teams and be given a design brief of a game. You'll have support in this from staff, but it'll be your project and you'll have to take the lead in its development. On the final day of the School, the teams will come together to play each others games and give each other feedback on how they can be taken further in the future.