Tech
Educators

UNITY CODING BOOTCAMP

2023

We develop different.
Instructor led coding bootcamps for everyone.

www.techeducators.co.uk

You don't actually need a **phd** **A Levels** or an **Undergraduate Degree** to work in tech.

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Our Mission

To support the future of tech talent

Our mission at Tech Educators is to cultivate the tech talent of tomorrow by making high-quality, software development education accessible to everyone, at any level or personal circumstance.

Our comprehensive courses, expert instructors, cutting-edge curriculum, and hands-on approach, equip people with the practical skills they need to succeed right away, and the know-how to stay relevant as their career develops. From 'hello world' to world class.

Supporting beginners to experienced practitioners, we're committed to ensuring that no one gets left behind in the rapidly evolving digital landscape. We provide a supportive and inclusive community where everyone can learn, grow, and thrive, as they build a better future.

Learning to code is a journey and through this course outline, we hope to give you an idea of how that journey with Tech Educators would progress. Whether you choose to join us in one of our locations around the country, or prefer an online online approach. Our courses are always instructor led and outcomes focussed.

James Adams, Founder and CEO

student

focus

Tafadzwa Tino Mpofu, Full Stack Graduate

"If you don't go for something. You will never know what you could have achieved. The team at Tech Educators have been so incredibly supportive throughout the course. It's tough, but when it gets tough, you have an entire community around you to support you. That's what the bootcamp is about."

"When I think back now on what I knew before I started, how quickly I learnt, and how fast it went. I didn't realise just how great the experience was, until I reflected on it."

The games industry taster session

One day

In this one-day workshop, you will get a sneak peek of what it is really like to work in the games industry. You will build a very basic game, your very first one! As well as hear a number of career paths that becoming a Unity developer could take you on.

Whilst this may be the very first interaction you have had with code, don't worry. We are here to guide you every step of the way and give you all the information that you need to decide if this course, and this career path is for you.

Learning outcomes

- Understand the basics of what it means to be a professional Unity developer and work in the games industry.
- Create your very first lines of code in a basic code editor, and push it live to make a game.
- Be able to identify whether a career in the games industry and the Tech Educators program is right for you.

Ready to proceed?

What a difference a day makes. After this one day taster session hopefully you like us, we like you, but we all love coding and where we think it can take you in your journey and your career into the games industry. If after the one day taster session you are ready to progress, you will need to complete a short maths challenge to demonstrate your ability to complete the technical requirements needed for the full course.
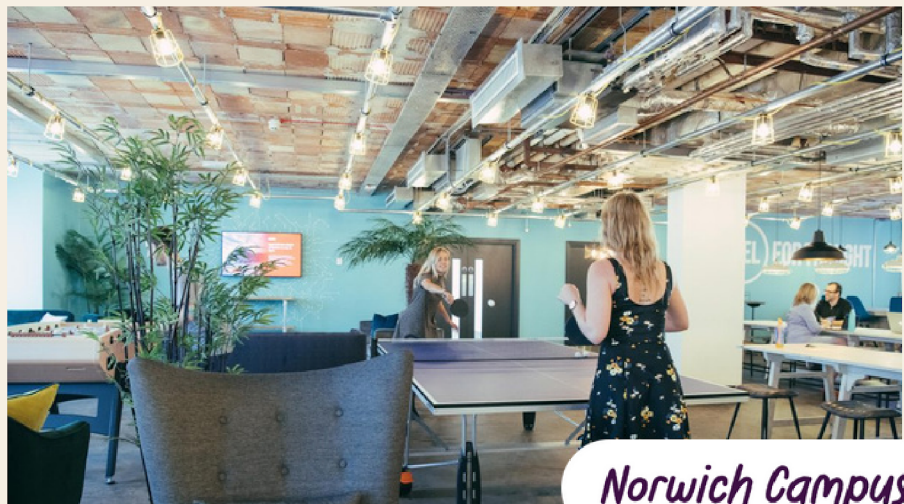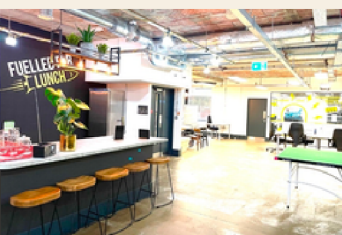
Norwich Campus

The basics of Unity

One week

In our fundamentals week, students move beyond the concepts covered in Taster Session to get a tour of the tools and basics that you will need to start working with Unity.

Whilst this week may feel like a whistle-stop tour of many of the main components of Unity, that's simply because it is. This week will prepare students by getting to grips with the basics of the Unity system and what it takes to be a Unity developer.

We will dive much deeper into using, creating and building with Unity as the course progresses, but for this week, let's just get the basics of your journey down, and understanding the framework you will be using.

Focus of the basics of Unity

- Succeeding on a Tech Educators bootcamp
- Introduction to Game Development with Unity
- Getting Started with Realtime 3D
- Introduction to Programming and Audio
- Getting Started with Realtime 2D

Buckle up. Here we go.

By now everything will be set up, ready to go and you will have a real grasp of the basics of Unity and what it can do. Look how far you've come in just a week and what you know now. Now prepare for the course to speed up, you're going to be making games real soon.

Cambridge Campus

You don't have to be an evil private island super-villain to work in tech.

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Building a game

Six weeks

Over six weeks you are going to go from understanding the Unity framework, to building your first simple playthrough game. Each week we take a dive into fundamental concepts and build iterative projects that embed continuous learning. Sounds fancy doesn't it!

From player control, to basic gameplay. From sound and effects, to user interface, we will dive into the fundamentals of building a game.

Learning outcomes

- Understand the need for basic project planning and project management. Be able to work in a team to create code that works together, towards making a game.
- Implement player control that can create gameplay using Methods, Vectors and Variances.
- Create basic gameplay mechanics and implement them into a game including projectiles, collision, object spawning, movement and game over conditions.
- Working with animation in game design and how to create movement of objects using animation techniques.
- How to bring sound to your game, including particles and sound effects.
- Create user interfaces to allow the player to control the game make difficulty selections.
- Build the environment and deploy the first walking skeleton project.

Let's change gear

this first six weeks will have been intense and over that time the amount of code you will be deploying will make you realise, whilst you were having fun building mini-projects, you have built a huge amount of knowledge that will all come together with this walking skeletons of a game. Congratulations, you have done an amazing job.

Now let's take a bit of a break and look at the games industry.

student focus

"As one of the first graduates from Tech Educators I am so grateful for their support and where I am now. I landed a job before I completed the course and am now embedding my knowledge and furthering my skills in a career I see myself in for a long long time."

"If you are thinking of a career in tech, marketing, or any of the related fields, then I would say go for it. It isn't just about the course itself, it's about the growth mindset you build along the way."

Leanna Lucas, Full Stack Graduate

Career week

One week

Okay, so that past seven weeks was wild, but by now we are sure you are really settling into the swing of things. This next week is time to solidify that learning. Catch up on some of the reading material you may want to re-embed. Run through some pair programming with your other students, and spend some time with our Student Success team as we really dig into where you want to take these talents you are creating for yourself.

We also introduce our industry mentors this week, with talks, fireside chats and opportunity to focus on where you want to go.

Learning outcomes

- Articulate with some certainty the type of career path you would like to take as you step into the world of games development.
- Finalise and cement any further reading and concepts that need to be defined and embedded with our mentors.
- Understand and have visibility of your own strengths and areas for improvement as a developer.
- Have an initial CV and outline of next steps in preparation for a career in the industry.

Ready for the final push?

This week will have presented some different challenges, and given you the chance to reflect on where you want to take your career. It's also going to have given you the time to prepare for the final push as we move towards bringing in some new concepts that are going to blow your mind.

Are you ready for the final push? This next bit is going to be intense, but it's going to show you just how far you've come.

"We have developed the entire career prep week around our students needs. This is the time where we focus on embedding the foundational Unity and games development skills learnt over the past seven weeks, but also take the time to consider where this new knowledge will take our students."

"The mentor support, talks, and fireside chats are incredibly valuable to everyone involved."

Jenna Buxton, Student Success Executive

Advancing in Unity

Four Weeks

This is the most intensive part of the course, we are back at it and embedding some serious Unity skills at this stage and also preparing you to be able to test games in development or nearing release. That's super exciting.

We will be covering further animations, introducing physics and pathfinding to add extra dimension to the games, we will then focus on the all important "polish" that you will be able to add to your game, and will need to do in an industry setting. We will also cover cross platform development, so you will be able to release your Capstone Project to multiple platforms. Wowsers. That's a lot!

Learning outcomes

- Working with the animator controller.
- Create simple keyframes animations.
- Reuse imported animations and retarget imported animation on different humanoid models.
- Use Signals and UnityEvent System to Control Animation Timelines.
- General and Humanoid-specific animation scripting.
- Understand what Raycasting is and how to implement it within Unity.
- Understand the layer collision matrix, what it is and how to implement it.
- Be able to utilise and implement ragdoll physics.
- Understand and implement NavMesh for AI and NPC characters that can be introduced to follow basic game mechanic elements.
- Be able to utilise post processing and tools in Unity to add polish.
- Understand how to use lighting effects within the Unity engine to enhance visuals.
- Create and implement custom shaders using ShaderGraph.
- Create VFX using VFX Graph.
- Understand publishing cross platform and Cross Platform Development.
- Understand working with Preprocessor Directives and Persistent Data
- Understand the difference in building for desktop and mobile platforms and be able to publish to either or both.

Capstone Project

Two Weeks

Next.js represents the future of web application development, with state of the art server side rendering, Next.js represents the future of React implementation. Industry giants including Netflix, TikTok, Twitch, Vodafone, Lego, Vercel, Hyundai (you know we could go on and on and on right?) are all using Next.js. Giving you a step ahead in industry and the ability to demonstrate the capability to learn modern frameworks.

Learning outcomes

- Working to a dedicated timeline to complete a project.
- Working within a team to develop and deploy a live project.
- Using industry standard QA testing processes to QA other projects, that you haven't built yourself.
- Implementing skills learnt through the course in a sandbox environment.
- Presenting a project to a live audience.

Graduation

At the end of the two weeks you will be presenting everything you have done to this point and graduating from the Tech Educators Unity programme. It's not the end of our journey though, there's so much more in the community to explore.

Liverpool Campus

You don't have to be a **young** **smart** **hipster** with the very latest **macbook-pro** to work in tech.

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