BSc Interactive & Immersive Technology

Department	Creative Technologies
Awarding Body	UEA
Additional Accreditations	N/A
Full-time Duration	Three Years
Part-time Duration	N/A
Full-time Annual Fee	£8,500
Part-time Annual Fee	N/A
Entry Requirements	UCAS Tariff: 96 points A Level: CCC BTEC L3 Extended Diploma: MMM GCSE Maths and English Grade C/4 or equivalent Other: students not meeting exact requirements can be assessed on a case- by-case basis, particularly where industry experience is evident.
Study Location	University and Professional Development Centre, 73 Western Way, Bury St Edmunds UK
Subject to Validation	No
Additional Potential Costs	Tuition fees will provide access to all the usual teaching and learning equipment; however, there may be additional costs such as materials and equipment that are associated with your course. Books (approx. £200-250 per year) Storage – we recommend 1-2TB to store solutions, reports, etc.; students will benefit from using SSD technology in terms of speed (approx. £65-£150+) Headphones (approx. £25 - £100) – where certain modules are taken, students are advised to purchase a set of headphones to test audio. Game Controller (approx. £20 - £50) – use of a standard gamepad is common during design, development and testing. Electronic Prototyping Equipment – some modules may require low-cost electronic prototyping equipment and components for experimentation at home, although these are available on campus (approx. £35 - £75)

	Esports Apparel – students may choose to purchase esports shirts, jackets, etc., in our team design (approx. £20 - £55 per item)
	Computer – It is recommended and common for students to use their own computer, although not essential. The required specification for this would partly depend on the modules chosen and given pace of the development of technology and changing value of equipment. It is not possible to put an exact cost on this, but this may be in the region of £750 - £1500+. The course team will be happy to discuss this with you.
	Events – optional attendance. Students have previously visited computer games events, including EGX (approx. £20 - £70 for tickets plus travel) and the UKie student conference (travel costs only as UKie membership is paid by the IIT course). The development Conference is a UK games conference and students are encouraged to attend (approx. £100 - £385 for the conference sessions, depending on early booking and number of days attending, or a free pass for the expo only; this does not include any travel and accommodation). Attendance at virtual and in-person industry events covering various aspect of IIT may also be organised, dependent on tickets, travel and accommodation.
	Printing – all students will be credited with the equivalent of £10 printing/copying at the start of the academic year. After that, students will need to pay for their own printing/copying. Most work is submitted electronically.
	Student ID cards – The first issue of your ID card is free. Replacement cards will be charged at £10 to replace lost or stolen cards.
Narrative	Learn to build digital worlds and design the tools that increasingly drive our industries. Design. Model. Code. Be as boundless as your imagination.
	Explore the design, development and production of interactive, immersive and entertainment experiences: simulations and solutions using cutting-edge technology.
	You will learn how to use software such as Unreal Engine, Unity, Visual Studio, Maya, and Substance to build industry-relevant skills and applications that are in demand in Interactive Entertainment, E-sports, Computing, Digital Technology, Automotive, Healthcare, and many other industries as the world moves ever increasingly to virtual modelling.
	You can choose to focus on Development (Coding), Design, E-sports, or Content Creation, and study an array of modules from multi-user experience design to the Internet of Things, to the principles of World Design and playability. Via optional placements, projects, exhibitions, competitions, and other events, we'll support you to put your newfound skills into practice, to harness the power of imagination and visualisation to build digital tools ready for tomorrow.
Key Course Features	The course is delivered on campus and requires students to attend a two full days per week.
	Delivery of the course is through a range of methods including lectures, seminars, case-study, discussions, and workshops.

The on-site immersive XR Lab provides virtual, augmented, and mixed reality technology including headsets, haptics, biometrics, and motion devices.

Via optional placements, projects, exhibitions, competitions and other events, students will be supported in putting their newfound skills and knowledge into practice, harnessing the power of technology, to build high-quality digital experiences.

Year One:

Students begin by mastering foundational concepts in computing and digital technology, particularly focusing on interactive, immersive, and entertainment technology. They learn to evaluate and interpret these concepts, honing problem-solving and communication skills crucial for future studies and professional roles.

Year Two:

Building on this foundation, students deepen their understanding of established principles and explore their practical applications, including in employment contexts. They also acquire research skills, enabling them to critically evaluate solutions and contribute to the field's advancement.

Year Three:

In the final year, students attain a comprehensive understanding of interactive, immersive, and entertainment technology, incorporating advanced knowledge and techniques informed by current research. They refine analytical and communication skills, preparing for employment in dynamic professional environments.

Career Prospects	**Typical job roles and salaries:** • VR Developer • **£30,000 - £60,000** • User Experience Designer • **£30,000 - £45,000** • Technical Artist • **£35,000 - £45,000** Software Engineer • **£35,000 - £65,000**
Module Summary	**Level 4 (Year 1)** **Coding, Prototyping and Internet of Things** This module introduces core concepts of coding and computing though the use of sketch-based creative visual (Processing), and hardware-related (Arduino) programming. **3D Concept and Modelling**

In this module, students will learn the real-time 3D creation process, developing skills in the creation of realtime 3D assets such as characters, architecture, vehicles and props ranging from photorealistic to more stylised creations.

Creation Engines and Scripting

This module will explore the features and tools within creation engines, with an emphasis on the use of visual scripting to ensure attainment of requisite creation-engine specific coding skills based on the underlying principles of programming and good practice.

Interaction and User Experience Design

In this module, students will use a variety of techniques, including paper-based and electronic prototyping, and through usability testing, gain practical skills in the design of experiences alongside a deeper understanding of the principles of interaction design, experience design and closely-related disciplines.

Projects, Testing and Performance

This module introduces team-based development and production of solutions and experiences using an Agile project management approach.

Immersive Experiences

This module provides an introduction to the design and development of virtual experiences using immersive technology. Topics include interaction in VR, the different forms of immersive technology, virtual worlds and the Metaverse, and implementation using game engines.

Level 5 (Year 2)

Multiuser Experiences

This module explores the elements required to develop, host and support an experience, its data, and its players or users in a connected environment. The module also provides the opportunity for a significant team-based project, where students will be able to undertake various creative or technical roles, within an Agile environment.

Research Skills and Industry Engagement

This module aims to develop essential research skills and an awareness of industry and individual aspirations. Students will review appropriate academic literature on a chosen topic within computing, interactive and immersive technology, games technology, and related areas.

High-Level Programming for Experiences (Optional)

The module explores the use of high-level programming languages and code libraries in the development of digital, interactive and immersive experiences and solutions, going beyond the pre-built functionality available within creation engine software.

Surfaces and Lighting (Optional)

In this module, students will have the opportunity to design their own textures, learn key lighting fundamentals that can bring scenes to life, and

develop the ability to texture and light 3D models effectively to a professional standard.

World Design and Playability (Optional)

In this module, students will explore the theory behind map creation, balanced gameplay and the use of layout and structure to develop engaging single and multi-user interactive environments. The module will utilise a creation engine for the construction of an interactive world.

Smart Systems Development (Optional)

This module explores issues associated with the collection, aggregation and management of data, its visualisation, and its preparation for detailed analysis. It also addresses the specification, design, and development of systems of interconnected devices. Issues associated with security in IoT systems, and broader ethical issues (e.g. privacy) will be discussed.

3D Animation (Optional)

This module provides thorough coverage of animation principles along with practical experience of the animation pipeline. Building on 3D modelling skills, students will learn how to rig and animate a character and other assets, and the skills gained will be applicable to any project requiring 3D animated content.

Immersive Audio (Optional)

This module offers an introduction to the principles and theories of audio and sound design, focusing on their application within virtual environments. Students will explore how to design, develop and manage audio assets for experiences, utilising a variety of tools and techniques. The module also examines workflows and strategies for integrating audio, alongside an exploration of current innovations and emerging trends in the field. By the end of the module, students will be equipped to plan, create and implement audio using a range of software and hardware tools.

Level 6 (Year 3)

Final Project

The module offers considerable autonomy and the opportunity to take responsibility for individual research of particular interest to the student, building on the knowledge and skills acquired over the course of their study.

Reality, Immersion and Innovation

This module explores various forms of immersive, digital and games technology. This module places an emphasis on exploring emerging technology in the creation of interactive, real-time experiences in varied situations, e.g. in healthcare, science, engineering and education (gamification), and entertainment.

Middleware, Tools and APIs (Optional)

This module is concerned with writing (and using) software components intended for reuse. This covers a range of different technologies and approaches which become increasingly important in the design of larger-scale systems.

Games Design Theories, Storytelling and Narrative (Optional)

This module considers game design theories and frameworks, storytelling and narrative. Topics include advanced game mechanics, design lenses, patterns, economies, play, culture and gamification, plus storytelling and character development, player choice, quests, history, and emotion. The role of the game designer and narrative designer within game production will be explored.

Environment Design and Creation (Optional)

This module covers the advanced design and asset creation techniques and processes required to create detailed, effective and engaging natural and outdoor environments.

Data Visualisation and AI (Optional)

This module surveys a range of practices and techniques for data visualisation, both for individual understanding and story-telling purposes. It covers simple statistical characterisation of data and considers options for representing complex data in graphical form, including interactive elements to allow exploration of features and patterns.

Real-Time Rendering and Visualisation (Optional)

This module focuses on the construction and visualisation of buildings, interior environments, and product designs using interactive and high-performance real-time rendering techniques and technology.

E-Sports Events, Performance and Coaching (Optional)

This module considers what may affect the performance of e-sports players or athletes, covering human factors, physical and mental training, fatigue, and ethics. The role of coaches, analysts and others in supporting, motivating and developing strategy will also be covered. The module also explores e-sports competition and the management, merchandising, sponsorship and particularly the technology of tournaments.

Staff Team	Daniel Robertson (Course Leader)
	Ollie Brock (Module Leader)
	Joseph Baker (Module Leader)
	Lecturing staff have qualifications in computer science, games art and design, computer games technology, at undergraduate and post graduate level. The team have a wealth of experience in industry, research and higher education.

Assessment Methods	Projects, Report, Technical Documentation, Testing, Marketing and PR, Research and Design Document, Specifications, Portfolio, Review, Reflection, Dissertation

Typical Module Diet
All modules are 20 credits unless stated

Year 1 (L4)	Year 2 (L5)	Year 3 (L6)
Coding, Prototyping and Internet of Things **3D Concept and Modelling** **Creation Engines and Scripting** **Interaction and User Experience Design** **Projects, Testing and Performance** **Immersive Experiences**	**Multiuser Experiences** **Research Skills and Industry Engagement** **High-Level Programming for Experiences** (Optional) **Surfaces and Lighting** (Optional) **World Design and Playability** (Optional) **Smart Systems Development** (Optional) **3D Animation** (Optional) **Immersive Audio** (Optional)	**Final Project** (40 credits) **Reality, Immersion and Innovation** **Middleware, Tools and APIs** (Optional) **Games Design Theories, Storytelling and Narrative** (Optional) **Environment Design and Creation** (Optional) **Data Visualisation and AI** (Optional) **Real-Time Rendering and Visualisation** (Optional) **E-Sports Events, Performance and Coaching** (Optional)

| Study Hours | **Study Hours per 20 credit Module: 200 hours**

Lectures and Seminars: 36 – 48 hours

Assessments: 30 hours

Preparation and Independent study: 122 – 134 hours

*Typically, three 20 credit modules will be studied per Semester. There are two Semesters a year. |

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English language requirements) can be accessed via the University Studies website at
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