BIRMINGHAM CITY University

COMPUTING AND DIGITAL TECHNOLOGY MINI LECTURES

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An Introduction to Careers in Computing, Engineering and the Built Environment

If your students are interested in getting into science and technology, this talk provides an insight into the different pathways available, and the courses that will help them get there. If your students are interested in computing, engineering and the built environment, you can find out what types of jobs could be in store for them and what qualifications they may need.

COMPUTING AND DIGITAL TECHNOLOGY

Careers in Computing and the Course for you

This talk introduces students to the different computing courses available at Birmingham City University and provides guidance on which different areas of computing your students may wish to get into. It covers aspects of studying at BCU that may make your students more employable, such as placement options and work experience, as well as highlighting career pathways and earning potential.

Cyber Security

This talk looks at digital security issues raised within programmes such as CSI, including an engaging demonstration on a number of security flaws in wireless networks and on our computers. Not only for people studying computing/ICT subjects, this lecture will be of interest to anyone who wants to understand how the internet works.

Ethical Hacking

Would your students like to understand the different approaches to ethical hacking and explore why we need to test networking and end systems for security. The session will look at some of the more common approaches to hacking and how to mitigate these within a network.

Introduction to Cryptography

Cryptography is the science of using mathematics to encrypt and decrypt data. Cryptography enables you to store sensitive information or transmit it across insecure networks (like the Internet) so that it cannot be read by anyone except the intended recipient. Students will be introduced to basic ciphers, cryptographic techniques as well as the main types of cryptography and encryption parameters and will explore different applications of modern cryptography.

Digital Forensics vs Cybercrime!

Posing new challenges to the police and intelligence agencies, the fight against cybercrime relies on forensics experts to analyse 'digital evidence' in order to bring criminals to justice. This interactive demonstration explores how digital devices are used by criminals, as well as the forensic techniques used to expose them.

Hiding in Plain Sight

Identifying covert communications is a huge part of digital forensic investigations. Armed with some specialist knowledge, people can easily exploit digital images and various computer files to hide data inside that would go undetected to most people. These data hiding techniques are not just thought to be used by criminals, but perhaps secret agencies too! This session allows your students to explore the world of Steganography, the art of hiding data in data!

Digital Forensics Investigation Skills

When we look at a picture, do we truly look at the picture? One of the key skills of any good investigator is to understand the importance of small details. This could be something like the colour of someone's shoes or even the shopping bag someone is carrying. In this lecture, we will look at a picture any piece together all the "extra" information we may have not noticed before. The aim is to allow you to develop your investigative skills and to show how even small details allow us to see the bigger picture.

Digital Image Forensics

Digital images taken from smartphones are shared abundantly over social media outlets and photo sharing websites. There is also rapid growth in digital images taken using devices such as dashcams, drones and CCTV cameras. These can all play a vital role in digital forensic investigations. They contain much more than just the graphical content; they contain valuable information about when, where, and potentially by whom the image was taken. Other evidential clues that are overlooked by the unsuspecting eye. In this session, your students will discover how digital forensic investigators are able to identify and extract far more information from a digital image than you once thought.

Business Information Technology Session

Are your students interested in understanding business concepts and how IT can be used to serve business needs? Business information technology bridges the gap between IT and business, driving innovation and growth in modern global organisations. It embeds a systems philosophy of connectivity, to offer an in-depth understanding of business concepts, problem solving and the implementation of IT solutions.

The Role of Natural Language Processing in AI

This session introduces basic concepts of natural language (NLP), which is a branch of artificial intelligence within computer science that focuses on helping computers to understand how humans write and speak. We will look at a few different applications and give an example to demonstrate their use.

Ethical Decision-making Process

This session will explain models that can aid in your decision-making process, allowing you to avoid unethical alternatives and unattractive consequences.

Careers in Film

Students that may be interested in going into the film industry can find out which course might be suitable for them. Whether wanting to work in film production, technology, screenwriting or criticism, students can study a course at BCU. Our courses span the technology behind the film as well as the writing and creation of script.

Digital Media, VFX and Film

Courses in digital media technology blend creative production with core skills in computing, engineering, and technology. They make a great choice, both for those with a passion for media production and those with a passion for computing and technology. This talk discusses the range of courses offered by the Department for Digital Media Technology and how these courses are an engaging way to develop highly sought after technical skills while using them with your preferred medium, whether that is sound, film, computer graphics, computer games or web applications.

Digital Media Production

Explore how to create stunning quality images when the art and science of video production comes together. This practical session will demonstrate how a strong technical underpinning can inspire creative thinking.

Creative Technology: The Career of a Full Stack Developer

The ever-pervasive internet's popularity is built on sites that deliver content across a multitude of devices. The tutor will demonstrate the technologies and techniques that drive your students' favourite sites, and the common problems web designers must consider when developing a web presence for a client.

Build your own Universe: The Power of 3D Modelling

Have your students ever wondered what goes into building the 3D models you see in film, TV, or games? Enter the world of 3D modelling, where people have the ability to create anything they can imagine. Students must take account of real-world physics if you want a believable construct.

Web and User Experience Design

User Experience Design is at the heart of digital product development. A considered design has the ability to engage the user and improve the quality of the experience. This session will identify standard design principles as well as explore techniques for evaluating user experience. This will inform students of concepts to consider when designing interactive digital products in future.

Careers in Visual Effects

Help your students take the first steps towards an exciting career in Visual Effects! Our Visual Effects specialist, Lianne Forbes, has worked on blockbuster films such as Harry Potter, Star Trek and The Amazing Spiderman! This talk covers what a Visual Effects specialist does and how this career can lead onto working on movies, games or even theme park rides. It also covers how to start a career within Visual Effects, Games or Animation and what our students have achieved on this course.

Coding Audio

Interested in computer science and have a passion for sound or music? Coding skills are very important in the development of game audio, audio analysis or recording and production tools. Find out how you could be part of the development team working on this type of project, and how the BSc Sound Engineering and Production degree has helped our graduates to find careers in these areas.

How Technology has Evolved in the Music Industry

Do you have a passion for music? Our course leader for Music Technology and Sound Engineering, Dr Islah Ali-MacLachlan, is joined by BCU students to discuss how perceptions have changed about careers in music, as well as the impact of technology on the industry. Turn your passion into a career and discover the vast range of opportunities that you could have access to after studying a degree in Music and Sound.
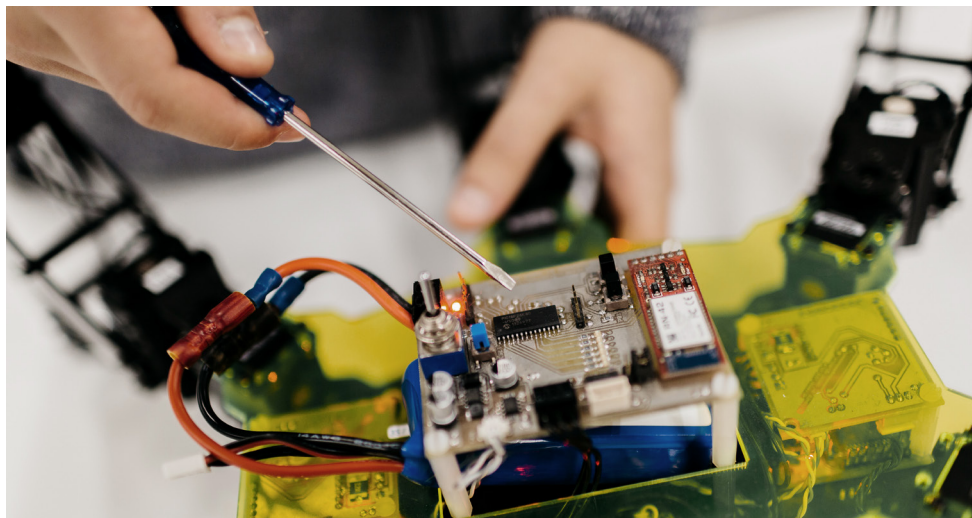
How Games are Changing the World

Gaming is heavily influencing every industry and impacting the future. Director of Future Games and Graphics Carlo Harvey discusses how games are changing the world, explaining how video games are now bigger than music and movies combined and how you can be part of this exciting industry.

Lighting Workshop

Students will be introduced to a virtual lighting tools software which will allow them to experiment with position and intensity of lighting instruments to light a selection of different faces. They will also be presented with a selection of movie stills illustrating some specific lighting techniques and be invited to reproduce these using the tools within the software.

Computer Games Technology: An Introduction to Unity or Unreal Game Engines

Your students will get to experience using an industry standard Game Engine - Unity or Unreal depending on what is installed and configured within your labs and tested for use. We will cover fundamental topics and the building blocks of games, ensuring students are equipped to import assets and develop gameplay mechanics to set them in good stead to start producing their own independent artefacts.