Artificial Intelligence BSc (Hons)

UCAS Code: GH76 | Duration: 3 years | Full-time | Hope Park | 2024/2025

Placement year opportunities available | Study Abroad opportunities

Course Overview

We are on the brink of a technological revolution that will profoundly alter the way we live, work, and relate to one another. In its scale, scope, and complexity, the transformation will be unlike anything humankind has experienced before. Artificial Intelligence (AI) systems are being developed today that would have been considered to belong to the realms of science fiction only a couple of years ago. The pace of change in AI is such that it has blindsided many politicians and policymakers. A very few are only now, at this late stage, becoming aware of the potentially massive disruptive impact of AI on all aspects of life in the 21st century. What is in no doubt is that the direction that AI takes will have a profound impact on all of our futures.

There is a major, and growing skills, shortage of AI practitioners developing. This course will teach you about the practical aspects of AI: how it works, what it can do, how it can be practically utilised for many different purposes, how it may develop in the future, and how to be part of the AI based industries of the future.

Entry Requirements

This course follows the standard University entry requirements. Please see the website for further information.

Fees and Additional Costs

The tuition fees for 2024/2025 are £9,250 for full-time undergraduate courses.

If you are a student from the Isle of Man or the Channel Islands, your tuition fees will also be £9,250. The University reserves the right to increase Home and EU Undergraduate and PGCE tuition fees in line with any inflationary or other increase authorised by the Secretary of State for future years of study.

You will also need to consider the cost of your accommodation each year whilst you study at university.

Visit our accommodation webpages for further details about our Halls of Residence: **www.hope.ac.uk/halls**

Applicants will need access to a computer if course delivery is switched to online. The University has a laptop lending service if remote study is necessary.

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Artificial Intelligence BSc (Hons) Curriculum

Year One

The year emphasises both theoretical understanding and hands-on experience, ensuring students are well-prepared for the AI-centric challenges ahead.

Python Programming

You will take a deep dive into Python, the go-to language for many AI applictions.

Introduction to AI

An overview of AI, its history, applications, and the potential it holds for the future.

Website Development Basics

This basic understanding is essential for all students, going into HTML, CSS and the basics of Javascript.

Data Engineering Foundations

Learn the intricacies of handling, processing, and analysing data, a critical component in training and refining AI models.

Professional Skills

Tailored to set the stage for learning about computing and AI and ensuring you have the necessarily study skills.

Year Two

During your second year, you will build upon the foundational knowledge from the first year. Topics include the following:

Intelligent Systems

You will gain a wide range of skills in AI, with an emphasis on machine learning, but also metaheuristics and cellular automata.

Data Visualisation

This topic emphasizes the importance of visual data storytelling, teaching students how to transform raw data into insightful visuals that drive decision-making and reveal hidden patterns.

Computer Vision

You will study how machines interpret and understand visual information from the world.

Algorithm Design and Analysis

The intricacies of algorithm development and performance analysis are explored.

Software Engineering

Master the principles of software development, from requirement analysis to deployment.

Year Three

This year focuses on advanced and specialized areas of AI, providing students with in-depth knowledge and practical skills.

Natural Language Processing

Students will learn classical NLP techniques based on linguistics in the first semester, followed by advanced methods like Transformers and Language Models in the second semester.

Vision Systems

This builds on previous knowledge of computer vision, focusing on more advanced techniques and applications for interpreting visual data.

Machine Learning Hardware

This focusses on the practical aspects of AI, specifically on programming with PyTorch and deploying AI models to physical devices.

Internet-of-Things

You will learn about the principles and applications of interconnected devices and systems.

COURSE STRUCTURE

Teaching on this degree is structured into lectures where all students are taught together, seminars of smaller groups of around 15-20 students, and tutorials which typically have no more than 10 students.

During your first year of study, there are approximately 12 teaching hours each week, which reduces to approximately 10 teaching hours in your second and third years. On top of teaching hours, you are also expected to spend a number of hours studying independently each week, as well as studying in groups to prepare for any group assessments that you may have.

ASSESSMENT AND FEEDBACK

Throughout your four years of study, you will have a number of assessments, individual and group presentations, lab reports, portfolios, practical tests, case studies, and placement assessment.

In your final year, you complete a dissertation research project.

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