Artificial Intelligence BSc (Hons)

UCAS Code: GH76 | Duration: 3 years | Full-time | Hope Park | 2025/2026

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 2025/2026 are £9,535 for full-time undergraduate courses.

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

This is a broad introduction to the subject and you develop the theoretical knowledge, problem solving and practical skills that underpin AI:

Introduction to Programming

You will learn the fundamentals of two programming languages. Python is crucial to machine learning, and Java is a popular language for development and production.

Introduction to AI

You start with classical approaches to AI, such as expert systems, as well as optimisation, the basics of finite state machines, and simple chatbots.

Professional Skills

You will be introduced to a broad range of soft skills to not only make you ready for your degree, but for your career.

Algorithm Design

Understanding algorithms and their creation is crucial to much of what you will do later in your degree and career, and you will learn this process from the ground up.

Mathematics for AI

Linear algebra and calculus are used extensively in machine learning, and you will learn the basics of these during your first year.

Data Engineering

Understanding how to obtain and manipulate data, which is essential for training machine learning algorithms.

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.

Graph Theory

Understanding the mathematical foundations of graphs is essential to modern machine learning, notably current edge techniques such as graph neural networks.

Computer Vision

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

Professional and Study Skills

This topic emphasises effective communication, teamwork, and the critical study techniques that will support your academic journey and future career.

Algorithm Design and Analysis

The intricacies of algorithm development and performance analysis are explored.

Human-computer Interaction

Discover the science behind user-friendly interfaces and impactful user experiences.

Year Three

This year focuses on advanced and specialised 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.

Convolutional Neural Networks

This builds on previous knowledge of computer vision, focusing on more advanced techniques, with a focus on CNNs, 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.

Cybersecurity

You will learn to identify vulnerabilities, implement security protocols and learn how machine learning techniques can be used to predict and mitigate cyber threats.

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.