



# Drive the Future of AI

**Artificial Intelligence** MSc | Postgraduate Certificate

Online

Course Guide



UNIVERSITY OF LEEDS

## Important Information

Important information provided by the University, such as in presentations, University brochures and on the University website, is accurate at the time of first disclosure. However, courses, University services and content of publications remain subject to change.

Changes may be necessary to comply with the requirements of accrediting bodies or to keep courses contemporary through updating practices or areas of study.

Circumstances may arise outside the reasonable control of the University leading to required changes. Such circumstances include industrial action, unexpected student numbers, significant staff illness (where a course is reliant upon a person's expertise), unexpected lack of funding, severe weather, fire, civil disorder, political unrest, government restrictions and serious concern with regard to the transmission of serious illness making a course unsafe to deliver.

After a student has taken up a place with the University, the University will look to give early notification of any changes and try to minimise their impact, offering suitable alternative arrangements or forms of compensation where it believes there is a fair case to do so. Offers of a place to study at the University will provide up-to-date information on courses. The latest key information on courses, entry requirements and fees can be found at [courses.leeds.ac.uk](https://courses.leeds.ac.uk).

Please check this website before making any decisions.

## Contents

<b>Why Choose the University of Leeds?</b>	<b>3</b>
<b>Course Details</b>	<b>4</b>
<b>Course Modules</b>	<b>5</b>
<b>Our Global Learning Network</b>	<b>6</b>
<b>Learning Support</b>	<b>7</b>
<b>Career Support</b>	<b>8</b>
<b>Entry Requirements</b>	<b>9</b>
<b>Application Deadline Dates</b>	<b>10</b>

## Why Choose the University of Leeds?

**We are one of the top 100 universities in the world and ranked in the top 15 in the UK (QS World University Rankings, 2023) with a global reputation for excellence in research and teaching.**

Through links with businesses, public organisations, and research groups worldwide, we provide students with a strong combination of higher education and career support. Our team of high-profile academics create an exceptional study experience guided by industry-leading knowledge and research.

### A research focused school

At the School of Computing, part of the Faculty of Engineering and Physical Sciences, 99% of the submitted computing research activity is rated as either 'world-leading' or 'internationally excellent', with 63% rated as 'world-leading' (Research Excellence Framework, 2021).

Our specialist [Centre for Doctoral Training in Artificial Intelligence for Medical Diagnosis and Care](#) focuses on the innovative technologies in the field of Artificial Intelligence. It gives us strong research capability in this fast-paced discipline of AI.

The Artificial Intelligence course is designed and delivered completely online by computer scientists specifically for professionals who recognise the importance of AI to their sector. The content blends industry knowledge into an academic curriculum, speaking to skills that employers are actively seeking. This enables you to develop your AI skills across a variety of industries and gives you a tailored online learning experience equivalent to on-campus courses.

## Partnerships

### Alan Turing Institute

The School of Computing is one of only a handful of elite UK institutions which partner with the [Alan Turing Institute](#) – the national institute for data science and artificial intelligence. The institute is a hub for research across disciplines and locations, approaching real-world issues in science and society to be at the forefront of cutting-edge changes today. The Alan Turing Institute is a place for engagement, discussion and development of new ideas. Our partnership gives the School of Computing real-world research and societal issues to discover more about the field of AI.



### Leeds Institute for Data Analytics (LIDA)

[The Leeds Institute for Data Analytics](#) brings together applied research groups and data scientists from all disciplines, opening new opportunities to understand health and human behaviour and casting light on the action required to tackle a wide range of social and environmental problems. Connecting academic research with external partners in business, government and the third sector; LIDA is matching the world class capabilities of University research with the needs and opportunities of local organisations.

### Robotics at Leeds

[Robotics at Leeds](#) is an interdisciplinary network driving innovation in robotics research. Our industrial partners, researchers and students can access a suite of technologies for robot design and construction that is among the most advanced in the world. Our national Robotics Facility is backed by the Engineering and Physical Sciences Research Council (EPSRC) as part of the Government's drive to improve Britain's international competitiveness in robotics.

## Course Details

**The Artificial Intelligence course is purely AI focused, covering an extensive range of AI and Machine Learning tools and techniques. It is taught by computer scientists specifically for professionals who recognise the importance of AI to their sector.**

You will develop practical skills that can be applied in the real world. These include self-direction and effective and ethical decision-making ability. The industry focus of the curriculum will give you the confidence and knowledge to pursue a role in industry or the public sector, to help build, specify and critique AI systems.

You can study for the Masters course, which enables students to apply their academic study, techniques and knowledge acquired from the course to develop AI solutions and address a work-related challenge, or you can study the Postgraduate Certificate, which is a gateway to the Masters. Both the Masters and Postgraduate Certificate are taught at the same academic level and contain the foundation module of Programming for Data Science.

The Postgraduate Certificate requires a choice between Data Science and Algorithms the other two foundation modules; on the Masters course you will study both. In addition to these modules on the Masters course, you'll have the opportunity to complete the Artificial Intelligence project, encouraging you to explore, analyse, and innovate upon existing critical theory and practice.

If you are not ready to commit to two years of Masters study, or do not yet meet the academic requirements for the Masters course the Postgraduate Certificate is perfectly placed to help you upskill in a minimum of eight months. It's possible to then progress on to the Masters course.



### Course Outcomes

Artificial Intelligence is changing the way we see the world, not only in technical areas, but across a vast array of industries. Learning and understanding AI, how it works, and what benefits it can have for your business and sector is the first step to a successful career in the future. This course will provide you with a deep understanding of emerging trends in the AI landscape to ensure you can separate you or your business from the crowd and be at the frontier of technological changes in the future.

The Artificial Intelligence course will teach you how to develop, manage and plan AI solutions or strategy in your organisation. You will develop mastery of generic and subject-specific intellectual abilities through group work and individual assignments across a wide range of topics, including Robotics and Algorithms.

By the end of the course, you will be equipped with the confidence to make high-level strategic decisions to respond to business needs and communicate complex, technical information to non-technical stakeholders.

## Course Modules

**Our purely AI focused curriculum covers an extensive range of AI and Machine Learning tools and techniques.**

You will learn skills that employers are actively seeking within the AI development sector from building skills in Python programming to the fundamental techniques of computer programming, and the core machine learning and data science knowledge that underpins many AI applications.

**The MSc course consists of three foundation modules, six development modules and a project**

### Foundation Modules

The first three modules will introduce you to the technical side of Artificial Intelligence:

- > **Programming for Data Science** (15 credits)
- > **Data Science** (15 credits)
- > **Algorithms** (15 credits)

### Development Modules

Building on these foundations, the remaining modules will help to develop a critical understanding of how Artificial Intelligence can be implemented to solve real world issues:

- > **Knowledge Representation and Reasoning** (15 credits)
- > **Ethics of Artificial Intelligence** (15 credits)
- > **Machine Learning** (15 credits)
- > **Data Mining and Text Analytics** (15 credits)
- > **Deep Learning** (15 credits)
- > **Robotics** (15 credits)

### Project

The Artificial Intelligence project enables you to apply your academic study, techniques and knowledge acquired from the course to develop AI solutions to the real world in your current role. This will allow you to address a work-related challenge, encouraging you to explore, analyse, and innovate upon existing critical theory and practice. (45 credits)

**The Postgraduate Certificate consists of four modules**

### Foundation Modules

Compulsory Module:

- > **Programming for Data Science** (15 credits)

Students must choose **one** other foundation module from the options below:

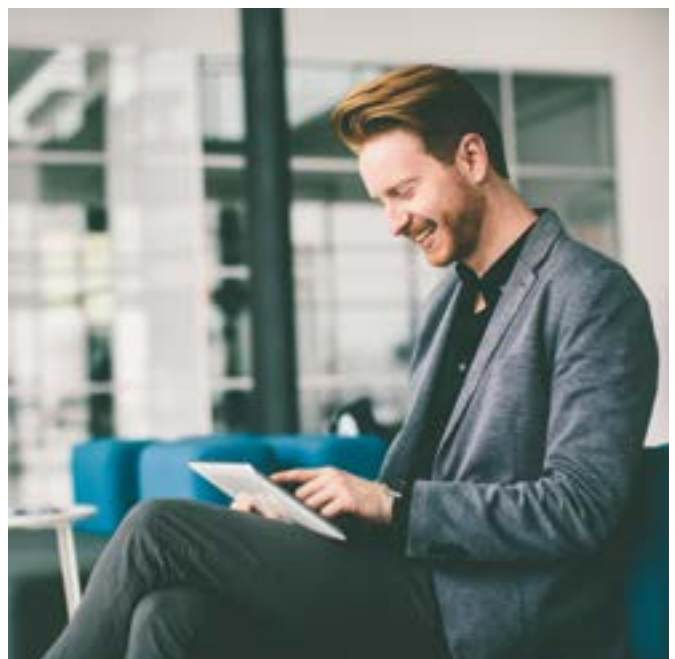
- > **Data Science** (15 credits)
- > **Algorithms** (15 credits)

### Development Modules

Students must choose any **two** development modules from the options below:

- > **Knowledge Representation and Reasoning** (15 credits)
- > **Machine Learning** (15 credits)
- > **Data Mining and Text Analytics** (15 credits)
- > **Deep Learning** (15 credits)

**Please note:** You might have to take a study break to complete the course depending on when the selected module is next running.



## Our Global Learning Network

**Your learning will be delivered online via our virtual learning environment, *Minerva*. Each week you will study through live face-to-face sessions with our experienced academics in a mixture of structured and open-ended learning techniques.**

We recognise that professionals have busy lives, so with a 100% online delivery mode, students can manage their learning around their busy personal and full-time employment, without the need to disrupt their life. We will also provide many tools, including study planners, to help you to track your progress and better manage your time.

Our course is designed to make learning as collaborative as possible. We believe in the importance of connecting like-minded professionals to each other as well as academic staff to form an active learning community.

Our VLE contains virtual social learning spaces, collaborative learning activities, regular live webinars, and we encourage peer to peer dialogue to share knowledge, ideas, and access personal tutors for advice on the learning experience.

This allows you to develop a range of transferable skills and grow confidence and strength in character studying within a growing community of virtual learners.

### **The Online Student Experience**

Every module is supported by a series of interactive and collaborative activities to bring your online learning experience to life. You will learn using techniques ranging from regular live webinars to interactive surveys, exercises and synchronous and asynchronous videos, and training in subject-specific software.

Minerva is accessible from anywhere with an Internet connection and is mobile friendly so you can study on the go. You will also benefit from downloadable PDFs on course content for offline reading when required.



## Enjoy Internationally Regarded Learning Support

Dedicated Student Success Advisors
Connecting students to specialist services
Pastoral support
Navigating around the learning platform
Assessment deadline reminders
Access to careers and employability advice
Enrolment and progress to the next module
Fee payment

Module Tutors
Academic advice
Academic progression
Assessment queries and advice
Module content queries
Academic concerns and grievances
Further reading suggestions
Course material
Formative feedback to check on your learning (the formative feedback does not count for any marks but is provided to help you chart your progress and develop your learning)
Forum interaction

You will have access to the University of Leeds extensive range of online library resources – including e-Journals, eBooks and specially digitised resources relevant to the course of study. As an online student, you will have access to a range of university services, including careers, learning support and alumni.

**You can start your course in January, March, May, July, September or November.**



## Career Support

---

**The University of Leeds engages in industry collaboration with domestic and worldwide partners. Our industry links help us to build a curriculum designed specifically to meet growing market demands.**

As a student, you will have access to the University of Leeds Careers Service's extensive online resources including career planning, advice on CV writing, job applications and key interview skills and access to a database of employer events. Further support will be available via the one-on-one e-Guidance service which can provide advice by appointment via telephone, Microsoft Teams or Zoom meeting.

The Careers Service may be able to connect students looking for knowledge of a specific region with groups of students in the same country so they can assist each other with job seeking. The Careers Service can offer professional development access to our alumni network, online careers support and employer links.





## Entry Requirements

### MSc and Postgraduate Certificate

#### Academic Entry Requirements

A First or 2.1 (hons) bachelor degree in any mathematical or highly numerate discipline where relevant subject areas have been studied.

If you hold a 2.2 (hons) bachelor degree in any mathematical discipline, we'll consider your application if you have at least three years of relevant work experience in a professional environment.

If you hold a First or 2.1 (hons) bachelor degree in a non-mathematical discipline, we'll consider your application if you have at least three years of relevant work experience in a related professional environment.

If you hold a 2.2 (hons) bachelor degree in a non-mathematical discipline with no relevant professional work experience, we'll consider your application following completion of an admissions test or relevant credit-bearing foundation course in programming.

Exceptionally, we will also consider applications from professionally qualified and experienced candidates who do not meet the formal requirements.

We accept a range of international equivalent qualifications. For information please contact our Enrolment Advisors at [studentenquiries.online@leeds.ac.uk](mailto:studentenquiries.online@leeds.ac.uk)

#### English Language Entry Requirements

GCSE English language at grade C or above.

or

IELTS 6.5 overall, with no less than 6.0 in any component as stated in the current [Taught Postgraduate Admissions Policy](#).

or

An appropriate equivalent English language qualification ([read English language equivalent qualifications](#)).

In certain circumstances applicants can provide alternative proof of English language proficiency rather than a standard English test. This will be assessed on a case-by-case basis. You should discuss the criteria with your Enrolment Advisor to see if this can be considered.

Where necessary, you will be expected to improve your English further during the course by making use of the online English tuition support that we provide.

## Application Deadline Dates

Start Date	Application Deadline
March 2023	February 2023
May 2023	April 2023
July 2023	June 2023
September 2023	August 2023
November 2023	October 2023
January 2024	December 2023

If you are ready to apply for the course or would like information on the application process to study on the online Artificial Intelligence course please email: [studentenquiries.online@leeds.ac.uk](mailto:studentenquiries.online@leeds.ac.uk), or call +44 (0) 113 341 1262 to speak to a member of our Enrolment Team.



“Our online Artificial Intelligence course will equip you with extensive exposure to all aspects of AI, including machine learning, deep learning, and reinforcement learning. We focus on Python as the primary development language for AI which will support you with libraries such as Sklearn, Pytorch, TensorFlow, Keras, Pandas, Numpy and many more. The course is well-rounded, and its objectives and learning outcomes are aligned with in-demand industry skills to help you become a master of AI.”

**Dr Abdulrahman Altahhan, Programme Leader, Artificial Intelligence online**

### Contact Us

Email [studentenquiries.online@leeds.ac.uk](mailto:studentenquiries.online@leeds.ac.uk)

Telephone +44 (0) 113 341 1262



**UNIVERSITY OF LEEDS**