



Worcester College
UNIVERSITY OF OXFORD

Oxford Certificate Programmes

University Online Study Abroad Programme Artificial Intelligence



OXFORD CERTIFICATE PROGRAMMES

at Worcester College offer university students the opportunity to experience Oxford and learn in an authentic Oxford college setting virtually. Upon completion of the programme, participants receive a Certificate of Attendance and Achievement and Academic Transcript issued by Worcester College.

MACHINE AND DEEP LEARNING IN R

Machine learning is a field of scientific study concerned with algorithmic techniques that enable machines to learn performance on a given task via the discovery of patterns or regularities in exemplary data. This course aims to acquaint the student with the main branches of machine learning and provide a thorough introduction to the most widely used approaches and methods in this field.

Neural networks and deep learning approaches have revolutionized the fields of data science and artificial intelligence in recent years, and applications built on these techniques have reached or surpassed human performance in many specialized applications. After a short review of the origins of neural networks and deep learning, this course will cover the most common neural network architectures and discuss in detail how neural networks are trained using dedicated data samples, avoiding common pitfalls such as overtraining. The course includes a detailed overview of alternative methods to train neural networks and further network architectures which are relevant in a wide range of specialized application scenarios.



**WINTER 2023
PROGRAMME DATES**
16 JAN–3 FEB 2023
(21-29 Jan Chinese New Year Break)

Applications deadline 31 December 2022

APPLICATIONS

For more information or to make an application please email:
enquiries.cpc@worc.ox.ac.uk



ACADEMIC WORKLOAD

- 16 academic hours: Course instruction (pre-recorded)
- 4 academic hours: Tutor-led live discussion and progress update on coding projects
- 2 academic hours: Tutor-led live assessment
- 4 academic hours: Oxford tradition series (pre-recorded)
- 20 academic hours: pre-course reading (reading list provided)
- 14 academic hours: self-study incl. assessment preparation
- In total: **3 ECTS** credits including pre-course work and assessments

SAMPLE TIMETABLE

Week I	16 January Monday	17 January Tuesday	18 January Wednesday	19 January Thursday	20 January Friday
Event I	Welcome & Orientation & Live Discussion	Lecture II	Lecture IV	Lecture V	Lecture VI
Event II	Lecture I	Lecture III	Oxford Tradition I	Oxford Tradition II	Live Discussion
Week II	30 January Monday	31 January Tuesday	1 February Wednesday	2 February Thursday	3 February Friday
Event I	Live Discussion	Lecture VIII	Lecture IX	Lecture XI	Final Presentation
Event II	Lecture VII	Oxford Tradition III	Lecture X	Oxford Tradition XII	Graduation Ceremony

WORCESTER is one of the historic colleges of the University of Oxford. It was founded in 1714 but there has been an institution of learning on the site since the late 13th century. Although it is very close to the centre of Oxford, Worcester is the only college to have its sports grounds onsite. The college buildings are set in the finest landscaped gardens in Oxford.

ASSESSMENT

- As part of the academic course, an assessment in the form of a **coding project** will be offered by the teaching academic.

CERTIFICATION

- Students will receive a **Certificate of Attendance and Achievement** issued by Worcester College (University of Oxford).
- Students who successfully finish the programme will receive an **Academic Transcript** with a summary of the programme content and students' academic performance issued by Worcester College (University of Oxford).

PROGRAMME FEE: £1,250 GBP

Teaching via Zoom