# Programme Specification

## Artificial Intelligence [Frenchay]

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## Section 1: Key Programme Details

### Part A: Programme Information

**Programme title:** Artificial Intelligence [Frenchay]

**Highest award:** MSc Artificial Intelligence

**Interim award:** PGCert Artificial Intelligence

**Interim award:** PGDip Artificial Intelligence

**Awarding institution:** UWE Bristol

**Affiliated institutions:** Not applicable

**Teaching institutions:** UWE Bristol

**Study abroad:** No

**Year abroad:** No

**Sandwich year:** No

**Credit recognition:** No

**Department responsible for the programme:** FET Dept of Computer Sci & Creative Tech, Faculty of Environment & Technology

**Contributing departments:** Not applicable

**Professional, statutory or regulatory bodies:** Not applicable

**Apprenticeship:** Not applicable

**Mode of delivery:** Full-time

**Entry requirements:** For the current entry requirements see the UWE public website

**For implementation from:** 01 September 2022

**Programme code:** I40000

## Section 2: Programme Overview, Aims and Learning Outcomes

### Part A: Programme Overview, Aims and Learning Outcomes

**Overview:** Artificial Intelligence (AI) is the study of how we can develop and apply computer algorithms to automatically solve problems - either on their own, or working together as part of a human-machine team. As a broad area it covers ideas from philosophy and psychology, through computer science to 'hands-on' skills in data handling, statistics and programming.

UWE's programme is very much focussed on giving you the knowledge and skills to develop useful AI-based solutions to real-world problems.

Through a series of core modules you will gain familiarity with the concepts, the principal approaches and algorithms of modern AI. You will have the opportunity to get hands-on experience of using different software tools and algorithms. These experiences will then help you gain skills in critically evaluating the strengths and weaknesses of proposed solutions to problems.

Option modules provide you with the chance to select areas to broaden your understanding of topics such as 'big data'.

In keeping with our focus on the AI-practitioner, interwoven throughout the course are the vital skills of analysing and understanding the ethical, technical and operational context where AI might be deployed, and the kinds of domain-specific issues that need to be taken into account during the design process.

To help you gain professional skills such as team work and project management, you will work on a major group project. Here you will bring together all the skills and understanding you have learned throughout the MSc to design, implement and deliver an AI-based solution to a more complex problem with all the characteristics of the real-world. You might expect to have to deal with uncertainty, inconsistent human interactions, and handling complex legal and ethical issues. At the end of the

project you will practice key professional skills of communicating with different audiences as you present your findings to different stakeholders.

**Educational Aims:** To enable graduates to progress to senior and leading Artificial Intelligence (AI) and related roles with scope and ability to develop organisational capabilities, strategies and operations related to AI/Machine Learning.

To develop resourceful, creative and independent thinkers able to identify, adapt and respond to changing requirements, capabilities and opportunities in the space of AI, Machine Learning and 'intelligent systems'.

To foster confidence in working with algorithms and data (including language and images) and managing associated concerns across multiple dimensions of data literacy.

Through AI/ML-based interventions, to enable graduates to impact positively on organisational efficiency and productivity.

To enable graduates to contribute to meeting societal needs for tackling complex ethical issues such as privacy, fairness, accountability and trust, surrounding the creation and use of AI-based systems.

**Programme Learning Outcomes:**
On successful completion of this programme graduates will achieve the following learning outcomes.

**Programme Learning Outcomes**

PO1. Construct questions and hypotheses relating to organisational objectives and to identify experiments or gather data bearing on these

PO2. Apply the basic paradigms and methods of contemporary AI to to develop descriptive, predictive and prescriptive models and analyses adhering to good statistical practice.

PO3. Select, employ and evaluate platforms, tools and data storage and management technologies and to build data pipelines and production-ready products for solving organisational problems.

PO4. Use scripting languages, good coding practice and a range contemporary toolkits together with data transformation and integration of diverse sources to design, prototype and develop AI-based solutions

PO5. Continually evaluate and improve models and systems to ensure they meet requirements and objectives

PO6. Effectively communicate the outcome of analyses to multiple stakeholders through verbal and multimedia reporting

PO7. Take account of legal requirements, and ethical and societal issues through highly informed and reflexive practice

PO8. Work cooperatively and collaboratively across functions and teams and show leadership and an outcomes-driven mindset.

## Part B: Programme Structure

### Year 1

The student must take 180 credits from the modules in Year 1.

### Year 1 Compulsory Modules

The student must take 150 credits from the modules in Compulsory Modules.

| Module Code | Module Title | Credit |
|---|---|---|
| UFCEL1-15-M | AI for Search and Optimisation 2022-23 | 15 |
| UFCEM1-60-M | AI Group Project Model 2022-23 | 60 |
| UFCEN1-15-M | Knowledge-based and Hybrid Systems 2022-23 | 15 |
| UFCEP1-30-M | Machine Learning Algorithms 2022-23 | 30 |
| UFCEQ1-15-M | Machine Learning for Language and Vision 2022-23 | 15 |
| UFMFHR-15-M | Statistical Inference 2022-23 | 15 |

**Year 1 Optional Modules**
The student must take 30 credits from the modules in Optional modules.

Students will be informed of possible option combinations when making choices.

| Module Code | Module Title | Credit |
|---|---|---|
| UFMFJR-15-M | Advanced Statistics 2022-23 | 15 |
| UFCF8H-15-M | Big Data 2022-23 | 15 |
| UFCFKR-15-M | Business Intelligence and Data Visualisation 2022-23 | 15 |
| UFCFKJ-15-M | Cloud Computing 2022-23 | 15 |
| UFCFEY-15-M | Data and Information Governance 2022-23 | 15 |
| UFCE8J-15-M | Designing the User Experience 2022-23 | 15 |
| UFCFGD-15-M | Knowledge Management 2022-23 | 15 |
| UFCFLJ-15-M | Linked, Open Data and the Internet of Things 2022-23 | 15 |
| UFCFJJ-15-M | Social Media and Web Science 2022-23 | 15 |

**Part C: Higher Education Achievement Record (HEAR) Synopsis**

Graduates will exhibit analytical skills in problem framing and project design, data manipulation and retrieval, statistics and coding for developing AI-based solutions for different types of problems such as optimisation, and building predictive models from data . They will be able to develop and evaluate models, use established tools and methods, and effectively communicate their results to stakeholders. They will be able to work in a multifunctional team and manage a full development lifecycle.

**Part D: External Reference Points and Benchmarks**

**Part E: Regulations**

A: Approved to University Regulations and Procedures:

https://www.uwe.ac.uk/study/academic-information/regulations-and-procedures