Module Specification

Artificial Intelligence

Version: 2025-26, v1.0, 19 Sep 2023

Contents

Part 1: Information

Module title: Artificial Intelligence

Module code: UFCE57-30-3

Level: Level 6

For implementation from: 2025-26

UWE credit rating: 30

ECTS credit rating: 15

College: College of Arts, Technology and Environment

School: CATE School of Computing and Creative Technologies

Partner institutions: None

Field:

Module type: Module

Pre-requisites: None

Excluded combinations: None

Co-requisites: None

Continuing professional development: No

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: The Artificial Intelligence module provides students with a comprehensive understanding of a broad range of AI topics, enabling them to apply AI techniques to solve complex problems across various domains.

Features: Not applicable

Educational aims: Throughout this module students will cover a range of topics including:

· Develop a solid understanding of fundamental AI concepts, techniques, and applications.

· Gain knowledge of various AI subfields, including classification and regression, computer vision, natural language processing, and search and optimisation.

· Apply AI techniques to real-world problems, demonstrating problem-solving and decision-making skills.

· Understand the ethical considerations and societal implications of AI development and deployment.

Outline syllabus: Topics to include:

· Introduction to artificial intelligence: history, concepts, and applications.

· Supervised learning: classification and regression techniques, such as decision trees, support vector machines, and neural networks.

· Computer vision: image processing, feature extraction, object recognition, and deep learning techniques.

· Natural language processing: text analysis, sentiment analysis, information retrieval, and machine translation.

· Search and optimisation: single-member search algorithms, constraint satisfaction problems and genetic algorithms.

· Ethical considerations and societal implications of AI: privacy, fairness, accountability, and transparency.

Part 3: Teaching and learning methods

Teaching and learning methods: Lectures covering the fundamental AI concepts and techniques, followed by practical delivery through a series of workshops, labs, and project-based tasks to develop the skills required to design, implement, and evaluate AI systems. Regular discussions and presentations will foster critical thinking and communication skills.

Module Learning outcomes: On successful completion of this module students will achieve the following learning outcomes.

> **MO1** Understand and explain key concepts, techniques, and applications in artificial intelligence, including its various subfields.

> **MO2** Evaluate the ethical considerations and societal implications of AI development and deployment, promoting responsible AI practices.

> **MO3** Apply critical thinking and problem solving skills to design, implement and evaluate an AI solution to address a complex, real-world challenge

> **MO4** Effectively communicate AI concepts, methodologies, and results to both technical and non-technical audiences.

Hours to be allocated: 300

Contact hours:

> Independent study/self-guided study = 228 hours

> Face-to-face learning = 72 hours

> Total = 300

Reading list: The reading list for this module can be accessed at readinglists.uwe.ac.uk via the following link

Part 4: Assessment

Assessment strategy: The Artificial Intelligence module is assessed using a combination of a written exam and a practical portfolio.

WRITTEN EXAM

The 2 hour written exam will assess students' understanding and proficiency in the topics covered in the syllabus. The exam will evaluate their knowledge of AI concepts, techniques, and applications, as well as their ability to critically analyse and solve AI-related problems. The written exam will take place under exam conditions, with no access to notes, textbooks, or electronic devices.

PRACTICAL PORTFOLIO

The practical portfolio is the second assessment task of the module, typically comprising several smaller deliverables. Students will be required to apply their knowledge of AI concepts and techniques to develop, implement, and evaluate AI solutions using appropriate languages, libraries, and frameworks.

The practical portfolio will provide an opportunity for students to demonstrate their skills in AI subfields, such as predictive analytics, computer vision, natural language processing, and search and optimisation. The completed projects should adhere to industry best practices and showcase students' ability to effectively apply AI techniques to real-world challenges.

Tutor-led formative feedback will be available throughout the module to support students in their learning and development.

The resit opportunity will follow the same format as the first sit. Due to the size and complexity of the project, a re-work is recommended for the portfolio where appropriate.

Assessment tasks:

Examination (Online) (First Sit)
Description: Exam covering AI concepts, techniques, and applications
Weighting: 40 %
Final assessment: Yes
Group work: No
Learning outcomes tested: MO1, MO2

Portfolio (First Sit)

Description: Develop, implement, and evaluate AI solutions

Weighting: 60 %

Final assessment: No

Group work: No

Learning outcomes tested: MO3, MO4

Examination (Online) (Resit)

Description: Exam covering AI concepts, techniques, and applications

Weighting: 40 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2

Portfolio (Resit)

Description: Develop, implement, and evaluate AI solutions.

Weighting: 60 %

Final assessment: No

Group work: No

Learning outcomes tested: MO3, MO4

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Digital and Technology Solutions (Software Engineer) {Apprenticeship-UCW} [UCW] BSc (Hons) 2023-24

Digital and Technology Solutions (Data Analyst) {Apprenticeship-UCW} [UCW] BSc (Hons) 2023-24

Digital and Technology Solutions (Software Engineer) {Apprenticeship-GlosColl} [GlosColl] BSc (Hons) 2023-24