COURSE SPECIFICATION

MSc Artificial Intelligence and Machine Learning

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Course Title	MSc Artificial Intelligence and Machine Learning
Final Award	MSc
Exit Awards	CertHE
Course Code / UCAS code (if applicable)	P3439FTC
Mode of study	Full time
Mode of delivery	Campus
Normal length of course	1 year
Cohort(s) to which this course specification applies	September 2023 onwards
Awarding Body	University of Portsmouth
Teaching Institution	University of Portsmouth
Faculty	Faculty of Technology
School/Department/Subject Group	Computing
School/Department/Subject Group webpage	https://www.port.ac.uk/about-us/structure-and-governance/organisational-structure/our-academic-structure/faculty-of-technology/school-of-computing
Course webpage including entry criteria	https://www.port.ac.uk/study/courses/postgraduate-taught/msc-artificial-intelligence-and-machine-learning
Professional and/or Statutory Regulatory Body accreditations	
Quality Assurance Agency Framework for Higher Education Qualifications (FHEQ) Level	7

This course specification provides a summary of the main features of the course, identifies the aims and learning outcomes of the course, the teaching, learning and assessment methods used by teaching staff, and the reference points used to inform the curriculum.
This information is therefore useful to potential students to help them choose the right course of study, to current students on the course and to staff teaching and administering the course.

Further detailed information on the individual modules within the course may be found in the relevant module descriptors and the Course Handbook provided to students on enrolment.

Please refer to the Course and Module Catalogue for further information on the course structure and modules.

Educational aims of the course

This course provides the context for understanding the frameworks and the range of artificial intelligence applications underpinned by the technologies of machine learning models and algorithms.
It includes an introduction to the current and future technological innovations that are driving the capabilities of computational intelligence in optimising the solutions to real-world problems in almost all areas of our existence, agriculture, healthcare, engineering, education, transport and more.
By the end of the course, you will have an understanding of the capabilities of deploying artificial intelligence and machine learning algorithms to enhance, innovate and contribute to further intelligence and problem-solving.

Students will learn

- The fundamentals concepts of artificial intelligence.
- The different AI frameworks and the application value of AI and machine learning.
- Develop technical text analytics skills and business intelligence skills to contribute to an understanding and practising of the range of applications for AI and machine learning.
- Critical problem solving skills to enable them to contribute to future innovations in the sector.

Course Learning Outcomes and Learning, Teaching and Assessment Strategies

The Quality Assurance Agency for Higher Education (QAA) sets out a national framework of qualification levels, and the associated standards of achievement are found in their Framework for Higher Education Qualifications document.

The Course Learning Outcomes for this course are outlined in the tables below.

A. Knowledge and understanding of:			
LO number	**Learning outcome**	**Learning and Teaching methods**	**Assessment methods**
A1	Internalise the fundamentals concepts of artificial intelligence	*Lectures, practical work, workshops, guest lectures, demos and supervision meetings.*	*Coursework, dissertation, portfolio, exams and presentations*
A2	Critically evaluate different AI frameworks and the application value of AI and machine learning	*Lectures, practical work, workshops and demos.*	*Coursework, portfolio and presentations.*
A3	Explore and use Different technical text analytics and business intelligence methods to contribute to an understanding of the range of applications for AI	*Lectures, practical work, workshops and guest lectures.*	*Coursework and exams.*
A4	Explore and practise modern data management techniques , including pre-processing.	*Lectures, practical work and workshops.*	*Coursework and exams.*
A5	Use AI and ML methodologies for the processing of large and complex datasets and their applications across various sectors.	*Lectures, practical work, workshops, guest lectures and demos.*	*Coursework, portfolio and presentations*

B. Cognitive (Intellectual or Thinking) skills, able to:			
LO number	**Learning outcome**	**Learning and Teaching methods**	**Assessment methods**
B1	Select and apply appropriate knowledge of the AI and ML to design and implement data and software solutions.	*Lectures, practical work, workshops, guest lectures, demos and supervision meetings.*	*Coursework, dissertation, portfolio, exams and presentations.*
B2	Develop general abilities of an intellectual, analytical problem-solving nature related to AI and ML.	*Lectures, practical work and workshops.*	*Coursework, portfolio & exams.*
B3	Apply conceptual understanding that will allow students to critically evaluate research, advanced scholarship and methodologies and argue alternative data and business analytics approaches and frameworks.	*Lectures, practical work, workshops and guest lectures.*	*Coursework, portfolio, exams & presentations.*
B4	Apply, compare and critically evaluate the most appropriate AI and machine learning frameworks and/or models for a given context.	*Lectures, practical work and workshops.*	*Coursework, portfolio & presentations.*

C. Practical (Professional or Subject) skills, able to:			
LO number	**Learning outcome**	**Learning and Teaching methods**	**Assessment methods**
C1	Independently select or create appropriate, effective and productive methods and tools for the successful construction and timely delivery of reliable, secure and usable data applications using AI and ML tools and methods	*Lectures, practical work, workshops, guest lectures, demos and supervision meetings.*	*Coursework, dissertation, portfolio, exams and presentations*
C2	Competently and critically assess, analyse and use current and future technologies in the main AI and ML aspects	*Lectures, practical work, workshops, guest lectures, demos and supervision meetings.*	*Coursework, dissertation, portfolio, exams and presentations.*
C3	Deal with complex and large data sets for building business and enterprise solutions.	*Lectures, practical work and workshops.*	*Coursework, portfolio & presentations.*
C4	Apply professional codes of conduct and appreciate the ethical considerations that underpin them.	*Lectures, workshops and supervision meetings.*	*Coursework, dissertation & portfolio.*

D. Transferrable (Graduate and Employability) skills, able to:			
LO number	**Learning outcome**	**Learning and Teaching methods**	**Assessment methods**
D1	Communicate effectively in writing, speaking and in appropriate forms of presentation. Read, understand and analyse complex documents related to software products and system requirements.	*Lectures and lab work and group projects.*	*Coursework, dissertation, portfolio and presentations.*
D2	Use information technology to efficiently handle data, simulation and assist with design and testing.	*Lectures, workshops and lab work*	*Coursework, dissertation and exam.*
D3	Deal with the numerical, structured and unstructured data that can be found in many real-world problems and computing applications.	*Lectures, workshops and lab work*	*Coursework, dissertation and portfolio.*
D4	Assess problem domains and formulate appropriate problem solving strategies.	*Lectures, workshops and lab work*	*Coursework and examination.*
D5	Build on previous experience in order to enhance personal development and, work teams to achieve goals efficiently and effectively but nevertheless be distinctively individual.	*Lectures, workshops and lab work*	*Coursework and examination.*

Academic Regulations

The current University of Portsmouth Academic Regulations: Examination & Assessment Regulations will apply to this course. Approved course exemptions can be found here.

Support for Student Learning

The University of Portsmouth provides a comprehensive range of support services for students throughout their course, details of which are available at the MyPort student portal.

In addition to these University support services this course also provides…

Artificial Intelligence and Machine Learning related support services:

- Have access and training in our new SAP Next-Gen Lab
- Work on our supercomputer, SCIAMA, which has 3,702 computer cores and networked clusters that offer more processing power than most commercial platforms
- Several general-purpose computer laboratories and special-purpose laboratories including a Networking Lab, Mobile Application Development Lab, Big Data Lab and Human Computer Interaction Lab.
- Apply your analytical abilities to practical problems and real-world datasets, such as our research in cosmology, health information and cyber security
- A library of devices loanable to students for project work (including smart watches, tablets, sensors, smart-home devices, eye trackers) and lockers of laptops for student loan.

General support services:

- Flexible teaching and study facilities including multiple areas ideal for individual and group study.
- An induction programme that introduces the student to the University and their course.
- A Course Leader who manages the course and provides students with course-specific advice and guidance.
- A Personal Tutor, responsible for student pastoral support and guidance.
- Course specification for MSc Artificial Intelligence and Machine Learning.
- A Faculty Learning Support Tutor (Computing) who provides additional subject-specific one-to-one support.
- A Faculty Student Placement and Employability Centre (SPEC) to support students finding
- Placements (if applicable), a Placement Coordinator to manage placements for Computing students, and a
- Placement Tutor who visits students whilst on placement and provides additional support.

Evaluation and Enhancement of Standards and Quality in Learning and Teaching

The University of Portsmouth undertakes comprehensive monitoring, review and evaluation of courses within clearly assigned staff responsibilities. Student feedback is a key feature in these evaluations, as represented in our Policy for Listening to and Responding to the Student Voice where you can also find further information.

Reference Points

The course and outcomes have been developed taking account of:

- University of Portsmouth Curriculum Framework Specification
- University of Portsmouth Vision
- Office for Students Conditions of Registration
- University of Portsmouth Code of Practice for Work-based and Placement Learning
- Quality Assurance Agency UK Quality Code for Higher Education
- Quality Assurance Agency Qualification Characteristic Statements
- Quality Assurance Agency Subject Benchmark Statement for **Computing**
- Quality Assurance Agency Framework for Higher Education Qualifications
- Requirements of Professional and/or Statutory Regulatory Bodies
- Vocational and professional experience, scholarship and research expertise of the University of Portsmouth's academic members of staff
- National Occupational Standards

Changes to your course/modules

The University of Portsmouth has checked the information provided in this Course Specification and will endeavour to deliver this course in keeping with this Course Specification. However, changes to the course may sometimes be required arising from annual monitoring, student feedback, and the review and update of modules and courses.

Where this activity leads to significant changes to modules and courses there will be prior consultation with students and others, wherever possible, and the University of Portsmouth will take all reasonable steps to minimise disruption to students.

It is also possible that the University of Portsmouth may not be able to offer a module or course for reasons outside of its control, for example, due to the absence of a member of staff or low student registration numbers. Where this is the case, the University of Portsmouth will endeavour to inform

applicants and students as soon as possible, and where appropriate, will facilitate the transfer of affected students to another suitable course.

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