MSc AI and Machine Learning

Programme specification

1. Programme details

Item	Information
a) Programme name (incl. pathways):	MSc AI and Machine Learning
b) Programme code(s)	Click or tap here to enter text.
c) Programme credit value(s)	180 CATS 90 ECTS
d) Programme author(s)	Dr Basel Barakat
e) Entry requirements	BSc Degree at level 2:1 in a science, technology, engineering, mathematical or other relevant quantitative subject. OR A BSc Degree at level 2:2 in a quantitative subject and at least 2 years of relevant professional experience. Non-standard entry criteria: If you do not have a quantitative background, we may accept applications from other disciplines, following the successful completion of a free primer that builds your skills in coding and maths: A BA or BSc Degree at level 2:1 or 2:2 with at least 2+ years of relevant work experience. No degree, but 5+ years of relevant work experience.
f) Academic year effective from	2025/26

2. Programme Aims & Overview

Aims

The programme aims to equip graduates with advanced practical competencies in artificial intelligence and machine learning, enabling them to design, implement, and deploy intelligent systems that address complex

real-world challenges. Through systematic study and applied research, students will develop critical analytical skills, technical proficiency, and professional judgement necessary to contribute meaningfully to the rapidly evolving landscape of intelligent technologies. The programme seeks to cultivate independent learners who can bridge the gap between conceptual understanding and practical implementation, preparing them for leadership roles in academia, industry, and research institutions.

Overview

This comprehensive programme provides a rigorous foundation in the principles, methodologies, and applications of artificial intelligence and machine learning. The curriculum is structured to progress systematically from foundational concepts through to advanced specializations, emphasising experiential learning and the development of transferable professional skills throughout.

Students begin by establishing core competencies in research methodologies, computational thinking, and algorithmic problem-solving, which form the essential groundwork for subsequent study. The programme then advances through progressive modules that explore data manipulation and analysis, fundamental artificial intelligence paradigms, and sophisticated machine learning techniques. Specialized modules address contemporary domains including automated feature learning, language understanding systems, visual perception technologies, and the operational deployment of intelligent systems at scale.

Throughout their studies, learners engage with authentic scenarios and challenges that mirror professional practice, developing not only technical expertise but also the critical thinking, collaborative, and communicative capabilities essential for success in multidisciplinary environments. The programme culminates in an independent research project that allows students to demonstrate mastery through original investigation, synthesis of acquired knowledge, and the production of work that contributes to the field.

The pedagogical approach emphasises active learning through practical workshops, collaborative exercises, and iterative development cycles, ensuring that theoretical understanding is consistently reinforced through application. Assessment strategies are designed to evaluate both conceptual comprehension and the ability to translate knowledge into functional solutions, preparing graduates to navigate the complex technical and ethical considerations inherent in deploying intelligent systems within diverse organizational and societal contexts.

3. External reference

Item	Information
a) FHEQ Level of Award:	7
b) UCAS Code(s):	TBC
c) HECoS Code(s):	TBC
d) QAA Benchmark group:	Computing

4. Awards

Item	Information
g) Awarding institution:	University of London (Interim Exit Awards made by Goldsmiths' University)
h) Teaching institution:	Goldsmiths, University of London
i) Home School:	Computing
j) School(s) also involved in teaching of the programme:	1. None 2. None 3. None **If other, name here:** N/A
k) Entry awards:	☐ CertHE ☐ DipHE ☒PGCert ☒ PGDip
l) Interim exit awards:	☐ CertHE ☐ DipHE ☒PGCert ☒ PGDip
m) Final awards:	MSc AI and Machine Learning

5. Delivery

Item	Information	
a) Language of study:	English	
b) Valid intake points in year:	☒ January ☒ Sept/Oct ☒ Other If other, specify: First intake June 2026, then intakes in Aug/September, January and May	
c) Mode of study:	Online Distance Learning Indicate the overall balance of teaching modes in the table below.	
d) Total hours directed learning/year	264	
e) In-person hours	0	**0%**
f) Online hours	264	**100%**
g) Pace of study:	☐ Full time ☒ Part time	
h) Duration of programme	Full time: N/A ☐years ☐months Part time: 24 ☐years ☒months	
i) External accreditation:	N/A	
j) Apprenticeship Standard:	N/A	

6. Programme Learning Outcomes

Also, see the curriculum map at the end of document.

For UG exit awards, Learning Outcomes must be achieved in the level indicated below:

- CertHE = Level 4
- DipHE = Level 5

Learning outcomes are grouped in categories of:

- **Declarative learning** - knowledge, thinking & facts (D1-3)
- **Functional learning** - application of knowledge, thinking & facts (F1-3)
- **Professional and transferable skills and behaviours** (P1-3)

On successful completion of the programme, you will be able to:

	Learning Outcome	Level	Graduate Attribute
D1	Critically assess contemporary techniques and ethics in the domains of AI and ML	7	Diversity of perspective
D2	Communicate ideas and concepts and provide recommendations for how to solve problems	7	Political in the personal
D3	Plan and conduct projects that systematically analyse the anatomy of a solution to a given problem	7	Responsible agency
F1	Produce technical solutions that provide effective means to solving problems	7	Responsible agency
F2	Analyse and criticise solutions to problems in terms of appropriateness and efficiency	7	Diversity of perspective
F3	Develop data-driven applications using common tools in the domain	7	Diversity of perspective
P1	Plan and conduct ethical, practical research projects independently	7	Responsible agency
P2	Communicate ideas in a clear and coherent manner that reflects on critical best practice	7	Political in the personal
P3	Combine a variety of techniques to substantiate projects that explore depth in reasoning, rationalisation and technical implementation strategies	7	Responsible agency

7. Programme Structure

For Undergraduate programmes (UG), each level must amount to at least **120 CATS** (60 ECTS).

Postgraduate (PGT) programmes must amount to at least 180 CATS (90ECTS), with exception to interim exit awards.

Compulsory modules must be taken by all students.

Option modules – you must choose one or more of the options available to this programme at this level and point. The option modules available from this list may vary from year to year, depending on student numbers and staff availability. Selection takes place during your studies, not before.

Also, see curriculum structure grid.

Phase 1

Module Name	Code	Credit	Level	Type	Term	Year PT	Pathway
Research Methods	TBC	15	7	Compulsory	Multi	N/A	N/A
Programming and Algorithms	TBC	15	7	Compulsory	Multi	N/A	N/A
Data Programming	TBC	15	7	Compulsory	Multi	N/A	N/A
Artificial Intelligence	TBC	15	7	Compulsory	Multi	N/A	N/A

Phase 2

Module Name	Code	Credit	Level	Type	Term	Year PT	Pathway
Machine Learning	TBC	15	7	Compulsory	Multi	N/A	N/A
Deep Learning	TBC	15	7	Compulsory	Multi	N/A	N/A
Natural Language Programming	TBC	15	7	Compulsory	Multi	N/A	N/A
Computer Vision	TBC	15	7	Compulsory	Multi	N/A	N/A

Phase 3

Module Name	Code	Credit	Level	Type	Term	Year PT	Pathway
Machine Learning Operations	TBC	15	7	Compulsory	Multi	N/A	N/A
Final Project	TBC	45	7	Compulsory	Multi	N/A	N/A

8. Learning, Teaching & Assessment

Learning & Teaching methods

Teaching will be via a range of formats to be as relevant as possible to the topic and learning outcomes. This may be through workshops, practical labs, lectures and seminars. It may have a mix of in-person and online activities, designed to give you the best learning experience and to make the most out of your time on campus. You are expected to attend all your timetabled learning activities.

Specifically, this programme will be taught in the following ways:

Each online module spans eight weeks. Weeks 1–7 include structured content, readings, formative activities, and assessment preparation tasks, while Week 8 is dedicated solely to assessment. Modules are delivered via Goldsmiths Moodle VLE, incorporating H5P and other interactive tools. Learning is organized into sequential, designed journeys that integrate multimedia elements—graphics, video, interactive components, and linked readings—within the activities.

Students progress through one week at a time and may choose when to study during that period; therefore, time-specific activities should be avoided. Activity submissions are due the following Monday before midday. Optional live sessions may be scheduled in Week 1 (introduction and welcome), Week 5 (interactive assignment feedback), and Week 7 (assessment briefing and Q&A). Throughout the module, the online tutor provides guidance and feedback during the live run.

Assessment modes and approaches

You will be assessed in a range ways throughout your course. These will be both Formative (for feedback and development), and Summative (required to pass and progress to the next level). Summative assessments are compulsory.

Feedback is a crucial part of your learning and development in this programme. You will receive feedback both on your Formative (work in progress) tasks/assessments, and your Summative (graded) assessments. This feedback will help the assessment to be a part of your learning, not just a test. It may be verbal, written or video based. Please engage with this feedback to improve your future work.

Specifically, this programme will be assessed in the following ways:

Standard modules include one major assessment submitted in Week 8. Some modules require closed-book, invigilated exams delivered through an online exam portal, while others use portfolio-based assessments developed progressively throughout the module. Assessments should incorporate self-reflection and personalized elements to discourage reliance on AI tools. Additionally, an interactive challenge or other formative assessment with feedback is scheduled for Week 5.

Assessment diet (number of assessments for compulsory modules)

Mode	Level 3	Level 4	Level 5	Level 6	Level 7	Total
Coursework	0	0	0	0	2	4
Exam	0	0	0	0	3	3
Live (presentation, performance etc.)	0	0	0	0	0	0
Portfolio (multi-modal)	0	0	0	0	4	4
Practical / multimedia	0	0	0	0	0	0
Written	0	0	0	0	1	1
TOTAL:	**0**	**0**	**0**	**0**	**10**	10
Of which...	**Individual:**	**10**	**Group:**	**0**		

9. Other information

Item	Information
a) Assessment regulations	https://www.gold.ac.uk/gam/taught-programmes/assessment/
b) Placement opportunities	N/A
c) Programme-specific requirements	N/A
d) Programme specific costs and resources	N/A
e) Employability and potential career opportunities	This equips them for high-demand, interdisciplinary careers spanning industry, research, and public sector roles, particularly those requiring ethical judgment, innovation, and the ability to translate technical solutions into real-world impact. Potential Career Opportunities

Item	Information	
	Domain	**Example Roles**
	AI & Machine Learning	ML Engineer, Data Scientist, AI Researcher, NLP Engineer, Computer Vision Specialist
	Data & Analytics	Data Analyst, Business Intelligence Developer, Predictive Analytics Consultant
	Research & Academia	Research Assistant, PhD Candidate, AI Ethics Researcher
	Policy & Advisory	AI Policy Advisor, Technology Consultant, Ethics & Compliance Officer
	Software & Product Development	Software Engineer, Systems Designer, Product Manager for AI/ML products
	Social Impact & Non-Profit Tech	AI for Social Good Specialist, Technology Inclusion Analyst, Human-Centered AI Developer

10. Academic support

There is a range of support available to you to give you the best possible chance of success in this programme.

Please see your tutors and student portal/VLE for details of what's available and how to access this support.

11. Curriculum map

Programme Learning Outcomes assessed by each module:

Module name	Code	Type	D1	D2	D3	F1	F2	F3	P1	P2	P3
Research Methods	TBC	Compulsory	☐	☐	☐	☐	☒	☐	☒	☒	☐
Programming and Algorithms	TBC	Compulsory	☐	☒	☐	☒	☒	☐	☐	☐	☐
Data Programming	TBC	Compulsory	☐	☒	☒	☒	☐	☒	☐	☐	☐
Artificial Intelligence	TBC	Compulsory	☒	☒	☒	☒	☐	☒	☐	☐	☒
Machine Learning	TBC	Compulsory	☒	☒	☒	☒	☐	☒	☐	☐	☒
Deep Learning	TBC	Compulsory	☐	☒	☒	☒	☐	☒	☐	☐	☒
Natural Language Processing	TBC	Compulsory	☒	☒	☐	☒	☐	☐	☐	☒	☒
Computer Vision	TBC	Compulsory	☐	☒	☐	☒	☐	☐	☐	☒	☒
Machine Learning Operations (MLOps)	TBC	Compulsory	☐	☒	☒	☒	☒	☐	☐	☐	☒
Final Project	TBC	Compulsory	☒	☒	☒	☒	☒	☒	☒	☒	☒