Programme Information		
Programme Title	Programme Code	HECoS Code
Artificial Intelligence	G5T1	For Registry Use Only

Award	Length of Study	Mode of Study	Entry Point(s)	Total Credits	
				ECTS	CATS
MSc	1 Calendar Year (12 months)	Full-Time	Annually in October	90	180
PG Diploma	N/A*	N/A	N/A*	60	120
PG Certificate	N/A*	N/A	N/A*	30	60
*The PG Diploma and PG Certificate are exit awards and are not available for entry. You must apply to and join the MSc.					

Ownership			
Awarding Institution	Imperial College London	Faculty	Faculty of Engineering
Teaching Institution	Imperial College London	Department	Computing
Associateship	Diploma of Imperial College (DIC)	Main Location(s) of Study	South Kensington Campus
External Reference			
Relevant QAA Benchmark Statement(s) and/or other external reference points		Master's awards in computing, www.qaa.ac.uk/quality-code/subject-benchmark-statements/computing	
FHEQ Level		Level 7 – Master's	
EHEA Level		2nd cycle	
External Accreditor(s) (if applicable)			
External Accreditor 1:	N/A		
Accreditation received:	N/A	Accreditation renewal:	N/A
Collaborative Provision			
Collaborative partner	Collaboration type	Agreement effective date	Agreement expiry date
N/A	N/A	N/A	N/A
Specification Details			
Programme Lead		Dr Robert Craven	

Student cohorts covered by specification	2025-26 entry
Date of introduction of programme	October 2019
Date of programme specification/revision	October 2025

Programme Overview

This is an MSc degree for graduates of disciplines with a large mathematics component, such as degrees in Mathematics, Physics, some branches of Engineering, and mathematical Economics. The programme includes intensive training in programming and fundamentals of AI and machine learning, with a number of bespoke modules, a module in the ethics of AI and fairness in machine learning, together with specialised elective modules, and a specialised group project allowing students to develop realistic applications, possibly with industrial input. The programme ends with a large specialised individual project that can be done a variety of ways: as a project supervised in our or any other department at Imperial, or as an internship working on AI. The MSc AI was introduced in 2019 to serve the need for more highly qualified AI-specialist graduates. This is still the purpose of the degree, and with a growing need for such graduates, the degree continues to occupy a valuable place in allowing STEM graduates from non-computer science backgrounds to transition into AI and machine learning.

The programme is full-time and is taken over 12 months, with a single entry point per year in October. In the Autumn term (October–December), you will follow three compulsory modules—two, on a variety of foundational themes in AI and machine learning, and an intensive, practical module on Python. You also choose, alongside these, elective modules to begin extending your knowledge to more specialised areas of AI. More electives are undertaken in the Spring term (January–March), allowing you to specialise further in different directions of interest. Also in Spring term is a practical group project and associated software engineering lectures, on which you work together with peers to create a substantial piece of AI software. A number of these group projects are proposed by, and conducted in collaboration with, companies in the AI and machine learning industry. The group project culminates in a demonstration and oral presentation at the start of Summer term. The remainder of the degree, from May to September, is devoted to a major individual project or an internship, resulting in a written dissertation and oral presentation.

The elective modules offer a range of different kinds of specialism. Naturally, there are modules which focus on the practical implementation and underlying theory of state-of-the-art techniques in machine learning. With other elective modules the focus is more on specific application areas in which current methods are applied—for example, in vision or in natural language processing. The degree also includes electives on symbolic methods in AI, and there is an opportunity to hone entrepreneurial skills, focused on AI, in a module shared with Imperial's Business School. Finally, students may, if they desire, broaden their knowledge by taking one module outside of topics related to AI and machine learning—this has typically included modules on the applications of computer science to finance, or quantum computing. Pre-sessional materials are sent out to you several months before the beginning of the degree, to ease your transition into computer scientists and AI experts.

You will be taught by leading academic staff who are experts in their fields, and whose research has been recognised to be at the forefront of current advances in AI and machine learning. The teaching is also well-recognised to be informed by this research. The programme is delivered in the world-leading Department of Computing at Imperial College London. The Department has active research groups in Artificial Intelligence, Data Science, Visual Computing, and Robotics. Many other groups and members of our research staff also work on the theory, methods and applications of artificial intelligence and machine learning, and there are many collaborations with other departments at Imperial, as well as with industry. We also house dedicated research centres, including the Dyson Robotics Lab, the Data Science Institute, the Centre for Integrative Systems Biology and Bioinformatics, the Hamlyn Centre for Medical Image Computing and Robotics, and more.

Graduates of the MSc in Artificial Intelligence have progressed to PhD positions in the UK and internationally (including in the US and Europe), as well as to positions as machine-learning engineers for tech companies working in fields such as autonomous driving, applications of reinforcement learning, and AI in healthcare. Some are working with the large tech companies, and others in prominent startups. Other graduates are applying AI and machine learning in the financial sector. We keep good connections with our graduates, and run a successful mentoring scheme to connect incoming students with previous years' cohorts—for advice on the degree and on careers in AI and machine learning. The *Applications of Computing in Industry* seminars, run during lunchtimes

during term, help to highlight the industrial relevance of AI and ML to students, and can be attended by MSc AI students; these are a good way for you to connect with people working in the AI industry.

Usually, software packages required to undertake this degree programme are accessible to all students through the department's laboratories and Imperial's Software Hub. However, you may need to purchase personalised hardware/software tools to cater for your individual preferences and project(s). We use digital technology to bring further benefits to our education programmes, drawing from investments made and skills gained during the pandemic. We deliver our education as a useful blend of face-to-face and digital learning. This will also prepare our students well for a more hybrid work culture of the future.

Learning Outcomes

Upon successful completion of the programme you will have acquired the following abilities.

On achieving the PG Certificate:

1 To formulate the principles of selected areas in which AI and machine learning are applied.
2 To determine which of a range of approaches to AI are appropriate for solving a given problem.
3 To compute widely used algorithms for solving problems in a range of application areas of AI and machine learning.

On achieving the PG Diploma, Learning Outcomes 1–3 above, and:

4 To formalise problems in AI and machine learning and employ an appropriate approach to solving them, involving techniques such as reinforcement learning, deep learning, logic-based reasoning, etc.
5 To work in-depth and independently on substantial AI and machine learning projects.
6 To evaluate the effectiveness of a given proposed solution to problems in AI and machine learning.

On achieving the MSc, Learning Outcomes 1–6 above, and:

7 To implement sound principles of software engineering and follow widely used software development methodologies.
8 To consider ethical and social issues related to current research and applications of AI, and in the context of your own project work.
9 To program in Python to a high standard, and apply it in a variety of areas of machine learning.
10 To develop the organisational skills necessary for working on software projects in AI and machine learning as part of a team or a research group.
11 To conduct independent research into state-of-the-art methods in AI and machine learning, and employ these in their own work.

The Imperial Graduate Attributes are a set of core competencies which we expect students to achieve through completion of any Imperial degree programme. The Graduate Attributes are available at: www.imperial.ac.uk/about/education/our-graduates/.

Entry Requirements

Academic Requirement	1st class honours in mathematics, physics, engineering, mathematical economics, or other degree with substantial mathematics content. (The high level of mathematical expertise required is aimed at ensuring an ideal amount of preparedness for the MSc.)
Non-academic Requirements	N/A
English Language Requirement	Higher requirement (PG) Please check for other Accepted English Qualifications
Admissions Test/Interview	N/A

The programme's competency standards documents can be found at:

www.imperial.ac.uk/computing/prospective-students/courses/competence/

Learning & Teaching Approach

Teaching
You will be taught through a combination of interactive sessions, lectures, team-based learning, tutorials, computer laboratory sessions, guest lectures, and individual project meetings.

Module lecturers employ a variety of these teaching methods, depending on the content of the module. A typical module might combine teaching by lectures, with tutorial sessions supported by the lecturer and their tutorial assistants. Tutorial sessions can involve practical coding tasks (run in our extensive computer laboratories), written exercises, or discussion groups.

Assessed coursework
Most modules set assessed coursework. This is sometimes to be completed in groups, and sometimes individual. It may consist of practical coding tasks, or written exercises, or a combination of the two. The portion of a module's final grade which is determined by assessed coursework is normally 20% but can be up to 100%, depending on the assessment strategy employed.

Individual project or internship
The degree includes a substantial individual project or internship, which runs from mid-May to mid-September. The individual project can be conducted with academics in the Department of Computing or in other departments at Imperial. The internship is with a company or other organisation working on AI and machine learning, with day-to-day supervision conducted by the company, supported by an academic in the Department of Computing. Both are evaluated with a final report and presentation.

Independent learning
Students are expected to spend significant time on independent study outside of face-to-face contact time. This will typically include accessing resources online, reading journal articles and books, undertaking research in the library, reviewing lecture notes and watching lecture recordings, working on individual and group projects, working on coursework assignments and revising for exams.

Overall Workload
Your overall workload consists of face-to-face sessions and independent learning. While your actual contact hours may vary according to the optional modules you choose to study, the following gives an indication of how much time you will need to allocate to different activities at each level of the programme. At Imperial, each ECTS credit taken equates to an expected total study time of 25 hours. Therefore, the expected total study time is 2250 hours.

Typically, you will spend in the order of 12.5% of your time on lectures, tutorials, and similar; and in the order of 87.5% of their time on independent study.

Assessment Strategy

Assessment Methods

You can expect a variety of different types of assessment methods.

Written assessment
- Coursework exercises
- Reports on practical coding
- Short-form written answers
- Essays
- Written examinations
- Report writing
- Peer assessment reports

Programming
- Programming coursework (for taught modules)
- Programming examination
- Code repositories (for group project)

Oral assessment

- Oral presentations

The programme allows you to test your understanding of the subject informally—through formative tutorial exercises, coding tasks, quizzes, in-class discussion, and so on—before you complete the formal summative assessments that count towards your final mark. These summative assessments allow you to demonstrate that you have met the intended learning outcomes for each module and contribute towards your achievement of the programme learning outcomes, detailed above. There is formal summative assessment during and/or at the end of each module.

Balance of assessment:

The percentages below are based on a typical pathway through the course and have been rounded to the nearest whole number.

Assessed coursework	20%
Examinations (practical and written)	30%
Group and individual project / internship	50%

Academic Feedback Policy

The department operates in accordance with Imperial's policy on academic feedback, and procedures are consistent across all postgraduate taught Computing programmes.

Feedback will normally be provided on coursework within two weeks of submission. This will be in the form of, for example:

1 Marked-up coursework, laboratory exercises or tests
2 Personal discussion
3 Discussions in small-group tutorials
4 Verbal presentation, e.g., during or after lectures
5 Written class-wide summaries

Feedback on exams is provided in two forms: (i) numerically, as individual interim marks subject to ratification (approval) by the Board of Examiners; and (ii) in written form, as non-individual summary feedback on individual questions. In July you will also receive feedback in the form of provisional marks for taught modules. Further, selected examination questions are routinely set as unassessed or assessed problems in later years, with model answers provided. Feedback on formative exercises may be given verbally during tutorial classes, or in lectures as worked-through exercises or comments.

Imperial's Policy on Academic Feedback and guidance on issuing provisional marks to students is available at: www.imperial.ac.uk/about/governance/academic-governance/academic-policy/exams-and-assessment/

Re-sit Policy

One resit is allowed per module, usually in the next instance when that module is examined. Determinations of results and mitigations will follow Imperial policies and the academic regulations.

Imperial's Policy on Re-sits is available at: www.imperial.ac.uk/about/governance/academic-governance/academic-policy/exams-and-assessment/

Mitigating Circumstances Policy

Imperial's Policy on Mitigating Circumstances is available at: www.imperial.ac.uk/about/governance/academic-governance/academic-policy/exams-and-assessment/

Additional Programme Costs		
This section should outline any additional costs relevant to this programme which are not included in students' tuition fees.		
Description	Mandatory/Optional	Approximate cost
Personalised hardware/software tools to cater for individual preferences and project(s).	Optional	N/A

Important notice: The Programme Specifications are the result of a large curriculum and pedagogy reform implemented by the Department and supported by the Learning and Teaching Strategy of Imperial College London. The modules, structure and assessments presented in this Programme Specification are correct at time of publication but might change as a result of student and staff feedback and the introduction of new or innovative approaches to teaching and learning. You will be consulted and notified in a timely manner of any changes to this document.

Programme Structure[1]					
FHEQ Level 7 **In addition to the Core and Compulsory modules, you must choose 5 elective modules. Between 4 and 5 of the electives can be from Group S (Selective) and at most 1 can be from Group O (Optional).**					
Code	Module Title	Core/ Compulsory/ Elective	Group	Term	Credits
COMP70078	MSc AI Individual Project	Core		Summer	35
COMP70053	Python Programming	Compulsory		Autumn	5
COMP70077	Introduction to Symbolic Artificial Intelligence	Compulsory		Autumn	5
COMP70050	Introduction to Machine Learning	Compulsory		Autumn	5
COMP70076	Ethics, Fairness, and Explanation in AI	Compulsory		Spring	5
COMP70079	MSc AI Software Engineering Group Project	Compulsory		Spring	10
COMP70110	Computer Vision	Elective	S	Autumn	5
COMP70028	Reinforcement Learning	Elective	S	Autumn	5
COMP70007	Computational Optimisation	Elective	S	Spring	5
COMP70015	Mathematics for Machine Learning	Elective	S	Autumn	5
COMP70031	Formal Methods for Safe AI	Elective	S	Spring	5
COMP70093	Logic-Based Learning	Elective	S	Spring	5
COMP70010	Deep Learning	Elective	S	Spring	5
COMP70030	Knowledge Representation (not running in 2025-26)	Elective	S	Spring	5
COMP70019	Probabilistic Inference	Elective	S	Spring	5
COMP70014	Machine Learning for Imaging	Elective	S	Spring	5
COMP70016	Natural Language Processing	Elective	S	Spring	5
COMP70067	Robot Learning	Elective	S	Spring	5
COMP70100	Computational Neurodynamics	Elective	S	Autumn	5
COMP70105	Deep Graph-Based Learning	Elective	S	Spring	5
COMP70101	Human-Robot Interaction (not running in 2025-26)	Elective	S	Autumn	5
COMP70084	Robotics	Elective	S	Spring	5

[1] **Core** modules are those which serve a fundamental role within the curriculum, and for which achievement of the credits for that module is essential for the achievement of the target award. Core modules must therefore be taken and passed in order to achieve that named award. **Compulsory** modules are those which are designated as necessary to be taken as part of the programme syllabus. Compulsory modules can be compensated. **Elective** modules are those which are in the same subject area as the field of study and are offered to students in order to offer an element of choice in the curriculum and from which students are able to select. Elective modules can be compensated.

COMP70102	Software Engineering for Machine Learning Systems	Elective	S	Spring	5
COMP70112	Non-Euclidean Methods in Machine Learning	Elective	S	Spring	5
COMP70113	Generative AI	Elective	S	Spring	5
BUSI70233	AI Ventures	Elective	S	Spring	5
COMP70006	Computational Finance	Elective	O	Autumn	5
COMP70017	Principles of Distributed Ledgers	Elective	O	Autumn	5
COMP70021	Quantum Computing	Elective	O	Autumn	5
COMP70103	Statistical Information Theory	Elective	O	Autumn	5
				Credit Total	90

Progression and Classification

Award of a Postgraduate Certificate (PG Cert)
To qualify for the award of a postgraduate certificate you must have:

1. accumulated credit to the value of no fewer than 30 ECTS credits at Level 7 or above.

Award of a Postgraduate Diploma (PG Dip)
To qualify for the award of a postgraduate diploma you must have:

1. accumulated credit to the value of no fewer than 60 ECTS credits at Level 7 or above;
2. no more than 10 credits as a result of compensated passes.

Award of a Master Degree
To qualify for the award of a postgraduate degree you must have:

1. accumulated credit to the value of no fewer than 90 ECTS credits at level 7 or above;
2. no more than 15 credits as a result of compensated passes;
3. met any specific requirements for an award as outlined in the approved programme specification for that award.

Classification of Postgraduate Taught Awards

The university sets the class of Degree that may be awarded as follows:

- Distinction: 70.00% or above.
- Merit: 60.00% or above but less than 70.00%.
- Pass: 50.00% or above but less than 60.00%.

For a Masters, your classification will be determined through the weighted taught module average and the designated dissertation or final major project module meeting the threshold for the relevant classification band.

Your degree algorithm provides an appropriate and reliable summary of your performance against the programme learning outcomes. It reflects the design, delivery, and structure of your programme without unduly over-emphasising particular aspects.

Programme Specific Regulations

N/A

Supporting Information
The Programme Handbook is available from the department.
The Module Handbook is available from the department.
Imperial's entry requirements for postgraduate programmes can be found at: www.imperial.ac.uk/study/apply/postgraduate-taught/entry-requirements/
Imperial's Quality & Enhancement Framework is available at: www.imperial.ac.uk/registry/proceduresandregulations/qualityassurance
Imperial's Academic and Examination Regulations can be found at: www.imperial.ac.uk/about/governance/academic-governance/regulations
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Imperial College London is regulated by the Office for Students (OfS) www.officeforstudents.org.uk/advice-and-guidance/the-register/
This document provides a definitive record of the main features of the programme and the learning outcomes that you may reasonably be expected to achieve and demonstrate if you take full advantage of the learning opportunities provided. This programme specification is primarily intended as a reference point for prospective and current students, academic and support staff involved in delivering the programme and enabling student development and achievement, for its assessment by internal and external examiners, and in subsequent monitoring and review.