



1. Programme Title(s) and Code(s):

<i>Programme Title</i>	<i>UCAS Code</i>	<i>GU Code</i>
BSc in Artificial Intelligence (Faster Route)		I400A-2208

2. Academic Session:

2025-26

3. SCQF Level (see [Scottish Credit and Qualifications Framework Levels](#)):

10

4. Credits:

480

5. Entrance Requirements:

Please refer to the current undergraduate prospectus at:
<http://www.gla.ac.uk/undergraduate/>

6. ATAS Certificate Requirement (see [Academic Technology Approval Scheme](#)):

ATAS Certificate not required

7. Attendance Type:

Full Time

8. Programme Aims:

This degree programme aims to:

- empower students with a deep theoretical comprehension and practical ability around core topics including Machine Learning and Deep Learning, enabling them to innovate and drive transformative change;

¹ This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if full advantage is taken of the learning opportunities that are provided. More detailed information on the learning outcomes, content and teaching, learning and assessment methods of each course can be found in course handbooks and other programme documentation and online at www.gla.ac.uk/

The accuracy of the information in this document is reviewed periodically by the University and may be checked by the Quality Assurance Agency for Higher Education.

- equip students with a strong and grounded understanding of the principals of Mathematics and Statistics that form the foundation of algorithms and models relevant in Machine Learning and Artificial Intelligence, including linear algebra, vector calculus and probability;
- instil in students a passion for Algorithms and Complexity as to ensure effective and efficient solutions that utilise Machine Learning and Artificial Intelligence;
- provide students the opportunity to familiarise and concentrate knowledge in relevant domains, such as Large Language Models (LLMs), Robotics and Vision;
- cultivate students appreciation and awareness of accountability, transparency, ethics and regulatory concerns as they relate to Machine Learning and Artificial Intelligence as well as the skills to convince others of their central importance;
- encourage students to discover the connections among these topics and to understand their common theoretical foundations;
- provide students the opportunity to collaborate and solve problems across disciplines, such as Health and Finance, utilising their core knowledge and skills;
- stimulate and cement students in the history and philosophical aspects of Machine Learning and Artificial Intelligence as to appreciate the scope and limitations of both;
- provide opportunities for students to assess and communicate the safety and security of systems that utilise Machine Learning and Artificial Intelligence, such as Formal Verification;
- produce graduates fit to occupy responsible positions in the information technology industry;
- give students the opportunity to choose selected topics to study in considerable depth thereby equipping the best graduates to enter research programmes;
- encourage independent study habits that will stand graduates in good stead throughout their professional careers;
- enable students to enhance their transferable and interpersonal skills, particularly written and oral communication and team working;
- equip students with the knowledge, skills, values, and graduate attributes that will enable them to take action towards sustainable computing, spread awareness about the need for sustainable computing, and help create systemic solutions for a sustainable society;

In line with curricular recommendations from bodies such as the UK's QAA and the US's Association for Computing Machinery (ACM), this programme recognises that the body of knowledge in Computing Science has grown so extensively that it is impossible to cover everything in a single programme. Instead, the Benchmark and Body of Knowledge definitions from QAA and ACM respectively define key attributes of a CS graduate, specify a small core of knowledge that all graduates should know, and accept that institutions will define specialisms that enable to graduates to study at a deep level in specific areas. These specialisms match both to areas of strength within the School of Computing Science, but are also determined in discussion with our industry partners.

9. Intended Learning Outcomes of Programme:

The programme provides opportunities for students to develop and to demonstrate knowledge and understanding, skills and other attributes as described below.

Subject-Specific/Practical Skills:

At the end of the programme students will be able to demonstrate skills, such as the ability to:

- program in relevant programming languages, including utilisation of relevant frameworks and integration of Machine Learning and Artificial Intelligence into solutions;
- critically evaluate systems in terms of machine learning optimisation and performance as well as Computational Complexity and Algorithmic efficiency;
- identify and critically appraise any safety and security aspects that may be involved in the operation of solutions that utilise Machine Learning and Artificial Intelligence within a given context;
- plan and execute a challenging and substantial research project that utilises Machine Learning and Artificial Intelligence, evaluate the work done, and place that work in the context of other related work;
- summarise and review research papers in a variety of areas of Machine Learning and Artificial Intelligence through the relevant research seminar series.

Intellectual Skills:

At the end of the programme students will be able to demonstrate a deep understanding of advanced topics chosen by the student, which will lead to the ability to:

- display comfortable grasp of relevant mathematics that are fundamental to concepts in Machine Learning and Artificial Intelligence;
- debate strengths and weaknesses of different algorithms, frameworks, libraries and programming languages for solutions utilising Machine Learning and Artificial Intelligence in a specific context;
- debate the transparency, explainability and accountability of solutions that utilise Machine Learning and Artificial Intelligence as well as ability to assess solutions in terms of alignment with human values and ethical concerns;
- critically evaluate, testing and tuning of relevant learning techniques and models as to ensure optimal performance for a given problem space;
- use formal and semi-formal methods in the analysis and verification of solutions that utilise Machine Learning and Artificial Intelligence;
- learn independently, solve challenging research problems and conduct independent research through the individual research project;
- critically review the research work of others through the relevant research seminar series.

Transferable/Key Skills:

At the end of the programme students will be able to:

- work individually, including managing learning and development, making use of time management and organisational skills;
- work in teams, recognising the different roles team members adopt;
- present succinctly rational and reasoned arguments (orally or in writing);
- effectively perform information-retrieval skills (e.g. using search engines and catalogues);
- present cases involving a quantitative dimension thus demonstrating basic numeracy;
- effectively use general IT facilities;
- demonstrate highly developed oral and written communication skills through the assessed research proposal and project and project presentation.

Sustainability and Decarbonisation:

At the end of the programme students will be able to:

- demonstrate a sound knowledge and critical understanding of the factors governing the increase in emissions from computing;
- understand the concept of the carbon footprint as applied to computing and reason about the factors that affect it;
- assess the emissions resulting from the software they are creating;
- understand the impact of the computing system life cycle on emissions.

10. Typical Learning and Teaching Approaches:

The research-led undergraduate programme is coordinated and led by several academics with current research interests and activity in Machine Learning, Artificial Intelligence and relevant domains. Their collective experience will shape and steer learning and teaching of the programme and ensure effective attainment of programme outcomes.

A range of teaching methods are used during the programme, including:

- **Knowledge and understanding**
 - Lectures
 - Research Reading
 - Assignments
- **Subject-specific/practical skills**
 - Laboratories
 - Workbooks
 - Activities

- **Intellectual skills**
 - Tutorials
 - Seminars
 - Workshops
- **Transferable/key skills**
 - Group projects
 - Poster presentations

11. Typical Assessment Methods:

The students' theoretical **knowledge and understanding** around the fundamental principles and concepts of Machine Learning and Artificial Intelligence will be assessed primarily using written examinations, coursework and assignments across the compulsory core courses of the programme. The students' knowledge and understanding will also be assessed across several elective courses that will also use written examinations and coursework. Students **subject-specific and practical skills** will be developed and assessed in-part in terms of their response to interrogation of work in tutorials and laboratory sessions. Students will also demonstrate subject-specific and practical skills in written examinations, coursework as well as in writing of technical reports.

The students' **intellectual skills** will be steered and developed through independent project work as well as a research proposal and project with an academic member of staff. The students' intellectual skills will be further expanded and refined in research reading and skills courses as well as research seminars. Students **transferable and key skills** will be developed through essay writing, oral presentations, collaborative projects as well as peer-review of others work.

12. Programme Structure and Features:

Structure

The BSc degree programme extends over four years of full-time study. A candidate for the BSc degree must obtain a minimum of 480 credits and a further 240 at Level H.

Concentrations

Students may choose any combination of courses, subject to pre-requisites and timetabling constraints at different points in the degree programme. Students are permitted to concentrate in a particular domain or problem space. Specific collections of courses across the elective pool, known as concentrations, are identified. These courses can potentially be complemented with relevant team project in Level 3 and individual project in Level 4.

If the concentration is 25% or greater of credits for the exit award, then the concentration can be recognised on the candidate's degree parchment along with the programme title. For Honours exit, 60 of the 240 credits taken by a student across Levels 3 and 4 must be recognised as part of a concentration. The expectation is that the Level 3 and Level 4 projects should complement concentrations, but credits associated these projects do not contribute to recognition of the concentration.

The School will review and confirm concentrations and contributing credits on an annual cycle and concentration details will be provided in the undergraduate course handbook each year. The expectation is that concentrations will change year on year and candidates will only be able to opt for concentrations available at the point of exit.

BSc in Artificial Intelligence

Level 1

There are three pathways of courses currently offered at Level 1. Either pathway enables students to continue to Honours level:

Pathway 1: aimed at students with prior programming experience; 40 credits of Computing Science out of 120.

Pathway 2: aimed at students with no prior programming experience; 40 credits of Computing Science out of 120.

Pathway 3: aimed at students with no prior programming experience; 50 credits of Computing Science out of 120

For all routes, students will be required to take 40 credits of Mathematics in Level 1.

Course Title	Course Code	Credits	Core	Optional	Semester(s) taught
Pathway 1 [80 credits]					
Computing Science 1P	COMPSCI1001	20	X		1 & 2
Computing Science 1F	COMPSCI1006	10	X		1
Computing Science 1S	COMPSCI1018	10	X		2
Mathematics 1	MATHS1017	40	X		1 & 2
Other subjects (Level 1, 40 credits)					
Pathway 2 [80 credits]					
Computing Science 1CT	COMPSCI1016	20	X		1
Computing Science 1PX	COMPSCI1017	10	X		2
Computing Science 1S	COMPSCI1018	10	X		2
Mathematics 1	MATHS1017	40	X		1 & 2
Other subjects (Level 1, 40 credits)					
Pathway 3 [90 credits]					
Computing Science 1CT	COMPSCI1016	20	X		1
Computing Science 1F	COMPSCI1006	10	X		1
Computing Science 1PX	COMPSCI1017	10	X		2
Computing Science 1S	COMPSCI1018	10	X		2

Mathematics 1	MATHS1017	40	X		1 & 2
Other subjects (Level 1, 30 credits)					

Level 2

Level 2 entry is guaranteed to students who achieve a Grade Point Average (GPA) of 12.0 (C3) or above in their Level 1 Computing Science courses and 12.0 (C3) or above in Mathematics 1.

There are two pathways of courses currently offered at Level 2 for Standard Route students. Either pathway enables students to continue to Honours level, Pathway 1 supports combination with most other subjects while Pathway 2 has limited progression routes with other subjects to Honours level.

Pathway 1: aimed at students coming from Pathway 1 or 3 in Level 1 and want to combine with other subjects; 60 credits of Computing Science out of 120.

Pathway 2: aimed at students coming from Pathway 2 in Level 1 and may be able to combine with some other subjects; 70 credits of Computing Science out of 120.

Course Title	Course Code	Credits	Core	Optional	Semester(s) taught
Pathway 1 [60 credits]					
Artificial Intelligence 2X: Mathematics for Machine Learning		20	X		1 & 2
Artificial Intelligence 2Y: Knowledge Representation and Decision Making		20	X		1 & 2
Algorithmic Foundations 2	COMPSCI2003	10	X		1
Algorithms and Data Structures	COMPSCI2007	10	X		2
Other subjects (Level 2, 60 credits)					
Pathway 2 [70 credits]					
Artificial Intelligence 2X: Mathematics for Machine Learning		20	X		1 & 2
Artificial Intelligence 2Y: Knowledge Representation and Decision Making		20	X		1 & 2
Algorithmic Foundations 2	COMPSCI2003	10	X		1
Algorithms and Data Structures	COMPSCI2007	10	X		2
Computing Science 1F	COMPSCI2006	10	X		1
Other subjects (Level 2, 50 credits)					

Level 3

In addition to College of Science and Engineering general progress requirements for the intended exit award. Honours progression is guaranteed to students who achieve a Grade Point Average (GPA) of 12.0 (C3) or

above over all Level 2 Artificial Intelligence courses and relevant Level 2 Computing Science courses at first attempt.

Course Title	Course Code	Credits	Core	Optional	Semester(s)
Artificial Intelligence 3Y: Machine Learning (H)		20	X		1 & 2
Artificial Intelligence 3Z: Deep Learning (H)		20	X		1 & 2
Artificial Intelligence 3G: Group Project (H)		40	X		1 & 2

BSc students in Level 3 must select 40 credits of taught material from elective course lists. The electives on offer change from year to year depending on resources. These courses are designed to enable students to develop introductory, or in an appropriate sequence, deep understanding in a subject area. Students may choose courses to align with the stated concentrations.

Students at Level 3 must also take courses from the current Level H and M Electives listed in the course catalogue, subject to meeting any requisites and restrictions:

<http://www.gla.ac.uk/coursecatalogue/courselist/?code=REG30200000&name=School+of+Computing+Science>

Level 4

Honours progression is guaranteed to students who achieve a Grade Point Average (GPA) of 12.0 (C3) or above over all Level 3 Artificial Intelligence and relevant Level 3 Computing Science courses at first attempt.

BSc students in Level 4 must select 80 credits of taught material from elective course lists. The electives on offer change from year to year depending on resources. These courses are designed to enable students to develop introductory, or in an appropriate sequence, deep understanding in a subject area. Students may choose courses to align with the stated concentrations.

Students at Level 4 must take courses from the current Level H and M Electives listed in the course catalogue, subject to meeting any requisites:

<http://www.gla.ac.uk/coursecatalogue/courselist/?code=REG30200000&name=School+of+Computing+Science>

Course Title	Course Code	Credits	Core	Optional	Semester(s) taught
Individual Project (H)	COMPSCI4025P	40	X		1 & 2

Honours Assessment

Within each year, courses are weighted according to credits. The final Honours assessment combines the aggregated scores from levels 3 and 4, in the ratio 40:60.

BSc in Artificial Intelligence (Faster Route)

Students taking this route will enter at Level 2. The 120 credits will match that of Standard Route students coming from one of the Level 1 pathways. It is expected that students will have sufficient background in Computing Science, Mathematics and Statistics.

The structure for the Faster Route programme is the same from Level 3 onwards for students as the Standard Route Honours programme. Level 2 of the Faster Route programme requires students to take additional Mathematics.

Level 2

Students must take the following compulsory courses:

Course Title	Course Code	Credits	Core	Optional	Semester(s) taught
Artificial Intelligence 2X: Mathematics for Machine Learning		20	X		1 & 2
Artificial Intelligence 2Y: Knowledge Representation and Decision Making		20	X		1 & 2
Algorithmic Foundations 2	COMPSCI2003	10	X		1
Algorithms and Data Structures	COMPSCI2007	10	X		2
Computing Science 1F	COMPSCI1006	10	X		1
Computing Science 1S	COMPSCI1018	10	X		2
Foundations of Mathematics	MATHS1021	20	X		1 & 2

Features

- **Concentrations**

Students are permitted to concentrate in a particular domain or problem space relevant to Machine Learning and Artificial Intelligence. Specific collections of courses across the elective pool, known as concentrations, are identified. These courses can potentially be complemented with relevant team project in Level 3, individual project in Level 4 and research project in Level 5. Students that complete a concentration have the option for it to be recognised on their degree parchment.

- **Programmatic and Inclusive Assessment**

The assessments in core compulsory courses are designed as vehicles to ensure they provide opportunities for academics to collaborate to ensure both vertical and horizontal programmatic assessment of students' knowledge and skills in Machine Learning and Artificial Intelligence.

- **Ethics embedded**

The importance of social and ethical concerns to the Machine Learning and Artificial Intelligence require the topics to be considered across all core courses of the programme. The assessments in core compulsory courses are designed for academics to make such concerns the foundation of some assessments as to ensure such important issues are not overshadowed by technical content.

- **Sustainability embedded**

The School of Computing Science has committed to sustainability and related areas being considered across all undergraduate programmes and throughout them. The assessments in core compulsory courses in the present programme are designed for academics to ensure such concerns are considered by students as part of their assessments in Machine Learning and Artificial Intelligence.

Regulations

This programme will be governed by the relevant regulations published in the University Regulations. These regulations include the requirements in relation to:

- (a) Award of the degree
- (b) Progress
- (c) Early exit awards

(d) Entry to Honours (For undergraduate programmes, where appropriate)

<https://www.gla.ac.uk/myglasgow/apg/policies/uniregs/>

13. Programme Accredited By:

None

14. Location(s):

Glasgow

15. College:

College of Science and Engineering

16. Lead School:

Computing Science [REG30200000]

17. Is this programme collaborative with another institution:

No

18. Awarding Institution(s):

University of Glasgow

19. Teaching Institution(s):

University of Glasgow

20. Language of Instruction:

English

21. Language of Assessment:

English

22. Relevant QAA Subject Benchmark Statements (see [Quality Assurance Agency for Higher Education](#)) and Other External or Internal Reference Points:

The following web links introduce the benchmarks that are used to guide and assess our programmes. We monitor our courses against these on a regular basis, further information about this process and about recent developments in these benchmarks can be obtained direct from the school.

http://www.qaa.ac.uk/docs/qaa/subject-benchmark-statements/sbs-computing-16.pdf?sfvrsn=26e1f781_12

<http://www.theiet.org/careers/profreg/>

<http://www.bcs.org/server.php?show=nav.7065>

23. Additional Relevant Information (if applicable):

Support for students is provided by the Postgraduate/Undergraduate Adviser(s) of Studies supported by University resources such Student Learning Development (www.gla.ac.uk/myglasgow/sld/), Counselling & Psychological Services (www.gla.ac.uk/myglasgow/counselling/), the Disability Service (www.gla.ac.uk/myglasgow/disability/) and the Careers Service (www.gla.ac.uk/myglasgow/careers/).

24. Online Distance Learning:

No

25. Date of approval:

05/05/2025