

Programme Specification

BSc Computer Science with Artificial Intelligence

For students entering Part 1 in September 2027

UCAS Code: G470

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This document sets out key information about your Programme and forms part of your Terms and Conditions with the University of Reading.

Awarding Institution	University of Reading
Teaching Institution	University of Reading
Length of Programme	3 years
Length of Programme with placement/year abroad	BSc Computer Science with Artificial Intelligence with Study Year Abroad - 4 years (internal transfer only) BSc Computer Science with Artificial Intelligence with Industrial Year - 4 years (UCAS Code: G471)
Accreditation	N/A
QAA Subject Benchmarking Group	Computing

Programme information and content

The programme aims to provide you with a comprehensive understanding of Computer Science and in particular Artificial Intelligence (AI). The program covers a range of subjects, including the fundamentals of computer systems, programming and software engineering, with a focus on AI throughout.

Through lectures and practical labs, supplemented with tutorials and seminars, you will gain a deep understanding of AI and be exposed to cutting-edge solutions and industrial collaborations. This approach combines theoretical knowledge with hands-on experience to give you a comprehensive education in Computer Science broadly and AI specifically.

The programme also emphasizes the development of transferable skills that are essential for staying up-to-date with the latest developments in the fast-moving world of AI, enabling success in your future career. You will learn analytical and critical thinking skills that are necessary for problem-solving and decision-making. You will develop independent study skills, time management skills, and effective communication skills in both oral and written form as well as learn how to work effectively in teams, enhancing your collaboration and creativity skills.

Part 1:	Introduces you to the foundations of Computer Science, on which AI is built. You will learn about programming concepts and principles, databases, relevant mathematics and how they are applied to AI.
Part 2:	Provides you with core skills and knowledge in the theory and application of AI, and adjacent areas of Computer Science. You will develop the intellectual methodology, computational judgment and critical thinking skills needed to solve computing problems with AI in a way that is

	reliable, scalable and ethical. You will build competencies through a range of core Computer Science topics, including algorithms, operating systems, networking and software engineering. You will become fluent in the Python programming language, which is dominant in AI applications.
Placement/Study abroad year:	A placement option provides you with the opportunity to undertake a credit-bearing and one year-long subject-specific placement as part of your programme. During the placement you will be able to apply AI knowledge and skills in industrial environment, further develop problem-solving competencies, and gain experience of working in real-world setting. A Study Abroad option provides you with the opportunity to undertake a non-credit-bearing study and one year-long with one of our partner universities across the world. During the year abroad, you will be exposed to a different higher educational system and experience their teaching and learning and increase cultural awareness.
Part 3:	You will learn how to build and use advanced AI systems. Optional modules will allow you to develop competency in different application areas, enabling you to specialise for a particular career path in AI or pursue a higher degree in Computer Science, AI, and related disciplines. The 40 credit compulsory degree project module provides you with a unique opportunity to integrate the CS and AI knowledge and skills learned and to explore innovations for creating intelligent computing solutions.

Programme Learning Outcomes - BSc Computer Science with Artificial Intelligence

During the course of the Programme, you will have the opportunity to develop a range of skills, knowledge and attributes (known as learning outcomes) For this programme, these are:

	Learning outcomes
1	Describe and explain foundational ideas and concepts in computer systems, computation theory, algorithms and Artificial Intelligence.
2	Develop computer programs in a variety of languages and paradigms.
3	Be able to apply concepts in theoretical Computer Science and Artificial Intelligence to design, implement and evaluate solutions in a variety of contexts or extensions to existing domain knowledge.
4	Describe, evaluate and apply selected contemporary Artificial Intelligence methodologies and technologies.
5	Critically analyse, design and construct Artificial Intelligence solutions that meet requirements based within interdisciplinary domains.
6	Apply knowledge of social, ethical, legal, and security aspects in development of software applications and Artificial Intelligence systems.
7	Apply and critique research findings to create fit-for-purpose and sustainable Artificial Intelligence solutions.

8	Select, justify and apply appropriate problem-solving approaches.
9	Work professionally, both individually and collaboratively.
10	Communicate technical concepts effectively, precisely and succinctly, in professional writing and spoken narrative, addressing various types of audience in an appropriate manner.
11	For the Industrial Year programme only: Apply and reflect on academic learning in a placement role relevant to Computer Science, Artificial Intelligence or cognate disciplines, developing professional experience, skills and knowledge that support continuing learning and graduate career development.

You will be expected to engage in learning activities to achieve these Programme learning outcomes. Assessment of your modules will reflect these learning outcomes and test how far you have met the requirements for your degree.

To pass the Programme, you will be required to meet the progression or accreditation and award criteria set out below.

In addition to the learning outcomes stated above if you are on a placement or study abroad programme you will have the opportunity to develop the following learning outcome:

Additional Learning outcomes	
Study Abroad	
By the end of the Study Abroad Programme, students will have adapted to international study contexts in order to achieve the required academic outcomes determined by the host institution.	
Placement	
By the end of the Placement Year programme, students will have contextualised their academic learning in a placement role relevant to their programme of studies and developed their professional experience, skills and knowledge, contributing significantly towards their continuous learning and career prospects as graduates.	

Module information

Each part comprises 120 credits, allocated across a range of compulsory and optional modules as shown below. Compulsory modules are listed.

Part 1 Modules:

Module	Name	Credits	Level
CS1AA	Introduction to Applied AI	20	4
CS1CA	Computer Systems Architecture	20	4
CS1DB	Databases	20	4
CS1IP	Imperative Programming	20	4
CS1MA	Mathematics and Computation	20	4
CS1OP	Object-Oriented Programming	20	4

Part 2 Modules:

Module	Name	Credits	Level
CS2AE	AI Ethics	20	5
CS2AI	Artificial Intelligence	20	5
CS2DA	Data Structures and Algorithms	20	5
CS2PP	Programming in Python	20	5
CS2SE	Software Engineering and Professional Development	20	5

Remaining credits in Part 2 will be made up of optional modules available from an approved list provided by the Department of Computer Science.

Modules during a placement year or study year (if applicable):

Students on one of the 4-year programmes will take one 120 credit module in either Study Abroad Year or Industrial Year.

Module	Name	Credits	Level
CS2AY	Study Abroad Year	120	5
OR			
CS2IY	Industrial Year	120	5

If you take a year-long placement or study abroad, Part 3 as described below may be subject to variation.

Part 3 Modules:

Module	Name	Credits	Level
CS3AS	Cognitive and Agentic Systems	20	6
CS3IP	Degree Project	40	6
CS3ML	Machine Learning	20	6

Remaining credits in Part 3 will be made up of optional modules available from an approved list provided by the Department of Computer Science.

Placement opportunities**Placements:**

You may be provided with the opportunity to undertake a credit-bearing placement as part of your Programme. This will form all or part of an optional module. You will be required to find and secure a placement opportunity, with the support of the University

Study Abroad:

You may be provided with the opportunity to undertake a Study Abroad placement during your Programme. This is subject to you meeting academic conditions detailed in the Programme Handbook, including obtaining the relevant permissions from your School, and

the availability of a suitable Study Abroad placement. If you undertake a Study Abroad placement, further arrangements will be discussed and agreed with you.

Optional modules:

The optional modules available can vary from year to year. An indicative list of the range of optional modules for your programme can be found online in the Course Catalogue. Details of optional modules for each part, including any additional costs associated with the optional modules, will be made available to you prior to the beginning of the Part in which they are to be taken and you will be given an opportunity to express interest in the optional modules that you would like to take. Entry to optional modules will be at the discretion of the University and subject to availability and may be subject to pre-requisites, such as completion of another module. Although the University tries to ensure you are able to take the optional modules in which you have expressed interest this cannot be guaranteed.

Teaching and learning delivery:

You will be taught primarily through a mixture of lectures, lab practicals, tutorials and seminars, depending on the modules you choose. Practical work will emphasise use of AI to solve problems. Some modules may include group work.

Elements of your programme will be delivered via digital technology.

The scheduled teaching and learning activity hours and amount of technology enhanced learning activity for your programme will depend upon your module combination. In addition, you will undertake some self-scheduled teaching and learning activities, designed by and/or involving staff, which give some flexibility for you to choose when to complete them. You will also be expected to undertake guided independent study. Information about module study hours including contact hours and the amount of independent study which a student is normally expected to undertake for a module is indicated in the relevant module description.

Accreditation details

N/A

Assessment

The programme will be assessed through a range of assessment types, such as written examination, written coursework assignment, set exercise, and in-class test. Coursework will emphasise the use of AI. In addition, the programme will also be assessed through dissertation, presentation and demonstration in the final year of studies. Further information is contained in the individual module descriptions.

Progression

Part 1

To achieve a threshold performance at Part 1, a student will normally be required to:

(i) Obtain an overall weighted average of 40% over 120 credits taken in Part 1; and

- (ii) Obtain a mark of at least 40% in individual modules amounting to not less than 80 credits taken in Part 1; and
- (iii) Obtain marks of at least 30% in modules amounting to 120 credits. (A Fail in a Pass/Fail module will be treated as not meeting the minimum threshold requirement for progression or classification. Pass/fail modules are excluded from weighted average calculations but must be passed to avoid failure of the Part or degree.)

In order to progress from Part 1 to Part 2, a student must achieve a threshold performance.

The achievement of a threshold performance at Part 1 qualifies a student for a Certificate of Higher Education if they leave the University before completing the subsequent Part.

Students considering transferring to another programme should seek guidance from their designated Support Centre in the first instance.

Part 2

To achieve a threshold performance at Part 2, a student shall normally be required to:

- (i) Obtain a weighted average of 40% over 120 credits taken in Part 2; and
- (ii) Obtain marks of at least 40% in individual modules amounting to at least 80 credits taken in Part 2; and
- (iii) Obtain marks of at least 30% in individual modules amounting to at least 120 credits (A Fail in a Pass/Fail module will be treated as not meeting the minimum threshold requirement for progression or classification. Pass/fail modules are excluded from weighted average calculations but must be passed to avoid failure of the Part or degree).

In order to progress from Part 2 to Part 3, a student must achieve a threshold performance.

The achievement of a threshold performance at Part 2 qualifies a student for a Diploma of Higher Education if they leave the University before completing the subsequent Part.

Professional/placement year

Students are required to pass the professional placement year/study abroad year in order to progress on the programme which incorporates the professional placement year/study abroad year. Students who fail the professional placement year/study abroad year transfer to the non-placement year version of the programme.

Classification

Bachelors' degrees

The University's honours classification scheme is based on the following:

Mark Interpretation

70% - 100% First class

60% - 69% Upper Second class

50% - 59% Lower Second class

40% - 49% Third class

35% - 39% Below Honours Standard
0% - 34% Fail

The weighting of the Parts/Years in the calculation of the degree classification is:

Three year programmes:

Part 2: one-third

Part 3: two-thirds

Four year programmes, including Study abroad/Placement year

Part 2: one-third

Study abroad/Placement year: not included in the classification

Part 3: two-thirds

Details of the classification method is given in detail in the [Assessment Handbook](#) under:

- Section 17: Awards (Bachelor's), or
- Section 18: Awards (Integrated Master's programmes). Students who do not progress to Part 4 of the Integrated Master's will normally be subject to the method detailed under Section 17: Awards (Bachelor's)

Please note that there may be a specific version of the above for your year of entry.

Additional costs of the programme

For textbooks and similar learning resources, we recommend that you budget up to £200 per year, depending on your preference to have your own books rather than borrow from the Library. Some books may be available second-hand, which will reduce costs. A range of resources to support your curriculum, including textbooks and electronic resources, are available through the Library. Reading lists and module specific costs are listed on the individual module descriptions.

Costs are indicative and may vary according to optional modules chosen and are subject to inflation and other price fluctuations. Estimates were calculated in 2026.

Students may consider purchasing a laptop to help support their learning. Information on recommended device specifications can be found on the [DTS Student Hub](#).

For further information about your Programme please refer to the Programme Handbook and the relevant module descriptions, which are available at <http://www.reading.ac.uk/module/>. The Programme Handbook and the relevant module descriptions do not form part of your Terms and Conditions with the University of Reading.

BSc Computer Science with Artificial Intelligence for students entering Part 1 in session 2027/28

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