

## Programme Specification

### BSc Computer Science

For students entering Part 1 in September 2022

UCAS Code: G400

UFCOMP B

UFCOMP B2

UFCOMP B3

UFCOMP BSY

UFCOMP BSY3

UFCSWIY B

UFCSWIY B2

UFCSWIY B3

**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 (students from Beihang University, China) - 3 years BSc Computer Science (students from KMITL, Thailand) - 3 years (internal transfer only) BSc Computer Science with Study Year Abroad - 4 years (internal transfer only) BSc Computer Science with Study Year Abroad (students from KMITL, Thailand) - 4 years (internal transfer only) BSc Computer Science with Industrial Year - 4 years (UCAS Code: G401) BSc Computer Science with Industrial Year (students from Beihang University, China) - 4 years BSc Computer Science with Industrial Year (students from KMITL, Thailand) - 4 years (internal transfer only)
Accreditation	British Computer Society

### Programme information and content

The programme aims to provide you with the preparation for a career in the software and computing industry or for further study at a postgraduate level to pursue an academic career. The course is designed to develop your knowledge of the theory and practice of modern computer science, necessary for you to secure employment as a professional software engineer or a computer system engineer in a wide variety of industries; to encourage your critical thinking and to enhance your analytical skills; and to develop your skills in applying theoretical concepts to the practice in the computing world. You will be well qualified to play a disciplined and creative part in a research, development or support environment.

Part 1:	Introduces you to the foundation of computer science with a set of modules to build knowledge of computer system, algorithms, programming and software engineering.
Part 2:	Provides you with core computer science modules, which cover a wide range from computer architecture, operating systems and compilers, to essential algorithms, databases, computer networking and system design. Additional programming languages are also delivered to enhance your programming skills.
Part 3:	Gives you the opportunity to select a set of modules, which may fit a direction leading to your career path in the computing industry or pursue a higher degree in computer science or related subjects. The 40 credit compulsory Individual Project module provides you with a unique opportunity to integrate knowledge and skills learned and to explore innovations within a project.

### 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
CS1AC16	Applications of Computer Science	20	4
CS1FC16	Fundamentals of Computer Science	20	4
CS1MA20	Mathematics and Computation	20	4
CS1PC20	Programming in C/C++	20	4
CS1SE20	Software Engineering: Fundamentals and Professional Development	20	4

Students must select a further 20 credits from optional modules from the list available from the Department of Computer Science.

#### Part 2 Modules:

Module	Name	Credits	Level
CS2AO17	Algorithms and Operating Systems	20	5
CS2CA17	Computer Architecture and Networking	20	5
CS2CO16	Compilers	10	5
CS2DI17	Databases and Information Security	20	5
CS2PJ20	Programming in Java	20	5
CS2SS20	Software System Design with UML	10	5

Students must select a further 20 credits from a list available from the Department of Computer Science.

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

Module	Name	Credits	Level
CS2IY16	Industrial Year	120	5

Students on the 4 year Industrial Year programme will take one 120 credit module in Work Experience.

Module	Name	Credits	Level
CS2AY20	Study Abroad Year	120	5

Students on the 4 year Study Abroad programme will take one 120 credit module in Study Abroad.

**Part 2 (continued) modules:**

Module	Name	Credits	Level
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Students may be permitted to undertake a placement year or a study abroad year between Part 2 and Part 3 of the programme. In such cases students will transfer to a 4-year programme. The placement or study abroad year should not normally be shorter than nine months full-time.

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
CS3AM	Artificial Intelligence and Machine Learning	20	6
CS3IP	Degree Project	40	6

Students must select a further 60 credits from a list available from the Department of Computer Science.

**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.

**Additional costs of the programme**

During your programme of study you will incur some additional costs.

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.

You will need an approved scientific calculator (approximate cost £12).

Costs are indicative and may vary according to optional modules chosen and are subject to inflation and other price fluctuations.

The estimates were calculated in 2021.

### **Placement opportunities**

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.

### **Teaching and learning delivery:**

You will be taught through lectures, practical classes, seminars and tutorials.

The contact hours for your Programme will be (on average) 396 for Part 1, 312 for Part 2 and 168 for Part 3 and will depend upon your module combination; however information about module contact hours can be located in the relevant module description.

### **Accreditation details**

Both the programmes of BSc Computer Science and BSc Computer Science with Industrial Year are accredited by the British Computer Society (BCS), the chartered institute for IT. When you successfully complete the degree, you are entitled to professional membership of the BCS, which is one of the criteria for achieving the status of Chartered IT Professional.

### **Assessment**

The programme will be assessed through a combination of written examinations and coursework. However, some modules are assessed only by coursework, while others are assessed solely by examination. Details are given in the relevant module descriptions.

### **Progression**

The University-wide rules relating to ‘threshold performance’ as follows

*Part 1*

- (i) obtain an overall average of 40% in 120 credits
- (ii) obtain a mark of at least 30% in individual modules amounting to at least 100 credits taken in Part 1.

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

- (iii) obtain a mark of at least 30% in CS1PC20, CS1SE20, CS1AC16 and CS1FC16.

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.

*Part 2*

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

- (i) obtain a weighted average of 40% over 120 credits taken at Part 2; and
- (ii) obtain marks of at least 40% in individual modules amounting to at least 80 credits; and
- (iii) obtain marks of at least 30% in individual modules amounting to at least 120 credits, except that a mark below 30% may be condoned in no more than 20 credits of modules owned by the Department of Mathematics and Statistics.

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

In order to progress from Part 2 to Part 3 in the 4 year programme, a student must achieve a threshold performance and obtain a pass in the professional/placement year. Students who fail the professional/placement year transfer to the non-placement year version of the programme.

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.

To be eligible for Honours, students must achieve at least 40% in modules amounting to 80 credits in the final Part, including the Individual Project (CS3IP).

**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 professional/work placement or study abroad:*

Part 2: one-third

Placement/Study Abroad Year abroad not included in the classification

Part 3: two-thirds

**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 for students entering Part 1 in session 2022/23

10 April 2024

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