

Mathematics and Computing with an Integrated Foundation Year



Applicable for all undergraduate students **starting** their Foundation Year on or after 1st September 2020

Version No.	Date	Notes – QA USE ONLY	QA
2020.21 v1	12 August 2020	Minor modification to programme, new <u>pathway</u> added to start September 2020 leading to entry to BSc (Hons) Mathematics for Data Science (<u>September 2021</u>) and BSc (Hons) Mathematics for Data Science with Professional Practice (<u>September 2021</u>).	JP

Honours programme	
1. Awarding institution	Brunel University London
2. Teaching institution(s)	Brunel University London
3. Home college/department/division	College of Engineering, Design and Physical Sciences / Department of Mathematics
4. Contributing college/department/division/ associated institution	College of Engineering, Design and Physical Sciences / Department of Computer Science and Department of Mathematics College of Business, Arts and Social Sciences/Department of Economics and Finance.
5. Programme accredited by	n/a
6. Final award(s) and FHEQ Level of Award	n/a
7. Programme title	Mathematics and Computing with an Integrated Foundation Year.
8. Programme type (Single honours/joint)	Foundation year followed by degree in Computing or Mathematics depending on route.
9. Normal length of programme (in months) for each mode of study	4 years full time; 5 years thick sandwich.
10. Maximum period of registration for each mode of study	7 years full time: 8 years thick sandwich.
11. Variation(s) to September start	None.
12. Modes of study	Full time.
13. Modes of delivery	Standard.
14. Intermediate awards, titles and FHEQ Level of Award	See awards section of the programme specification for the chosen pathway
15. UCAS code	G503
16. JACS / HECoS Code	G100 (70%), I100 (20%), L100 (10%) / TBC
17. Route Code	G100UMACSFND
18. Relevant subject benchmark statements and other external and internal reference points used to inform programme design.	UK Quality Code for Higher Education which includes the English Framework for Higher Education Qualifications within Part A on Setting and Maintaining Academic Standards QAA Subject Benchmark Statement (Computer Science and Mathematics) Brunel 2030 Brunel Placement Learning Policy, as published under the 'Placements' section of the Managing Higher Education Provision with Others page.
19. Admission Requirements	Details of entry requirements are provided on the University's and College website. Levels of English for non-native speakers are outlined on Brunel International's language requirements pages.
20. Other relevant information (e.g. study abroad, additional information on placements)	N/A

21. Programme regulations not specified in Senate Regulation 2. Any departure from regulations specified in Senate Regulation 2 must be stated here and approved by Senate.	See section 25 below.
22. Further information about the programme is available from the College website.	http://www.brunel.ac.uk/cedps/courses

23. EDUCATIONAL AIMS OF THE PROGRAMME

This programme aims to prepare students for all degrees in the Department of Computer Science and the Department of Mathematics. The aims of the programme vary according to the chosen pathway. See the relevant section of the programme specification (refer to section 16). At Foundation Level, the aim is to prepare students to enter Level 4 of the selected pathway as follows:

Pathways

Department of Mathematics

BSc (Hons) Financial Mathematics
 BSc (Hons) Financial Mathematics with Professional Practice
 BSc (Hons) Mathematics and Statistics with Management
 BSc (Hons) Mathematics and Statistics with Management with Professional Practice
 BSc (Hons) Mathematics with Computer Science
 BSc (Hons) Mathematics with Computer Science with Professional Practice
 BSc (Hons) Mathematics
 BSc (Hons) Mathematics with Professional Practice
 BSc (Hons) Mathematics for Data Science (entry from September 2021)
 BSc (Hons) Mathematics for Data Science with Professional Practice (entry from September 2021)

Department of Computer Science

BSc (Hons) Business Computing
 BSc (Hons) Business Computing with Professional Practice
 BSc (Hons) Business Computing (Human-Computer Interaction)
 BSc (Hons) Business Computing (Human-Computer Interaction) with Professional Practice
 BSc (Hons) Business Computing (eBusiness)
 BSc (Hons) Business Computing (eBusiness) with Professional Practice
 BSc (Hons) Business Computing (Social Media)
 BSc (Hons) Business Computing (Social Media) with Professional Practice

BSc (Hons) Computer Science
 BSc (Hons) Computer Science (Artificial Intelligence)
 BSc (Hons) Computer Science (Digital Media And Games)
 BSc (Hons) Computer Science (Network Computing)
 BSc (Hons) Computer Science (Software Engineering)
 BSc (Hons) Computer Science with Professional Practice
 BSc (Hons) Computer Science (Artificial Intelligence) with Professional Practice
 BSc (Hons) Computer Science (Digital Media And Games) with Professional Practice
 BSc (Hons) Computer Science (Network Computing) with Professional Practice
 BSc (Hons) Computer Science (Software Engineering) with Professional Practice

24. PROGRAMME AND INTERMEDIATE LEARNING OUTCOMES

The programme provides opportunities for students to develop and demonstrate knowledge and understanding (K) cognitive (thinking) skills (C) and other skills and attributes (S) in the following areas:

	Category (K = knowledge and understanding, C = cognitive (thinking) skills, S = other skills and attributes)	Learning Outcome	Associated Assessment Blocks Code(s)	Associated Study Blocks Code(s)	Associated Modular Blocks Code(s)
Foundation Year					
	K	the techniques of mathematics, statistics and computing to the level required by their chosen degree programme;			All
	C	Able to: create abstract models of simple 'real world' problems and expressing them mathematically; derive and analyse mathematical or computer models for simple well-defined situations; analyse numerical data using basic statistical methods;			All
	S	access and use a range of sources of information; communicate mathematical and technical information in an appropriate format; produce work of the appropriate quality within given time scales; work in a group; make use of relevant computer software with confidence.			MA0490

Learning/teaching strategies and methods to enable learning outcomes to be achieved, including formative assessments

Lectures coupled with seminars, workshops and computer-aided material.

A strong component of some modular blocks is the idea of mathematical modelling and/or statistical analysis of results. With the underpinning of pastoral support and staff commitment, the cohort should work well together in a way that builds confidence. Many assignments will be somewhat open-ended to encourage thinking and reflection.

Classroom discussion followed by individual and group assignments. Clearly defined tasks at the start of the programme will increasingly give way to exercises designed to increase the students' autonomy and self-motivation.

Summative assessment strategies and methods to enable learning outcomes to be demonstrated

Most modular blocks have a significant element of coursework that will promote the use of skills.

Assignments, class tests and examination; computer-based assessments.

25. Programme Structure, progression and award requirements

Programme structures and features: levels, assessment blocks, credit and progression and award requirements

- **Compulsory block:** one which all students registered for the award are required to take as part of their programme of study. These will be listed in the left hand column;
- **Optional block:** one which students choose from an 'option range'. These will be listed in the right hand column;
- A **core assessment** is an assessment identified within an assessment block or modular block (either compulsory or optional) which must be passed (at grade D- or better) in order to be eligible to progress and to be eligible for the final award. All core assessments must be specified on the programme specification next to the appropriate assessment or modular block:
Where students are expected to pass the block at D- or better, but not necessarily all elements, then the block itself is core.
e.g. AB3000 Project (40)
Core: Block
Where only some elements of assessments are required to be passed at D- or better, these will be identified by listing each element that is core
e.g. ABXXX1 Title (XX credits)
Core: 1 & 4
Where students are expected to pass all assessments in a block then this will be identified. By setting the assessment this way, students are also required to pass the block by default. This will be identified thus:
e.g. ABXXXX Title (XX credits)
Core: All, Block
- A **non-core assessment** does not have to be passed at grade D- or better, but must be better than a grade F, in order to progress and to be eligible for the final award.

Foundation Year

Compulsory assessment block codes, titles and credit	Optional assessment block codes, titles and credits
Compulsory study block codes, titles and credit volume	Optional Study block codes, titles and credit volume
<p>Compulsory modular block codes, titles and credits All modular blocks are 20 credits:</p> <p><u>Compulsory modules for both degree programmes:</u></p> <p>Autumn term: MA0490 Study Skills</p> <p>Spring term: MA0422 Discrete & Decision Mathematics Core: 2</p> <p>For progression onto a Maths degree programme the following TWO blocks are compulsory: MA0410 Calculus Core: 2 MA0371 Statistics Core: 2</p> <p>For progression onto a Computing degree programme the following THREE blocks are compulsory: CS0001 Introduction to Computing. CS0002 Programming CS0601 Introduction to Artificial intelligence.</p>	<p>Optional modular block codes, titles and credits All modular blocks are 20 credits.</p> <p><u>Optional modules for BOTH degree programmes: Choose 20 credits from:</u></p> <p>Autumn term: MA0600 Algebra A Core: 2 Or MA0601 Algebra B Core: 2</p> <p><u>For progression on to a Maths degree programme in ADDITION to the above options, choose 20 credits from:</u></p> <p>CS0001 Introduction to Computing (Autumn) Or AF0600 Introduction to Finance and Accounting for Business (Autumn)</p>

Progression and Award Requirements

[As per Senate Regulation 2](#)

To progress to one of the following pathways to continue their programme of study at Levels 4-6 which will lead to the award shown on the programme specification for the chosen pathway, students are required to achieve the following three conditions:

1. A grade point average (GPA) of at least 5 in year as a whole
AND
2. at least 80 credits at D- and 20 further credits at E-
AND
3. a grade of at least D- in each of the specified modular blocks depending on pathway chosen (as shown below):

Mathematical Sciences

All Mathematics degree courses **MA0410_CN and MA0600_CN and MA0371_CN and MA0422_CN** (*exceptionally* MA0601_CN may substitute for MA0600_CN but a *pass of at least grade B-* is required in addition to the other requirements).

Computer Science

Computer Science

CS0001_CN and CS0002_CN and CS0601_CN
and (MA0422_CN or MA0600 or MA0601)

Business Computing

CS0001_CN and CS0002_CN and CS0601_CN
and (MA0422_CN or MA0600 or MA0601)

Also see the Student Handbook for more details on progression requirements.

Students who have satisfied Conditions 1 and 2 but not Condition 3 required for their chosen pathway may be eligible for an alternative. Such students may apply to be considered for a place on any other pathway for which they may have qualified. Students should be aware that some programmes request a choice of two spring term options.

Students who have not successfully progressed from this programme at the first attempt will not normally be allowed to repeat it, either in part or in whole.

FHEQ Levels 4-6	
Compulsory assessment block codes, titles and credits See programme specification for chosen pathway	Optional assessment block codes, titles and credits See programme specification for chosen pathway
Compulsory study block codes, titles and credit volume See programme specification for chosen pathway	Optional Study block codes, titles and credit volume See programme specification for chosen pathway
Compulsory modular block codes, titles and credits See programme specification for chosen pathway	Optional modular block codes, titles and credits See programme specification for chosen pathway

Progression and Award Requirements

[As per Senate Regulation 2](#)

Please note: this specification provides a concise summary of the main features of the programme and the learning outcomes that a student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. More detailed information on the learning outcomes, content and teaching, learning and assessment methods can be found in the modular block, assessment and study block outlines and other programme and block information. The accuracy of the information contained in this document is reviewed by the University from time to time and whenever a modification occurs.