

## Programme Specification

**BSc Mathematics and Applied Mathematics (NUIST-UoR Academy)  
NUIST-based (full-time)**

**For students entering Part 1 in September 2020**

**AFMAXAPMJJ  
UFMAXAPMJX**

**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	4 years
Length of Programme with placement/year abroad	BSc Mathematics and Applied Mathematics (NUIST-UoR Academy) UoR-based (full-time) - 4 years (internal transfer only)
Accreditation	N/A

### Programme information and content

The foundation year (Part 0) is designed for foundation year students at NUIST who intend to progress on to a three-year undergraduate programme within the NUIST-University of Reading Academy. Successful completion of the NUIST Foundation Programme gives the student admission to one of the University of Reading undergraduate programmes. It also contributes, through credit transfer, to the first year of an award of NUIST.

On completion of Part 0, students will have the general academic language and study skills required to begin their Year 1 degree studies

The programme is designed to provide a good general mathematical education, coupled with a more in-depth knowledge of particular areas of mathematics. This is achieved by students studying core material in the earlier years, followed by mainly optional modules in the final year, some giving an overview of a broad area and others studying a particular topic in depth, along with a range of appropriate subject-specific and transferable skills.

This programme is available to students studying at the NUIST-Reading Academy, who may transfer to UoR for parts 2 and/or 3 of their degree.

Foundation year:	<p>The <b>aims</b> of this part of the programme are to introduce students to basic skills and knowledge to prepare for the transition to university level mathematics, and to develop students' language knowledge* and language skills to meet the needs of their future academic studies, by improving their ability to:</p> <ul style="list-style-type: none"><li>• use academic sources effectively and appropriately (in accordance with academic conventions) to complete academic assignments</li><li>• present information, ideas and opinions through writing, in a clear, organised, and effective way, using appropriate academic language</li></ul>
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	<ul style="list-style-type: none"> <li>• understand long spoken texts (e.g. mini-lectures, lecture extracts, spontaneous monologues) and take notes independently</li> <li>• listen to and understand spontaneous speech in both group and one-to-one settings, and to contribute orally in both contexts in a relevant and constructive way</li> <li>• deliver extended formal presentations, and respond effectively to questions</li> <li>• study independently e.g. planning their work, managing their time, finding additional language learning resources and additional sources relevant to their academic assignments</li> <li>• work effectively in groups.</li> </ul> <p>*Language knowledge: in all parts of the programme, there will be an emphasis on expanding the students’ range and control of English vocabulary, grammar, language functions and academic style.</p> <p><b>Content will include:</b></p> <p>Reading skills and strategies, including survey reading, close reading, selecting information, summarising, monitoring comprehension, summarising, synthesising.</p> <p>Listening skills and strategies, including identifying main and supporting points, note-taking, decoding connected speech, monitoring comprehension; listening and responding appropriately in interactive situations.</p> <p>Speaking skills, including oral presentations, group discussions, oral fluency, communicative strategies, negotiating meaning by checking understanding and asking for clarification, pronunciation.</p> <p>Writing skills, including paragraphing, text organisation, introductions and conclusions,</p> <p>analysing essay questions, paraphrasing, avoiding plagiarism, referencing ; the process of writing i.e. planning, drafting, receiving feedback, redrafting.</p> <p>Language knowledge: (a) vocabulary – General Service List, Oxford 3000, Academic Word List (b) grammatical structures and functional language relevant to general academic English.</p> <p>Studied at NUIST</p>
Part 1:	<p>Introduces you to core skills and knowledge through a number of introductory modules designed to manage the transition to university level mathematics. The modules in Real Analysis will build on material seen in Part 0 concerning the need for proof Other compulsory Part 1 mathematics modules build on and</p>

	reinforce core material and form the basis for more advanced study in later years.  Studied at NUIST
Part 2:	Provides you with more advanced topics in mathematics: the modules Vector Calculus and Differential Equations will employ techniques established in Part 1 Linear Algebra. The concept of abstract algebra is introduced and builds on the Foundations module.  Studied at NUIST or UoR
Part 3:	Gives you the opportunity to undertake some project work in mathematics. Most of your modules will be optional, allowing you to express your preference for certain topics in pure or applied mathematics and statistics.  Studied at NUIST or UoR

### Module information

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

#### Foundation modules:

Module	Name	Credits	Level
IF0NU1	English for Academic Purposes 1	60	0
IF0NU2	English for Academic Purposes 2	40	0
MA0FMNU	Foundations of Mathematics	10	0
MA0MANU	Mathematical Analysis	10	0

#### Part 1 Modules:

Module	Name	Credits	Level
IF1NUM	English for Mathematicians	20	4
MA1DE1NU	Differential Equations I	10	4
MA1LANU	Linear Algebra	20	4
MA1MPRNU	Mathematical Programming	10	4
MA1RA1NU	Real Analysis 1	20	4
MA1RA2NU	Real Analysis II	20	4
ST1PSNU	Probability and Statistics	20	4

#### Part 2 Modules:

Module	Name	Credits	Level
MA2ALANU	Algebra	20	5

MA2CANU	Complex Analysis	10	5
MA2DE2NU	Differentiable Equations II	20	5
MA2MODNU	Mathematical Modelling	10	5
MA2MPHNU	Mathematical Physics	10	5
MA2NANNU	Numerical Analysis	10	5
MA2PSMNU	Professional Skills for Mathematicians	10	5
MA2VCNU	Vector Calculus	10	5
ST2PSTNU	Probability and Statistical Theory	20	5

For Part 2 at UoR

Module code	Module title	Credits	Level
MA2DE	Differential Equations	20	5
MA2CA1	Complex Analysis I	10	5
MA2ALA	Algebra	20	5
MA2VC	Vector Calculus	10	5
MA2NAN	Numerical Analysis	10	5
MA2MPH	Mathematical Physics	10	5
MA2PSM	Professional Skills for Mathematicians	10	5
MA2MOD	Mathematical Modelling	10	5
ST2PST	Probability and Statistical Theory	20	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
MA3PRONU	Part 3 Project	20	6

Students based at NUIST must take a further 100 credits from a set of core topic modules. The list of modules will be available from the Programme Director

For Part 3 at UoR

Module code	Module title	Credits	Level
MA3PRO	Part 3 Project	20	6

Students based at UoR must select a further 100 credits from a list of optional modules provided by the School of Mathematical, Physical and Computational Sciences.

**Optional modules:**

The optional modules available can vary from year to year. An indicative list of the range of optional modules for your Programme is set out in the Further Programme Information. 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.

At NUIST: There will be some additional costs if you require printing facilities at NUIST, there may also be additional costs if your programme involves a field trip whilst at NUIST. Details of costs can be found at the NUIST help desk.

For textbooks and similar learning resources, we recommend that you budget up to £100 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 2019.

**Placement opportunities**

N/A

**Teaching and learning delivery:**

In Part 0 you will be taught through classes, using a communicative approach to language learning, with an emphasis on meaning, task completion, interaction and feedback. You will also have a number of tutorials, and carry out supervised project work. Total study hours for Part 0 will be a minimum of 1200 hours.

Modules in Part 0 are taught by Academy staff in Nanjing.

For Parts 1, 2 and 3 you will be taught through lectures, tutorials, practical classes and supervised project work.

Modules in Nanjing are taught by a combination of Academy staff and visiting staff from the University of Reading.

Total study hours for each Part of your programme will be a minimum of 1200 hours. The contact hours for your Programme will be (on average) 576 hours for Part 1 (for students studying at NUIST), 576 hours (for students studying at NUIST) or 372 hours (for students studying at UoR) for Part 2, and 240 hours (for all students) for Part 3, and will depend upon your module combination; however information about module contact hours can be located in the relevant module description.

In addition to your scheduled contact hours, you will be expected to undertake guided independent study. Information about module 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**

For Part 0 you will be assessed through a combination of written exams and coursework. Some modules may be assessed by 100% coursework whereas others contain a mixture of both coursework and exam at varying ratios.

Part 1, 2 and 3 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**

Part 0 Foundation year

In order to complete Part 0 successfully, students are required to:

- (i) obtain a mark of at least 40% in IF0NU1.
- (ii) obtain a weighted average of at least 40% over MA0FMNU and MA0MANU and a mark of at least 30% in each module;

(iii) obtain a mark of at least 5.5 in IF0NU2 with no element (Speaking, Listening, Reading and Writing) below 5.0. The summative assessment for this module will be through the TEEP.

Students who obtain 6.0 in IF0NU2, with no element (Speaking, Listening, Reading and Writing) below 5.5 will be deemed to have met the English language progression requirement to Part 2 and will be exempted from the mandatory Year 1 non-credit EAP module.

#### Part 1

The University-wide rules relating to 'threshold performance' as follows

#### Part 1

- i. obtain an overall weighted 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.
- iii. obtain 6.0 in TEEP on IF1NU3A (where taken), with no element (Speaking, Listening, Reading and Writing) below 5.5.

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

- i. obtain a weighted average of at least 40% over MA1RA1NU, MA1RA2NU, MA1LANU and MA1DE1NU;; and
- ii. obtain a mark of at least 30% in individual modules amounting to at least 100 credits.

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 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.

**The University's Honours classification is as follows:**

### **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:

Part 2: one-third

Part 3: two-thirds

### **Dual Awards**

Successful completion of the Programme will lead to the award of degrees by both the University of Reading and Nanjing University of Information Science and Technology. Modules completed at Part 2 and Part 3 regardless of place of study, will contribute to the classification of degrees.



**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 Mathematics and Applied Mathematics (NUIST-UoR Academy) NUIST-based (full-time) for students entering Part 1 in session 2020/21

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