Programme Specification

BSc Atmospheric Sciences (NUIST-UoR Academy) NUIST-based (full-time)

For students entering Part 0 in September 2027 **AFATMOSJJ**

UFATMOSJX

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 Atmospheric Sciences (NUIST-UoR Academy) UoR-based (full-time) - 4 years (internal transfer only)
Accreditation	N/A
QAA Subject Benchmarking Group	N/A

Programme information and content
This programme is designed to equip you with the knowledge and tools needed for a wide range of careers in meteorology, climate and related environmental science disciplines. At the core of the programme is the detailed scientific understanding of the Earth's weather and climate systems. The appropriate laws of physics will be applied to the Earth's atmosphere, oceans and wider climate system using mathematical methods. These scientific principles are the building blocks of all weather forecasting and climate prediction computer models and so hold the key to understanding the main tools of weather and climate scientists. The programme offers a broad range of options so that whether you are thinking of a career in operational weather forecasting, climate and environmental consultancy, scientific and academic research or working with observing systems and instruments, there will be a set of compulsory and optional modules to provide you with the knowledge and tools necessary to move onto that career. As well as in depth coverage of the core science this degree will also have a strong focus on science communication. In many branches of weather and climate science, communicating scientific concepts and results in an appropriate way for the audience is a key skill. Whether you are producing weather forecasts for commercial customers, advising large organisations of the potential impacts of climate change on their activities or making complex scientific concepts accessible to non-specialists, communication is as important as the fundamental scientific understanding. The programme includes a foundation year (Part 0) which enables students to progress on to the undergraduate programme in Atmospheric Scienceswithin the NUIST-University of

Reading Academy. On completion of Part 0, you will have the general academic language and study skills required to begin your degree studies through Part 1, Part 2 and Part 3. 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:	Part 0 helps you develop the academic language and study skills you will need for your university degree programme. This year provides opportunities to: 1. Understand and engage with the expectations of UK academic culture; 2. Attain the academic reading, writing, listening, and speaking skills needed to undertake university study in English; 3. Understand and apply basic academic study skills, including the selection, evaluation, and use of information sources; 4. Develop as independent learners. Studied at NUIST
Part 1:	Part 1 will introduce you to the fundamental scientific principles and terminology that apply to the Earth's weather and climate systems. This will be supported by study of some important mathematical knowledge and techniques which will allow the further development of your scientific understanding. You will also be taught basic computer programming and laboratory skills. Studied at NUIST
Part 2:	Part 2 builds an in-depth understanding of the physics and dynamics of the Earth's weather and climate systems. The fundamental science and current state of knowledge of climate change will be introduced. Computing skills for numerical modelling and weather and climate data analysis will be taught, along with more supporting mathematics. Studied at UoR or NUIST
Part 3:	Part 3 gives you the chance to select modules appropriate for your chosen career pathway, or alternatively select modules across the range of pathways. Additionally you will complete a research project on a topic of your choice, either from a list supplied by the department or on a topic which you specify yourself. Studied at UoR or NUIST

Programme Learning Outcomes - BSc Atmospheric Sciences (NUIST-UoR Academy) NUIST-based (full-time)

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 the core physical principles behind Earth's weather and climate systems on both local and global scales.

2	Select and apply appropriate mathematical and statistical methods to describe and analyse the Earth's weather and climate systems.
3	Design, execute and report the results of a laboratory experiment or investigation.
4	Employ a range of laboratory and fieldwork skills to measure and quantify aspects of weather and climate.
5	Construct simple conceptual and mathematical models from physical principles and use them to explore the behaviour of weather and climate systems.
6	Apply concepts or risk and uncertainty to weather hazards and climate change impacts.
7	Analyse large weather and climate related datasets using appropriate computing tools and methodologies.
8	Create documentation associated with a computational investigation, including computer code, in a way which is reproducible by other scientists.
9	Explain the relevance to society of the weather and climate systems you have studied, including critical evaluation of how they impact upon policy and risk management.
10	Perform in-depth research into a specific area of meteorology and climate science and communicate your findings to a scientific audience.
11	Communicate scientific information to a diverse range of stakeholders such as government agencies, commercial companies and the general public.

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
N/A

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
IF0NUP	English for Academic Purposes Project	20	0

Part 1 Modules:

Module	Name	Credits	Level
IL1ASNU	English for Atmospheric Science	20	4
MA1CANU	Calculus	20	4
MA1LANU	Linear Algebra	20	4
MT1ITMNU	Introduction to Meteorology	20	4
MT1SESNU	Skills for Environmental Science	20	4
MT1WCFNU	Weather and Climate Fundamentals	20	4

Part 2 Modules:

Modules for NUIST-based teaching (if applicable):

Module	Name	Credits	Level
MT2AODNU	Atmosphere and Ocean Dynamics	20	5
MT2APNU	Atmospheric Physics	20	5
MT2CLCNU	Climate Change	20	5
MT2MMNU	Mathematical Methods for Weather and Climate Science	20	5
MT2NSMNU	Numerical and Statistical Methods for Weather and Climate Science	20	5
MT2WFNU	Weather Forecasting	20	5

Modules for UoR-based teaching (if applicable):

Module	Name	Credits	Level
MT2AOD	Atmosphere and Ocean Dynamics	20	5
MT2AP	Atmospheric Physics	20	5
MT2MM	Mathematical Methods for Weather and Climate Science	20	5
MT2NSM	Numerical and Statistical Methods for Weather and Climate Science	20	5

Students based at UoR for Part 2 must select a further 20 credits from a list of optional modules provided by the School of Mathematical, Physical and Computational Sciences. These are likely to be a choice of MT2ACT Atmospheric Chemistry and Transport or MT2WF Weather Forecasting.

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

Part 3 Modules:

Modules for UoR-based teaching (if applicable):

Module	Name	Credits	Level

MT3RP	Research Project	40	6

Students based at UoR for Part 3 must select a further 80 credits from a list of optional modules provided by the School of Mathematical, Physical and Computational Sciences, of which 40 credits should be in Semester 1 and 40 credits in Semester 2.

The choice of modules is likely to be (all 20 credits each):

Semester 1: MT3DWS Dynamics of Weather Systems, MT3ESW Atmospheric Electricity and Space Weather, MT3RS Remote Sensing Methods and Applications, MT3SBL Surface and Boundary Layer Meteorology.

Semester 2: MT3AFT Atmospheric Science Field Trip, MT3CS Data Science and Climate Services, MT3GCD Global Climate Dynamics, MT3NM Numerical Modelling for Weather and Climate Science, MT3OCN Oceanography.

Modules for NUIST-based teaching (if applicable):

Module	Name	Credits	Level
MT3DWSNU	Dynamics of Weather Systems	20	6
MT3GCDNU	Global Climate Dynamics	20	6
MT3NMNU	Numerical Modelling for Weather and Climate Science	20	6
MT3RPNU	Research Project	40	6
MT3SBLNU	Surface and Boundary Layer Meteorology	20	6

Placement opportunities

Placements:

N/A

Study abroad:

Students may choose to transfer to University of Reading campus for either Part 3 alone, or for Part 2 onwards.

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:

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

Core knowledge on this programme for Parts 1, 2 and 3 will be delivered through lectures, supported by a wide range of learning reinforcement activities appropriate to the material. These will include:

- Problems classes with in-class support
- Laboratory classes using meteorological instruments and fluid dynamics experiments
- Computer lab classes to introduce you to the fundamental elements of programming
- Online material such as quizzes, weather system analysis practicals and programming challenges. Approximately 30% of your overall programme will be delivered through a blended approach using on-line materials supported by in-person tutorial sessions, discussion boards etc
- Field work, both on the University's own Atmospheric Observatory and on an optional residential field trip, should you transfer to University of Reading campus.

All modules will require significant guided independent learning. This may involve reading set texts or published papers, completing problem sheets, writing up laboratory experiments or following weather and climate related news stories in the media.

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

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 assessment strategy for this degree programme comprises three main strands.

First is the assessment of core scientific/mathematical knowledge. This will be done partly through the use of more traditional assessment methods such as problem sheets, class tests and exams, coupled with online assessment methods such as quizzes.

With a key theme of science communication running through the degree the next strand of assessment will be based on how students are able to communicate and apply their knowledge through authentic assignments based on scientific and report writing skills for a range of different audiences. These skills will be introduced during Part 1, developed in Part 2 and mastered during part 3, with the method of communication at this stage varying depending on the optional module choices. All students will produce a dissertation on their research project, which will be written in the style of a scientific research paper.

A third strand of assessment will be based on the transferable skills that run through the degree programme. In particular the production, running and documentation of computer code to solve numerical problems or analyse weather and climate datasets will be developed and assessed using a range of different software tools and code libraries.

Details of assessment methods for individual modules are contained in the relevant module description forms.

Progression

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

(i) obtain a mark of at least 40% in IF0NU1 and IF0NUP.

(ii) obtain a Pass mark in IF0NU2 as specified in the module description.

Students who obtain 6.0, with no element (Speaking, Listening, Reading and Writing) below 5.5 in the IF0NU2 final test will be deemed to have met the English language progression requirements to Part 2 and will be exempted from the mandatory Part 1 preparatory learning module English for Academic Purposes IF1NU3A.

Successful completion of these modules will lead to progression to Year 1 of the student's chosen degree programme.

The achievement of a threshold performance at Foundation Year qualifies a student for a Certificate of Completion if they leave the University before completing the subsequent Part.

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, and:

(iv) Obtain a Pass mark in IF1NU3A as specified in the module description; and

(v) Obtain a weighted average of at least 40% over all modules at Part 1 provided by the Department of Meteorology (MT1ITMNU, MT1SESNU, MT1WCFNU).

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.

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

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.

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

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

The main additional cost for this programme is for an optional field trip in Part 3, should you transfer to University of Reading campus and choose that module. There are no compulsory textbook purchases for this programme. 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.

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.

At UoR: Printing and photocopying facilities are available on campus at a cost per A4 page of £0.05 (black and white) and £0.30 (colour). Essential costs in this area will be low as most coursework will be submitted electronically.

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 Atmospheric Sciences (NUIST-UoR Academy) NUIST-based (full-time) for students entering Part 1 in session 2027/28

1 July 2026