Programme Specification
BSc Meteorology and Climate   **UCAS Code: F790**
For students entering Part 1 in September 2026   **UFMETCLI**
                                                                UFMETCLIWY

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
Accreditation	The programme outlined here is approved by the Royal Meteorological Society as appropriate academic training for candidates seeking the qualification *Chartered Meteorologist*
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.

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.
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.
Placement/Study abroad year:	The year in industry occurs between Parts 2 and 3 of your degree. Students are responsible for finding and applying for their placement, and will be given help and support to do this from the School of Mathematical, Physical and Computational Sciences. Once you are successful in finding a placement you will be transferred onto the version of the degree programme including a placement year (UFMETCLIWY). The placement year provides experience of working in industry, government, research or other appropriate organisations. Training takes place in the workplace, usually including attendance at Continuing Professional Development courses as well as mentoring by a line manager. Actual contact hours will vary according to the placement and employer.
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.

Programme Learning Outcomes - BSc Meteorology and Climate

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
Placement By the end of the Placement Year Programme, students will have explored 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
MA1CA	Calculus	20	4
MA1LA	Linear Algebra	20	4
MT1ITM	Introduction to Meteorology	20	4
MT1PNW	Physics of the Natural World	20	4
MT1SES	Skills for Environmental Science	20	4
MT1WCF	Weather and Climate Fundamentals	20	4

Part 2 Modules:

Module	Name	Credits	Level
MT2AOD	Atmosphere and Ocean Dynamics	20	5
MT2AP	Atmospheric Physics	20	5
MT2CLC	Climate Change	20	5
MT2MM	Mathematical Methods for Weather and Climate Science	20	5
MT2NSM	Numerical and Statistical Methods for Weather and Climate Science	20	5

Remaining credits will be made up of optional modules available in the School of Mathematical, Physical and Computational Sciences or modules from an approved list.

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

The placement year is made up of one 120 credit module. Satisfactory completion of the placement is determined by the student's progress through the year, together with a presentation and reports submitted by the student and their employer.

Students who do not satisfactorily complete the placement year will be permitted to continue to Part 3 of the non-placement version of the programme.

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
MT3RP	Research Project	40	6

All remaining credits in Part 3 are optional. Remaining credits will be made up of optional modules available in the Department of Meteorology.

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.

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:

Core knowledge on this programme 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

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.

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

The programme outlined here is approved by the Royal Meteorological Society as appropriate academic training for candidates seeking the qualification *Chartered Meteorologist.*

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

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;
(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 are able to transfer from a Joint or Major/Minor Honours programme to a Single Honours programme in one of their joint subject areas at the end of Part 1, subject to:

- Meeting the University Threshold Standard at the end of Part 1; and
- Achieving marks of at least 40% in at least 40 credits of modules (e.g., 2 x 20 credit modules) in the subject to which they wish to transfer; and
- Meeting any programme-specific progression rules for the Part 1 Single Honours Programme to which they wish to transfer.

NB Students taking a Major/Minor programme may only transfer to a Single Honours programme in the Major subject and must meet the above requirements.

Students should seek advice about the titles of programmes they may be eligible to transfer to.

Students who transfer from a Joint or Major/Minor Honours programme to a Single Honours programme may not have taken all of the Part 1 modules listed in the Single Honours Programme Specification. The modules which they have taken will be shown on their Diploma Supplement.

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 professional/work placement and study abroad:
Part 2: one-third
Placement/Study abroad: not included in the classification
Part 3: two-thirds

Details of the classification method is given in detail in the <u>Assessment Handbook</u> 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. 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.

Costs are indicative and may vary according to optional modules chosen and are subject to inflation and other price fluctuations. Estimates were calculated in 2025.

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

BSc Meteorology and Climate for students entering Part 1 in session 2026/27
4 July 2025