Programme Specification

MMet Meteorology and Climate with a Year in Oklahoma **UCAS Code: F791**

For students entering Part 1 in September 2025 **UFMETCLIOKM**

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
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.

In addition to the content delivered at the University of Reading, this programme gives you the opportunity to spend a year studying at one of the USA's premier schools of Meteorology.

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.
Part 3:	In Part 3 you will spend the year in the School of Meteorology, University of Oklahoma USA. You will study modules from the undergraduate degree programme there, some of which are specific to the weather systems typical of the US mid-west. You will be taught by experts in their fields and will have opportunities to visit the US National Weather Center and the National Severe Storms Laboratory.
Part 4:	Part 4 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 - MMet Meteorology and Climate with a Year in Oklahoma

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.
12	Summarize the factors that determine the weather and climate of the US and the mid-west in particular.

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.

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.

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

Part 3 Modules:

Year at the University of Oklahoma

All modules in Part 3 are optional. You must select an appropriate number of modules in each of two semesters to meet a total of the equivalent of 120 credits at the University of Reading. You will be given guidance on choosing your modules prior to travelling to the University of Oklahoma. All modules chosen must be related to Meteorology and Climate.

Part 4 modules:

Module	Name	Credits	Level
MT4RP	Research Project	40	7

All remaining credits in Part 4 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.

Study Abroad:

Part 3 of this degree programme involves studying abroad at the University of Oklahoma (OU) USA. You will be given briefings and help on enrolling at OU, booking accommodation, travel and visas throughout Part 2 of your programme, prior to departure at the start of Part 3.

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 4, 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 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.

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.

Transferring from a Joint Honours to a Single Honours programme

Students are able to transfer from a Joint Honours to a Single Honours programme in one of their joint subject areas at the end of Part 1, subject to fulfilling the Part 1 University Threshold Standard, achieving marks of at least 40% in at least 40 credits of modules in the subject to which they wish to transfer, and fulfilling any programme-specific progression rules for the Part 1 Single Honours Programme to which they wish to transfer.

Students who transfer from a Joint Honours 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, 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; and

(iv) Obtain a weighted average of 50% over 120 credits taken in Part 2.

For any module passed in a re-sit examination the maximum mark carried forward into the final degree classification will be the higher of
(a) the first attempt mark; and
(b) the lower of 40 and the mark achieved in the re-examination.

Failure to progress from Part 2 to Part 3 at first attempt (i.e. prior to resits) means that the student will not be allowed to take the Year in Oklahoma and must resit in Reading to transfer onto the BSc Meteorology and Climate degree.

Any costs incurred regarding the trip to Oklahoma will not be refunded.

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.

Part 3
Mark translation:
Main algorithm
The main translation algorithm assumes that there is equivalence between the lettered grades at OU and the degree classifications at UoR.

In other words an A at OU is a 1st class honours at UoR, a B is a 2:1, C a 2:2 and so on. The percentage marks are then translated in a piecewise linear fashion between the marks required for the OU grades on either side of the boundary and the marks required for the corresponding UoR classifications.

Note that some modules can return marks of over 100% at OU. These are capped at 100% in the UoR scheme.

Grade-only algorithm: Some modules at OU only return a grade. In this case the mid-way point of the UoR classification is return. So A=85%, B=65%, C=55% and so on. Note that in some instance a student will see a percentage mark at OU that has not been returned officially to UoR and in these cases we have to work on the grade alone. This is not very common.

Pass/fail modules Very rarely some modules at OU only return as pass/fail to UoR. In this instance the mark awarded is simply the average UoR mark for all other modules, or 40% in the unlikely case that the average is below 40%.

Once the individual module marks have been translated they are combined into a single mark for Part 3 which is a weighted average of all the modules taken at OU.

In order to progress from Part 3 to Part 4, a student must achieve an average of 40% over 120 credits taken in Part 3.

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

Integrated Masters Programmes (MEng, MMath, MChem etc.)
Part 2: 20%
Part 3: 30%
Part 4: 50%

The classification method is given in detail in Section 18 of the Assessment Handbook.

Additional costs of the programme

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

The main additional cost of this programme is the Year in Oklahoma and there are a number of costs involved in this year. The University of Oklahoma has a number of charges including accommodation, health cover, and student maintenance fees. These costs amount to about £6000 for the year. The cost of a US student visa is approximately £300. Students must pay for their own air-fares to travel to and from the USA (return fare approximately £1000). These estimates do not include food or travel costs within the US.
When applying for a US student visa you will need to show that you meet the US financial requirements that are in place at the time.

The other additional cost for this programme is for an optional field trip in Part 4. 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 2024.

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.

MMet Meteorology and Climate with a Year in Oklahoma for students entering Part 1 in session 2025/26

3 July 2024