PhD ATMOSPHERE, OCEANS AND CLIMATE

Study within the largest meteorology department in Europe
What is a PhD?

The PhD in Atmosphere, Oceans and Climate programme offered within the Department of Meteorology at the University of Reading provides training in research into atmospheric, oceanic, or climate science leading to the presentation of a thesis containing original findings in a particular aspect of the field. A PhD is an original contribution, which advances science. It normally takes 3 years of full-time study (4 or 5 years of part-time study) as there is a 5 year time limit on most PhDs.

To achieve a PhD you will need:

- Strong self-motivation and some ‘resilience’
- Strong technical and intellectual skills
- Evidence of independent critical power and a command of your field
- To communicate what you have done (viva, thesis/papers, talks)
- To identify how your research contributes to the ‘big picture’

Many of our research students have little prior knowledge in atmospheric or oceanic sciences; the first two terms are normally partly occupied by taking a selection of appropriate Masters courses. Part-time arrangements are possible for students working full-time in another institution – please enquire.

Postgraduate degrees – MSc or PhD?

In addition to research programmes, we offer taught postgraduate degrees. For more information about the availability of Master’s courses, please see our brochure ‘MSc programmes in meteorology at Reading’ or visit www.met.reading.ac.uk/pg-taught
Become a expert in just three years!
Here’s what you can expect during your PhD at Reading:

Year One
Getting up to speed on your research topic, topping up with taught Master’s modules, depending on your background: guidance into your project area by your supervisor, perhaps with a short-term ‘starter project’.

Year Two
Developing your expertise and competence in experimentation (physical or numerical) and analysis.

Year Three
Take the reins: by now you will know more than your supervisor in your specialist area! Define your direction (with thesis in mind) and set the agenda, and aim to submit your thesis by the end of year three.

Thesis titles
Here’s a selection of recent PhD thesis titles, showing the breadth and depth of research topics catered for within our department:

• Langmuir Turbulence in the Ocean Surface Boundary Layer
• Evaluating latent heat release in extratropical cyclones in a high-resolution climate model using remote sensing data and global reanalysis
• Quasi-stationary Convective Systems in the UK
• Errors in Predicting Snow’s Near-Infrared Optical Grain Size
• Development and exploitation of a 30-year African rainfall climatology and time-series
The Department of Meteorology was established in 1965, and is the only UK university department to offer a full range of undergraduate and postgraduate courses in meteorology. We are internationally renowned for our excellent research and teaching in atmospheric, oceanic and climate science.

- The Department of Meteorology at Reading is the largest meteorology department in Europe, and one of the world’s leading centres in the field.

- We have strong links with the Met Office, the National Centre for Atmospheric Science (NCAS), the National Centre for Earth Observation (NCEO), the European Centre for Medium Range Weather Forecasts (ECMWF), and the Walker Institute for Climate System Research.

- The Department is a thriving research community – over 200 research scientists and typically around 80 PhD students.

- We have a mature and well-organised PhD programme, where your abilities can flourish.

- The science of the atmosphere and oceans is a great area for research – many fundamental science questions are wide open, exciting and challenging.

- There are strong socio-economic drivers: climate change and high impact weather.

- Excellent career prospects.

WHY READING?
‘The University of Reading was my first choice for a PhD in Meteorology, the academic opportunities are amazing here, and the vibrant social activities always keep me smiling’

Kate Fradley – Third year PhD student

Image credit: © Stephen Burt
In the most recent Research Excellence Framework results (REF 2014), 86% of our research was graded as world leading or internationally excellent. Our weighted score places us third in the country in the ‘Earth Systems & Environmental Science’ category, and makes us the highest-graded department focusing on the fundamental science of weather and climate.

We were rated particularly strongly on the impact of our research on society, and on the quality of our research environment. Research by our PhD students was central to these successes. Similarly, our unique and comprehensive range of undergraduate and postgraduate courses have always received the highest grade.

Our entire PhD theses collection – almost 400 to date – has recently been digitised and made available on the British Library’s Ethos service (www.bl.uk/EThOS) – one of the first university departments in the United Kingdom to do so. By doing this, we maximise the visibility and availability of our research in both academic and commercial environments. Printed copies of the theses are available to students and staff in our department library and searchable through our library catalogue.
EMPLOYABILITY
Around two-thirds of our recent PhD graduates go on to post-doctoral research positions within UK and international academic institutions. Others find employment in public-sector research centres, such as the Met Office or the Centre for Ecology and Hydrology, or in the private sector – a PhD in Atmosphere, Oceans and Climate opens many career opportunities in weather forecasting, risk analysis, insurance and re-insurance, oil extraction and mining, IT, or finance, as recent destinations of our PhD students show.

FUNDING
Most PhD funding is from the Natural Environment Research Council (NERC) via the SCENARIO Doctoral Training Partnership (DTP); this programme is led by us in partnership with other Reading-based NERC relevant science (Geography, Chemistry, Biology), the University of Surrey, NERC’s British Geological Survey, the Met Office, the Centre for Ecology and Hydrology and other partners.

We normally also have other studentships funded by a variety of NERC and other sources, the numbers varying from year-to-year, together with CASE funded projects. CASE (Cooperative Awards in Science and Engineering) studentships – most commonly Met Office projects, but occasionally other bodies such as the British Geological Survey – provide additional funding on top of the standard studentship stipend.

The Department of Meteorology also welcomes non-EU PhD students, funded by international projects, international scholarships, foreign government grants, or with their own funds.
What happens after your application?

Your application will be assessed based on your academic strengths. A 2.1 or better at your undergraduate degree or a Merit or better at your MSc are normally required, although relevant work experience can be taken into account.

Depending on your research interest, you can apply for a project advertised on the Department website or propose your own research proposal, in which case we will identify a suitable supervisor for you.
Our research community

Students and staff find the Department a friendly and informal place – one focus of which is the open plan coffee and meeting area on the first floor of the Meteorology Building.

Information about our Department and Departmental staff profiles can be found at: www.met.reading.ac.uk/about

Our research groups cover a wide range of topics – from operational radar meteorology, through urban climates and oceanography to data assimilation: for more details see www.met.reading.ac.uk/research

Facilities

Research students take a full part in the academic life of the department including participation in seminars, weather and climate discussions and group meetings. We offer taught courses in atmospheric science if required, while other staff and PhD students provide a wealth of knowledge in all aspects of meteorology, climate, mathematics, statistics, and computing. We also provide opportunities to assist as a paid statistics and computing demonstrator in our teaching programmes.

New students are allocated a ‘mentor’, a research student in their second or third year, to assist them in settling in. Supervisors will normally have one-to-one meetings with you every week – sometimes close interaction with post-doctoral researchers too – and there are weekly or fortnightly group meetings together with a wide range of seminars to broaden your outlook. Our PhD programme is also underpinned by a University-wide generic skills training programme, and most research students attend at least one summer school and one international conference during their three year period with us.

Because we have a large research student population (typically around 80 in total), we offer a huge range of social and sporting activities ranging from the annual departmental croquet competition for the Golden Mallet, our summer staff and students BBQ and the famous (infamous?) Christmas Panto, which is written by and stars PhD students.
STUDYING AT READING

Our magnificent setting is one of the University’s greatest attractions. Our main Whiteknights site is set in 130 hectares of beautiful parkland. This is the heart of University life and provides a special sense of community. With its green open spaces, lakes, rare trees and wildlife it is an exceptional environment in which to study, live and relax.

Visit us

We are home to a diverse and thriving community, which provides a unique and rewarding environment in which to live and study. To appreciate the University of Reading’s distinctive atmosphere and world-class facilities you need to come and look around. You can take advantage of one of the University Open Days or pay us an informal visit.

We invite all prospective Masters or PhD students to visit our department, to meet staff and current students, talk about our programmes and take a close look at our campus and departmental facilities.

To arrange a visit, please contact us using the contact details given overleaf.
When it came to interviews, my time at Reading stood me in very good stead. Employers were impressed not only with the very varied work in my portfolio but also with my ability to talk through ideas and think on my feet.

Fleur Richards
BA Typography & Graphic Communication Designer, BBC Sport Online

High-resolution satellite image from VIIRS (Visible Infrared Imaging Radiometer Suite) over the British Isles at 1249 UTC on 18 June 2014.

Image courtesy of the University of Dundee