

# School of Mathematical & Physical Sciences



## **MSc/Diploma Programme Handbook**

**October 2011 – September 2012**

- **Mathematics of Scientific and Industrial Computation**
- **Mathematical and Numerical Modelling of the Atmosphere and Oceans**
- **Applied Meteorology**
- **Atmosphere, Ocean & Climate**
- **Applied Meteorology and Climate with Management**
- **Data Assimilation and Inverse Modelling in Geosciences**

## Disclaimer

**The standard paragraph provided below is a guide for the convenience of students and staff. Formal Ordinances and Regulations are given in the University Calendar ([www.reading.ac.uk/calendar/](http://www.reading.ac.uk/calendar/)), in the Programme Specification (available at [www.reading.ac.uk/progspecs/](http://www.reading.ac.uk/progspecs/)) and in relevant module descriptions ([www.info.reading.ac.uk/module/](http://www.info.reading.ac.uk/module/)); should there be, or appear to be, any conflict between statements in this handbook and the full Ordinances, Regulations, Programme Specifications or module descriptions, the latter shall prevail.**

Although the information in this Handbook is accurate at the time of publication, aspects of the programme and of School practice may be subject to modification and revision. The University reserves the right to modify the programme in unforeseen circumstances, or where the process of academic development and feedback from students, quality assurance processes or external sources, such as professional bodies, requires a change to be made. In such circumstances, revised information will be issued. Information provided by the School in the course of the year should therefore be regarded, where appropriate, as superseding the information contained in the handbook.

## Alternative formats

The material in this handbook can be provided in alternative formats such as large print, Braille and on disk upon request to Sudha Vaidya ([s.vaidya@reading.ac.uk](mailto:s.vaidya@reading.ac.uk)).

Please keep this handbook in a safe place as you will need to refer to it throughout your programme.

# A letter from the Head of School

## Welcome to the School of Mathematical and Physical Sciences

We are delighted that you have chosen to study here this year. We hope that your time here will be interesting, challenging and enjoyable, and a valuable stepping stone in both your continuing education and the further development of your career.

You are joining one of the largest and most successful schools of mathematical and physical sciences in the country. It is an excitingly varied school, hosting the Departments of Mathematics and Statistics and Meteorology, the NERC National Centre for Earth Observation and large parts of the NERC National Centre for Atmospheric Sciences, and the Statistical Services Centre, a commercial consultancy and training unit, working for clients across the UK and globally. The School is home to and leads the University's Walker Institute for Climate System Research, which is at the forefront of the science of climate change and its implications for future human society. A distinctive asset to the School is that we also play host to approximately 30 Met Office scientists, embedded into our research activities.

This research effort is supported by £40M of competitively won research grants and contracts supporting a very lively research environment, with over 100 research staff and 100 PhD students, and many research groups and interesting research seminars, which you will be encouraged to attend. You will find our academic and research staff welcoming, keen to support you in your studies and involve you in their research, through dissertations and leading edge courses. You will find them excited about their research and teaching, whether deep mathematical theory, sophisticated computer simulation, or state-of-the-art experimental and field work. A distinctive feature of our School is a strong interdisciplinary emphasis, essential to tackling grand challenge problems in science, with many staff joint between our two departments. We also pride ourselves on very strong industrial and commercial links, and on the practical impact of our work, this facilitated by professorial chairs funded by the Met Office, Willis Re, and BMT, and by a successful spin-off company from Mathematics and Statistics. We will be introducing you to many of our industrial partners through your courses and/or MSc project opportunities.

We hope you find this MSc handbook a useful resource and source of information about your courses and the wider University. Our staff, including our staff in our School Teaching and Learning Offices, will, of course, be very pleased to field other queries you may have.

I wish you all the best in your studies and a very happy and successful year with us.

Prof Simon Chandler-Wilde



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## Key Dates for Mathematics Students

Date		Event
2011	07 October	Introductory Meeting
	10 October	Autumn Term starts- Programmes begin
	Early December	Selection of advanced optional modules for Spring Term
	16 December	Autumn Term ends
2012	Week before spring term (early January)	Examinations
	16 January	Spring Term Starts- Lectures begin (see timetable) and discussions concerning your dissertation topic starts
	February/ March	Discussions on topics for Literature Seminar
	23 March	Spring Term ends- Confirmation of dissertation or Diploma/ essay topic
	Early/mid April	Examinations - Final registration for MSc/Diploma will be taken after these examinations
	23 April	Summer Term starts- including <ul style="list-style-type: none"> <li>- Lectures begin (see timetable)</li> <li>- work begins on your Dissertation</li> <li>- C++ course</li> <li>- Four-day Forecasting Course run by the UK Met Office. This is only for MNMAO students</li> <li>- Modelling Week</li> <li>- Literature Seminars</li> </ul>
	29 June	Summer Term ends
	20 August	Dissertations submission deadline by 10am
	End Aug/begin Sept	Resit Examinations
	Mid-end September	Oral examinations with External Examiner
	Mid December	The graduation ceremony for MSc and Diploma students is held on a Saturday in mid-December.



## Key Date for Meteorology students

	Date	Event
2011	06 October	Introductory Meeting
	10 October	Autumn Term starts- Programmes begin
	28-30 October	Weekend field course in Dorset
	14 to 18 Nov	No Lectures; writing up of Dorset report
	Early December	Selection of advanced optional modules for Spring Term
	16 December	Autumn Term ends
2012	11 to 13 January	Examinations
	17 January	Spring Term Starts- Lectures begin (see timetable) and discussions concerning your dissertation topic starts
	20 to 24 Feb	Team project
	23 March	Spring Term ends- Confirmation of dissertation or Diploma/ essay topic
	Early/mid April	Examinations - Final registration for MSc/Diploma will be taken after these examinations
	23 April	Summer Term starts- Lectures begin (see timetable) and work begins on your Dissertation
	1 <sup>st</sup> week of May	Four-day Forecasting Course run by the UK Met Office for AOC students
	2 <sup>nd</sup> week of May	Four-day Forecasting Course run by the UK Met Office for AM and AMCM students
	29 June	Summer Term ends
	July or August	PRECIS one week workshop (AMCM only)
	02 to 03 July	Students give a brief, un-assessed (10 minutes + 5 minutes questions) presentation of their dissertation.
	02 July	Diploma Essay must be submitted by 12 noon.
	13 August	Dissertations submission deadline by 12 noon
	End Aug/ begin Sept	Resit Examinations
	Early September	Return all course-assessed material and project work to the School Office
	Mid September	Examiners' Meeting. Day on which provisional results are available. <i>You are required to be present in the Department on this day (date will be advised during the Summer term)</i>
Late September	After the Examiners' Meeting you may be required to make corrections to your dissertation. To graduate in December, one corrected and bound copy must be handed in to the School Taught Postgraduate Office by the end of October.	
Mid December	The graduation ceremony for MSc and Diploma students is held on a Saturday in mid-December.	



# Introduction

***This handbook is your guide to all MSc Programmes so you should read it carefully as soon as possible.***

## The School of Mathematical and Physical Sciences (SMPS)

The School was established on 1 August 2010, comprising the Department of Meteorology, the Department of Mathematics & Statistics, the Statistical Services Centre and the NERC Environmental Systems Science Centre. The Head of School is Professor Simon Chandler-Wilde (room 2L53, Meteorology).

School web-site is: <http://www.smps.reading.ac.uk/>

A list of Mathematics and Statistics staff contact details can be viewed at:  
<http://www.reading.ac.uk/internal/maths-and-stats/StaffResponsibilitiesandRepresentatives2010-11.aspx>

A list of Meteorology staff contact details can be viewed at:  
<http://www.met.reading.ac.uk/users/>

## Support Office

The School has a dedicated MSc Office for use by Mathematics and Meteorology MSc students. The office is located in room 212, JJ Thompson Building at Whiteknight campus. Office opening hours are from 10.00am to 2.30pm Monday to Friday. (more information about support is given in section 9)

- Mathematics students can also make enquiries to: [maths-pg@reading.ac.uk](mailto:maths-pg@reading.ac.uk)
- Meteorology students can also make enquiries to: [mscinfo@met.reading.ac.uk](mailto:mscinfo@met.reading.ac.uk)

# Academic Departments

The School is made up of two departments;

-Mathematics & Statistics (*detailed information about the Statistics Programme is available in separate handbook*)

-Meteorology

## The Department of Mathematics and Statistics

The Department of Mathematics and Statistics provides a focus for the physical and mathematical sciences to flourish within the University. It strives to engender an intellectual culture that extols excellence in research and scholarship in order to maintain the high level of quality research in Mathematics and Statistics.

The Department is home to both Pure and Applied Mathematicians, including Numerical Analysts, as well as Applied Statisticians, and has a thriving postgraduate community. There are three taught MSc courses run under this Department: Mathematics of Scientific and Industrial Computation, Mathematical and Numerical Modelling of the Atmosphere and Oceans and Biometry. In addition, there is a large cohort of PhD students, engaged on a range of projects from the pure, applied and numerical analysis disciplines to applied statistics within the Department, funded by Research Councils, industry and other sources.

More information about the Department can be found on the Department of Mathematics and Statistics web site: <http://www.reading.ac.uk/maths-and-stats/>

## The Department of Meteorology

The Department of Meteorology is an internationally renowned centre of excellence in both teaching and research in atmospheric science. It is recognised by the World Meteorological Organisation for the breadth and depth of its teaching and since 1965 it has trained many meteorologists who are now working in meteorological institutes in numerous countries.

The Department has grown rapidly in recent years and is one of the largest atmospheric science departments in the world. There are some two dozen full-time faculty teaching staff, about two hundred postdoctoral research scientists, and approximately 50 PhD Students. Typically a total of about 80 students are enrolled on undergraduate programmes and 25 to 35 on the MSc/Diploma programme.

More information about the Department can be found in the Department Handbook (copies available from room 1L42, Meteorology Building) and on the Department of Meteorology web site: [www.met.reading.ac.uk](http://www.met.reading.ac.uk).

## Board of Studies

The MSc programmes outlined in this handbook are overseen by the School Taught Postgraduate Programmes Board of Studies that normally meets once per term. The Chair is Ross Reynolds, Department of Meteorology (x8956, room 2U05).

# The Programmes

The School offers six one-year MSc/Diploma postgraduate programmes. Details of all MSc programmes can be found at: <http://www.reading.ac.uk/Study/pg-taughtaz.aspx>

<b>Mathematics</b>	<p><b>Programmes under Mathematics:</b></p> <ul style="list-style-type: none"><li>-MSc/Diploma in Mathematics of Scientific and Industrial Computation (MoSaIC)</li><li>-MSc/Diploma in Mathematics and Numerical Modelling of Atmospheres and Oceans (MNMAO)</li></ul> <p><b>Mathematics of Scientific and Industrial Computation</b></p> <p>This course is based on the highly successful course on Numerical Solution of Differential Equations together with various innovations, such as a Modeling Week.</p> <p>Differential equations form the basis of mathematical models for many problems in the physical and engineering sciences and also in the biological sciences. Very often the complicated nature of these problems leads to equations that can be solved only approximately, by numerical methods. The study of such methods is therefore of practical importance to industry and business and the need for people who can develop and apply numerical techniques to problems in these areas is growing rapidly.</p> <p>However, the numerical methods themselves often behave in a complicated way and the study of their stability, convergence and approximation properties forms an important part of numerical analysis. A proper understanding is needed of the differential equations being approximated; for example, it is important to know the conditions for a unique solution to exist and the characterisation of such solutions. The provision of a firm foundation in both the mathematical theory of differential equations and in numerical analysis is therefore an important part of the Course.</p> <p>Some understanding of typical practical application areas is also essential. Examples are drawn mainly from fluid dynamics and control engineering, which together cover a very wide range of practical problems and types of differential equations. They include for instance, models of the flow of compressible fluids (like air), incompressible fluids (like water), flows in porous media (such as water or oil underground), atmospheric flows (weather prediction) as well as mechanical, electrical and electronic control systems and chemical and bio-chemical reaction processes.</p>
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## **Mathematics and Numerical Modelling of Atmospheres and Oceans**

This course is offered jointly by the Departments of Mathematics and Meteorology. The course combines graduate study in applied and computational mathematics together with advanced training in meteorology and oceanography. The objectives of the course are to provide a foundation in the theory and techniques of mathematical and numerical modelling for atmosphere and ocean systems, together with practical experience in the application and analysis of computational simulation processes used in the environmental sciences.

Concern about the environment has brought increasing demands for the prediction of the possible effects of natural and man-made changes on both global and regional scales. The need is for quantitative analyses based on sound mathematical and numerical models of environmental systems. This is especially true in the areas of numerical weather prediction, long-range forecasting of climate variability, oceanography, dispersion of pollution and data assimilation. Data assimilation, which attempts to incorporate observational data on the environment into a dynamical model, is an area particularly ripe for development, since the current use of expensively acquired observational data is far from optimal.

The dynamic behaviour of the atmosphere and oceans is described by systems of differential equations. These equations form the basis of mathematical models for many problems in the physical and environmental sciences, including, for instance, models of the flow of compressible fluids (like air), incompressible fluids (like water), and flows in channels and through porous media (such as water aquifers or oil reservoirs), as well as models of the circulations in the atmosphere and oceans. The complicated nature of these equations generally leads to systems that can be solved only approximately, by numerical methods. The study of such methods is therefore of practical importance to industry and business, and the need for people who can develop and apply numerical techniques to environmental problems is growing rapidly. Providing a firm foundation in the mathematical theory of differential equations and in numerical analysis is therefore a primary aim of the course.

### **Meteorology**

#### **Programmes under Meteorology**

- MSc/Diploma in Atmosphere, Ocean & Climate (AOC)
- MSc/Diploma in Applied Meteorology (AM)
- MSc/Diploma in Data Assimilation & Inverse Methods in Geosciences (DAIMG)
- MSc/Diploma in Applied Meteorology and Climate with Management (AMCM)

The AM, AOC & AMCM programmes are intended to provide a quantitative scientific understanding of the Earth's atmosphere and its interaction with the surface environment.

Specifically the aims of the programmes are as follows:

**AOC** – to provide a quantitative description of the physical processes (including the influence of the oceans) that produce weather and climate, and the methods used to simulate weather and climate on computers

**AM** – to provide the scientific background to a wide range of meteorological applications focussing particularly on the links between the atmosphere and the land surface environment

**AMCM** – as AM above but with a broad introduction to management of individuals and organisations plus training in the use of the UK Met Office's PRECIS climate prediction software

**DAIMG** – to provide a thorough knowledge of the mathematical fundamentals of data assimilation and inverse methods as well as of practical applications, together with computer skills including data visualisation and exploration.

All programmes are of the same high academic standard. The AOC programme focuses more strongly on fluid dynamics and numerical modelling and therefore requires a more mathematical background (e.g. knowledge of vector calculus) whereas the AM and AMCM programmes places more emphasis on practical and laboratory work and data analysis. However, the programmes share many modules (e.g. atmospheric physics, climate change and tropical weather systems). Previous graduate placement indicates that career options are not significantly influenced by the choice of AOC or AM programme.

The DAIMG MSc is unique internationally, aimed at those with a strong mathematical background interested in not only the theoretical aspects of the subject, but also those with a desire to experience the wide-ranging applications in the geosciences.

Entrants to the MSc programme are normally required to have obtained a good honours degree in mathematics or a physical, environmental or engineering science. A-level physics or mathematics or equivalent is usually required. Students with other qualifications should discuss their background with either the Admissions Tutor (d.i.f.grimes:@reading.ac.uk) or Programme Director ([r.reynolds@reading.ac.uk](mailto:r.reynolds@reading.ac.uk)). Prior knowledge of meteorology is not essential. For more information about admissions please refer to the MSc pages on [www.met.reading.ac.uk](http://www.met.reading.ac.uk).

# Programme Specification

The programme specifications for the MScs discussed in this handbook are available in Appendices and also via <http://www.reading.ac.uk/progspecs/2010/prog-pgfaculty2010.asp?faculty=SC>

Students must complete all core modules and also choose optional modules. A dissertation must be completed by the middle of August.

**IMPORTANT:** Students must fully research their option choices because, after option choices have been made, any changes must be approved by the Programme Director and will only be permitted under special circumstances.

## Mathematics

### Programme Schedule

With the exception of a weather forecasting course (MNMAO only), the Modelling Week, the C++ short course and the Literature Seminars all of the taught part of the MSc Programme, consisting of lecture and practical modules, occurs within the Autumn and Spring Terms. These courses module are scheduled as intensive one week courses during the Summer Term and the remainder of the time (from mid-May to the end of August) is devoted to your dissertation. Re-sit exams, if required, are held at the beginning of September while the Oral Examination is in mid to late September. Apart from periods during the Christmas and Easter vacations when the University is closed, you should expect to be in the Department for the whole of the year attending modules or working on your dissertation.

The programme structure is summarised below and is described in more detail in the following sections.

PERIOD	CONTENT
Autumn Term	Introductory, core and optional modules
Christmas vacation	Exams for Autumn term
Spring term	Core and optional modules
Easter vacation	Exams for Spring term
Summer term until mid August	Weather Forecasting course (MNMAO), C++, Modelling Week, Literature Seminars Dissertation/Diploma Essay
Early September	Resit Exams
Mid to late September	Oral Examination

	<p><b>Autumn term (October-December)</b></p> <p>The Autumn Term teaching introduces core elements of the numerical solution of differential equations together with an introduction to FORTRAN programming. In addition it provides a basic introduction to atmospheric science for MNMAO students and, where necessary, elementary numerical and functional analysis to all students. In addition to the compulsory core modules students are free to take one or two of their optional modules. The modules are assessed by a combination of coursework together with written examinations during the Christmas vacation.</p> <p><b>Spring term (January-March)</b></p> <p>The Spring Term contains additional core elements as well as more advanced and specialised modules. Certain modules are compulsory but you are also able to choose from a selection of optional modules. The modules are assessed by a combination of coursework together with written examinations during the Easter vacation.</p> <p><b>Summer (April-August)</b></p> <p>During the Summer Term there is a short crash-course on the C++ programming language, the Modelling Week (optional but highly recommended for MNMAO students) and the literature seminars which form the bulk of the assessment of the MAMB5 Communication Skills module. MNMAO students will also attend a one-week practical weather forecasting course run by instructors from the UK Met. After these short courses, you will start your MSc dissertation project. The dissertation topic is chosen before Easter in consultation with members of academic staff. The dissertation must be written up and submitted by not later than <b>10:00 on 20<sup>th</sup> August 2012</b>. The dissertation should contain a critical and comprehensive review of current and recent research in the chosen field and will usually also contain some original research in the form of numerical work.</p>
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<p><b>Meteorology</b></p>	<p><b>Programme Schedule</b></p> <p>With the exception of a weather forecasting module (for all students) and a PRECIS workshop for AMCM students, all of the taught part of the MSc Programme, consisting of lecture and practical modules, occur within the Autumn and Spring Terms. The weather forecasting module and the PRECIS workshop are scheduled as intensive one week courses during the Summer Term and the remainder of the time (from beginning of May to mid-August) is devoted to your dissertation. Week 6 in the Autumn and Spring terms is free from lectures but focuses on other activities. Re-sit exams, if required, are held at the end of August and/or the beginning of September while the Examiners' meeting (when provisional results are released) is in mid-September. Apart from periods during the Christmas and Easter vacations when the University is closed, you should expect to be in the Department for the whole of the year attending modules or working on your dissertation.</p>
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The programme structure is summarised below and is described in more detail in the following sections.

PERIOD	CONTENT
Autumn Term	Introductory modules
Christmas vacation	Exams for Autumn term
Spring term	Advanced modules
Easter vacation	Exams for Spring term
Summer term until mid August	Weather Forecasting course Dissertation/Diploma Essay PRECIS workshop (AMCM)
Late August/early September	Resit Exams
Mid-September (1-day)	Examiners' Meeting

### **Autumn term (October-December)**

The Autumn Term teaching provides a basic introduction to atmospheric science and mathematical skills (for DAIMG students). No prior knowledge of the subject is assumed but you will need to be familiar with the relevant maths and physics. One weekend within this period (for AM, AMCM and AOC students, normally near the end of October) is devoted to a two-day residential field trip during which you will make frequent observations of the weather in Dorset on the south coast of England. This is occasionally a very active time for extra-tropical cyclones and previous trips have experienced some exciting gale force winds. Week 6 of the Autumn Term is free from any lectures (AM, AMCM and AOC). The time in this week is used to analyse the field trip data and to give you the opportunity to read notes, books, etc. to help consolidate the taught material. The Autumn Term modules are all compulsory and are assessed partly by coursework and partly by written examinations. DAIMG students have a mix of compulsory and optional modules.

### **Spring term (January-March)**

The Spring Term contains more advanced and specialised modules. Certain modules are compulsory but you are also able to choose from a selection of optional modules. The choice is made at the end of the preceding Autumn Term in consultation with your tutor. The modules are assessed by a combination of coursework together with written examinations during the Easter vacation. The Department reserves the right to withdraw an advanced module if less than five students decide to register for examination in that module. Week 6 of the Spring Term is free from any lectures (AM, AMCM, AOC). It is used for a one-week long Team Project in which you will work together in small groups to research and present a report on a specific topic. The Team Project is an assessed part of the Professional Skills module (MTMG05).

**Summer (April-August)**

During the Summer Term, you (AM, AMCM, AOC) will attend a one-week practical weather forecasting course run by instructors from the UK Met Office (the final part of the Professional Skills module). This will give a real feel as to how weather forecasters use and interpret numerical weather forecasts each day. In addition, the AMCM students will attend a one-week PRECIS workshop within the Department, run by UK Met Office staff. After the Forecasting course, you will start your MSc dissertation project. The dissertation topic is chosen before Easter in consultation with members of academic staff. The dissertation must be written up and submitted by not later than **1200 (noon) on 13<sup>th</sup> August 2012 (AM, AMCM, AOC) and 1200 (noon) on 20th August 2012 (DAIMG)**. The dissertation should contain a critical and comprehensive review of current and recent research in the chosen field and will usually also contain some original research in the form of experimental work and/or data analysis. Near the end of the Summer Term, students give brief (10 minute) presentations on their chosen topics to practice scientific communication skills and to obtain feedback on their topics from academic staff and fellow MSc students.

**Part-time MSc degree over two years**

Students who wish to undertake the MSc programme part-time (not AMCM) over two years will complete a subset of modules in each year on a timetable agreed with the Programme Director. The Team Project and Forecasting Course (MTMG05 Parts (2) and (3)) can be completed in either year. There is also a regime for two-year part time registration for the DAIMG MSc.

# Dissertation

The dissertation is a major component of the MSc programme worth 60 credits, equal to one third of the total mark.

## Preparation

The dissertation topic is chosen in consultation with members of academic staff. A list of suggested topics which staff members are willing to supervise will be circulated during the Spring Term. The topics are updated each year and you may also propose your own dissertation topic providing it can be supervised by a member of academic staff.

Your dissertation supervisor will meet with you regularly (usually weekly) to give advice and comments on your work while you are preparing your dissertation. In planning your dissertation work schedule you should allow for periods of time during which your supervisor may be away during the summer.

<b>Mathematics</b>	<p>The MSc dissertation typically consist of either (a) a critical evaluation of the literature on a particular topic, (b) the solution of a practical problem, or (c) a theoretical investigation of a numerical method applicable in an appropriate area for the programme being undertaken. Diploma dissertations may consist of one or more long essays.</p> <p>Work on the dissertation should start at the beginning of the Summer Term. It is wise to ensure that a typed draft of at least part of the dissertation is available for the supervisor's comments <u>by the beginning of August</u>: academic staff take the opportunity during August to attend conferences and take holidays. Also, the time needed to word-process the dissertation is often miscalculated.</p> <p>The dissertation must be submitted by the beginning of the fourth week in August. These will be independently assessed prior to the oral examination, held near the end of September, with the External Examiner present. The dissertation will be marked and the marks will be included in the final weighted average mark for the course.</p> <p><u>Literature Seminar*</u> You will be required to give a 20 minutes literature seminar as part of the MAMB5 Communications Skills module in week 4 or 5 of the Summer Term. This should usually use one or more papers form the literature to give a general overview of the area of your dissertation.</p>
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**\*DAIMG students also required to do this.**

<p><b>Meteorology</b></p>	<p>The aim of the dissertation is to enable you to acquire the skills needed for scientific research in assembling a body of information and arriving at a critical appraisal of it. The dissertation will help you to develop your own specific interests in the general field of meteorology and can help prepare you for research or other work in a particular field.</p> <p>The dissertation normally includes elements of practical work, data analysis and critical literature review, although sometimes projects can be entirely based on a more extensive literature review.</p> <p>The literature review involves finding and reading original scientific papers covering current and recent developments in your chosen topic and presenting a logical, comprehensive, and organised account of these developments. You are also expected to make a critical assessment of the published work, and to give a reasoned account of your views concerning future developments and implications of your topic. The literature review component will be assessed on how thoroughly you have covered your chosen field and on the level of critical discussion.</p> <p>The practical work and the data analysis offer an opportunity to do some scientific research often on areas at the forefront of weather and climate science. The methods and results should be written up clearly and concisely in a scientific style and should include a critical assessment of the strengths and weaknesses of the approach. The assessment of your dissertation will take into account the quality of practical work, data analysis and interpretation of results as appropriate. Details of the assessment process will be provided during the summer term, including the marking criteria.</p> <p>The presentation and organisation of the material in your dissertation will also contribute to your final mark. Your dissertation must be in your own words. It is NOT ACCEPTABLE to quote extended extracts or use figures from textbooks or articles without giving proper accreditation. The dissertation should include a complete and correctly formatted bibliography. A document giving more details on the dissertation format and supervision procedures will be circulated in the Spring Term. Dissertations are normally written by students on their own or Departmental personal computers. It is important to back up your work regularly – on to a memory stick /flash drive CD-ROM or other medium, just in case anything goes wrong.</p> <p><u>Oral presentation</u></p> <p>In order to benefit from feedback on your research from fellow students and academic staff and for the chance to practice scientific communication skills, all Meteorology students give brief oral presentations of their projects near the end of the summer term. The presentations are ten minutes long, followed by a few minutes of questions and should describe the aim/background of the topic, preliminary results, and a brief outline plan for the rest of the project. These presentations are not formally assessed but they can significantly help improve the quality of the final dissertation (which is assessed!).</p>
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## Submission

**NOTE: you should plan to submit a near-final version of your dissertation electronically to your tutor by a mutually-agreed date that may be between one and two weeks before the final deadline quoted in the next paragraphs.**

**With your agreement, and to benefit you, the draft dissertation can be run through 'Turnitin' software to check for any problems related to plagiarism.**

There is a **STRICT DEADLINE** for submission of dissertations

<b>Mathematics</b>	The final version must be submitted electronically not later than <b>10:00 am on 20<sup>th</sup> August 2012</b> together with four hard copies (one properly bound and three stapled) to the School Office, Room <b>211</b> in the JJ Thomson Building. Students must include a signed declaration form with each copy of the dissertation.
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<b>Meteorology</b>	<p>The final version must be submitted electronically not later than <b>1200 (noon) on 13<sup>th</sup> August 2012 (AM, AMCM, AOC) and 1200 (noon) on 20<sup>th</sup> August 2012 (DAIMG)</b> to the School Office, Room <b>211</b> in the JJ Thomson Building.</p> <p>After the Examiners' Meeting in September, one permanently bound copy of your dissertation, incorporating any changes or corrections required by the Examiners, <b>MUST</b> be submitted to the School Office no later than <b>31st October 2012</b>. Bound copies of all previous MSc dissertations are on display in the Meteorology department library. Dissertations by students who achieved a distinction are marked with a star on the spine.</p>
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Failure to meet the deadline will be penalised unless there are exceptional circumstances. It is therefore important not to leave the final preparation of your dissertation until the last minute – computers, printers and photocopiers are often very busy and can malfunction occasionally!

See the section on Submission of Coursework for details of penalties for late submission and the section on Extenuating Circumstances for procedures for seeking an extension to the deadline for submission.

## Copyright

Normally, the copyright of the dissertation rests with the candidate (any exceptions are included in the University's Intellectual Property Code of Practice). The Head of School concerned should be informed in writing if the candidate is not willing for the dissertation to be made available for loan/online or photocopying for the benefit of persons or bodies not necessarily connected with the University of Reading. A note of any such restrictions will be attached to the dissertation. The University is subject to the Freedom of Information Act and it will take account of a candidate's interests in considering any application under the Act.

## Resubmission

In the unusual event that you are required to resubmit your dissertation, in order to achieve a pass mark, the deadline is 12 months after the original deadline i.e. **12<sup>th</sup> or 19<sup>th</sup> August 2013** depending on the MSc. It is your right to resubmit once under these circumstances.

# Assessment

The University's Code of Practice on the Assessment of Taught Programmes can be downloaded from the web at: <http://www.reading.ac.uk/Exams/cpat.htm>

Further information on examinations and assessment can be found on the Examinations Office website (<http://www.reading.ac.uk/exams/>).

Formal assessment varies by unit and may be by examination and/or assessed coursework.

Examinations are held in January just before the start of the Spring term and during the Easter Vacation period. Re-sit examinations are held in the end of August/ beginning of September.

## Coursework

Throughout the programme there will be an element of coursework associated with the modules. This will include exercises, computing projects and possibly reports as well as the final dissertation. To enable feedback marked coursework will be returned to students. The External Examiner may wish to inspect course work. Accordingly, when such material is returned to you after marking, it should be collected to form a portfolio, hence **all assessed course work must be resubmitted to the School Office along with your dissertation**. In addition, the University reserves the right to retain coursework for the purposes of Programme review (both internal and external).

## Submission of coursework

Coursework should be submitted by the due date in accordance with the arrangements specified by the lecturer who has set the work. Failure to submit the work by the due date will mean that a penalty is applied; unless an extension to the date for submission has been granted or approval is given for remission of the normal penalty (please see the section below on Extenuating Circumstances). It is essential that you hand in laboratory reports and other assignments by the required deadline so that they can be included in your assessment.

Coursework submission office is situated in Physics building, room 211, where you will be asked to complete a Coursework Coversheet. Work will then be time and date stamped, and receipted. The School Office opening hours are from 9:00-16:30 Monday to Friday. It is closed for lunch between 13:00-14:00.

Make sure you keep a copy of all work you submit.

## Extensions and remission

Students may request in advance an extension to the date for submission of coursework (by using the Extenuating Circumstances form) and should submit their request in good time. If an extension is granted and the work is submitted by the revised deadline, no penalty will be applied. Extensions will only be granted for good reason.

Students may request remission of the penalty for late work (i.e. the normal penalty for late submission is waived or varied). Remission will only be granted for very good reason and normally only for a reason which could not have been anticipated in time to make a request for an extension. If remission is granted, no penalty will be applied.

Requests for an extension or remission should be submitted on the Extenuating Circumstances form to the School Office. If you consider that the decision on your request is unfair, you may seek a review of the decision. Appeals should be submitted to the School Office and will be considered by the Faculty or School Director of Teaching and Learning for the Faculty 'owning' the module.

## **Penalties for late submission**

The following penalties will be applied to coursework which is submitted after the deadline for submission:

- where the piece of work is submitted up to one calendar week after the original deadline (or any formally agreed extension to the deadline): 10% of the total marks available for the piece of work will be deducted from the mark;
- where the piece of work is submitted more than one calendar week after the original deadline (or any formally agreed extension to the deadline): a mark of zero will be recorded.

You are strongly advised to ensure that coursework is submitted by the relevant deadline. You should note that it is advisable to submit work in an unfinished state rather than to fail to submit any work.

## **Formative assessment**

You may be set coursework as a formative assessment, which allows you to benefit from feedback but does not contribute to the mark for the module. If you fail to submit such work by the deadline for submission, you forfeit your right to any feedback. It is entirely at the discretion of the marker whether to provide feedback.

## **Feedback to students**

It is the University's policy that you should receive rapid, structured and appropriate feedback on your assignments. While such feedback may be oral, normally it will be written and will contain comments appropriate to the nature of the assignment and how it is to be assessed. These comments, whether positive or negative, should provide the basis for you to improve and develop. You should expect that the type and amount of feedback will vary depending on whether the assignment is formative (usually coursework within a particular module) or summative (counting towards the final mark for a module). In setting an assignment, you can expect staff to give you an indication of the date on which an assignment will be returned and feedback provided.

If you would like feedback on your overall progress, module providers will give you an indication of your progress in an individual module, while feedback on progress on your programme will be given by the programme director.

## **Reviews**

Students who fail their programme at the second attempt are normally required to leave the University. All students have the right to make a case to the Senate Committee on Failures in Examinations for an exceptional third attempt at the assessment failed. Such a case should only be made on the basis of exceptional circumstances. Details of the Committee and the Standing Committee on Examination Results, which considers requests for the review of results, are given in the Guide to Assessment for Taught Postgraduate Students and on the Exams Office website.

## **Assessment and re-assessment subsequent to a student's period of registration**

Most full-time students will have completed the assessment process (including re-examination) by the end of the academic year in which they were registered for their programme. In a small minority of cases, students will have assessments or re-assessments to be undertaken in the academic year following their normal period of registration. Students in this category will not be registered at the University for the academic year following their normal period of registration, and will not normally be permitted to attend lectures, seminars or tutorials, or to submit further formative work during this period. They are, however, permitted to attend any revision sessions or other revision activities which are included in the normal provision for students. They may also seek guidance from tutors and lecturers in relation to their revision.

Students who have been deemed not to have sat and are undertaking assessment in the academic year following their normal period of registration are permitted to apply to the relevant Faculty Director for Teaching and Learning to attend specified classes. The Faculty Director will consider each case on its merits, and will grant such an allowance in cases where a student, due to his or her circumstances, has missed certain classes.

All students who are undertaking assessment or re-assessment in the academic year following their normal period of registration have free reader-only access to the library and may apply for an academic visitors' card (which allows borrowing) provided that the request is supported by the relevant School, the student lives locally, and the student is not in debt to the University.

## **Appeals**

Appeals for review of overall results for a Final Examination

Students who consider that they have a genuine and well-founded reason for asking for their overall examination result for a Final Examination to be reviewed must consult their Personal Tutor and/or Head of Department/School as soon as possible after the publication of the provisional result. If their concern cannot be settled within the Department/School, they have the right to submit a case to the Senate Standing Committee on Examination Results. Details of the procedures of the Committee and the deadlines for submission of cases are available at: <http://www.reading.ac.uk/Exams/scer.pdf>

## **Appeals for review of marks**

A student who considers that he or she has been awarded unfairly a mark for a module may request that the mark be reviewed, provided that the grounds for the request do not relate to the academic judgement of the Examiners. The procedures relating to students' requests for review of alleged assessment irregularities in relation to module marks are available at: <http://www.reading.ac.uk/Exams/ModuleMarks.htm>

## Programmes Assessment

Three final qualifications are possible for our MSc programmes: Masters Degree, Postgraduate Diploma, and Postgraduate Certificate. Different criteria based on the sum of module credits have to be satisfied to obtain each of these qualifications. Each module has a credit weighting of either 10 or 20 with the exception of the MSc dissertation which is worth 60 credits and the Diploma essay worth 30 credits.

Progression at the end of each term requires students to have attempted all assessments during the term. The University's taught postgraduate marks classification is as follows:

Mark	Interpretation
70 – 100%	Distinction
60 – 69%	Merit
50 – 59%	Good standard (Pass)
40 – 49%	Work below threshold standard (Fail)
0 – 39%	Unsatisfactory Work (Fail)

Mathematics	Oral examination is compulsory to all MNMAO and MoSaIC students.
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Meteorology	Oral examination (viva) of some or all the candidates may be held at the Examiners' Meeting in September.
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During the oral examination, candidates will be expected to show an understanding both of the background to their dissertation and of the general course work. Such interviews are for the External Examiner to gauge the quality of Reading's Masters students compared to other broadly similar programmes.

### Programme award requirements

#### Masters degree

A Masters degree is awarded on successful completion of 180 module credits.

Mathematics	Students must complete all core modules (100 credits) and also choose optional modules worth 20 credits, for MNMAO students one of the options must be from Meteorology.
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Meteorology	Students must complete all core modules (80 credits) and also choose FOUR modules in the Spring Term from those marked optional (40 credits).
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A dissertation worth 60 credits must be completed by mid-August.  
Degree categories are decided on the following basis.

## Masters Degree

- DISTINCTION:** A weighted average mark of 70 or more over 180 credits  
AND  
a mark of 60 or more for the dissertation  
AND  
no mark below 40.
- OR
- A weighted average mark of 68 or more over 180 credits  
AND  
a mark of 70 or more in at least 90 credits  
AND  
a mark of 60 or more for the dissertation  
AND  
no mark below 40.

AND for MNMAO/MoSALC	At least 40% in MAMA5
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- MERIT:** A weighted average mark of 60 or more over 180 credits  
AND  
a mark of 50 or more for the dissertation  
AND  
no mark below 40.
- OR
- A weighted average mark of 58 or more over 180 credits  
AND  
a mark of 60 or more in at least 90 credits  
AND  
a mark of 50 or more for the dissertation  
AND  
no mark below 40.

AND for MNMAO/MoSALC	At least 40% in MAMA5
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- PASS:** A weighted average mark of 50 or more over 180 credits  
AND  
a mark of 50 or more for the dissertation  
AND  
no significant weakness (i.e. no mark below 40 in modules agreed at validation to be of special significance to the programme)  
AND

no absolute weakness (i.e. the total credit value summed for all modules marked below 40 does not exceed 30 credits and for all modules marked below 50 does not exceed 55 credits).\*

OR

A weighted average mark of 48 or more over 180 credits

AND

a mark of 50 or more in at least 90 credits

AND

a mark of 50 or more for the dissertation

AND

no significant weakness (i.e. no mark below 40 in modules agreed at validation to be of special significance to the programme)

AND

no absolute weakness (i.e. the total credit value summed for all modules marked below 40 does not exceed 30 credits and for all modules marked below 50 does not exceed 55 credits).\*

AND for MNMAO/MoSAlC	At least 40% in MAMA5
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**FAIL**

A performance which fails to fulfil the criteria for the above classifications.

### **Postgraduate Diploma**

A Diploma is awarded on successful completion of 120 module credits.

Mathematics	Students must complete all core modules (100 credits) and must also EITHER choose optional modules worth 20 credits, for MNMAO students one of the options must be from Meteorology, OR complete an extended essay (worth 20 credits) by the end of June.
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Meteorology	Students must complete all core modules (80 credits) then follow either of the following two routes: Students must choose FOUR modules in the Spring Term from those marked optional (40 credits) Students must choose ONE module in the Spring Term from those marked optional (10 credits) and complete an extended essay of about 10,000 words on a topic chosen in consultation with a member of staff. The extended essay is worth 30 credits and must be submitted by the end of June.
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## Postgraduate Diploma

**DISTINCTION:** A weighted average mark of 70 or more over 120 credits  
AND  
no mark below 40.

OR

A weighted average mark of 68 or more over 120 credits  
AND  
a mark of 70 or more in at least 60 credits  
AND  
no mark below 40.

AND for MNMAO/MoSAlC	At least 40% in MAMA5
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**MERIT:** A weighted average mark of 60 or more over 120 credits  
AND  
no mark below 40.

OR

A weighted average mark of 58 or more over 120 credits  
AND  
a mark of 60 or more in at least 60 credits  
AND  
no mark below 40.

AND for MNMAO/MoSAlC	At least 40% in MAMA5
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**PASS:** A weighted average mark of 50 or more 120 credits  
AND  
no significant weakness (ie no mark below 40 in modules agreed at validation to be of special significance to the programme)  
AND  
no absolute weakness (ie the total credit value summed for all modules marked below 40 does not exceed 30 credits and for all modules marked below 50 does not exceed 55 credits).\*

OR

A weighted average mark of 48 or more over 120 credits  
AND  
a mark of 50 or more in 60 credits  
AND  
no significant weakness (ie no mark below 40 in modules agreed at validation to be of special significance to the programme)  
AND

no absolute weakness (ie the total credit value summed for all modules marked below 40 does not exceed 30 credits and for all modules marked below 50 does not exceed 55 credits).\*

AND for MNMAO/MoSaIC	At least 40% in MAMA5
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**FAIL:** A performance which fails to fulfil the criteria for the above classifications.

### Postgraduate Certificate

A certificate is awarded on successful completion of 60 module credits. Students must complete all assessed modules in the Autumn Term (60 credits). To pass the Postgraduate Certificate students must gain an average mark of 50 or more. In addition the total credit value of all modules marked below 40 must not exceed 10 credits.\*

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\* Note: The provision to permit a candidate to be passed overall with a profile containing marks below 40 is made subject to the condition that there is evidence that the candidate applied him or herself to the work of those modules with reasonable diligence and has not been absent from the examination without reasonable cause.

## Publication of marks and grades

Students should be aware that marks and grades given to them during their degree programme are provisional and subject to moderation by the External Examiner, who may recommend changes either to the marks of a particular student or to those of a whole group. Marks therefore only reach their final form after they have been scrutinised and approved by the appropriate Examiners' Meeting, which takes place at the end of the programme.

# Extenuating Circumstances

*Serious problems, including personal problems that could prevent you from working to the best of your ability are known as extenuating circumstances.*

**You are responsible for notifying your School of any circumstances which you consider might have affected your performance. If you do not submit an extenuating circumstances form, your circumstances will not be considered. In addition, you should inform your Personal Tutor.**

To notify the School, complete the University's notification of Extenuating Circumstances form. The form is available from School Office, the University Medical Practice, the Counselling Service and on the University's website at [http://www.reading.ac.uk/web/FILES/exams/ECF\\_2011.pdf](http://www.reading.ac.uk/web/FILES/exams/ECF_2011.pdf).

The completed form should be submitted as soon as possible to your School Office. If you have suffered an illness or injury which has been treated by a doctor not attached to the University Medical Practice, you will need to provide a medical certificate or report from the doctor. If your medical condition has been treated by a doctor at the University Medical Practice, you do not need to obtain a medical certificate, but you should give your consent on the extenuating circumstances form for the doctor to disclose information about your condition.

Examiners will take note of illness or other serious personal circumstances in considering a result, provided that appropriate information has been submitted. A candidate may, at the discretion of the Examiners, be deemed not to have sat an examination if illness or other serious personal circumstance has prevented the candidate from sitting the examination or has significantly affected the candidate's performance. A student who has been deemed not to have sat at the first attempt may sit the examination at the next opportunity as if for the first time.

If you are ill or have other difficulties at the time of the examinations, the Examinations Officer may be able to arrange for you to take examinations either in the University Health Centre or in the special examination centre in St Patrick's Hall.

Extenuating circumstances cannot be claimed retrospectively after the School examination board has made its decisions. In no circumstances will claims for extenuating circumstances be considered after a student has seen their grades.

More information from the website: <http://www.reading.ac.uk/internal/exams/student/exa-circumstances.aspx>

# Academic Misconduct

The University takes the most serious view of cheating and other forms of academic misconduct, whether in written examinations or coursework. Any such case will be treated as a disciplinary matter and will be referred to the School Director of Teaching and Learning, who may impose a penalty or refer the matter to the relevant Faculty Director of Teaching and Learning, who has powers to impose more severe penalties. In the most serious cases, the Faculty Director of Teaching and Learning will refer the matter to the Senate Standing Committee on Academic Misconduct, which may lead to a student being failed in all assessments for the relevant Part of their programme or removal from membership of the University.

You should read the University's definition of academic misconduct, which is given in the Guide to Assessment for Taught Postgraduate Students, and on the Examinations Office website at <http://www.reading.ac.uk/Exams/academicmisconduct.htm>.

Where a marker considers work to be excessively derivative and poorly referenced but not to be plagiarism (within the terms of the University's definition) the work should be treated as an instance of poor academic practice and not academic misconduct. The student should be given an appropriately low mark, appropriate advice, and a warning in respect of future academic conduct.

## Copying

It is clear to all that, if a student is asked to do a piece of work, then simply copying all or part of someone else's work is not acceptable. Copying is cheating and regarded seriously as academic misconduct. More importantly, perhaps, it is not sensible. If there is a purpose in asking a student to do a piece of work it will be to promote or assess the student's learning, and copying contributes nothing to that purpose. Equally, you should never employ anyone to write an essay for you: this is a variant of copying.

This includes cheating in written examinations and plagiarism or copying of others' work. Cases of alleged academic misconduct will be reported to the relevant Head of School or School Director of Teaching and Learning and, if necessary, to the appropriate Faculty Director of Teaching and Learning, and the Standing Committee on Academic Misconduct. A proven case of academic misconduct is treated as a disciplinary matter.

The Standing Committee on Academic Misconduct has the power to impose disciplinary sanctions, including failure in all the assessments for a Year or Part of a course. It may also recommend that a student is expelled from the University.

## Falsifying Data

Falsifying data, for example making up data and pretending the values were measured during an experiment is another form of academic misconduct.

# Plagiarism

For the purposes of the University regulations, plagiarism is defined as the fraudulent representation of another's work as one's own. This applies whatever the source of the material (for example, a published source, the web, or the work of another student), whether the material is copied word for word or paraphrased, and whatever the extent of the material is used. Wilful and deliberate disregard for good academic practice in respect of attribution of material will be construed as plagiarism.

## How can you avoid plagiarism?

This handbook offers detailed advice relevant to your subject. If you have any queries or require further information, you should consult the relevant lecturers.

## General Advice

When preparing almost any piece of work you will use sources. These may be purely information, they may explain techniques and ideas, they may be evaluative overviews of an area or they may take other forms. It is fundamental to your learning that you understand the relevant material and use that understanding to tackle the task in hand. The better you understand the content the less likely it is that you will, accidentally or otherwise, use other people's words.

You should keep notes of the material you use (and its source), and especially of any material you have quoted verbatim. It is best to make the notes in your own words, after you have understood the material, since extensive quotation, even when properly acknowledged, is usually poor practice and runs the risk of being plagiarism when not acknowledged. In some cases you might also want to copy out sections of a source verbatim, but you must be sure that you know it is a direct quotation to avoid the possibility of your using it inadvertently. There are various conventions for referencing academic work. Use those applicable to the relevant subject.

You should not compile a piece of work by cutting and pasting together text from one or more sources. Neither should you use lengthy quotations from other sources, acknowledged or not, with relatively little input from yourself. At best this is very derivative, and therefore poorly regarded, at worst it is plagiarism.

An essay or dissertation is expected to be in your own words, except where you are using direct quotations from primary or secondary sources. Obviously you will use ordinary words, and possibly phrases, from sources and you should beware that, especially where you have not engaged well with the content, you may do this accidentally. You must acknowledge all the sources you have used, and identify specifically, and mark in the text any direct quotations you make from other sources by putting them in inverted commas. If you are using someone else's ideas but not their words you should employ phrases such as 'Jones argues', again giving the source of your information. Even if you identify sources, simply altering a few words, or the order of the words will give a very derivative result which may not even merit a pass mark. You need to absorb the ideas and express them yourself, giving the emphasis you think important to the main points. You should formulate your own explanations and judgements and, above all, your own conclusions.

As a student you may be asked to solve a particular problem where you may refer to standard techniques as a justification of the truth of some assertion you have made, or some step in the solution. This needs no further acknowledgement. Moreover the "common knowledge" of the subject does not

need to be acknowledged; you do not need to acknowledge the technique of adding two numbers or facts like the melting point of ice being 0°C. Each discipline will give advice on this. Equally, when a problem requires a solution based on the use of a computer, computer programs and code for software packages should be written by you and not copied from someone else, or, if you have used an existing package, then you must acknowledge its use. You may wish to compare your results with those of someone else; it is acceptable for this to lead to changes to the code that you originally wrote, and hence revised results - but you must do the revising, not simply copy someone else. Including computer output that has been produced by others, or photocopies of such output, is an example of plagiarism, if not acknowledged.

## **Joint or group work**

Students may discuss a piece of work they all have to do, think through the issues together and come to some joint conclusions. In group work this is explicit and uncontroversial, as the output will be acknowledged as coming from the group. In cases where the students are asked to carry out individual work there is frequently a grey area, but nobody is suggesting there should be no discussion. In essay-type material it is reasonably clear that independent write-ups will be different, but for analysing data or solving a mathematical problem this is less clear: the theory will constrain independent correct work to be quite similar. What is totally unacceptable is for one student to do the work and for others simply to copy it. If independent work is sought, then after the group discussions each individual should write the results in his or her own words and draw independent conclusions.

If you are in any doubt as to what is acceptable, you should seek guidance from your lecturers. Example of acceptable and unacceptable practices can be found in Appendix 6.

## **Using information from text books and journal articles**

In many assignments and pieces of work you will be expected to include information from sources such as text books and journal articles. It is very important that when you do so you summarise the information in your own words and that you do not copy direct phrases, sentences or section of text from the source you are referencing without proper acknowledgment. In doing this, you are demonstrating to yourself and anyone who reads your work that you fully understand what you are writing.

## **Plagiarism and its detection**

It is a requirement that all work that students submit is their own and not copied from others, and that all quotations and sources are duly acknowledged. In doing a piece of work, students will, of course, use sources, and the University generally encourages students to discuss their work with others. The final writing of a piece of work should be the student's however, and to gain marks students are expected to add value to material which they use. For details of this see the advice about plagiarism above.

It occasionally happens that we receive work which appears to have plagiarised material in it and, in common with other universities, the University of Reading subscribes to a Plagiarism Detection Service for comparing work received with that of other sources. Students agree that by taking this MSc programme, all required work may be subject to submission for textual similarity review to this service for the detection of plagiarism. All submitted papers may be included as source documents in the

system's reference database solely for the purpose of detecting plagiarism of such papers in the future. Use of the plagiarism service shall be subject to such Terms and Conditions of Use as may be agreed between the Service and the University of Reading from time to time and posted on the Service's and University's websites.

## Consequences

The most serious view will be taken within the University of plagiarism and other forms of cheating. Any such case will be treated as a disciplinary matter and will be referred to the Head of School who may then refer the matter to the Faculty Director of Teaching and Learning. Minor cases may be dealt with at School or Faculty level, but if the case is serious it will be referred to the Senate Standing Committee on Academic Misconduct which may impose such penalties as are deemed appropriate. The Senate Standing Committee on Academic Misconduct has the power to impose disciplinary sanctions, including a failure in all the assessments for a Year or Part of a programme. In sufficiently serious cases the Senate Standing Committee on Academic Misconduct may refer the case to the Standing Disciplinary Committee which has the power to remove the student from membership of the University. (See the provisions of the Regulations for Conduct (31) to (41) for the procedures.)

## Working together with other students

We strongly encourage you to work together with your fellow students and to discuss lecture material and coursework with each other. Such discussions are a vital part of the learning process. Often the best way to check that you understand something is to try to explain it to someone else. Also as regards coursework, comparing different approaches to a problem may provide you with valuable insights which you could not get from simply reading a text book.

HOWEVER, with regard to assessed coursework, it is extremely important that, having discussed an assignment with other students, you then go away and complete it on your own. Cases in which assignments from two or more students contain identical wording, or are otherwise overly similar, will be treated as plagiarism and will be penalised accordingly.

## References and citations

In the course of a piece of extended writing you will almost certainly use some material from other sources. Where you consult books, papers or other sources you must acknowledge the source, both in the bibliography at the end of the work and at the time when you quote the work. If you produce an account which is inspired by someone else's work, you must still acknowledge this, in words like 'based on Laurel and Hardy, "Advanced Mathematics", Cambridge University Press, 1990, page 666'. It is not necessary to quote sources for standard material or techniques of the subject, although it will often be natural to say what result or technique you are using.

Where you are quoting work from some other source you should put it in quotes. The quotation should then be exactly what is in the source, with omissions marked by three dots. If you need to insert words of your own in a quotation (to make sense where words have been omitted or to relate it to the rest of the text) these should be in square brackets. Where you are referring to the meaning rather than the exact words of some source you should use phraseology like 'Li and Yorke [1] show that if in a

dynamical system there is an orbit of period three then the system is chaotic.' The list of references would have to say exactly what [1] is; this presumes the references are in a numbered list at the end. You might refer to the paper by name within the text or indicate it other than by numbering the references consecutively. Some authors prefer to list the references alphabetically by author and then by year, so you might refer to this paper as Li and Yorke (1975). Unless the specification for the piece of work in hand requires otherwise, the list of all sources used should be quoted in a list at the end of the work, in a sensible order. Note that it is unacceptable to invent false references.

*Examples of References.*

P. M. McCabe, J. A. Leach, and D. J. Needham, The Evolution of Travelling Waves in Fractional Order Autocatalysis with Decay, I, Permanent Form Travelling Waves. *Siam J. Appl. Math.* **59** (1999) 870-899

J. R. Whitehead, The Design and Analysis of Sequential Clinical Trials, 2nd edition, *Chichester, Wiley*, 1997.

Notice the slightly different forms for journal articles and books. These could be numbered or referred to as, for example, McCabe, Leach and Needham (1999). (If these authors had more than one entry for 1999, refer to them in the order listed as 1999a, 1999b etc.)

### Conventions for acknowledging collaborative work

There will be no true collaborative work involved in the MSc course. However, if you consult with someone or receive substantial help, this should be acknowledged, either in the section where the consultation was relevant or in the acknowledgement section of the report. This might simply amount to a sentence like 'I am grateful to Pilar Rubble for her help with Chapter 3'.

### Reading lists for students

<p><b>Mathematics</b></p>	<p>A booklist is issued at the beginning of the programme. It is divided into introductory, main and background texts. The majority of the texts are available in the Departmental Library, others in the main library. It is not expected that students buy many (if any) of the texts. However, they will serve as invaluable reference for certain aspects of the course. Module lecturers will indicate the recommended texts for their topic. The list is not exhaustive and students are encouraged to explore other reference material, both in traditional text book form and from resources on the web.</p>
<p><b>Meteorology</b></p>	<p>Reading for Meteorology students is quoted either in the module specification or recommended by the lecturer during the course of the module.</p>

# Communication

We would like you to enjoy your course here and get the most out of it, so please do not be afraid to talk to us even if the matter seems trivial. It is much better to tackle potential problems early rather than ignoring them and allowing them to grow into major difficulties. If at any stage in the programme you have academic or personal/health problems that you feel are affecting your performance or general happiness then please raise these matters **AS SOON AS POSSIBLE** with either your tutor (see below) or with the MSc Programme Director. If they are not available then please talk to the MSc Secretary (Sudha Vaidya) who may be able to help you. In addition, we have a very active staff-student committee that provides a mechanism for giving feedback on all aspects of the programme – your input helps us to improve our teaching.

Communication of vital information is by email. Please ensure you check your University email regularly.

Shortly after your arrival, you will receive a University of Reading computer account and e-mail address that will enable you to access Internet from computers around campus and in the Department. Since email is the most usual means of rapid communication in the Department, you should check your mailbox daily for important information (e.g. from your tutor, the Programme Director, etc.). Please use this e-mail account to communicate with us instead of external mail accounts such as hotmail.com etc. for the following reasons.

- the University guarantees that this account will be available to you for the entire duration of your studies;
- the University guarantees that suitable, supported email software will be available to you for the entire duration of your studies;
- the University offers an email service to standards of availability, reliability, performance and security which it determines and which are under its own control.

You may set up forwarding arrangements to automatically send email received in your University account to another email account of your choosing; however, you do so at your own risk and should ensure that you forward to a valid and existing account. The University can only be held responsible for email reaching your University email account. If an email has been sent without apparent problem to your University account, the sender may reasonably assume that you will receive that email. If you do wish to forward email from your University account to a private Internet Service Provider account, you can do this by changing your email options at [www.mailopts.reading.ac.uk](http://www.mailopts.reading.ac.uk). Or contact ITS Helpline at [ITS-Help@reading.ac.uk](mailto:ITS-Help@reading.ac.uk) for advice about the procedure.

It is advisable for a copy of the email to be delivered to (and stored in) your University account as well by including your University email address on a separate line under your personal email address in the mail options.

Unless otherwise instructed by your School, you should not submit coursework using email.

<p><b>Mathematics</b></p>	<p>For <b>Mathematics</b> students- It is also important that students <u>regularly</u> check the MSc post-tray in the Mathematics General Office (Room 214), since urgent and often important information on course arrangements is to be found here. Students taking any Meteorology modules should also check the notice boards and pigeonholes in the Meteorology Department.</p>
<p><b>Meteorology</b></p>	<p>For <b>Meteorology</b> students- In addition to checking your email on a regular basis, it is also important that you frequently check the Notice Boards (in the Main Foyer and the Coffee Lounge in the Department) and your pigeon-hole/postbox (near the laboratories in the basement) for important notices. Teaching staff and students are required, as a bare minimum, to check their email accounts <b>at least once a week</b> during term-time.</p>

# Student Support

## Academic Services

Details of library and IT services provided by the University can be found in the online student diary at <http://www.info.reading.ac.uk/student/docs/studentdiary.pdf>.

A list of relevant academic staff with their contact detail is available in Appendix 7.

## Administrative Services

The MSc Office is located in room 212 JJ Thompson Building and is manned by the MSc Secretary, Sudha Vaidya ([s.vaidya@reading.ac.uk](mailto:s.vaidya@reading.ac.uk)). Sudha is available to answer general queries about the running of the MSc course, although academic matters should be addressed to the appropriate lecturer or the Programme Director:

- Dr Peter Sweby for Mathematics ([p.k.sweby@reading.ac.uk](mailto:p.k.sweby@reading.ac.uk))
- Mr Ross Reynolds for Meteorology ([r.reynolds@reading.ac.uk](mailto:r.reynolds@reading.ac.uk))
- Prof Peter Jan van Leeuwen for Data Assimilation ([p.j.vanleeuwen@reading.ac.uk](mailto:p.j.vanleeuwen@reading.ac.uk))

At the beginning of the year students must notify the MSc office of their term time address and contact telephone numbers. This information should be kept up-to-date throughout the year. If there is a need for absence from lectures this should be discussed with the Programme Director. Any unexpected absence should be notified to the MSc Secretary as soon as possible on [s.vaidya@reading.ac.uk](mailto:s.vaidya@reading.ac.uk).

Other administrative contacts in absence of MSc Secretary are:

- Mrs Sue Davis for Mathematics ([s.davis@reading.ac.uk](mailto:s.davis@reading.ac.uk))
- Mrs Christine Macfarlane for Meteorology and DAIMG ([c.m.macfarlane@reading.ac.uk](mailto:c.m.macfarlane@reading.ac.uk))

<b>Mathematics</b>	<b>Mathematics Departmental Facilities</b>  <b>Tutoring and supervision</b>  Each student will be allocated a member of staff who will act as tutor for the year. The tutor will play a dual role as both a "pastoral" and an academic advisor.  During the preparation of your dissertation, the role of tutor generally passes to your dissertation supervisor.  If you have any academic problems or personal/health problems which you feel are affecting your work please see <u>either</u> your tutor or the Course Organiser as soon as possible.
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## **Department/School accommodation**

The Mathematics Building houses not only the Department of Mathematics and Statistics itself but IT Services also. The Department occupies most (but not all) of the first floor and all of the second and third floors of the building. Room numbers indicate which floor of the building the room is on by their hundreds digit, e.g. room 100 is on the first floor, 212 is on the second floor and 314 on the third. Rooms on the ground floor of the building have numbers below 100. The central teaching classrooms within the Department are rooms 100, 104, 108, 113, 212, 215, 304 and 314. The secretarial offices are rooms 203 (Ros Young), 209 (Sue Davis) and the general office 214 (Brigitte Calderon).

Computing facilities are located in rooms 105 and 316 and the Departmental Library is situated in room 313C. There is a photocopier opposite room 203, to which all students will be issued a user number. A common room, for use by staff and students, is situated on the first floor (room 112), and a kitchen for the use of postgraduate students and staff is located opposite room 102. Please keep the kitchen tidy. Tea and coffee is available at cost, but please supply your own mugs; the supply in the cupboard is for official departmental use, as is the dishwasher so please wash up your own cups etc. The microwave may be used but please keep it clean. The general office, computing facilities, library and photocopier all have combination locks on their doors. Combinations are issued at the start of the year – please keep the library and computing facilities locked when no one is in the rooms.

Twenty-four hours access to the Mathematics Building is available using your access card issued by the library. Keep this card safely as it must be returned at the end of the year. Do not divulge your PIN number or any of the combinations for departmental rooms to anyone else.

Attached to the Mathematics Building is the JJ Thompson Building. As well as lecture theatres it houses the School Teaching & Learning Administrator- Katherine Shaw(room 210), the School Teaching and Learning Office (Coursework Submission Office, room 211) and Admissions and MSc Office (room 212). Like the Mathematics Building the hundreds digit indicate the floor number. There is duplication of room numbers between the two buildings, but any document issued by the Mathematics Department with unqualified room numbers will refer to rooms in the Mathematics Building.

The Meteorology Department is located at the Earley Gate part of campus, which is a short walk through the woods or across the lake from Mathematics. Each floor has an upper and lower level, which is denoted by U or L in its room number, e.g. 1L42 is on the first floor, lower level. Rooms are clearly sign posted. There is a common room area on the 1L level and the School Postgraduate Office dealing with the Meteorology MSc courses is room 1L42.

## Library and Computing Facilities

As well as the University Main Library the Department has a library in room 313C. It houses an extensive collection of books relating to areas of research and postgraduate study within the Department. Books may be borrowed for unlimited periods but **must be booked out** and, for the convenience of others who may wish to consult them, they should normally be kept in the Department. The barcode reader attached to the PC records borrowing and return of books. Each student is issued with a personal bar code for this purpose.

The University has a wide range of computing facilities; for further information see the section on Academic Services in the Student Diary and the relevant documents issued by IT Services. These facilities include a PC lab in JJ Thompson Building (room 128). In addition, within the Department, there are a number of PCs. The PCs in the common room (112) are for general undergraduate and postgraduate use. All other computing facilities (PCs in 105 and 316) have restricted login privileges for mathematics staff and postgraduates only. The University has a central filestore and so a user's files are available (as the N:/ drive on PCs) on whichever machine the user logs into. Usernames are issued to students on registration.

The department has two colour printers available in rooms 105 and 316. Both are accessible from all departmental workstations. At the moment there is no charge for normal use of these printers; however their use is recorded and monitored and quotas may be implemented if unreasonable use occurs. (For example they should not be used in place of the photocopier.)

All general access computing facilities in the Mathematics Building are maintained for us by IT Services and so problems should be reported to its-help@reading.ac.uk or by phoning extension 6262. The ITS web pages contain detailed documentation of facilities and general software; its-help is able to deal with general computing queries.

## Seminars

Each Tuesday at 4pm in term time the Applied Mathematics Group holds a seminar in the Department. Some of these are given by members of staff, research assistants and research students in the Department, whilst others are given by outside speakers. **All M.Sc./Diploma students should attend these seminars**, (unless they have other academic commitments) which provide a valuable opportunity for keeping up-to-date with developments in various areas of Applied Mathematics. In addition students on the Mathematical and Numerical Modelling of the Atmosphere and Oceans course should attend the Current Weather Discussion series in Meteorology at noon on Fridays. Students in their first postgraduate year may only understand a small part of the material, but in this way they get an overall impression of the research going on in the field, what opportunities there are for further research and where the interests of research workers lie. It is still valuable to try to extract something worthwhile from a seminar that is generally difficult to follow, for this is a situation which one is bound to meet often in a future career.

	<p>There are other seminars in the Department of Meteorology and in Mathematics from time to time, which will be of interest. Details are circulated and/or posted on notice boards and members of staff will be happy to advise on whether they are likely to be useful.</p>
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<p><b>Meteorology</b></p>	<p><b>Meteorology departmental facilities:</b></p> <p>The Meteorology Department has its own library which holds copies of all recommended texts as well as a great variety of books on meteorology and related topics and long runs of important meteorology journals. Many meteorological journals are also available electronically. Information can be found at <a href="http://www.met.reading.ac.uk/library">www.met.reading.ac.uk/library</a>. Details of how to use the Department library will be provided during the first week of term.</p> <p>Computers for students use are available within the Department in rooms 3L67, 1L34 and the library. 1L61 also holds few computers; however it is a classroom, hence cannot be accessed all the time. There is a university supported computer lab in room GL68. This lab is within the Meteorology building but must be accessed by going out of the Department at the main entrance, turning right and following the building round to the extreme south west corner.</p> <p><b>Tutoring and supervision</b></p> <p>Upon your arrival, a member of academic teaching staff will be designated as your academic tutor for the Autumn term. He/she is there to help you get the most you can out of the programme and will help deal with any academic (or personal) problems you may wish to raise. This opportunity to interact regularly in a small-group setting with a scientist who is actively involved in weather/climate research and teaching will enrich your experience and give you a personal opportunity to learn more about research.</p> <p>During the first term (Autumn) the tutor will meet you weekly in a small group of 2 to 4 students to discuss any matters that may have arisen in the taught modules during the week or wider issues not dealt with in lectures. Work done during the tutorials is not formally assessed but can help you do much better in the assessed assignments and examinations. During the second and third terms, there are no formally timetabled tutorials. After the Easter break, academic supervision passes to your dissertation supervisor who will meet with you on a regular one-to-one basis to discuss your dissertation work.</p> <p>In addition to your tutor, members of the teaching staff will welcome any comments or questions you may have about material they cover in the modules. It is an important aspect of being a scientist to ask questions so please don't hesitate to do so during or after the lectures. Otherwise arrange an appointment to talk to the lecturer concerned at some mutually convenient time.</p>
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## **Weather and Climate Discussion and weekly seminars**

The Department is very active in research and hosts some very good weekly seminars both from internal and external researchers. In addition, once a week, there is an exciting one-hour Weather and Climate Discussion in which recent weather around the world is summarised, “hot” research topics are discussed and the following week’s weather forecast is presented. You are strongly encouraged to attend these events held throughout the year. They will help to give you a good understanding of current research and areas of interest in atmospheric science. They will also contribute to your general understanding of meteorology and could help inspire your choice of dissertation topic and even future career.

## **Photocopying**

Photocopying cards are provided free by the School Postgraduate Office in the Meteorology Building to enable you to do A4 copies on the Departmental photocopier housed in the Departmental Library. This is intended to cover photocopying of, for example, journal articles, items for the Team Project, and the production of your dissertation.

## **Opportunities for developing transferable skills**

You will have the opportunity to develop transferable skills (such as written and spoken communication, use of IT, information handling, interpersonal skills, etc) through your programme of study. Details of skills within programmes are given in module descriptions and programme specifications. The University provides a wide range of opportunities for students who wish to enhance or reinforce their skills. You may also wish to acquire additional skills to those gained through your programme as part of your own personal development, and in preparation for life beyond university. Being able to articulate and present evidence of your skills is something which is greatly valued by employers.

The University encourages a broad and varied student experience, both through study and extracurricular activities such as societies and volunteering. Knowing what opportunities are available and how they lead to personal development is now much easier through the Skills Opportunities At Reading (SOAR) website. This links to resources and events offered by providers such as the Library, IT Services, Study Advisers, RUSU, Mathematics Support Centre and the University Language Centre.

The website is available at <http://www.reading.ac.uk/SOAR>.

## **Additional Costs of Studying**

During your time studying at Reading, you may encounter some additional costs, for example field trips, text books, or stationery. It is prudent to budget appropriately for these costs, and the Money Doctors in the Students' Union or at [www.rusu.co.uk](http://www.rusu.co.uk) can help with this. More specific information can be given by your department or school

## **Recognising and rewarding skills development**

The Reading Experience and Development (RED) Award is a University scheme that rewards students for undertaking extracurricular activities as well as helping students to develop employability skills and personal attributes. You can choose to take part in a wide range of activities, including volunteering, work experience and paid work as well as taking part in training and development sessions that really help to make you stand out from the crowd. The experiences you undertake as part of the Award will allow you to gain additional skills to those you learn within your academic programme. Why is this important? Employers are looking for applicants who recognise their own abilities and ambitions and who can articulate those effectively. The RED Award will help you to do just this; by taking part in the scheme early on in your University career, you will soon gain confidence with managing your future career. The website is available at <http://www.reading.ac.uk/redaward>.

## **Special needs**

The School Special Needs co-ordinator is Katherine Shaw (JJ Thomson Building, room 210, tel: 8541) who is the first point of contact for students with special needs, whether previous declared or not. In addition there is a University Disability Co-ordinator in Room 210, Whiteknights House (tel: 8115). The Disability Office web site can be found at [www.reading.ac.uk/disability](http://www.reading.ac.uk/disability).

## **Students with disabilities, disabling conditions or specific learning difficulties (such as dyslexia)**

The Disability Discrimination Act (DDA) 1995 was amended in 2005 to introduce a Disability Equality Duty which includes a framework of "general" and "specific" duties imposed on public bodies (including Universities) to promote disability equality. This has resulted in all Universities being required to produce a Disability Equality Scheme. Our overarching goal of this Disability Equality Scheme 2009 -12 is to promote equality of opportunity, eliminate disability related discrimination and harassment, promote positive attitudes towards disabled people and to encourage disabled people to participate in public life.

The University scheme provides a chance to further develop our longstanding disability agenda and the whole scheme can be accessed via the following link <http://www.rdg.ac.uk/equality>.

Further information and queries may be directed to:-

Disability Advisory Service (0118 3787306)

E Mail: [disability@reading.ac.uk](mailto:disability@reading.ac.uk)

Website <http://www.rdg.ac.uk/disability>

Equal Opportunities and Diversity Office

E Mail: [m.e.mcgrath@reading.ac.uk](mailto:m.e.mcgrath@reading.ac.uk)

Website: <http://www.rdg.ac.uk/equality>

## Careers

<p><b>Mathematics</b></p>	<p><b>MoSaIC</b>            The programmes will provide the basic mathematical tools required for the development and analysis of modern numerical techniques for the solution of differential equations and will provide experience in implementing and applying the numerical procedures to industrial models. Graduates will therefore possess the skills required for development and effective use of specialist, application based computer packages. The programmes will enable mathematicians, scientists and engineers with a wide variety of backgrounds and specific subject interests to obtain the mathematical foundations and practical skills needed for computational modelling in modern industry.</p> <p><b>MNMAO</b>            The majority of graduates from the course will pursue careers in the mathematical and environmental sciences. The course will provide the skills and knowledge base for a wide range of careers including:</p> <ul style="list-style-type: none"> <li>• Research and forecasting posts in national meteorological services (including The Met. Office)</li> <li>• Research work and technical posts in universities</li> <li>• Research and technical posts in other environmental science institutes (such as the Institute of Hydrology and Hydraulics Research Wallingford)</li> <li>• Research posts in environmental science consultancy firms</li> <li>• Forecasting and analysis in meteorological consultancies</li> </ul>
<p><b>Meteorology</b></p>	<p>The record of employment in relevant areas of science for AOC and AM students is very good. In the last two years, students have found employment with the UK Met Office, Meteogroup, WSI, FUGRO and Hydrologic in addition to moving on to PhDs either in the department or elsewhere.</p> <p>The module MTMG05 'Professional skills' in Term 2 will give you the opportunity to visit or hear talks about work in organisations related to atmospheric and environmental science.</p>

## Student Employment Experience & Careers Centre

The Student Employment Experience & Careers Centre (SECC) is here to help you with the often-difficult process of deciding what you would like to do when you leave university. We aim to work with you throughout your time at university. The Service has recently achieved the MATRIX Quality standard for Information, Advice and Guidance.

The University hosts two major national centres: the Centre for Excellence in Teaching and Learning and the Centre for Careers Management Skills. They enhance the support that we provide to students at all stages of their Higher Education experience.

Where the SECC is:

At **Whiteknights**: on the first floor of the Carrington Building, next to the Student Union Building. Opening hours: Monday-to-Friday, 9.30am to 4.30pm during term time and 10.00am to 4.00pm during vacations.

Email: [careers@reading.ac.uk](mailto:careers@reading.ac.uk). Telephone 0118 378 8351.

## Career Planning

Information, advice and helpful web links that address the special circumstances of postgraduates are available on the SECC website (e.g. how to write CVs for a job within academia, how to write CVs for a job outside of academia). Career management materials for postgraduates are currently being developed for a new website and these will be available in the coming year. These materials will include case studies, exercises and video clips of postgraduates and employers.

## Exploring your career and academic options

You can see a Careers Advisor on a 'quick query' basis any weekday between 10.30am and 4.30pm during term and 1pm until 4pm outside of term time. This can help to get you started with planning your career or simply have someone check your application form or CV.

A special postgraduate weekly drop-in service is offered each Wednesday at the Carrington Building – details from SECC or on the website.

Help is also available for those who have no idea of what they want to do after they complete their course. Longer appointments with a careers adviser are also available. The website never shuts - keep an eye on this to find out what's on: [www.reading.ac.uk/Careers](http://www.reading.ac.uk/Careers)

## Special events

We also actively run events for all students to meet potential employers and voluntary organisations at Summer and Autumn Fairs. Numerous seminars and workshops are open to all on topics such as 'How to write a CV', 'Effective Interview Skills' and practice aptitude tests. Pick up your 'Events Guide' from your departmental pigeonhole (in the Department basement) and check the website at the start of every term.

## Job Shop - Getting a part-time job

The SEECC has a Job Shop advertising local part-time, temporary and vacation work to help you finance your studies and gain useful work experience. These vacancies are advertised on a dedicated web-site [www.readingjobshop.co.uk](http://www.readingjobshop.co.uk) and consist of part-time, temporary and vacation opportunities.

## Putting you in touch with employers

As well as the General Careers fairs, we also organise specialist subject fairs such as teaching, law and construction management for example as well as running annual Work Experience event and mentoring events. You will also find a range of graduate jobs on our website <http://www.reading.ac.uk/careers>

In addition to the SEECC many departmental staff have contact with local industry. The Programme Director will be happy to direct you to appropriate members of staff. Also, it is not uncommon for MSc students to progress to PhDs, either at Reading or elsewhere. It is advisable to indicate any interest in this at an early stage; again staff have contacts at other universities and may be able to advise you accordingly.

## Developing learning practices- Study Advise

Starting a postgraduate course means meeting higher academic standards. This can involve a steep learning curve for both home and international students. The Study Advisers can help with every aspect of postgraduate study, so come and ask us about...

- writing assignments at a new level
- managing your dissertation
- advanced referencing
- coping with more material and a faster pace of learning
- using academic theories to support your writing
- adjusting to new academic expectations and culture
- time management
- research methods

Taking time to address any study concerns now can really save time later, allowing you to develop your study practices before beginning a longer piece of research or dissertation. The Study Advisers offer confidential one-to-one advice sessions which usually last 30 minutes. We are very happy to book one hour sessions for postgraduate research students, as we are aware they often have longer and more complex work to discuss. If you would like an hour session, then please mention this when you book.

Appointments are available every week day during term-time and most days during vacations in the Main Library, Whiteknights, Room 103 (first floor) – see website for details.

[www.reading.ac.uk/studyadvice/](http://www.reading.ac.uk/studyadvice/).

To book an appointment: phone 0118 378 4242 (10.00 – 16.00 weekdays) or e-mail [studyadvice@reading.ac.uk](mailto:studyadvice@reading.ac.uk) – giving your mobile number.

We run workshops and provide online and paper study guides. See our website to access our study guides and for more information on workshops.

We also offer advice, support and assessments for specific learning difficulties (including dyslexia, dyspraxia and AD(H)D). To discuss any of these, please book an appointment.

## Editorial and proof-reading services

Students who feel that they need assistance in writing appropriate English should, in the first instance, seek guidance from their School, which should discuss with the student their difficulties and, where appropriate, refer the student to the University's Study Advisors.

Students who use software for assistance with proof-reading or with editing their work, or who seek assistance with proof-reading or with editing from third parties, should be alert to the major risks associated with such intervention, including the distortion of intended meaning and the failure to use technical terms appropriately.

Students are warned that any use of third party proof-reading or editing services must not compromise their authorship of the work submitted and, in particular, that the substance of work must remain the student's own. Students are also warned that they will be held responsible for work which they submit, and that the use of third party services will not be accepted in mitigation of any deficiencies in the work.

The use of any third party proof-reading or editing must be acknowledged in a written statement accompanying the work on submission.

We run workshops and provide online and paper study guides. See our website for our study guides and more information on workshops:

<http://www.reading.ac.uk/studyadvice/>.

We also offer advice, support and assessments for specific learning disabilities (including dyslexia, dyspraxia, ADD and Aspergers syndrome).

## Student Maternity Policy

Information regarding the student maternity policy can be found in:

[www.reading.ac.uk/web/files/staffportal/UBTLStudentMaternityPolicy.pdf](http://www.reading.ac.uk/web/files/staffportal/UBTLStudentMaternityPolicy.pdf).

## Student Counselling Services

The University Counselling Service offers short-term counselling and workshops for all currently-registered students free of charge. They can be contacted on 0118 378 4242, [counselling@reading.ac.uk](mailto:counselling@reading.ac.uk)

# Safety

It is students' responsibility to ensure that they do not place themselves or others in danger by their activity or behaviour. If there is a question or problem concerning health or safety, it should be discussed with the Departmental Safety Co-ordinator or the Head of Department.

## Accidents

Mathematics	In case of an accident resulting in injury there is a first aid box outside room 204 of the Department. The Department has qualified First Aiders and Appointed Persons who will be able to help; their names are to be found on the safety notices displayed in the Department. All accidents, no matter how trivial must be reported to the Departmental Safety Co-ordinator (after they have been attended to medically).
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Meteorology	In case of an accident resulting in injury there are first aid boxes on each floor of the main stairwell, in each of the workshops and in the Postgraduate Office 1L42. The Department has qualified First Aiders and Appointed Persons who will be able to help; their names are to be found on the safety Board outside GL69 and there is also a list in the PG office 1L42. All accidents, no matter how trivial, must be recorded in the accident book in the PG office (after they have been attended to medically).
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## Fire Alarm

Mathematics	The fire alarm in the Mathematics Department is a talking siren. (This is not to be confused with a continuous siren, which is the computer alarm.) <b>Never</b> ignore it.
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Meteorology	On hearing the continuous fire alarm, abandon equipment in a safe condition and leave the building by the nearest fire stairwell, <u>not</u> the central stairwell, closing but not locking any door through which you pass. Ensure, where possible that windows are closed. Do not use the lift and do not return to collect personal items. The assembly point is on the far side of the car park in front of the Department.
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*If you hear the alarm:*

Turn off all electrical appliances – except computers.

Close the windows.

Leave the room– last person shuts the door. **DO NOT LOCK THE DOOR.**

Leave the building quickly and calmly. Warn others as you go. Take the most direct route.

Assemble on the road immediately outside the main entrance to the Mathematics building.

Do not re-enter the building until told it is safe to do so.

*If you discover a fire:*

Isolate it – close the door of the room.

Raise the alarm.

Telephone the Emergency Control Centre: Dial 6300, say “FIRE”, give your name, building and other details as requested.

Call for help. Fight the fire with the correct fire extinguisher **only if you are competent to do so**, and if you do not endanger yourself. Otherwise,

Leave the building at once, warning others as you go.

*If you are trapped by fire in a room:*

Close the door.

Open the Window.

Stand by the window and attract attention – Shout “HELP – FIRE”.

## Out of Hours Working

<b>Mathematics</b>	Staff and postgraduate students may gain out of hours access to the Department by use of a card key. You are allowed to work in the Department and to use its facilities during the evenings and at weekends. However, it is a condition of out-of-hours work at the University that you sign in/out in the "Building Occupants Register" whenever you use the Mathematics Building out of "normal" working hours, <b>including when the work period started/finished within these hours</b> . (Normal hours are 8am – 6pm weekdays, when the University is open.) The Building Occupants Register is located just inside the main entrance. Although entry is via computerised card key, it still important that the Register is signed. This is for your own safety: if there is a fire or other emergency the book can be checked to see if anyone is inside the building. When you leave please sign out, and check that you switch off all equipment <b>except computers</b> , and close all doors and windows, even if you were not the one who switched them on or opened them.
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<b>Meteorology</b>	'Normal hours' means between 8.00am and 6.00pm Monday to Friday inclusive except for public holidays and closure days as announced on the University website <a href="http://www.info.rdg.ac.uk/student/dates.asp">http://www.info.rdg.ac.uk/student/dates.asp</a> . <i>Signing in:</i> Outside these Normal Hours all building occupants <u>must</u> sign the Building Occupants Register, which is kept in the outer foyer. For this purpose, the Atmospheric Observatory is not regarded as being within the Meteorology Building. At weekends, Met Observers should sign out of the
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	<p>building when leaving for the Atmospheric Observatory, and sign in again on return.</p> <p><i>Signing out:</i> On leaving the building outside normal working hours it is imperative that you sign-out - in the event of an emergency, valuable time or lives could be wasted searching for you.</p> <p><i>Working procedures and High and Low risk activities:</i> Outside Normal Hours we distinguish between <i>High Risk</i> and <i>Low Risk</i> activities as does the University of Reading Safety Guide. Guidance on <i>High Risk</i> and <i>Low Risk</i> activities and working procedures outside of normal hours is detailed on notice in each office and laboratory. Extra care should be exercised outside normal hours due to the restricted help that is available.</p>
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It is not always safe to walk across the campus alone after dark particularly for female students. Leave in the company of other students, or use the Safety Bus (check times with the Students' Union). If you have a car, bring it close to the Department after 5:00pm. The Security Officers are friendly, and are happy to escort you to your vehicle or off campus to the bus stop. Give them a call on 6300 if you see something suspicious or are nervous about walking about alone.

## Security

Please be careful. Make sure that you do not leave valuables (wallets/purses, cheque books, calculators, etc) lying around. If you enter a locked room, have the courtesy to lock it when you leave.

Bicycles are also vulnerable, so make sure that you lock it securely and remove items such as lights which can be easily taken. You can register your bicycle with Security - ring extension 7799 for a card to record details of your cycle.

If you see anyone acting suspiciously you may challenge them, or if you do not feel able to do this then ask a member of staff. If it is out-of-hours, then ring Security (extension 6300).

## Monitoring progress/Neglect of work

The School Taught Postgraduate Board of Studies monitors the progress of students on the MSc programmes.

The Programme Director is responsible for any initial and informal moves to help a student who is neglecting his or her work, or is making unsatisfactory progress. Reports will be received from those teaching the student about unexplained or persistent absences, about work handed in late, about work of persistently poor quality or about poor performance in tests. The task initially is to help the student to sort out any personal problems that may underlie the academic ones, to instill an element of time management, and to investigate any academic difficulties there may be. A visit to a counsellor or Study Adviser may be appropriate.

If, however, such efforts bring no improvement, formal warnings will need to be given that persistent neglect of work will lead to discontinuation of the student's programme, as provided for in the Regulations for Conduct (Clause 43). The Programme Director is not responsible for formal warnings,

but does have a role both in bringing the problem to the attention of those with that responsibility, and in continuing to offer support to the student. The student will in the first instance be warned at School level, either by the School Director of Teaching and Learning or the Head of School. If there is no improvement, he or she will normally be given a second warning by the Faculty Director of Teaching and Learning. If the warnings fail to produce the improvement required, the Faculty Director of Teaching and Learning may refer the case to the University Board for Teaching and Learning.

A student referred to the Board has the right to make written representation to it if he or she wishes, and the right to appear before it in person. Any written statement for the Board must reach the Director of Academic Services as far in advance as possible before the relevant meeting; and a student must inform the Director of Academic Services in writing at least one week in advance if he or she wishes to appear in person before the Board. The student may, if he or she so chooses, be accompanied at the relevant meeting by a 'friend' who must be a member of the University.

## **Student contribution to the evaluation of the programme**

There is an Evaluation Meeting for all of the MSc/Diploma students with the Course Organiser in the Autumn and Spring terms where aspects of both the programme as a whole as well as individual modules can be discussed. Individual modules are monitored both during their delivery and at the end of each term. There is a school-wide Staff Student Liaison Committee (SSLC) at which pressing issues can be raised just before mid-term, allowing time for corrective action to be taken if appropriate. One of the MSc/Diploma students is elected to this committee. At the end of the year students are supplied with a questionnaire based on the programme as a whole.

## **Other Facilities**

The University bookshop, Blackwells, is located in the Student Union. Lloyds Bank cash machines are located at Black Horse House, near the Student Union.

## **Further Information**

Further information may be found in:

The University *Calendar* - (includes University Ordinances, Fees etc). Available for consultation in the University Library.

# Student evaluation of the MSc Programme

We greatly value comments and criticism (both positive and negative) from students about the MSc programme. There are two official routes for such comments: the first is through module evaluation forms which are distributed at the end of taught modules and the second is via the Staff/Student Liaison Committee (SSLC). You will be asked to elect a representative to the SSLC early in the first term.

All MSc courses have changed considerably over the years in the light of feedback from students and we hope this continues in the future. In order to make sure we get the full picture, please make an effort to complete all evaluation forms and respond positively to requests for comments from your SSLC representative.

## Complaints procedure

If you have a complaint about your programme you should in the first instance talk to your Tutor or the Programme Director about the problem; most difficulties are soluble at this level. If you are not satisfied, the problem should next be discussed with the Head of School. If you are unable or unwilling for good reason to take a complaint by this route you should see the Faculty Director of Teaching and Learning or the Sub-Dean of the Faculty. If none of these avenues of complaint yield a satisfactory response, you should write to the Director of Student Services.

You can find a summary of the University's Student Complaints Procedures at <http://www.info.reading.ac.uk/student/docs/appealscomplaintsguide.pdf>

## Examination arrangements for students with disabilities

A number of arrangements can be made for students with disabilities. Examples of such arrangements include allowing the student extra time, allowing the student to take rest breaks, arranging for the student to sit examinations in an alternative venue, or arranging for the student to use an amanuensis or reader. These arrangements will be made on an individual basis with the Disability Representative of the student's School.

Where a student has been assessed as having a specific learning difficulty (such as dyslexia), they should provide a copy of a recent Educational Psychologist's assessment report to their School Disability Representative. The report will be reviewed by the University Study Advisers, who will either make recommendations based upon it, or will ask the student to make an appointment for a new assessment. Students who think they may have specific learning difficulties, but who have not been formally diagnosed as such, should discuss the issue with their Personal Tutor or School Disability Representative.

# Appendix