

Post-Experience Diploma in Statistics

For students entering in 2005

Awarding Institution:	The University of Reading
Teaching Institution:	The University of Reading
Relevant QAA subject benchmarking group:	Mathematics, Statistics and Operational Research
Faculty of Life Sciences	Programme length: 1 year
Date of specification: 10 September 2004	
Programme Director:	Dr A C Kimber
Programme Advisor:	Dr A C Kimber
Board of Studies:	Postgraduate Board of Studies
Accreditation:	

Summary of programme aims and learning outcomes

The programme aims to provide a broad range of practical skills in statistics. This is achieved by providing modules which cover the basic principles of drawing conclusions from data, as well as those concentrating on the practical applications of the subject. The modules are complemented by tutorials specifically for the Diploma. A distinguishing feature of the programme is that it gives strong emphasis on the practical applications of statistics in a variety of areas, including business, biological sciences, economics, industry, and medicine.

For those students planning to continue to the MSc in Biometry, the modules taken are specified to ensure the necessary theoretical background for the MSc. The Diploma year then becomes the first of a two-year programme with the aim of students becoming competent in thinking and working with mathematical language, and learning the key statistical concepts.

Students are welcome to attend modules other than those specified, but even if assessed they will not count towards the final Diploma grade.

For a full statement of the programme aims and outcomes, see below.

Transferable skills

The University's Strategy for Teaching and Learning has identified a number of generic transferable skills which all students are expected to have developed by the end of their programme. In following this programme, students will have had the opportunity to enhance their skills relating to career management, communication (both written and oral), information handling, numeracy, problem-solving, team working and use of information technology.

As part of this programme students are expected to have gained experience and show competence in the following transferable skills: IT (word-processing, spreadsheet, database and statistical software), scientific writing, oral presentation, team-working, problem-solving, use of library and internet resources, time-management, and career planning.

Programme content

The profile which follows states which modules must be taken (the compulsory part), together with a list of modules from which the student must make a selection (the "selected" modules). Students must choose such additional modules as they wish, in consultation with their programme advisor, to make 120 credits in total. The number of credits for each module is shown after its title.

Diploma

		<i>Credits</i>	<i>Level</i>
<i>Compulsory modules</i>			
AS1A	<i>Communicating with Statistics</i>	20	C
AS1B	<i>Probability and Statistical Methods</i>	20	C
AS1C	<i>Mathematical Methods for Statistics</i>	20	C
* AS2A	<i>Statistical Theory and Methods</i>	20	I
AS2B	<i>Linear Models</i>	20	I

Selected modules:

<u>Either</u>	AS2D	<i>Medical Statistics</i>	20	I
<u>Or</u>	AS3G	<i>Study Design and Sampling Methods</i>	20	H

In weeks 8 and 9 of the Summer term there will be an additional course in SAS statistical computing to learn the essentials of this programming language.

* If the student intends to proceed to the MSc in Biometry, this module **must** be taken.

Requirements for a Pass and Progression requirements

Students are assessed on all modules by a mixture of examinations and continuously assessed assignments. The division of marks between examinations and assignments varies from module to module (see module descriptions). A final mark is obtained for each module. To pass, students must

<i>either</i>	obtain 40% or more for all modules	<i>PASS</i>
<i>or</i>	obtain 40% or more in all but one module, obtain 33% or more in the remaining module, and obtain an overall average of 40% or more	<i>COMPENSATED FAIL</i>

Distinctions will be considered for average marks of around 80% or more.

In general, students wishing to proceed to the MSc should obtain at least 60% overall. In particular, students need to show that their mathematical ability is of a high enough standard.

Summary of teaching and assessment

Teaching is organised in modules that typically involve both lectures and practicals. The assessment is carried out within the University's degree classification scheme, details of which are in the programme handbook. The pass mark in each module is 40%. Modules

are normally assessed by a mixture of coursework and formal examination, although some are assessed wholly by coursework.

Admission requirements

Entrants to this programme are normally required to have obtained a good Honours degree or practical experience of working as a statistician.

Support for students and their learning

University support for students and their learning falls into two categories. Learning support includes IT Services, which has several hundred computers and the University Library, which across its three sites holds over a million volumes, subscribes to around 4,000 current periodicals, has a range of electronic sources of information and houses the Student Access to Independent Learning (S@IL) computer-based teaching and learning facilities. There are language laboratory facilities both for those students studying on a language degree and for those taking modules offered by the Institution-wide Language Programme. Student guidance and welfare support is provided by Personal Tutors, the Careers Advisory Service, the University's Special Needs Advisor, Study Advisors, Hall Wardens and the Students' Union.

Within the providing departments additional support is given through practical classes, and the development of problem-solving skills is assisted by provision of model solutions to exercises. Advice on statistical computing is available from the computing staff of the School of Applied Statistics, and copies of software manuals are held in a computing library. There is a Programme Director to offer advice on the choice of modules within the programme.

Career prospects

In recent years, most students who have followed this programme have chosen to gain entry to an MSc programme in Statistics. The programme has also enabled students to enhance their career opportunities.

Educational aims of the programme

The programme aims to provide a thorough education in statistics for those students with little formal training in statistics who wish to develop their statistical skills either to help in their work, to change career, or to prepare for a Masters programme in statistics. The programme covers the basic ideas of summarising and presenting data, statistical inference and linear modelling. Strong emphasis is given to practical applications of the subject, and the use of statistical software in data analysis.

Programme outcomes

The programme provides opportunities to develop and demonstrate knowledge and understanding, skills, qualities and other attributes in the following areas:

Knowledge and Understanding

A. Knowledge and understanding of:

1. the fundamental concepts and techniques of data summary and presentation, statistical inference and linear modelling
2. the application of statistics in a variety of areas
3. a selection of more specialist optional topics
4. the use of statistical software in data analysis.

Teaching/learning methods and strategies

The knowledge required for the basic topics is delineated in formal lectures supported by problem sets for students to tackle on their own. These are supported by tutorials and practical classes through which students can obtain additional help and feedback on their work.

In the programme students are expected to work on practical problems on their own and seek help when required. Model solutions are provided for problems set.

Assessment

Most knowledge is tested through a combination of coursework and unseen formal examinations. Dissertations and oral presentations also contribute in other parts of the programme.

Skills and other attributes

B. Intellectual skills – able to:

1. think logically
2. analyse and solve problems
3. organise tasks into a structured form
4. transfer appropriate knowledge and methods from one topic within the subject to another
5. recognise and use appropriate statistical methods in data analysis

Teaching/learning methods and strategies

Logic is an essential part of the understanding of statistical techniques, and the use of statistical software for data analysis is embedded throughout the programme. The quality of solutions to a problem is substantially determined by the structure of that response; analysis, synthesis, problem solving, integration of theory and application, and knowledge transfer from one topic to another are intrinsic to high-level performance in the programme.

Assessment

Skills 1-3 are assessed indirectly in most parts of the programme, while 4 contributes to the more successful work. Skill 5 is assessed in practical work..

C. Practical skills – able to:

1. plan, conduct and report on the results of statistical investigations
2. formulate and solve statistical problems
3. use statistical software in an effective manner
4. write and defend a report on a chosen topic

Teaching/learning methods and strategies

Lectures, practical work and assignments are designed to enhance skills 1-4.

Assessment

Skills 1 and 2 are tested both formatively in coursework and summatively in examinations. Skills 3 and 4 are assessed in coursework that involves computer based analysis.

D. Transferable skills – able to:

1. use IT (word-processing, spreadsheets and statistical software)
2. communicate scientific ideas
3. give oral presentations
4. work effectively as part of a team
5. use library and internet resources
6. manage time
7. plan their career.

Teaching/learning methods and strategies

The use of IT is embedded throughout the programme, and in the packages Excel, Access, Minitab and SAS taught in Parts 1 and 2. Communication skills are enhanced and deployed in modules. Time management is essential for the timely and effective completion of the programme. Library and internet resources are required for certain assignments, and contribute to the best performances throughout.

Assessment

Skills 1 and 2 are assessed through coursework. The effective use of all skills will enhance performance in later modules.

Please note: This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably expect to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. More detailed information on the learning outcomes, content and teaching, learning and assessment methods of each module can be found in module and programme handbooks.