Diploma in Statistics

Awarding Institution: The University of Reading
Teaching Institution: The University of Reading
Faculty of Life Sciences Programme length: 9 months
For students entering in 2003 Date of specification:
Programme Director: Dr N A Butler
Programme Admissions Tutor: Dr D Collett
Board of Studies: Postgraduate Board of Studies

Summary of programme aims

The Diploma in Statistics aims to provide two types of graduates: students from a non-mathematical background who wish to develop degree-level statistical skills, and students from a mathematical background which is not sufficiently advanced to allow them direct entry to a Masters level course. The course may be viewed either as an end in itself or as preparation for the MSc in Biometry.

Transferable skills

On completion of the programme, students will have developed the following transferable skills:

- computing skills for data management, data analysis and communication
- report-writing
- problem-solving
- ability to work as part of a team.

Programme content

The profile which follows states which modules must be taken (the compulsory modules), together with a list of optional modules. Students must choose such additional modules, in consultation with their programme advisor, to make 120 credits in total. The number of credits for each total is shown after its title.

		Credits	*Level*
Compulsory modules			
AS1A	*Communicating with Statistics*	20	C
AS1C	*Mathematical Methods for Statistics*	20	C
AS2A	*Statistical Theory and Methods*	20	I
AS2B	*Linear Models*	20	I
AS2E	*Survey Data Management*	20	I
Optional modules			
One of:			
AS2D	*Medical Statistics*	20	I
AS2F	*Sampling Methods and Study Design*	20	I

Progression requirements

There are no progression requirements during the Diploma programme, but students are required to obtain at least 60% overall in order to progress to the MSc.

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 50%. Modules are assessed by a mixture of coursework and formal examination.

Admission requirements

At the discretion of the Diploma Admissions Tutor.

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.

Support for students in the School of Applied Statistics is similarly aimed at both learning and pastoral support. Students receive weekly tutorials to sort out difficulties in their courses. Advice on statistical computing is available from the computing staff of the School of Applied Statistics. Pastoral support augments the University's care systems, with the Programme Director acting as Personal Tutor to each student.

A comprehensive handbook is available for the programme; this is available on-line, as are a wealth of other resources via the School's internet. There is an active Student-Staff Committee with Diploma representation.

Career Prospects

Many Diploma students go on to do the MSc in Biometry after which their careers prospects are very good. In recent years, students who have followed the MSc programme have entered careers as statisticians in the pharmaceutical industry, university medical schools, medical research centres and agricultural research institutes, in the UK and overseas.

Opportunities for study abroad or placements

None at present.

Educational aims of the programme

The programme aims to provide graduates with a thorough knowledge of degree-level statistics, with particular emphasis on biometrical applications. The programme also aims to prepare students for the MSc in Biometry.

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:	**Teaching/learning methods and strategies**
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. the use of statistical software in data analysis.	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. Project work and oral presentations also contribute in other parts of the programme.

Skills and other attributes

B. Intellectual skills – able to:	**Teaching/learning methods and strategies**
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 6. plan, conduct and write a report on a group project.	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, while 6 is assessed within particular modules.

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 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. Skill 3 is assessed in coursework that involves computer based analysis, and skill 4 is assessed within particular modules..
D. Transferable skills – able to: 1. use IT (word-processing, spreadsheets and statistical software) 2. communicate scientific ideas 3. work effectively as part of a team 4. use library and internet resources 5. manage time	**Teaching/learning methods and strategies** The use of IT is embedded throughout the programme, the packages Excel and Minitab Team work is part of the module *Survey Data Management*. 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. Skills 3 contributes assessed coursework towards the module *Survey Data* Management. The other skills are not directly assessed but their effective use 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.