

BSc Psychology and Statistics

UCAS code: CG84

Awarding Institution:

The University of Reading

Teaching Institution:

The University of Reading

Relevant QAA subject benchmarking group(s):

Psychology; Mathematics,
Statistics and Operational
Research

Faculty of Life Sciences

Programme length: 3 years

For students entering Part 1 in 2004

Date of specification: 9 Sept 04

Programme Director: Dr W M Patefield (Applied Statistics)

Programme Adviser: Dr E A Gaffan (Psychology)

Board of Studies: Mathematics, Statistics and Psychology.

Accreditation: British Psychological Society Graduate Basis of Registration

Summary of programme aims

The programme aims to give a thorough and broadly based training in modern psychology and applied statistics. It aims to introduce students to the wide range of approaches that constitute modern Psychology, and to concepts and evidence within the domains of the subject required for British Psychological Society accreditation. Students have the opportunity to apply their knowledge to chosen areas of interest, increasing their degree of choice and independence as they move through the programme. They are made aware of current research - its methods, applications and unresolved issues - and learn how to evaluate research and carry it out themselves, with staff research expertise providing stimulation, guidance and high-quality laboratory facilities. The modules provided in Applied Statistics cover the basic ideas of summarising and presenting data, statistical inference and linear modelling. The programme gives strong emphasis to the practical applications of statistics in a variety of areas, including business, biological sciences, economics, industry, and medicine, and the use of statistical software in data analysis, supplemented by special expertise in psychological applications. (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 degree 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 in, and show competence in, the following: uses of IT including information search, spreadsheet, database and statistical software; presentation and analysis of quantitative data; written reports on projects; oral presentation and written summary of research and other material; teamwork; time management; project management; career planning.

Programme content

The profile which follows states which modules must be taken (the compulsory part), together with one or more lists 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 adviser, to make 120 credits in each Part. The number of modules credit for and the level of each module is shown in brackets after its title.

Part 1 (three terms) Credits Level

Compulsory modules

PY11A	<i>Psychological Research 1</i>	10	C
PY11B	<i>Perception & Learning</i>	10	C
PY11C	<i>Introduction to Neuroscience</i>	10	C
PY12D	<i>Psychological Research 2</i>	10	C
PY12E	<i>Cognition & Applied Psychology</i>	10	C
PY12F	<i>Developmental & Social Psychology</i>	10	C
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

Part 2 (three terms) Credits Level

Compulsory modules

PY24A	<i>Research Methods & Data Analysis 1</i>	10	I
PY24B	<i>Developmental & Social Psychology 1</i>	10	I
AS2A	<i>Statistical Theory and Methods</i>	20	I
AS2B	<i>Linear Models</i>	20	I

At least one of:

PY24C	<i>Neuroscience 1</i>	10	I
PY25I	<i>Neuroscience 2</i>	10	I

At least one of:

PY24D	<i>Cognition 1</i>	10	I
PY25J	<i>Cognition 3</i>	10	I

Optional modules

(i) Modules chosen from the following, if necessary, to make an overall total of 60 credits in Psychology:

PY24E	<i>Cognition 2</i>	10	I
PY24F	<i>Applied Psychology</i>	10	I
PY25G	<i>Research Methods & Data Analysis 2</i>	10	I
PY25H	<i>Developmental & Social Psychology 2</i>	10	I
PY25K*	<i>Project and Careers Skills</i>	10	I
PY25L	<i>Clinical Psychology</i>	10	I

(ii) Modules to the value of 20 credits chosen from:

AS2D	<i>Medical Statistics</i>	20	I
AS2E*	<i>Survey Data Management</i>	20	I

* The choice of modules in Part 2 must include either PY25K or AS2E but not both of these modules.

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 for final year modules.

British Psychological Society Graduate Basis of Registration. Psychology Part 2 modules PY24A + PY24B + *either* PY24C or PY25I + *either* PY24D or PY25J are the minimum required for BPS accreditation. *See also Part 3 Project.*

Part 3 (three terms)		<i>Credits</i>	<i>Level</i>
<i>Compulsory modules</i>			
AS3A	<i>Advanced Statistical Modelling</i>	20	H
PY3Q**	<i>Project for Maths or Stats Joint students</i>	30	H

****British Psychological Society Graduate Basis of Registration.** To qualify for BPS accreditation, the Project must be passed with at least 40%

Optional modules:

(i) *Modules to the value of 30 credits chosen from a list of Psychology options such as the following:*

PY3LD	<i>Language Development</i>	10	H
PY3ADD	<i>Acquired and Developmental Dyslexia</i>	10	H
PY3CNM	<i>Cognitive Neuropsychology of Memory</i>	10	H
PY3DN	<i>Developmental Neuroscience</i>	10	H
PY3CN	<i>Clinical Neuropsychology</i>	10	H
PY3CNV	<i>Cognitive Neuroscience of Vision</i>	10	H
PY3OS	<i>Occupational Stress</i>	10	H
PY3VSD	<i>Visual & Spatial Development</i>	10	H
PY3CPA	<i>Clinical Psychology of Adulthood</i>	10	H
PY3LCP	<i>Language & Cognitive Processes</i>	10	H
PY3IR	<i>Issues in Rationality</i>	10	H
PY3WMC	<i>Working Memory & Cognition</i>	10	H
PY3ASD	<i>Autistic Spectrum Disorders</i>	10	H
PY3PA	<i>Perception for Action</i>	10	H
PY3NCP	<i>Nature & Aetiology of Childhood Psychopathology</i>	10	H
PY3EDP	<i>Early Experience & Developmental Psychopathology</i>	10	H
PY3PCD	<i>Psychopharmacology of Clinical Disorders</i>	10	H
PY3AP	<i>Auditory Perception</i>	10	H
PY3CLM	<i>Clinical Aspects of Learning and Memory</i>	10	H
PY3SC	<i>Social Cognition</i>	10	H
PY3PP	<i>Psychopharmacology</i>	10	H
PY3BOB	<i>Biochemistry of Behaviour</i>	20	H
PY3RA	<i>Risk & Accidents</i>	10	H
PY3NHI	<i>Neuropsychology of Head Injury & Attentional Deficits</i>	10	H
PY3NP	<i>Neuropsychiatry</i>	10	H
PY3HP	<i>Health Psychology</i>	10	H
PY3CNA	<i>Cognitive Neuropsychology of Healthy & Abnormal Ageing</i>	10	H
PY3FP	<i>Forensic Psychology</i>	10	H
PY3CP	<i>Counselling Psychology</i>	10	H

(ii) *Modules to the value of 40 credits chosen from:*

AS3B	<i>Statistical Inference</i>	20	H
AS3C	<i>Analysis of Structured Data</i>	20	H
AS3D	<i>Operational Research Techniques</i>	20	H
AS3G	<i>Study Design and Sampling Methods</i>	20	H

Progression requirements

Part 1. To gain a threshold performance at Part 1 a student shall normally be required to achieve an overall average of 40% over 120 credits taken in Part 1, and a mark of at least 30% in individual modules amounting to not less than 100 credits. **In order to progress from Part 1 to Part 2 in Psychology and Statistics**, a student shall normally be required to achieve a threshold performance at Part 1 and to have obtained at least 40% in the Psychology modules PY11A, PY11B, PY11C, PY12D, PY12E and PY12F averaged together, with at least 30% in 5 or more of those 6 modules; and to have obtained at least 40% in the Applied Statistics modules averaged together.

Part 2. To gain a threshold performance at Part 2 a student shall normally be required to achieve: an overall average of 40% over 120 credits taken in Part 2, and a mark of at least 30% in individual modules amounting to not less than 100 credits.

In order to progress from Part 2 to Part 3 in Psychology and Statistics, a student should normally be required to achieve a threshold performance at Part 2.

To be eligible for Honours students must pass the Project module.

Summary of teaching and assessment

Teaching is organised in modules that typically involve both lectures and [in Statistics] problems. Practical work is carried out either in large or small groups (Parts 1 and 2) or individually (Part 3 project). Many modules are supported by tutorial groups or seminars. The assessment is carried out within the University's degree classification scheme, details of which are in the programme handbooks. The pass mark in each module is 40%. Modules are assessed by a mixture of coursework and formal examination. Some modules are assessed wholly by coursework and others wholly by examination; the details are given in the module descriptions.

Part 2 contributes one third of the final assessment and Part 3 the remaining two thirds.

Admission requirements

Entrants to this programme are normally required to have obtained:

Grade C or better in English in GCSE; and achieved

UCAS Tariff: 300 points at A/AS Level (preferably BBC at A-level and including at least AS Mathematics or Statistics); or

International Baccalaureat: 30 points including 5 in Mathematics; or

Scottish Highers: BBBB including Maths; or

Irish Highers: ABBBC including Maths.

Admissions Tutor: Dr Howard Grubb.

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 Disability Officer, Study Advisors, Hall Wardens and the Students' Union.

There are Course Advisers to offer advice on the choice of modules within the programme. In Psychology, each Part of the programme has a Year Tutor, whose role is to provide information to students in that year, monitor their progress (liaising with the Course Administrator) and advise those who fall behind in academic work. Staff with relevant expertise, e.g. in dyslexia, support the departmental Special Needs advisor. Staff's specialised laboratories are available for use in student research projects. 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.

Career prospects

Because the degree is accredited by the British Psychological Society, graduates are qualified to enter training as, for example, clinical or educational psychologists. Psychology graduates move into an extremely wide range of careers with some bias towards health and education, but extending to many other professional roles. Graduates whose degree includes Statistics readily find employment as professional statisticians, for example in the Civil Service, in local government and health authorities, in medical research establishments and in commerce, education and industry. The pharmaceutical industry, and actuarial, accountancy and other financial professions draw heavily on Statistics graduates each year. Joint degree graduates may proceed to careers in either of their subject areas. Recent graduates who have followed this programme have gone into jobs as actuarial trainee, trainee chartered accountant, teaching, business analyst and postgraduate study.

Opportunities for study abroad or for placements

Although there are no formal arrangements for the Psychology and Statistics programme, informal arrangements may be possible.

Educational aims of the programme

The programme aims to give a thorough and broadly based training in modern psychology and statistics. It aims to introduce students to the wide range of approaches that constitute modern Psychology, and to concepts and evidence within the domains of the subject required

for British Psychological Society accreditation. Students have the opportunity to apply their knowledge to chosen areas of interest, increasing their degree of choice and independence as they move through the programme. They are made aware of current research - its methods, applications and unresolved issues - and learn how to evaluate research and carry it out themselves, with staff research expertise providing stimulation, guidance and high-quality laboratory facilities. The modules provided in Applied Statistics cover the basic ideas of summarising and presenting data, statistical inference and linear modelling. The programme gives strong emphasis to the practical applications of statistics in a variety of areas, including business, biological sciences, economics, industry, and medicine, and the use of statistical software in data analysis, supplemented by special expertise in psychological applications.

Programme Outcomes

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

Knowledge and Understanding

<p>A. Knowledge and understanding of:</p> <ol style="list-style-type: none"> 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. use of statistical software in data analysis 4. concepts, theories and evidence in at least five out of six core domains of Psychology: research methods, individual differences, biological, cognitive, developmental and social psychology 5. a broad variety of methods and approaches used in psychological research 6. practical applications of psychological theory and research 7. ethical issues in research and appropriate conduct by researchers 8. a selection of more specialist optional topics. 	<p>Teaching/learning methods and strategies</p> <p>The knowledge required for 1-2 and 4-7 is delineated in lectures and seminars. 1 and 2 are supported in Part 1 by tutorials and practical classes, and throughout by problems which students are expected to work on individually. 5 is further supported by practical classes and exercises, microprojects and Part 3 projects. Students also learn about 7 from participating in research studies in which the principles are made explicit, and while planning the Part 3 project. Part 3 optional modules cover 8 and extend earlier work to a more advanced level.</p> <p>Assessment</p> <p>Most knowledge is assessed by unseen or open-book examinations, coursework essays and other exercises, and reports on empirical work. The Part 3 project assesses both 7 in the plan and final report, and 5 through the rationale for the choice of methods.</p>
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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 area within a subject to another
5. use evidence-based reasoning to argue or evaluate a claim
6. apply multiple perspectives and levels of explanation to understand behaviour
7. critically evaluate the design and conduct of psychological research
8. write well-structured and well-argued essays.

Teaching/learning methods and strategies

1-3 are explicated in lectures, tutorials or feedback on exercises, and are essential in the use of statistical software for data analysis which is embedded throughout the Statistics teaching. 5-7 are covered in Psychology lectures and option seminars. 4 is not formally taught but is illustrated and encouraged particularly in Part 3 modules, and is intrinsic to high-level performance in all parts of the programme. Psychology essays at Parts 1 and 2 provide practice in 8 with formative feedback.

Assessment

1- 3 are assessed indirectly in most parts of Applied Statistics, and 5-8 in Psychology examinations and coursework at all levels. 4 is emphasised in formative and summative assessment as an indicator of the most successful work in both subjects.

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 appropriate manner
4. choose and apply appropriate data-analytic techniques to psychological data
5. search for information, using suitable sources, about a specific topic
6. plan and carry out empirical studies with guidance or supervision
7. write reports on empirical studies.

Teaching/learning methods and strategies

Lectures, practical work and assignments are designed to enhance skills 1-3, including some practicals on software especially relevant to Psychology. Dedicated modules using lectures, practical classes and exercises cover 4, 5 and the principles underlying 6. Further learning of 6 and 7 takes place through Psychology practical classes, microprojects and the Part 3 project.

Assessment

Skills 1, 2 and 4 are tested both formatively in coursework and summatively in examinations, and 3 in coursework that involves computer-based analysis. 4, 6 and 7 are assessed in reports on practical classes. Microproject reports, the Part 3 project plan and report assess 4, 5, 6 and 7.

D. Transferable skills – able to:

1. use IT to write, to present information visually, for statistical analyses and computation, to manage and analyse data, to communicate and to find information
2. communicate information concisely or at length in writing
3. give oral presentations
4. work with a group
5. plan and implement a project
6. solve practical problems
7. manage time
8. start planning a career.

Teaching/learning methods and strategies

The use of IT is embedded throughout the programme, and in the packages Excel, Access, Minitab, SAS and SPSS. 2 and 3 are reinforced in several psychology modules, and 4 in microprojects; 2-4 also form part of the optional Statistical Consultancy module. Competence at 5 and 6 are progressively developed through microprojects and the Part 3 research project. 7 is encouraged by staged deadlines and is essential for the timely and effective completion of the programme. Students work on 8 within Statistical Consultancy or Personal Development (Psychology), but their planning should reflect both fields.

Assessment

1 is required widely for coursework in both subjects, 2 for most psychology coursework and examinations. 3 is assessed within Part 3 Psychology options and 4 forms part of microproject assessment; 3 and 4 are also assessed in the optional module Statistical Consultancy. 5-7 are necessary for successful completion of Psychology microprojects and project. 8 is assessed within either Statistical Consultancy or Personal Development (Psychology) one of which must be taken.

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.