

Programme Specification

BSc Pharmacology

For students entering Part 1 in September 2024

UCAS Code: B210

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This document sets out key information about your Programme and forms part of your Terms and Conditions with the University of Reading.

Awarding Institution	University of Reading
Teaching Institution	University of Reading
Length of Programme	3 years
Length of Programme with placement/year abroad	BSc Pharmacology with a Year in Industry - 4 years (UCAS Code: B211)
Accreditation	N/A
QAA Subject Benchmarking Group	Biomedical Science and Biomedical Sciences

Programme information and content

The programme aims to produce graduates who have the knowledge, skills and professional behaviours to work as pharmacologists within drug discovery in the pharmaceutical industry or life sciences- related industries, universities or medical charities. Graduates will be prepared for further higher education, postgraduate courses and academia and have the personal and intellectual attributes necessary for life-long professional development. Such graduates will:

- possess core pharmacology knowledge and skills and appropriate attitudes.
- have knowledge and understanding of related disciplines including life sciences e.g. molecular biology, physiology; relevant mathematics; the basics of medicinal chemistry; and how related disciplines can yield insights in pharmacology and vice versa.
- be innovative and adaptive graduates who can respond to the challenge of a changing global scientific landscape and develop the skills for lifelong learning e.g. independence, time management, organisation and planning, initiative, knowledge transfer; the ability to self-assess performance; an understanding of how to evaluate risk.

Part 1:	In Part 1 you will be introduced to core concepts of science, and to key experimental techniques to allow development of skills to collect and interpret clinical and scientific data. You will be taught using a variety of teaching and assessment methods that enable you to develop independent and reflective learning skills. The year is made up of a range of modules that provide you with core scientific knowledge whilst also introducing you to the skills and attitudes appropriate for pharmacology undergraduates, including mathematical knowledge that underpins today's
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	science. You will also learn with and from other students doing different healthcare degree programmes.
Part 2:	In Part 2 you will build on your learning from Part 1 as your pharmacology knowledge is developed in a way that encourages you to further your basic knowledge and skills base. The year is made up of a range of modules which will prepare you for the opportunity to spend a year working in industry and putting your knowledge into practice.
Placement/Study abroad year:	Between Parts 2 and 3 of the programme there is an optional industrial year, which provides students with the opportunity to develop their graduate employability skills. Completion of an industrial year will qualify students for BSc Pharmacology with a Year in Industry award. Industrial partners will be sought from stakeholders who will input industrial content to the degree programme.
Part 3:	You will perform an extended laboratory-based or data analysis project which will develop practical skills sought by pharmaceutical, and life sciences-related, industry. You will also have access to optional modules on cutting edge areas built around areas of staff research expertise. You will learn about societal aspects of pharmacology and develop core attributes and attitudes that will support a research-focused career.

Programme Learning Outcomes - BSc Pharmacology

During the course of the Programme, you will have the opportunity to develop a range of skills, knowledge and attributes (known as learning outcomes) For this programme, these are:

Learning outcomes	
1	Describe, discuss and apply key principles of pharmacology, drug discovery and drug development.
2	Demonstrate core knowledge in, and explain, the societal relevance and impact of pharmacology in improving human/animal health and its relationship with other subject areas, and discuss ethical concerns relevant to the field.
3	Apply the principles of pharmacokinetics and demonstrate numeracy skills in pharmacological calculations.
4	Demonstrate core knowledge about, and apply methodological principles relevant to pharmacology, including handling of qualitative and quantitative statistical tools and analytical methods used to interpret pharmacological data.
5	Demonstrate core knowledge and skills in the scientific method (hypothesis formulation, hypothesis testing, experimental design, experimental analysis).
6	Demonstrate appropriate practical and computational techniques to solve problems relevant to pharmacology, following safe laboratory practices and with consideration of the theoretical basis and limitations of these techniques.
7	Collect, organize, interpret and analyse scientific information and data from the literature or the laboratory to produce written work such as lab reports, essays and dissertations for varied purposes and audiences.

8	Communicate effectively to scientific and non-scientific audiences, in a range of formats.
9	Apply pharmacological knowledge and skills to solve problems in a real-world setting.
10	Plan, design, conduct and report on an individual research project.
11	Work effectively independently and within a team, and to be able to confidently and empathically support others.
12	To develop skills for lifelong learning and effective working practice e.g. independence, time management, organisation and planning, initiative, knowledge transfer.

You will be expected to engage in learning activities to achieve these Programme learning outcomes. Assessment of your modules will reflect these learning outcomes and test how far you have met the requirements for your degree.

To pass the Programme, you will be required to meet the progression or accreditation and award criteria set out below.

Module information

Each part comprises 120 credits, allocated across a range of compulsory and optional modules as shown below. Compulsory modules are listed.

Part 1 Modules:

Module	Name	Credits	Level
BI1AP3	Anatomy and Physiology	20	4
PM1KSP	Key Skills for Pharmacology	20	4
PM1MSP	Mathematics and Statistics for Pharmacology	20	4
PM1PDA	Principles of Drug Action	20	4
PM1PY2	Fundamentals of Cell Biology	20	4
PM1PY3	Fundamentals of Pharmaceutical Science	20	4

Part 2 Modules:

Module	Name	Credits	Level
BI2HI1	Haematology and Immunology	20	5
BI2IAP1	Integrated Anatomy and Physiology	20	5
PM2DDD	Drug Design and Delivery	20	5
PM2MDT	Molecular Drug Targets	20	5
PM2MHC	Medicines in Healthcare	20	5
PM2MMM	Mathematical Modelling for Pharmacology	20	5

There is an additional Preparatory Learning module for students on the B211 BSc Pharmacology with a Year in Industry programme:

Module	Name	Credits	Level
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PM2PS	Placement Support	0	5
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Modules during a placement year or study year (if applicable):

Module	Name	Credits	Level
PM2IPY	Industrial Placement Year	120	5

Students on the 4 year version of the programme will take one 120 credit module (PM2IPY) during their Work Experience or Study Abroad year.

If you take a year-long placement or study abroad, Part 3 as described below may be subject to variation.

Part 3 Modules:

Module	Name	Credits	Level
PM3CSIP	Clinical and Societal Impact of Pharmacology	40	6
PM3RP	Research Project	60	6

The remaining credits will be taken from a list of optional modules from the School of Chemistry, Food and Pharmacy, or from an approved list of modules.

Placement opportunities

Placements:

You will undertake experiential learning during your studies and will have the opportunity to complete a credit-bearing industrial placement year in the pharmaceutical or life science-related environment. You will be required to find and secure a placement opportunity, with the support of the University.

Study Abroad:

You may be provided with the opportunity to undertake a Study Abroad placement during your Programme. This is subject to you meeting academic conditions detailed in the Programme Handbook, including obtaining the relevant permissions from your School, and the availability of a suitable Study Abroad placement. If you undertake a Study Abroad placement, further arrangements will be discussed and agreed with you.

Optional modules:

The optional modules available can vary from year to year. An indicative list of the range of optional modules for your programme can be found online in the Course Catalogue. Details of optional modules for each part, including any additional costs associated with the optional modules, will be made available to you prior to the beginning of the Part in which they are to be taken and you will be given an opportunity to express interest in the optional modules that you would like to take. Entry to optional modules will be at the discretion of the University and subject to availability and may be subject to pre-requisites, such as completion of another module. Although the University tries to ensure you are able to take the optional modules in which you have expressed interest this cannot be guaranteed.

Teaching and learning delivery:

Teaching and learning are delivered in a variety of ways, including interactive lectures, practical skills workshops, case-based learning and small group work, laboratory-based practical and computer-aided practical sessions, and seminars.

Total study hours for each Part of your programme will be 1200 hours. The contact hours for your programme will depend upon your module combination; an average for a typical set of modules on this programme is approximately 400 hours in Part 1 and 2, and 650 hours/year for Part 3. In addition to your scheduled contact hours, you will be expected to undertake guided independent study. Information about module contact hours and the amount of independent study which a student is normally expected to undertake for a module is indicated in the relevant module description.

Elements of your programme will be delivered via digital technology.

The scheduled teaching and learning activity hours and amount of technology enhanced learning activity for your programme will depend upon your module combination. In addition, you will undertake some self-scheduled teaching and learning activities, designed by and/or involving staff, which give some flexibility for you to choose when to complete them. You will also be expected to undertake guided independent study. Information about module study hours including contact hours and the amount of independent study which a student is normally expected to undertake for a module is indicated in the relevant module description.

Accreditation details

The programme is not accredited; however, the education and training of pharmacologists is currently overseen by the Royal Society of Biology.

Assessment

Assessment methods used will be according to those stated in the module descriptors to align to the learning outcomes. This means the programme is assessed through a combination of written examinations, coursework, oral examinations, and practical examinations.

Progression

Part 1

To achieve a threshold performance at Part 1, a student will normally be required to:

- (i) Obtain an overall average of 40% over 120 credits taken in Part 1;
- (ii) Obtain a mark of at least 40% in individual modules amounting to not less than 80 credits taken in Part 1; and
- (iii) Obtain marks of at least 30% in modules amounting to 120 credits.

In order to progress from Part 1 to Part 2, a student must achieve a threshold performance;

The achievement of a threshold performance at Part 1 qualifies a student for a Certificate of Higher Education if they leave the University before completing the subsequent Part.

Transferring from a Joint Honours to a Single Honours programme

Students are able to transfer from a Joint Honours to a Single Honours programme in one of their joint subject areas at the end of Part 1, subject to fulfilling the Part 1 University Threshold Standard, achieving marks of at least 40% in at least 40 credits of modules in the subject to which they wish to transfer, and fulfilling any programme-specific progression rules for the Part 1 Single Honours Programme to which they wish to transfer.

Students who transfer from a Joint Honours to a Single Honours programme may not have taken all of the Part 1 modules listed in the Single Honours Programme Specification. The modules which they have taken will be shown on their Diploma Supplement.

Part 2

To achieve a threshold performance at Part 2, a student shall normally be required to:

- (i) Obtain a weighted average of 40% over 120 credits taken in Part 2; and
- (ii) Obtain marks of at least 40% in individual modules amounting to at least 80 credits taken in Part 2; and
- (iii) Obtain marks of at least 30% in individual modules amounting to at least 120 credits, except that a mark below 30% may be condoned in no more than 20 credits of modules owned by the Department of Mathematics and Statistics.

In order to progress from Part 2 to Part 3, a student must achieve a threshold performance;

The achievement of a threshold performance at Part 2 qualifies a student for a Diploma of Higher Education if they leave the University before completing the subsequent Part.

Professional/placement year

Students are required to pass the professional placement year/study abroad year in order to progress on the programme which incorporates the professional placement year/study abroad year. Students who fail the professional placement year/study abroad year transfer to the non-placement year version of the programme.

Classification

Bachelors' degrees

The University's honours classification scheme is based on the following:

Mark Interpretation

70% - 100% First class

60% - 69% Upper Second class

50% - 59% Lower Second class

40% - 49% Third class

35% - 39% Below Honours Standard

0% - 34% Fail

The weighting of the Parts/Years in the calculation of the degree classification is:

Three year programmes:

Part 2: one-third

Part 3: two-thirds

Four year programmes, including professional/work placement or study abroad

Part 2: one-third

Placement/Study abroad: not included in the classification

Part 3: two-thirds

The classification method is given in detail in [Section 17](#) of the Assessment Handbook.

Additional costs of the programme

1. Required text books: A wide variety of text books is available from the library, many as e-books. Students are advised to purchase own copies of some core texts at varying costs.
2. Specialist equipment or materials: A lab coat will cost approximately £10.
3. Printing facilities are available on campus at approximately £0.05 per page
4. Travel, accommodation and subsistence: Students may need to travel if they visit venues geographically further away from University (when significantly further away, the programme currently supports travel costs by reimbursements).

Costs are indicative and may vary according to optional modules chosen and are subject to inflation and other price fluctuations. Estimates were calculated in 2023.

For further information about your Programme please refer to the Programme Handbook and the relevant module descriptions, which are available at <http://www.reading.ac.uk/module/>. The Programme Handbook and the relevant module descriptions do not form part of your Terms and Conditions with the University of Reading.

BSc Pharmacology for students entering Part 1 in session 2024/25

7 July 2023

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