

BSc Pharmaceutical Science
For students entering Part 1 in 2015/6

UCAS code:

Awarding Institution:	University of Reading
Teaching Institution:	University of Reading
Relevant QAA subject Benchmarking group(s):	Pharmacy
Faculty:	Life Sciences Faculty
Programme length:	3 years
Date of specification:	23/May/2016
Programme Director:	Dr Katja Strohfeldt-Venables
Programme Advisor:	
Board of Studies:	Pharmacy
Accreditation:	N/A

Summary of programme aims

The programme aims to provide a modern, innovative and integrated degree-level education in Pharmaceutical Sciences and Pharmacy that meets the standards of the University. It provides an exit route for students who do not satisfy the progression requirements for MPharm at Part 3 or Part 4.

The BSc will teach students to be responsible for the manufacture, safe, legal and professional control, distribution and use of medicinal products and will encompass detailed studies of all aspects of drug action, design, formulation and use. Thus students will be trained in aspects of chemistry, biology, statistics, social and clinical pharmacy, and law, that impact on pharmacy.

Transferable skills

During the course of their studies at Reading, all students will be expected to enhance their academic and personal transferable skills. In following this programme, students will have had the opportunity to develop such skills, in particular relating to career management, communication (both written and oral), information handling, numeracy, problem-solving, team-working, and use of information technology and will have been encouraged to further develop and enhance the full set of skills through a variety of opportunities available outside their curriculum.

As part of this programme, students are also expected to have gained experience and show competence in the following skills: Problem based learning, IT (pharmacy related as well as word-processing, use of spreadsheets and databases), communication, scientific writing, oral presentation, team-working, use of library resources, time-management, research methods and skills, self-motivation skills, and career planning and management.

Programme content

The BSc degree programme follows the same syllabus as MPharm for Parts 1, 2 and 3. The degree profile outlined below lists the modules, all of which are compulsory. The number of credits for each module is given after its title; each Part comprises modules totalling 120 credits.

Part 1 (three terms)

Compulsory modules

<i>Code</i>	<i>Title</i>	<i>Credits</i>	<i>Level</i>
PM1A	Fundamentals of Physiology	50	4
PM1B	Medicines Discovery, Design, Development and Delivery	50	4
PM1C	Introduction to Professionalism and Practice	20	4

Part 2 (three terms)

Compulsory modules

<i>Mod Code</i>	<i>Module Title</i>	<i>Credits</i>	<i>Level</i>
PM2A2	Therapeutics and medicines optimisation A2: Molecules and Medicines	30	5
PM2B	Therapeutics and Medicines Optimisation B: A Journey Through the GI Tract	35	5
PM2C2	Therapeutics and medicines optimisation C2: Therapeutics and Patient care	35	5

Part 3 (three terms)*Compulsory modules*

<i>Code</i>	<i>Module title</i>	<i>Credits</i>	<i>Level</i>
PM3A	Therapeutics and medicines optimisation D	40	6
PM3B	Therapeutics and medicines optimisation E	40	6
PM3C	Delivering pharmacy services 2	40	6

Progression requirements

In order to progress from Part 1 to Part 2, a student shall normally be required to achieve the following at Part 1:

- an overall weighted average of 40% over 120 credits; and
- a mark of at least 40% in individual modules and at least 40% in each individual module written examination
- successful completion of specified coursework and /or examination components of relevant modules, as described in the module descriptions.

Students who have failed or are not qualified to progress to Part 2 are permitted one re-sit examination in each module (or failed required coursework element of a module) in which they fail to meet the progression requirements. The mark used for the purposes of progression will be the higher of the mark obtained in the original examination and the mark obtained in the re-examination.

Students who do not meet the above requirement but gain a University threshold performance at Part 1 may be eligible to transfer to another programme or to leave with a CertHE. 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 2 to Part 3, a student shall normally be required to achieve the following in Part 2:

- an overall weighted average of at least 40% over 120 credits; and
- a mark of at least 40% in individual modules and at least 40% in each individual module written examination
- successful completion of specified coursework and / or examination components of relevant modules, as described in the module descriptions.

Students who have failed or are not qualified to progress to Part 3 are permitted one re-sit examination in each module (or failed required coursework element of a module) in which they fail to meet the progression requirements. The mark used for the purpose of progression will be the higher of the mark obtained in the original examination and the mark obtained in the re-examination. Students who re-sit examinations at Part 2 and meet the MPharm progression criteria will have their marks in those modules capped at 40% for degree classification purposes in accordance with the University regulations.

Students who pass a module but fail a required coursework element of the module will be permitted to re-sit the required element and the element will be graded as Pass or Fail; the original overall module mark achieved will be carried forward into their final degree calculations.

Students who do not meet the above requirements for progression to Part 3 but gain a threshold performance may be eligible to transfer to another programme or leave with a DipHE. To gain a threshold performance at Part 2 a student shall normally be required to achieve:

- (i) a weighted average of 40% over 120 credits taken at Part 2;
- (ii) marks of at least 40% in individual modules amounting to not less than 80 credits; and
- (iii) marks of at least 30% in individual modules amounting to not less than 120 credits.

To Obtain the BSc Pharmaceutical Science Degree

To obtain the Degree, a student shall normally be required to have satisfied all of the above progression requirements and to achieve the following in Part 3:

- an overall average of 40% over 120 credits, and
- a mark of at least 30% in individual modules amounting to not less than 100 credits.

Summary of Teaching and Assessment

The University's honours classification scheme is:

<i>Mark</i>	<i>Interpretation</i>
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

For the University-wide framework for classification, which includes details of the classification method, please see: www.reading.ac.uk/internal/exams/Policies/exa-class.aspx.

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

Teaching is organised in modules that involve a combination of lectures, tutorials, workshops, practical sessions and private study. Modules are assessed by a mixture of coursework and formal examinations. At least 70% of the assessment will normally be by formal examination.

Admission requirements

There is no direct entry to this programme; the programme provides an exit route for students who do not satisfy the progression requirements for MPharm at Part 3 or Part 4.

Admissions Tutor:

Support for students and their learning

University support for students and their learning falls into two categories. Learning support is provided by a wide array of services across the University, including: the University Library, the Careers, Placement and Experience Centre (CPEC), In-session English Support Programme, the Study Advice and Mathematics Support Centre teams, IT Services and 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, School Senior Tutors, the Students' Union, the Medical Practice and advisers in the Student Services Centre. The Student Services Centre is housed in the Carrington Building and offers advice on accommodation, careers, disability, finance, and wellbeing, academic issues (eg problems with module selection) and exam related queries. Students can get key information and guidance from the team of Helpdesk Advisers, or make an appointment with a specialist adviser; Student Services also offer drop-in sessions and runs workshops and seminars on a range of topics. For more information see www.reading.ac.uk/student

Within Reading School of Pharmacy additional training will be given in Problem Based Learning. Support will also be provided through practical classes and tutorials for every Part of the degree programme, and through

community placements for the more vocational aspects of the course. A course handbook will be provided for all students, and problems may be raised for discussion through the MPharm Staff-Student Committee.

Career learning

Career prospects

The course provides a thorough grounding in the practical and theoretical skills required of science graduates enabling access to a wide range of careers in academic and commercial bioscience.

Opportunities for study abroad

There are no formal arrangements in place for studying abroad. However, there may be opportunities for six-month research project placements at the University of Reading Malaysia campus (subject to successful accreditation of the programme, by the GPhC) for which students will be able to apply.

Placement opportunities

Placements in Part 1 consist of a half-day visit to a hospital in the Autumn Term and a half-day visit to a community pharmacy; these visits will be supervised by a staff member from Reading School of Pharmacy. There are additional hospital and community placement opportunities in Parts 2 and 3 where students work in the hospital discharge lounge at the Royal Berkshire Hospital, have additional hospital visits and are provided with a two week community placement in Part 3. In Part 4, there are opportunities for students to carry out their research projects as part of a 3-6 month industry placement. Arrangements of placements will conform to the guidelines set by the General Pharmaceutical Council and the 'University Code of Practice on Placement Learning'.

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

A. Knowledge and understanding of:

1. The science of pharmacy and how it is applied to the design and development of medicines and devices.
2. How medicines affect the body and how the body interacts with and metabolises drugs.
3. The main skills required for clinical pharmacy including recognition of disease symptoms, the promotion of good health and the management of medicines.
4. Health promotion information and skills to promote healthy lifestyles.
5. Analytical and diagnostic approaches used in science, therapeutics and practice that inform scientific and clinical decision-making.
6. Pharmaceutical analysis to ensure quality and safety of medicines.
7. The principles of formulation, preparation and packaging of medicines.
8. The necessary knowledge to interpret and evaluate prescriptions using the relevant legal and ethical guidelines.
9. The principles of clinical governance as applied to practice and current pharmacy related policy to improve health outcomes.
10. The safe and legal procurement, distribution and disposal of medicines and veterinary medicines.
11. Infections and how to use appropriate infection control measures.

Teaching/learning methods and strategies

- 1-2. The core scientific knowledge is taught within an integrated curriculum via formal lectures, tutorial and problem based learning classes.
3. Clinical pharmacy knowledge and skills are developed throughout the course within all therapeutic based and practice led classes.
4. Patient centred care and health promotion are integral to PM1C and all taught Part 2-4 modules.
- 5-6. Analytical approaches and skills are taught through lectures and practical classes from the point of view of medicine development and clinical/diagnostic testing.
7. Introduced in PM1B and developed further in Part 2 and 3, where concepts are taught within integrated modules that are organised by therapeutic topics.
8. Addressed throughout the programme as part of professional practice modules and within science led modules where appropriate. The prescriptions increase in complexity as students' progress.
9. Clinical governance forms the basis of all our professional training activities.
- 10-11. Introduced in year 1 as part of PM1B. The concepts developed further within integrated modules of Parts 2 and 3.

Assessment

Skills and other attributes

B. Intellectual skills - *able to*:

1. Recognise ethical dilemmas and respond in accordance with code of conduct.
2. Recognise situations that potentially could put public and patients at risk and act in accordance with code of conduct.
3. Critically evaluate evidence to support safe, rational and cost-effective use of medicines, and use these skills to review current practice.
4. Use research, development and enquiry skills to improve health outcomes
provide evidence-based medicines information.
5. Carry out pharmaceutical calculations to ensure safety of doses and administration rates.
6. Advise patients on safe and effective use of medicines and devices, and identify inappropriate behaviours.
7. Analyse prescriptions for validity and clarity, clinically evaluate the appropriateness of prescribed medicines, and provide, monitor and modify prescribed treatments to maximise health outcomes.
8. Develop, manage and maintain appropriate quality management systems and keep appropriate records that effectively document medicine and patient data safely with knowledge of legal requirements and best professional.
9. Create an individual development plan and use reflective practices to monitor and revise own performance.
8. construct a poster.

C. Practical skills - *able to*:

1. Respond appropriately to medical emergencies with knowledge of first aid.
2. Work with health care professionals and the public to improve health and patient outcomes.
3. Communicate effectively with colleagues, other health care professionals and patients regarding the effective use of medicines for individual patients.
4. Participate in audits for the identification, reporting and prevention of errors and unsafe practice.
5. Carry out experimental procedures safely and following standard operating procedures and, interpret quantitatively their results.

Teaching/learning methods and strategies

- 1-3. Taught within all modules. The programme has a strong focus to safe practice and ensuring patient safety, from point of view of quality management and personal responsibility.
4. Students develop research and enquiry skills using science and practice based examples throughout the programme and document their progression within their personal and academic portfolios.
5. Numeracy is taught in PM1B and skills used throughout the programme where quantitative subjects such as pharmacokinetics, pharmaceutical calculations and statistic are taught. Pharmaceutical calculations are an integral part of all years of the programme and a key component of each year's assessment strategies.
6. Taught within all years.
7. Dispensing skills are developed within each year of the programme as part of professional practice modules and within science led modules where appropriate. The prescriptions increase in complexity as students' progress. Dispensing skills are assessed in Part 3.
8. Taught from prospective of all pharmacy professions, with a focus on industry pharmacy quality management in Part 2 and with a professional practice focus throughout all years. Assessed within PM1B, PM2A and all professional/clinical practice modules.
9. These skills are taught as part of the students' personal and academic development portfolio. Students develop their portfolio throughout the programme and it is assessed within Part 3 of the programme in a viva voce examination.

Assessment

Teaching/learning methods and strategies

1. Students are provided with first aid training in PM2D.
2. Inter-professional and patient focused learning opportunities are provided throughout the programme through organised placements, simulated practice learning experiences, learning with other healthcare professionals and providing health services such as a health fair and health checks to the University community.
3. Communication skills are developed throughout the programme as an integral component of all modules. There are inter-professional learning opportunities, organised placements and public involvement during the course that further assist students in developing these skills. Oral and written communication skills are assessed widely during the programme.

4. Auditing experience provided within PM2D and PM3C, and as part of some research project topics.
5. Detailed practical manuals are provided for all practical courses, together with sources of recommended further reading. Staff and postgraduate demonstrators are present during every practical session to guide and help students. In Part 4 students work on individual projects under the supervision of one or more members of staff.

Assessment

D. Transferable skills - able to:

1. Work effectively within a multidisciplinary team contributing to development and training of other members of the team.
2. Use leadership and management skills to ensure the effectiveness of the team, facilitate change and minimise risk.
3. Take responsibility for health and safety.
4. Effectively and respectfully communicate to promote understanding and assist in decision-making.
5. Provide written and oral information at an appropriate level for the recipient.
6. use technology effectively

Teaching/learning methods and strategies

The programme will deliver skills in a wide range of modules. The importance of communication and the ability to work alone or as part of a team is emphasised throughout the programme and is assisted through workshops, placements and the small group work associated with all modules throughout the programme. The challenging degree programme will require students to develop effective time management. The use of IT is embedded throughout the programme. Oral presentations will be required within several modules. The personal and academic development portfolio provides support towards career management and self-development.

Assessment

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 be expected 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 the module description and in the programme handbook. The University reserves the right to modify this specification in unforeseen circumstances, or where the process of academic development and feedback from students, quality assurance process or external sources, such as professional bodies, requires a change to be made. In such circumstances, a revised specification will be issued.