Pharmacy   **UCAS code: B230**
For students entering Part 1 in 2013/4

Awarding Institution:	University of Reading
Teaching Institution:	University of Reading
Relevant QAA subject Benchmarking group(s):	Pharmacy
Faculty:	Life Sciences Faculty
Programme length:	4 years
Date of specification:	08/Mar/2016
Programme Director:	Mr Daniel Grant
Programme Advisor:	
Board of Studies:	Pharmacy
Accreditation:	General Pharmaceutical Council (GPhC)

Summary of programme aims

The programme provides a modern, innovative and integrated Masters degree-level education in Pharmacy that meets the standards of the University and the requirements of the GPhC. The MPharm will teach students to be responsible for the safe manufacture, 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, therapeutics, statistics, social and clinical pharmacy, and law, that impact on pharmacy within a fully integrated curriculum. The programme is focussed on the patient and provides students with professional experiences in terms of placement opportunities, inter-professional learning and patient interaction. The programme provides a thorough degree level education in Pharmacy and this will form the first stage of professional training for the pharmacist. It will produce MPharm graduates who are independent learners with strong therapeutic and clinical skills and knowledge. Reading MPharm graduates will be well placed to complete a further 12 months pre-registration training and pass the General Pharmaceutical Council (GPhC) Registration examination.

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 gain experience and show competence in the following skills: Problem-based learning, IT (pharmacy specific as well as word-processing, use of spread sheets and databases), communication, scientific writing, oral presentation, team-working, use of information resources, time-management, research methods and skills, self-motivation skills, and career planning and management. Students are expected to engage in continued professional development (CPD) and reflective practices and the University RED (Reading Experience and Development) award as part of their personal and academic development portfolio, which is an integral part of the MPharm programme.

Programme content

The MPharm Pharmacy degree programme is divided into four Parts, each of 120 credits. 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.

Part 1 (three terms)
Compulsory modules

PM1PP1	Pharmacy Practice		20	4
PM1PB2B	Human Physiology		20	4
PM1DS1	Drug Design and Synthesis: Basic Organic Chemistry		20	4
PM1ESA	Concepts and Skills		10	4
BI1P4	Biochemistry and Metabolism		10	4
BI1P1	The Living Cell		10	4

BI1P2	Genes and Chromosomes	10	4
BI1P3	Introductory Microbiology	10	4
PM1PH1	Physicochemical Principles of Pharmacy	10	4

Replace compulsory module PM1PB2 WITH:
PM1PB2B Human Physiology   20 credits Level 4

Part 2 (three terms)
Compulsory modules

Code	Module title	Credits	Level
PM2A	Therapeutics and medicines optimisation A	35	5
PM2B	Therapeutics and medicines optimisation B	35	5
PM2C	Therapeutics and medicines optimisation C	30	5
PM2D	Delivering pharmacy services 1	20	5

Part 3 (three terms)
Compulsory modules

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

Part 4 (three terms)
Compulsory modules

Code	Module Title	Credits	Level
PM4A	Pharmaceutical research and enquiry	60	7
PM4B	Advanced clinical pharmacy & pharmacy practice	60	7

PM4A and PM4B are compulsory modules.
Research project: Students will devise or select a project title from a list provided and develop and implement it in the Part 4 module PM4A under the supervision of a member of academic staff.

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. 40% in all modules written examination amounting to not less than 100 credits; and
• a mark of at least 35% in individual modules and at least 35% in all module written examination amounting to not less than 120 credits; and
• 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 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 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.

In order to progress from Part 3 to Part 4, a student shall normally be required to achieve the following in Part 3:
- an overall weighted average of at least 40% over 120 credits; and
- a mark of at least 40% in individual modules
- successful completion of specified coursework and examination components of relevant modules, as described in the module descriptions.

Students who have failed or are not qualified to progress to Part 4 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 re-sit examinations at Part 3 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 4 but gain a threshold performance will be eligible for the award of BSc Pharmaceutical Science. The classification for this exit award will be based 33% upon the overall weighted average in Part 2 and 67% the overall weighted average in Part 3. To gain a threshold performance at Part 3 a student shall normally be required to achieve:
- an overall weighted average of 40% over 120 credits taken in Part 3; and
- a mark of at least 30% in individual modules amounting to not less than 100 credits.

To obtain the MPharm Degree, a student shall normally be required to have satisfied all of the above progression requirements and to achieve the following in Part 4:
- an overall weighted average of at least 40% in Parts 2 and 3, and at least 50% at Part 4; and
- a mark of at least 50% in each module amounting to 120 credits in Part 4; and
- successful completion of specified coursework and written examinations of relevant modules, as described in the module descriptions.

Students who fail the degree are permitted one re-sit examination in each Part 4 module, or failed required coursework element of a passed module, in which they have achieved less than 50%. Students who re-sit

examinations at Part 4 and meet the MPharm progression criteria will have their marks in those modules capped at 50% 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 then 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 obtaining the MPharm degree will be eligible for the award of BSc Pharmaceutical Science. The classification for this award will be based 33% upon the overall weighted average in Part 2 and 67% the overall weighted average in Part 3.

The GPhC does not accept Aegrotat degrees for entry to the Registration Examinations for pharmacists.

Assessment and classification

The University's honours classification scheme is:

Mark Interpretation

70% First class
-
100%
60% Upper
- Second class
69%
50% Lower
- Second class
59%
40% Third class
-
49%
0% - Fail
39%

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

Integrated Masters programmes (MEng, MMath, MChem, MPharm *etc*)

Part 2 20%
Part 3 30%
Part 4 50%

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 except for the Part 4 project, which will be assessed through research (such as laboratory work or systematic review) and the written report.

Admission requirements

Entrants to this programme are normally required to have obtained:
Grade C or better in English and Grade B or better in Mathematics in GCSE; and achieved
UCAS Tariff: AAB-ABB at A2 to include Chemistry and one other science.
Other Qualifications are available on http://www.reading.ac.uk/pharmacy/ug/pharm-ugentryrequirements

Admissions Tutor: Dr Barnaby Greenland, b.w.greenland@reading.ac.uk

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-sessional 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
In order to qualify and practise as a pharmacist, graduates must complete 12 months pre-registration training in an approved pharmaceutical environment after successful completion of the MPharm degree. The student must then pass the General Pharmaceutical Council (GPhC) Registration Examination before they can register as a pharmacist. After this time, graduates will be able to contribute to the development of pharmacy through employment within primary care centres, community, hospital or industry-based pharmacy departments, or through teaching and research and primary care organisations.
In addition to the vocational training for pharmacy 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.

Career prospects
A career in pharmacy offers a wealth of opportunities for graduates. Throughout all 4 years of the MPharm course you will learn about the career of a Pharmacist. There will be a range of lectures and workshops together with an annual careers dedicated to MPharm students.

Opportunities for study abroad
There are no formal arrangements in place for studying abroad.
Placements in Part 1 consist of 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 pharmacy opportunities in Parts 2 and 3 where students work in the hospital discharge lounge at the Royal Berkshire Hospital, and are provided with a one week community or hospital placement in Part 3.
Arrangements of placements will conform to the guidlines set by the General Pharmaceutical Council and the University Code of Practice on Placement Learning.

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:	Teaching/learning methods and strategies
1. The science of pharmacy and how it is applied to the design and development of medicines and	1-2. The core scientific knowledge is taught within an integrated curriculum via formal lectures, tutorial

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.

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 and all taught Part 1-4 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 Part 1 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. The concepts developed further within integrated modules of Parts 2 and 3.

Assessment

Most knowledge is tested through a combination of coursework and unseen formal examinations. Dissertations, oral presentations, OSCEs and viva voce also contribute to assessment. Feedback is provided for all marked work in accordance with university polices.

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 practice.

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 Part 1 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

9. Create an individual development plan and use reflective practices to monitor and revise own performance.

quality management in Part 2 and with a professional practice focus throughout all years. Assessed within Part 1, 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

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. Students are provided with first aid training in PM3A.
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

6. Develop career management skills and a professional approach to learning.

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.