

Programme Specification: Undergraduate

For students starting in Academic Year 2017/2018

1. Course Summary

Names of programme(s) and award title(s)	Master of Pharmacy (MPharm)
Award type	Integrated Masters
Mode of study	Full time
Framework of Higher Education Qualification (FHEQ) level of final award	Level 7
Duration	4 years
Location of study	Keele University – main campus
Accreditation (if applicable)	This subject/programme is accredited by the General Pharmaceutical Council (GPC) – for further details see section 12
Regulator	Higher Education Funding Council for England (HEFCE)
Tuition Fees	<p>UK/EU students: Fee for 2017/18 is £9,250*</p> <p>International students: Fee for 2017/18 is £16,000**</p>
Additional Costs	Refer to section 18

How this information might change: Please read the important information at <http://www.keele.ac.uk/student-agreement/>. This explains how and why we may need to make changes to the information provided in this document and to help you understand how we will communicate with you if this happens.

2. What is an Integrated Masters programme?

Integrated master's awards - which are common in science, mathematics and engineering - are delivered through a programme that combines study at the level of a bachelor's degree with honours with study at master's level. As such, a student graduates with a master's degree after a single four-year programme of study. The Integrated Masters programme described in this document builds upon undergraduate-level study by adding a fourth year in which students study modules in Pharmacy at an advanced level.

* These fees are regulated by Government. We reserve the right to increase fees in subsequent years of study in response to changes in government policy and/or changes to the law. If permitted by such change in policy or law, we may increase your fees by an inflationary amount or such other measure as required by government policy or the law. Please refer to the accompanying Student Terms & Conditions. Further information on fees can be found at <http://www.keele.ac.uk/studentfunding/tuitionfees/>

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3. Overview of the Programme

The aim of the MPharm programme is to produce graduates prepared to undertake the pre-registration programme (the post-graduate training year required to register as a pharmacist) with the values and attitudes that will enable them to undertake the roles and duties of a pharmacist in a highly professional manner.

4. Aims of the Programme

The broad aims of the programme are to:

- enable our undergraduate students to apply an evidence-based and patient-centred approach to practice;
- provide students with the breadth and depth of appropriate subject knowledge in keeping with an MPharm programme;
- provide high quality teaching in Pharmacy in a dynamic environment that reflects external developments in employers' needs;
- enable students to become reflective learners, and to encourage and develop self-discipline and enthusiasm for continual professional development that continues throughout their careers;
- provide students with the opportunity to gain direct and indirect experience of the work of a pharmacist, enabling an understanding of the profession of Pharmacy as a patient-centred discipline, and the role of the pharmacist in primary and secondary care settings and in the pharmaceutical industry;
- allow students to deepen both their Pharmacy-specific knowledge but also their skills base, by maintaining both a programme of appropriate skills training throughout the course but also by introducing increasing challenges as the programme progresses

Following the government White Paper, *Pharmacy in England: Building on Strengths - Delivering the Future* (Department of Health, 2008), and the formation of the General Pharmaceutical Council (GPhC) in 2010, the structure of MPharm programmes nationally is under review. Foremost amongst potential developments is the introduction of greater clinical content and experience into MPharm curricula, and this may encompass the inclusion of the pre-registration year in a five-year integrated programme leading directly to registration.

Anticipating these changes, the Keele MPharm programme has been designed to provide:

- a fully integrated and contextualised course that better prepares students for the future roles of the pharmacist; and
- increased opportunities for students to have contact with patients and to practise their clinical skills.

While designing the course, care has been taken to build in flexibility whatever model of placements is decided upon by the profession. A programme structure comprising four 120-credit integrated modules will allow for the smooth inclusion of enhanced placement opportunities.

5. What you will learn

See Section 9 for information about the intended learning outcomes of the programme (what students should know, understand and be able to do at the end of the programme), by level/year.

The intended learning outcomes of the programme (what students should know, understand and be able to do at the end of the programme) are based on the outcomes in the General Pharmaceutical Council's (GPhC) document '*Future pharmacists: Standards for the initial education and training of pharmacists*'.

Link: https://www.pharmacyregulation.org/sites/default/files/GPhC_Future_Pharmacists.pdf

Keele Graduate attributes

Engagement with this programme will enable you to develop your intellectual, personal and professional capabilities. At Keele, we call these our ten Graduate Attributes and they include independent thinking, synthesizing information, creative problem solving, communicating clearly, and appreciating the social,

environmental and global implications of your studies and activities. Our educational programme and learning environment is designed to help you to become a well-rounded graduate who is capable of making a positive and valued contribution in a complex and rapidly changing world, whichever spheres of life you engage in after your studies are completed.

Further information about the Keele Graduate Attributes can be found here: <http://www.keele.ac.uk/journey/>

6. How is the Programme taught?

A wide variety of teaching methods are used within the MPharm programme. These include traditional large group teaching sessions, workshops, seminars and tutorials (both face-to-face and on-line) and a variety of practical classes that support the development of scientific and professional skills. However, a feature of the Keele MPharm programme is the use of innovative teaching methods; these include: computer-generated virtual environments where the student can “float” complex molecules to view receptor sites, and a virtual body which can show anatomy and physiology in detail in three-dimensions.

The above scheduled teaching sessions are supported by an extensive programme of one-to-one mentoring by healthcare professionals, a series of clinical placements and regular opportunities to interact with both simulated (actor) and real patients.

Learning and teaching methods used on the programme vary according to the subject matter and level of the module.

Apart from these formal activities, students are also provided with regular opportunities to talk through particular areas of difficulty, and any special learning needs they may have, with their Personal Tutors or module lecturers on a one-to-one basis.

7. Teaching Staff

The staffing within the School of Pharmacy includes professors and a complement of readers, senior lecturers, lecturers and academic-related and technical support staff, all of which contribute to a supportive environment for study. A number of staff have dual roles, in that they have contracts with the University but also hold contracts with other relevant stakeholders, including the NHS. Several of the current staff also have extensive experience of working within the pharmaceutical industry and are able to provide context and perspective to all aspects of the programme.

All current permanent academic staff are members of, or are working towards, membership of the Higher Education Academy. All current permanent academic staff hold academic qualifications up to at least Post-graduate diploma level or significant equivalent experience within practice and the majority hold a PhD qualification in a discipline firmly rooted in pharmacy. The staff group has extensive experience of teaching at undergraduate and postgraduate level and includes individuals with expertise in learning and teaching, and research. The work of all research-active staff has been published widely and shared via conference presentations, for example.

The University will attempt to minimise changes to our core teaching teams, however, delivery of the programme depends on having a sufficient number of staff with the relevant expertise to ensure that the programme is taught to the appropriate academic standard.

Staff turnover, for example where key members of staff leave, fall ill or go on research leave, may result in changes to the programme’s content. The University will endeavour to ensure that any impact on students is limited if such changes occur.

8. What is the Structure of the Programme?

The academic year runs from September to June and is divided into two semesters. The number of weeks of teaching will vary from course to course, but you can generally expect to attend scheduled teaching sessions between the end of September and mid-December, and from mid-January to the end of April.

Our degree courses are organised into modules. Each module is usually a self-contained unit of study and each is usually assessed separately with the award of credits on the basis of 1 credit = 10 hours of student effort. An outline of the structure of the programme is provided in the tables below.

The programme is planned as four 120-credit modules – one for each year of study. During each year teaching material is delivered within themes that are designed to integrate the physical and social sciences within the context of patient care and public health.

During Level 7 students have the opportunity to choose topics to study within an electives strand that is designed to complement their chosen career path within Pharmacy. Students will choose from a range of specialist topics taught in small seminar groups and an extended project. The number of specialist options chosen and the length / nature of the project may be varied to suit each student’s interests and aspirations.

Shown on the following pages are the learning outcomes for each level of study. Further details of the mapping of learning outcomes to themes are provided in the module guides for each level of study.

For further information on the content of modules currently offered please visit:

www.keele.ac.uk/recordsandexams/az

Learning Outcomes

Level 4 (Stage 1)

Learning Outcome	Principal forms of assessment used (not specific to each learning outcome)
Apply an integrated approach towards patient care which links pharmaceutical science and pharmacy practice	O1: Laboratory Assessment 1st cycle laboratory skills assessment The laboratory assessment will be based upon a laboratory session conducted during the 1st cycle. A formative attempt will also be provided.
Describe the concepts of health, illness, public health and the development of health policy, including the role of medicines in society	
Describe the structure and function of healthcare provision in the UK, including the regulation of healthcare professionals	O2: Practical Assessment 1st cycle practical skills assessment The assessment will cover a variety of essential academic and professional skills.
Recognise the key characteristics of a responsible and capable healthcare professional, including skills, attitudes and values	
Describe the roles of other healthcare professionals and the importance of interprofessional collaboration	O3: Exam End of 1st cycle exam Formative tests will be provided prior to the examination to assist students with preparation.
Demonstrate an understanding of the key features of the profession of pharmacy and the varied career profiles of pharmacists	
Describe and apply the underpinning legal framework for the sale and supply of medicines in the UK	
Demonstrate an ability to make sound and informed decisions in accordance with basic ethical principles	
Describe the basic architecture and cellular diversity of prokaryotic and eukaryotic cells	O4: Laboratory Assessment 2nd cycle laboratory skills assessment The laboratory assessment will be based upon a laboratory session conducted during the 2nd cycle. A formative attempt
Explain the essential aspects of metabolism at a cellular level	
Describe the different types of inter- and intracellular signalling systems in eukaryotic cells	

	will also be provided
Describe the central role of thermodynamics, chemical kinetics and electrochemistry in biological systems	05: Practical Assessment 2nd cycle practical skills assessment
Describe the cellular and molecular interactions involved in the formation and function of tissues	The assessment will cover a variety of essential academic and professional skills
Describe the role of genes in living organisms and how inheritance of genes affects human body systems	06: Exam End of 2nd cycle exam.
Describe the normal anatomy and physiology of the major body systems	Formative tests will be provided prior to the examination to assist students with preparation.
Describe the structure and function of common receptor types	
Interpret pharmacological data to identify drug-target interactions	07: Laboratory Assessment 3rd cycle laboratory skills assessment
Explain the common mechanisms by which drugs interact with physiological systems to exert pharmacological and adverse effects	The laboratory assessment will comprise a report based upon a multi-step synthesis. A formative attempt will be provided in Cycle 2.
Interpret common pathological symptoms associated with abnormal functions in body systems	08: Practical Assessment 3rd cycle practical skills assessment
Recognise and describe the structures and functions of molecules and their reactivity	The assessment will cover a variety of essential academic and professional skills
Describe how functional groups affect the physicochemical properties of molecules	09: Exam End of 3rd cycle exam.
Describe how the physicochemical properties of molecules affect their formulation into medicines and the route of administration to patients	Formative tests will be provided prior to the examination to assist students with preparation.
Describe why a variety of dosage forms is necessary and the relative merits and demerits of the available forms	
Determine the purity and composition of compounds using appropriate practical and analytical techniques	10: Professional skills development The Professional Development assessment will include CPD activities, competency assessment in pharmacy practice (including calculations and communications skills), case studies in ethics, and evidence of professionalism measured by Professional Activity Credits
Describe the process of drug design and development from identification of target to formulation	
Describe and explain biopharmaceutics in terms of the relationship between dosage form and interaction of the drug substance with human physiology	
Demonstrate a high level of laboratory skill and apply a knowledge of the skills necessary for the successful completion of appropriate manipulative practical exercises	11: Mixed Exam End of year synoptic assessment
Demonstrate competence in pharmaceutical calculations	This assessment will comprise both group work and individual assessment. It will potentially cover all topics studied during the year, but will focus in particular on demonstrating understanding of the integration of those topics
Communicate complex concepts effectively, both orally and in writing, in a manner that reflects professional practice	

Level 5 (Stage 2)

Learning Outcome	Principal forms of assessment used (not specific to each learning outcome)
Demonstrate knowledge of and apply an integrated approach towards patient care which links pharmaceutical science and pharmacy practice	01: Laboratory Assessment 1st Cycle laboratory skills assessment The laboratory assessment will comprise elements from multiple laboratory sessions during the 1st Cycle
Explain how physiological patient factors affect the choice of pharmacological agents to treat disease states based upon absorption, distribution, metabolism and excretion data	
Identify and describe the mechanisms of common drug-drug, drug- patient and drug-food interactions and their consequences for patient care	
Explain how drug resistance and drug interactions have consequences for patient care	02: Practical Assessment 1st Cycle practical skills assessment The practical skills assessment will include an essay, a presentation, and a pharmacy practice exercise
Explain the relationship between absorption, distribution, metabolism and elimination of drugs and their physicochemical properties and formulation	
Compare and evaluate the efficiency and safety of different routes of drug administration	
Explain the underpinning concepts in physical chemistry and materials science which underpin drug formulation	03: Exam End of 1st cycle exam
Evaluate and select processes and formulations appropriate to the manufacture of specified drug products	
Explain the processes involved in the quality assurance of all aspects of pharmaceutical drug development, formulation and the manufacturing process	
Describe in detail analytical techniques employed to assure quality and safety during the drug development process and the quality, safety and efficacy of the finished drug product	04: Laboratory Assessment 2nd cycle laboratory skills assessment The laboratory assessment will comprise elements from multiple laboratory sessions during the 2nd Cycle
Demonstrate the relationship between the design of drug product formulation, properties of the formulation, in vitro behaviour and in vivo performance	
Apply the physicochemical principles underlying the formulation of various dosage forms to the extemporaneous preparation of medicines	
Describe the relevance of microbiology within healthcare practice, and the challenges presented by infection in the context of patient care	05: Practical Assessment 2nd cycle practical skills assessment The practical skills assessment will several elements relating to the practical skills developed during the 2nd Cycle
Describe in detail the metabolic interrelationships of the various tissues and organs of the human body, including the role of hormones in the integration of metabolism and the maintenance of homeostasis	
Explain the common techniques used in the analysis of biological data to arrive at safe and appropriate drug	06: Exam

selection for a patient	End of 2nd cycle exam.
Interpret nationally and locally produced guidelines in the selection and recommendation of appropriate therapeutic regimens for patients	
Apply a methodical approach to, and demonstrate competence in, the supply of medicines, including controlled drugs, in light of relevant clinical, legal, ethical and pharmaceutical factors	07: Professional Portfolio The portfolio will include CPD reflections, a calculations test and a competency assessment in dispensing. Students will also be required to acquire a set number of Professional Activity Credits.
Demonstrate competence in pharmaceutical calculations related to pharmacology, pharmaceuticals and pharmacy practice	
Demonstrate competence in the performance of laboratory techniques in the pharmaceutical sciences and the analysis of data generated therein	08: Mixed Exam End of year synoptic assessment This assessment will comprise both group work and individual assessment. It will potentially cover all topics studied during the year, but will focus in particular on demonstrating understanding of the integration of those topics.
Demonstrate competence in the performance of laboratory techniques in the pharmaceutical sciences and the analysis of data generated therein	
Communicate complex concepts effectively, both orally and in writing, in a manner that reflects professional practice	

Level 6 (Stage 3)

Learning Outcome	Principal forms of assessment used (not specific to each learning outcome)
Apply a detailed understanding of the statistical and mathematical tools of evidence-based medicine, including epidemiology, to calculate, analyse and draw conclusions from the results of clinical trials and epidemiological studies	01: Coursework Stage 3 Coursework part 1 This component of assessment comprises a variety of assessments including case studies and critiques.
Use the principles of evidence-based medicine and systematically apply knowledge of the underpinning pharmaceutical sciences to the process of therapeutic decision making in the management of specified disease states	
Demonstrate knowledge of and apply an integrated approach towards patient care which links pharmaceutical science and pharmacy practice	02: Coursework Stage 3 Coursework part 2 This component of assessment comprises a variety of assessments including: case studies, on-line group work, and Tripartite Problem Solving Exercises (TRIPSEs).
Apply a systematic and integrated knowledge of underpinning pharmaceutical sciences and pharmaceutical care to the interpretation and implementation of clinical and therapeutic guidelines	
Review, consolidate and extend knowledge and understanding of the properties and applications of drug delivery systems to maximise the therapeutic benefits for patients	03: Mixed Exam Stage 3 Examination 1 This examination comprises both seen and unseen elements and will contain a combination of MCQs and written answers.
Review, consolidate and extend knowledge and understanding of microbiology, medicinal chemistry, pharmacology and pharmaceuticals in the context of	

pharmaceutical care and medicines optimisation	
Describe and critically evaluate the role of pharmacotherapy in the management of specified disease states	
Develop an understanding of the causes, incidence and clinical features, including differential diagnosis, of specified disease states	04: Mixed Exam Stage 3 Examination 2 (2 papers) This examination comprises both seen and unseen elements and will contain a combination of MCQs and written answers presented as two papers.
Apply a systematic and integrated knowledge of underpinning pharmaceutical sciences to the process of therapeutic decision making in specific population groups, including: children, the elderly, pregnant women and breastfeeding mothers, patients with liver and renal impairment	
Critically evaluate medical case notes (including laboratory data) as part of a multidisciplinary healthcare team	05: Mixed Exam Stage 3 Examination 3 (2 papers)
Review, consolidate and extend knowledge of the legal, regulatory and governance frameworks of pharmacy practice	This examination comprises both seen and unseen elements and will contain a combination of MCQs and written answers presented as two papers.
Review, consolidate and extend knowledge of the regulation of healthcare professions, including fitness to practise	
Demonstrate a systematic understanding of the concepts of public health, health inequalities and health promotion (including the legal and professional framework for accountability) needed to implement and evaluate a health promotion campaign	06: Mixed Exam End of year synoptic assessment This assessment will comprise both group work and individual assessment. It will potentially cover all topics studied during the year, but will focus in particular on demonstrating understanding of the integration of those topics.
Apply an in-depth knowledge of decision making processes to complex ethical problems	
Compare and critically evaluate research techniques and self-management skills in order to plan a programme of research at a professional level	07: Professional Development Professional skills development The Professional Development assessment will include CPD activities, competency assessment in pharmacy practice (including calculations and communications skills), case studies in ethics, and evidence of professionalism measured by Professional Activity Credits.
Identify and explain the differences between audit, service evaluation and research	
Critically evaluate current research and advanced scholarship in pharmacy, the pharmaceutical sciences and related fields, and apply a detailed understanding of the research process in planning a research project	
Demonstrate an ability to make informed decisions using the available evidence base to solve complex problems	
Demonstrate competence in calculations related to evidence-based medicine, clinical pharmacy and pharmaceuticals	
Communicate complex concepts effectively, both orally and in writing, in a manner that reflects professional practice	

Level 7 (Stage 4)

Learning Outcome	Principal forms of assessment used (not specific to each learning outcome)
Apply a systematic understanding of pharmacology,	01: Group Project

pharmacokinetics and pharmaceuticals to the process of therapeutic decision making and the rationale and role of drug therapy	Students will work in groups to design and lead workshops for their peers on designated clinical topics. They will also undertake a number of formative TRIPSE cases followed by a summative case. These involve complex patient case studies designed to closely reflect the staged diagnosis and decision-making encountered by healthcare professionals in practice. NB: As these are "live" teaching sessions it is not possible to assess these anonymously
Demonstrate knowledge of and apply an integrated approach towards patient care which links pharmaceutical science and pharmacy practice	
Apply the principles of evidence based medicine to clinical and therapeutic scenarios and critically evaluate complex therapeutic regimens	O2: Group Project Health Promotion Project
Apply a systematic knowledge of the current understanding of the epidemiology, aetiology, pathophysiology, clinical features and diagnosis of disease states to solve problems concerning the management of specified diseases and clinical conditions	Students will work collaboratively to design and deliver a health promotion campaign, including production of health promotion materials. NB: As these are "live" activities conducted and assessed in public locations, it is not possible to assess these activities anonymously.
Apply comprehensive knowledge of pharmaceutical sciences, clinical therapeutics and evidence based principles to the process of diagnosis, clinical management of disease and therapeutic decision making	O3: Exam This examination will comprise a combination of MCQ and long-answer questions. The latter will be chosen from an extended list of questions provided to the students in advance of the examination. The exam will focus on the non-elective teaching materials studied.
Critically evaluate patients' responses to therapeutic interventions and modify treatment where appropriate	
Apply a systematic understanding of the consultation process including an understanding of compliance and concordance and demonstrate the ability to communicate effectively with patients, carers and other healthcare professionals	O4: Coursework Electives – Option topics and/or project
Demonstrate an understanding of the roles and responsibilities of the different members of the prescribing team and the responsibilities of a pharmacist prescriber	Students will be assessed in their chosen elective topics. Those students undertaking a research project, audit or service evaluation will complete a report on this along with a variety of assessment methods within the optional topics. These may include (but are not exclusive to) presentations, critiques, essays and tests. NB it is not possible to assess anonymously the majority of assessments in this section as they will be taught and assessed on a one-to-one or small group basis.
Demonstrate a comprehensive understanding of the legal, policy, professional, ethical and clinical governance	O5: Online tasks

frameworks for accountability and responsibility in relation to pharmacist prescribing	Contributions to online discussions on current developments
Apply a comprehensive knowledge of the regulation of health care professions and fitness to practice, in particular in relation to pharmacists in their extended roles as consultant pharmacists, independent prescribers, pharmaceutical health specialists and clinical team leaders	Students will participate in a blog of current issues in pharmacy and healthcare generally. NB it is not possible to assess participation in this activity anonymously.
Explain in detail how molecular genetics can be applied in clinical research, in the diagnosis of disease states, and in the design of appropriate therapies using pharmacogenomics	06: Objective Structured Skills & Clinical Examination Final OSCE assessment
Apply a systematic and detailed understanding of the dynamic nature of genes in populations and the possible causes of inherited and acquired genetic diseases	Students will complete a multi-station OSPE that will focus on skills and knowledge required for day one of pharmacy practice. OSPE stations will include for example: dispensing exercises, clinical skills, communication skills in the context of health promotion, recent changes to governance and regulatory requirements. There will be an opportunity for formative/mock assessment in the OSPE under exam conditions and students will be able to gain exemption from the final assessment based upon performance in the mock assessment. NB some elements of the OSPE will involve face-to-face interaction and hence cannot be marked anonymously.
Interpret the impact of recent advances in therapeutics on patient care	
Develop an original health promotion service by drawing on a systematic and integrated knowledge of applied therapeutics in the context of public health	07: Professional Development Professional skills development
Undertake critical appraisal of the impact on pharmacy practice of recent legislative changes (including EC directives) and professional developments	This assessment comprises students' participation in a number of activities that reflect attributes of pharmacists in professional practice. These will include participation in reflective practice in CPD cycles; participation in ethical case studies; and participation in the Professional Activity Credits (PAC) scheme.
Critically evaluate current research and advanced scholarship and practice in selected specialist topics and accurately undertake data acquisition in a relevant project area if appropriate	
Apply a systematic and detailed understanding of the legal, professional and contractual frameworks governing healthcare and use these to critically evaluate the implications of recent changes in the healthcare environment, particularly in relation to pharmacy	
Communicate progress reports and conclusions on work carried out to specialist and non-specialist audiences	
Show self-direction and originality in tackling and solving problems	
Communicate complex concepts effectively, both orally and in writing, in a manner that reflects professional practice	

9. Final and intermediate awards

Credits required for each level of academic award are as follows:

MPharm Pharmacy	480 credits	You will require at least 120 credits at levels 4, 5, 6 and 7 Students who have attained the required standard shall be awarded the Integrated Master's degree with honours classification as follows: <ul style="list-style-type: none">• First class: a mean average of at least 70% determined in accordance with the weightings specified below;• Second Class, Division I: a mean average between 60% and 69% determined in accordance with the weightings specified below;• Second Class, Division II: a mean average between 50% and 59% determined in accordance with the weightings specified below. For the purpose of the Integrated Master's degree with honours classification modules shall contribute to the mean average calculation as follows: <ul style="list-style-type: none">• Level 5 module: 20%• Level 6 module: 30%• Level 7 module: 50%
BSc Honours Degree in Pharmaceutical Sciences	360 credits	You will require at least 120 credits at levels 4, 5 and 6
Diploma in Higher Education	240 credits	You will require at least 120 credits at level 4 or higher and at least 120 credits at level 5 or higher
Certificate in Higher Education	120 credits	You will require at least 120 credits at level 4 or higher

NB: Students are only eligible for entry to the pre-registration training year (and hence to the Register of Pharmacists) when they graduate with the full MPharm degree

10. How is the Programme assessed?

The wide variety of assessment methods used within Pharmacy at Keele reflects the broad range of knowledge and skills that are developed as you progress through the degree programme. Teaching staff take care to apply the principles of assessment laid out in the University's assessment strategy and pay particular attention to specifying clear assessment criteria and providing timely, regular and constructive feedback that helps to clarify things you did not understand and helps you to improve your performance. In each Level of the programme a combination of examination (in various formats) and coursework is employed. An outline of the assessment types is provided below.

At all levels, reassessment opportunities for individual components of coursework will be provided during the academic year. Students who have failed to complete any of the assessments above will be given the opportunity to redeem the failure during the August reassessment period, where possible.

Level 4 (Stage 1)

Each eight-week cycle of learning is assessed using a balanced mix of unseen multiple-choice examinations and laboratory, coursework and skills-based assignments. Students also complete a professional development portfolio, given the title of Professional Skills Element, throughout the year.

After completing the three cycles of learning and assessment students undertake a problem-based learning strand culminating in a group-based competency assessment. The aim of this synoptic assessment is to ensure that students demonstrate understanding of the links and interdependencies between the topics that they have covered during the year.

In order to be awarded credits at Level 4, students are required to pass:

- the end-of-cycle examinations;
- the laboratory skills assessments;
- the practical skills assessments

Students must also achieve a satisfactory standard in the Professional Skills Element (which includes competency based assessments) and the final synoptic assessment.

Progression to Level 5 is not permitted until all units of assessment are completed satisfactorily.

Level 5 (Stage 2)

There are two cycles of learning and assessment in Level 5. Each cycle is assessed using a balanced mix of unseen examinations, and laboratory, coursework and skills-based assignments, alongside the Professional Skills Element that runs throughout the year. As in Level 4, a synoptic assessment allows students to demonstrate understanding of the links and interdependencies between the topics that they have covered; this assessment takes the form of a group-based assignment as at Level 4.

In order to be awarded credits at Level 5, students are required to pass:

- the end-of-cycle examinations;
- the laboratory skills assessments;
- the practical skills assessments

Students must also achieve a satisfactory standard in the Professional Skills Element (which includes competency based assessments such as that for dispensing practice) and the final synoptic assessment.

Progression to Level 6 is not permitted until all units of assessment are completed satisfactorily.

Level 6 (Stage 3)

Level 6 is assessed by a balanced mix of seen and unseen examinations, coursework and skills-based assignments alongside the Professional Skills Element and synoptic assessment throughout the year.

In addition, at Level 6, and continuing in Level 7, TRIPSE assessments are introduced. TRIPSEs are designed to mirror closely the clinical challenges that pharmacists face in day-to-day practice. Peer and self-assessment are also introduced at this level.

Progression to Level 7 is not permitted until all units of assessment are completed satisfactorily; it should be noted that students must achieve a threshold mark of 50% averaged across all Level 6 assessments in order to progress.

Level 7 (Stage 4)

New coursework assessments introduced at Level 7 include the project report and presentation, and a public health campaign along with a variety of assessments associated with the option topics.

As in previous years, students must also achieve a satisfactory standard in the Professional Skills Element (including competency based assessments) and the final synoptic assessment.

Formative assessments and feedback

Marks are awarded for summative assessments designed to assess students' achievement of learning outcomes. Students are also assessed formatively to enable them to monitor their own progress and to assist staff in identifying and addressing any specific learning needs. Feedback, including guidance on how students can improve the quality of their work, is also provided on all summative assessments within three working weeks of submission, unless there are compelling circumstances that make this impossible, and more informally in the course of tutorial and seminar discussions.

Interprofessional Education (IPE)

At all levels of the programme there will be opportunities to participate in IPE sessions within the Faculty of Health.

11. Contact Time and Expected Workload

This contact time measure is intended to provide you with an indication of the type of activity you are likely to undertake during this programme. The data is compiled based on module choices and learning patterns of students on similar programmes in previous years. Every effort is made to ensure this data is a realistic representation of what you are likely to experience, but changes to programmes, teaching methods and assessment methods mean this data is representative and not specific.

Undergraduate courses at Keele contain an element of module choice; therefore, individual students will experience a different mix of contact time and assessment types dependent upon their own individual choice of modules. The figures below are an example of activities that a student may expect on your chosen course by year/stage of study. Contact time includes scheduled activities such as: lecture, seminar, tutorial, project supervision, demonstration, practical classes and labs, supervised time in labs/workshop, fieldwork and external visits. The figures are based on 1,200 hours of student effort each year for full-time students.

Activity	Year 1 (Level 4)	Year 2 (Level 5)	Year 3 (Level 6)	Year 4 (Level 7)
Scheduled learning and teaching activities	37%	33%	28%	23%
Guided independent Study	62%	66%	70%	75%
Placements	1%	11%	2%	2%

12. Accreditation

This subject/programme is accredited by the General Pharmaceutical Council (GPC). Please note the specific regulations below. Study abroad is not currently permitted on the MPharm programme.

13. Regulations

The University Regulations form the framework for learning, teaching and assessment and other aspects of the student experience. Further information about the University Regulations can be found at: <http://www.keele.ac.uk/student-agreement/>

Your programme has professional accreditation and there are specific regulations, which you have to agree to abide by, as follows:

- All four 120-credit modules in the Keele MPharm programme are core and must be passed in their entirety before progression to the next stage of study.
- The award of MPharm will require the successful completion of 120 credits at Stage 4.
- Graduates from the MPharm programme must carry out a period of assessed pre-registration training in order to register with the GPC to practise Pharmacy. Consequently, the MPharm degree is viewed as a vocational programme and is a pre-requisite for pre-registration study, and the MPharm course is subject to accreditation by the GPC.

14. What are the typical admission requirements for the programme?

Subject	A-level	Subjects not included	International Baccalaureate	BTEC	Access to Higher Education Diploma	GCSE requirements
Pharmacy	AAB - ABB To include Biology or Chemistry. A pass in at least one Science Practical will be required. ** ** Science practical only required from applicants taking reformed A level Biology, Chemistry or Physics in England.	Dual award Applied Science, Critical Thinking, General Studies, Maths and Further Maths in combination. Media Studies only accepted with both Chemistry and Biology	34 – 36 points to include Higher Level Chemistry or Biology at 6.	DDD You must have taken certain Science units, please contact us for advice	Please contact us for advice.	GCSE Maths at C (or 4) if AS/A level Maths being studied otherwise grade B (or 6). GCSE English language grade C (or 4) if GCSE English Lit grade B (or 6) or AS/A level English/History/Geography being studied, otherwise grade B (or 6).

Applicants who are not currently undertaking any formal study or who have been out of formal education for more than 3 years and are not qualified to A-level or BTEC standard may be offered entry to the University's Foundation Year Programme.

Applicants for whom English is not a first language must provide evidence of a recognised qualification in English language. The minimum score for entry to the Programme is Academic IELTS 7.0 or equivalent.

Please note: All non-native English speaking students are required to undertake a diagnostic English language assessment on arrival at Keele, to determine whether English language support may help them succeed with their studies. An English language module may be compulsory for some students during their first year at Keele.

Accreditation of Prior Learning (APL) is considered on a case-by-case basis and those interested should contact the Programme Director. The University's guidelines on this can be found here:

<http://www.keele.ac.uk/qa/accreditationofpriorlearning/>

15. How are students supported on the programme?

There is a wide spectrum of support available to students on the MPharm programme. These range from the institution-level student support services to the specific one-to-one support offered by the personal tutoring system. Every student is allocated to a member of staff to act as personal tutor at the start of his/her studies. Personal tutors also act as a first point of contact for students on non-academic issues which may affect their learning and can refer students on to a range of specialist health, welfare and financial services co-ordinated by the University's Student Support & Development Services. In addition to the provision of pastoral support, personal tutors provide feedback on assessments; this is particularly important in relation to students' first experiences of assessment in Level 4 where early feedback is particularly important in helping students to adjust to higher education.

Students in Levels 4 and 5 are allocated a mentor to support their professional development. Professional mentors are drawn from members of staff who are registered as healthcare professionals in pharmacy or medicine.

In Level 4 and 5 students are also allocated a "Buddy" – a more experienced student colleague from Levels 7 and 6 of the programme respectively – who provides peer support and guidance.

To support students in finding employment for their post-graduate (pre-registration) year, and for vacation employment, careers events are held annually to supplement the opportunities that students have to engage with potential employers on placements. A separate careers section is also available on the KLE to highlight opportunities available.

16. Learning Resources

The undergraduate activities of the School of Pharmacy are based within dedicated buildings at the heart of the academic science cluster on Keele campus. These include:

- The Jack Ashley building which houses three pharmaceuticals laboratories. In addition, the building houses the KAVE (see below for more details).
- A state-of-the art Chemistry laboratory that provides facilities for up to 64 students.
- Facilities located in the Lennard-Jones Laboratories (chemistry research and analytical laboratories, and the Atrium IT suite), and the Huxley building (biochemistry and physiology laboratories).
- The Hornbeam building provides further teaching facilities, including the Well Pharmacy Clinical Skills Suite, the Health Cinema and accommodation for all staff of the School of Pharmacy (aside from a number of technical support staff who have offices close to the facilities that they support).

The laboratories in all locations have the necessary equipment for dispensing and preparative practical work. The main pharmaceuticals laboratory in the Jack Ashley building can accommodate groups of up to 48 students. Those in the Lennard-Jones Laboratories are designed for maximum occupancy of 64 students, and the Huxley building has space for 120 students (3 x 40-place bays). Additional laboratory space for physiology, pathology and pharmacology work is located on campus within the Undergraduate Medical School (3 x 40-place bays).

The KAVE is a physical room where three dimensional 'stereoscopic' visuals display on three walls and the floor, to create a computer generated virtual environment. A student wears active 3D glasses and a lightweight head & hand tracking unit. The computer generated visuals respond to your position in the KAVE and it allows you to 'pick up' and interact with digital objects. The Health Cinema provides a similar 3D experience for a whole cohort of students.

The Health Cinema and the KAVE are used to enhance the learning experience in other subjects in the Pharmacy syllabus. Using open-source 'PyMol' software, the student can "float" complex molecules in the KAVE and move them around to view receptor sites. Also available is a virtual body which can show anatomy and physiology in detail as the various "layers" – skin, neural networks, muscle, skeleton and organs can be isolated, dissected and illustrated in three-dimensions. A 24-bed virtual ward has been designed and is used to develop key clinical skills.

17. Other learning opportunities

External learning opportunities on the Keele MPharm take two forms: observational visits and participatory placements.

In the first year of the course, students are given the opportunity to observe practice in primary care (community pharmacy) and secondary care (hospital pharmacy) environments. Students have 12 hours placement in community pharmacy (undertaken as 4 x 3 hour visits) with the opportunity to undertake a three hour placement in hospital pharmacy. These visits are designed to allow the student to contextualise the theoretical learning they have undertaken within the University. In the second year students are provided with support and information to organise 18 hours of placement activity within community pharmacy and are actively encouraged to seek further, voluntary, work experience. All MPharm students are indemnified by the university to undertake activities within pharmacy working environments meaning that these placements are participatory rather than observational. Also included in the Level 5 programme is a visit to a pharmaceutical company that specialises in the manufacture of liquid formulations so students will be able to experience the manufacture of pharmaceuticals on an industrial scale. These visits allow the students to further build upon and contextualise the material taught within the second year of the MPharm course, including that in pharmaceuticals and relating to pharmaceutical manufacturing.

In the third and final years of the MPharm course the emphasis of the placement activity is very much of participation. Placements within the secondary care setting start in the first semester of the third year as tutor-led teaching visits. By the end of the final year students are taken to a ward and encouraged, under supervision, to perform the functions of a hospital pharmacist by exploring and verifying the drug history of a small number

of patients. Students are also encouraged, where it is possible, to talk to and ask questions of patients they encounter.

During the third year, secondary care placements are designed to reinforce the therapeutic areas being taught within the MPharm course. During the final year such specialisation is not deemed necessary as co-morbidities are being addressed within the therapeutic teaching sessions and so the students experience the variety and unpredictability of the real clinical environment.

Level 6 placements in community practice are organised in the same fashion as in Level 5 and the students are encouraged to explore non-prescription medicine supply. Within the first semester of Level 6, the students are responsible for the production of their own set of non-prescription medicine and advice guidelines. The community placements are expected to reinforce this material.

Students are responsible for reasonable costs incurred in travelling to local placements and making travel arrangements – in the same way as for travel to and from the University generally. As with all healthcare programmes, there are requirements for occupational health and fitness to practise checks that apply before students can undertake placements in healthcare settings.

Study abroad is not currently permitted on the MPharm programme.

18. Additional costs

MPharm Programme Costs

Occupational Health and Vaccinations

All students registering on the MPharm programme will need to have a health fitness report prepared by the University's Occupational Health Service (OHS). As part of this report your GP will need to complete the appropriate section of the questionnaire and provide a vaccination record that has your name, d.o.b. and a practice stamp on it. It is likely that your GP will make a charge for this service which could be in the region of £25 – but this charge can vary. You will receive all of the required information about this process in your offer letter from the University.

You will be required to have the following immunisations/immunity checks if you have not already had them.

- A course of hepatitis B plus a blood test to confirm immunity (a course is 3 or 4 vaccinations)
- MMR Vaccinations – proof of 2 vaccines or blood test confirming immunity (Your GP should be able to offer MMR vaccination free of charge if you have not previously had them)
- BCG – proof of vaccination or BCG Scar
- Additional TB screening – if you were born or lived in a TB endemic country for 3 months or more you will require a Quatum Interferon test for TB (IGRA)
- Chicken pox / varicella – you must have a definite history of illness or blood test to confirm immunity, if you are non-immune on blood testing you will require evidence of receiving two varicella vaccinations. Your vaccination requirements should be discussed with your GP; you are likely to incur a charge for these.

Appointments can be arranged for you once you have commenced your course however there will be a charge for these, currently between £40 - £45 per blood test.

Cost for vaccines - current costs vary between £45 and £80 per vaccine.

Please note the above costs are indicative and you would need to contact your GP or Keele's Occupational Health team for the latest charges.

You will be unable to attend experiential learning visits without a completed University Occupational Health Service health fitness report.

Disclosure and Barring Service (DBS) Check

As parts of your course will involve contact with patients who may be children or vulnerable adults, you are required to undergo an appropriate Disclosure and Barring Service check when you enrol on the MPharm course. The cost for the online check is currently £55.89.

Travel for placements

You will be required to attend local hospitals and community pharmacies for half-day teaching / training sessions. Travel costs to attend your placement can cost up to a maximum of £280 per year, but the proximity of your own accommodation to your placement location and any personal travel arrangements you may wish to organise (e.g. a student bus pass) may reduce this cost significantly.

All placements are allocated at random. Where possible, the School will be mindful of previous allocations re: distance.

Protective clothing

Protective clothing such as laboratory coats and safety goggles will be provided to you by the School of Pharmacy free of charge in the first instance.

Item	Estimated cost
Travel (as above)	£280
Other additional costs – Occupational health clearance (first year only)	Up to £150
Other additional costs – DBS check (first year only)	£56
Total estimated additional costs	£500

These costs have been forecast by the University as accurately as possible but may be subject to change as a result of factors outside of our control (for example, increase in costs for external services). Forecast costs are reviewed on an annual basis to ensure they remain representative. Where additional costs are in direct control of the University we will ensure increases do not exceed 5%.

We do not anticipate any further additional costs for this undergraduate programme.

As to be expected there will be additional costs for inter-library loans and potential overdue library fines, print and graduation.

19. Quality management and enhancement

The quality and standards of learning in the MPharm programme are subject to a continuous process of monitoring, review and enhancement overseen by the MPharm Course Committee.

- The Learning and Teaching Committee of the School of Pharmacy is responsible for reviewing and monitoring quality management and enhancement procedures and activities across the School.
- Individual modules and the MPharm Programme as a whole are reviewed and enhanced every year in the annual programme review which takes place at the end of the academic year and as part of the University's Curriculum Annual Review and Development (CARD) process.
- The programmes are run in accordance with the University's Quality Assurance procedures and are subject to periodic reviews under the Internal Quality Audit (IQA) process.

Student evaluation of, and feedback on, the quality of learning on every MPharm module takes place every year using a variety of different methods:

- The results of student evaluations of all modules are reported to module leaders and reviewed by the SSLC and MCC and as part of the Curriculum Annual Review and Development (CARD) process.
- Findings related to the MPharm Programmes from the annual National Student Survey (NSS), and from regular surveys of the student experience conducted by the University, are scrutinised in the SSLC and the MCC.

- Feedback received from representatives of students in all four years of the MPharm Programme is considered and acted on at regular meetings of the Staff Student Liaison Committee.

The University appoints senior members of academic staff from other universities to act as external examiners on all programmes. They are responsible for:

- Approving examination questions
- Confirming all marks which contribute to a student's degree
- Reviewing and giving advice on the structure and content of the programme and assessment procedures

Information about current external examiner(s) can be found here:

<http://www.keele.ac.uk/ga/externalexaminers/currentexternalexaminers/>

Management of the MPharm programme

The Director of MPharm Learning and Teaching is responsible for the overall direction of learning and teaching on the MPharm Programme supported by the Academic Stage Leads and the MPharm Course Committee.

There is a tutor for each of the four year groups in the programme. It is the role of the Year Tutor to take an overview of the welfare and conduct of students in their year group. Year Tutors will meet with student representatives of their year group regularly throughout the year to listen to feedback on how the course is going and to pick up on any specific issues that need attention.

These will either be dealt with by the Year Tutor or referred to the Staff Student Liaison Committee which in turn will refer matters to the MPharm Course Committee.

The MPharm Course Committee consists of all members of staff teaching on the programme plus a student representative nominated by the Staff Student Liaison Committee. The MPharm Course Committee reports to the School of Pharmacy Learning and Teaching Committee. The structure and roles of these committees and the Staff Student Liaison Committee are described below.

School Learning and Teaching Committee

The School Learning and Teaching Committee is chaired by the Head of the School of Pharmacy and comprises the senior staff in the School of Pharmacy. The Committee considers matters relevant to continuing professional accreditation and reviews and develops the School's learning and teaching strategy in line with the University Learning and Teaching Strategy.

Core responsibilities are:

- to have general oversight over quality and standards in the School
- to oversee and respond as appropriate to decisions and recommendations from programme committees
- to receive and consider annual and long-term review reports from programme committees
- to receive and consider reports on student evaluation of modules
- to receive and consider results from the National Student Survey (NSS)
- to receive reports from the Staff Student Liaison Committee(s) and report proposed action to it
- to receive and consider reports from meetings of the Faculty Learning and Teaching Committee
- to receive and consider reports from the School's Senior Tutor, library and careers liaison officers

MPharm Course committee

The MPharm Course Committee (MCC) is chaired by the Director of MPharm Learning and Teaching. The Committee considers all aspects of the MPharm programme and meets at least twice per semester, usually the week following a Staff Student Liaison Committee meeting.

The core responsibilities of the MPharm Course Committee are:

- to manage the running and development of the programme(s), this to include appropriate decisions and recommendations on programme and module development and approval, marketing and recruitment, and student progression, retention and achievement
- to ensure the maintenance and enhancement of quality and standards in the programme(s) for which it is responsible, including the consideration of module reports
- to facilitate and contribute to the annual programme review
- to facilitate and contribute to the long-term programme review
- to report to the School's Learning and Teaching Committee or its equivalent on matters relevant to the management of the programme(s)

Membership of the MPharm Course Committee comprises:

- the Director of MPharm Learning and Teaching,
- the Head and Deputy Head of School
- the individual Year Tutors, academic teaching staff, support staff representatives,
- staff engaged in teaching the MPharm programme
- at least one student representative nominated by the Staff Student Liaison Committee

Staff Student Liaison Committee

The Staff Student Liaison Committee (SSLC) is formed according to Keele's Code of Practice for Staff Student Liaison Committees. The Committee meets at least twice each semester, Chaired by a student member, and provides a forum for discussion between students and staff about issues relating to teaching and assessment as well as the provision of facilities to Pharmacy undergraduates. Core responsibilities of the SSLC are:

- to discuss matters raised by students, and matters on which the School wishes to seek student views;
- to consider the outcome of student evaluation of programmes and modules, and the School's response to it;
- to advise the School on proposals for new programmes, and changes to existing programmes;
- to report the views of students to the School Learning and Teaching Committee, and receive reports from it on the School's proposed response.

Core Membership of the SSLC comprises:

- representatives of the academic staff of the School, whose number shall not exceed the number of student members, including the Director of MPharm Teaching and Learning, Year Tutors and other staff with particular responsibilities.
- three elected representatives of each student cohort of the MPharm programme
- the Students' Union Vice-President for Education and Welfare and the deputy director of quality assurance responsible for liaison with the Students' Union, both of whom reserve the right to attend any SSLC meeting
- while the above constitutes the core membership, SSLC meetings are not closed, and any student who is studying on the programmes in question may attend

20. The principles of programme design

The MPharm Programmes described in this document have been drawn up with reference to, and in accordance with the guidance set out in, the following documents:

- a. UK Quality Code for Higher Education, Quality Assurance Agency for Higher Education:
<http://www.qaa.ac.uk/assuring-standards-and-quality/the-quality-code>
- b. Pharmacy in England: building on strengths - delivering the future (Department of Health 2008)
- c. A High Quality Workforce: NHS Next Stage review (Department of Health, 2008)

- d. Life Sciences Blueprint (Department for Business Innovation and Skills, 2009)
- e. Future pharmacists: Standards for the initial education and training of pharmacists (General Pharmaceutical Council, 2011)
- f. Keele University Regulations and Guidance for Students and Staff: <http://www.keele.ac.uk/regulations>

21. Document Version History

Version history	Date	Notes
Date first created	October 2016	
Revision history	v2.0 May 2017	Changes to charges for blood tests and vaccinations reflected in the Additional Costs section; and study hours updated in year 4
Date approved		