Programme Specification: Pharmaceutical Science MSc

UNIVERSITY OF
WESTMINSTER⌗

Course record information

Name and level of final award	• Master of Science - Pharmaceutical Science The award is Bologna FQ-EHEA second cycle degree or diploma compatible
Name and level of intermediate awards	• Postgraduate Diploma (Pg Dip) - Pharmaceutical Science • Postgraduate Certificate (Pg Cert) - Pharmaceutical Science
Awarding body/institution	University of Westminster
Teaching institution	University of Westminster
Status of awarding body/institution	Recognised Body
Location of delivery	Primary: Central London
Language of delivery and assessment	English
QAA subject benchmarking group(s)	There are no specific QAA benchmark statements for Pharmaceutical Science. However, this program has been designed to align with the QAA Master's Degree Character Statements, relevant areas in the QAA Subject Benchmark Statements Bioscience and Biomedical Sciences and the UK Academy of Pharmaceutical Science curriculum framework
Professional statutory or regulatory body	
Westminster course title, mode of attendance and standard length	• Pharmaceutical Science, Full-time, September start - 1 year standard length • Pharmaceutical Science, Part-time day, September start - 2 years standard length
Valid for cohorts	From 2024/5

Admissions requirements

There are standard minimum entry requirements for all postgraduate courses. Students are advised to check the standard requirements for the most up-to-date information. For most courses a decision will be made on the basis of your application form alone. However, for some courses the selection process may include an interview to demonstrate your strengths in addition to any formal entry requirements. More information can be found here: https://www.westminster.ac.uk/courses/postgraduate/how-to-apply.

Aims of the programme

The aims of this programme are to enable postgraduate students to gain a holistic and detailed understanding of both theoretical and practical aspects of pharmaceutical science as well as equip them with the necessary skills to undertake individual and collaborative research. It is also designed to give students the opportunity to develop in-depth knowledge of the specialised areas of pharmaceutical science, an appreciation of the current range of research tools in those areas and their application to real problems.

- They will create, design and explore a research or development question in a specialised area of pharmaceutical science and evaluate this research with appropriate justification or undertake a work-based learning project to evaluate an issue in practice.

- Students will develop a systematic and critical awareness of the knowledge base, current problems and new insights, much of which is at, or informed by, the forefront of pharmaceutical science, drug design and development, manufacturing, quality control and drug regulation. Students will link these topics to key challenges facing the pharmaceutical industry and the realisation of UN sustainable development goals.

- They will learn the latest research techniques and how emerging technologies are being applied in the pharmaceutical industry.

- Finally, students will be given the opportunity to hone their communication and team working skills, developing the confidence to interact effectively with peers and a wide range of audiences using a variety of methods including written and oral presentations.

Employment and further study opportunities

Today's organisations need graduates with both good degrees and skills relevant to the workplace, i.e. employability skills. The University of Westminster is committed to developing employable graduates by ensuring that:

- Career development skills are embedded in all courses

- Opportunities for part-time work, placements and work-related learning activities are widely available to students

- Staff continue to widen and strengthen the University's links with employers in all sectors, involving them in curriculum design and encouraging their participation in other aspects of the University's career education and guidance provision

- Staff are provided with up-to-date data on labour market trends and employers' requirements, which will inform the service delivered to students.

This course will develop graduates with broad knowledge bases in the key disciplines underpinning pharmaceutical sciences and medicines development. These include: the ability to critically analyse scientific literature and to discuss and correctly cite those sources; gaining competence in laboratory and other practical/ investigative techniques relevant to pharmaceutical science including good laboratory and manufacturing process (GLP/GMP); the ability to process, analyse, interpret and present a variety of data types including the appropriate statistical analysis of that data using a variety of software packages including Microsoft office and dedicated statistical analysis software such as SPSS; team working and leadership skills from group work in practical classes/ workshops and group presentation tasks; presentations skills in a variety of formats (e.g. posters, oral presentations, infographics). The School of Life Sciences has well equipped teaching laboratories with access to modern analytical platforms and research tools allowing students to experience and develop techniques and practices from the different subject areas encompassed within pharmaceutical development and manufacturing.

In addition, the emphasis on medicines regulation, sustainability and the global picture in medicines development and access will be particularly relevant for this next generation of pharmaceutical scientists. The MSc course will equip students with insightful and rigorous research skills, tools and overall expertise in this subject area which, should they desire, also allow them to continue studies progressing to MPhil/PhD.

The course will also train and equip students to become confident, independent life-long learners with qualities and transferable skills employers are looking for, such as leadership, an entrepreneurial mindset, good time management, communication, data analysis and interpretation, strategising and planning, generating ideas and solutions, decision making in complex situations. Development of these subject knowledge areas and key transferable skills will allow graduates to work in a variety of private and public sector organisations or regulatory bodies. These include pharmaceutical research, product development, manufacturing, and regulation in a variety of settings such as global pharmaceutical companies, small- medium biotechnological enterprises, public regulatory entities, government funded research institutes and laboratories

What will you be expected to achieve?

Course learning outcomes

Learning outcomes are statements on what successful students have achieved as the result of learning.

These are threshold statements of achievement the learning outcomes broadly fall into four categories:

The overall knowledge and understanding you will gain from your course (KU)

Graduate attributes are characteristics that you will have developed during the duration of your course (GA)

Professional and personal practice learning outcomes are specific skills that you will be expected to have gained on successful completion of the course (PPP)

Key transferable skills that you will be expected to have gained on successful completion of the course. (KTS)

Level 7 course learning outcomes: upon completion of Level 7 you will be able to:

- 01 Develop and demonstrate an in-depth knowledge of current and emerging theories and research developments in pharmaceutical science and other relevant scientific disciplines. (KU)
- 02 Critically evaluate the use of different discovery and development strategies in the search for new medicines. (KU KTS)
- 03 Synthesise outputs from a variety of sources and assess their importance in medicines discovery, development, pre-clinical and clinical testing, formulation, manufacturing, quality assurance and regulation. (KU SS CS)
- 04 Critique research findings from a diverse range of global sources and perspectives to solve problems in the field of medicines development through applied study or research. (PPP SS)
- 05 Evaluate the legal, ethical, equality, diversity and regulatory considerations underpinning the field of pharmaceutical science at both national and international levels including the development and protection of intellectual property. (PPP KTS)
- 06 Assess and propose opportunities for new medicines development or production practices that could lead to realisation of UN sustainable development goals and more sustainable manufacturing or broader global access to pharmaceuticals. (KTS)
- 07 Utilise and critically evaluate laboratory and computational techniques used in pharmaceutical sciences in areas of drug discovery, development and manufacturing with specific focus on knowledge and core competencies in health and safety, good laboratory practice (GLP) and good manufacturing practice (GMP). (KTS SS CS)
- 08 Develop and critically evaluate integrated approaches to analyse and interpret complex information from diverse sources. (KTS)
- 09 Design, project manage and conduct their own innovative independent research project focusing on a topic in pharmaceutical science using appropriate methodology to gather, analyse, interpret and disseminate their project outcomes in an ethical and rigorous manner while demonstrating adherence to the principles of research governance. (PPP KTS CS)
- 10 Communicate effectively with a variety of key stakeholders employing a range of communication styles appropriate to the target audience. (PPP KTS)

How will you learn?

Learning methods

The course learning strategy focusses on the development of self-motivation and management, active-in-depth learning, and reflective self-appraisal within our students. It is expected that students will read broadly around the subjects introduced during the contact hours and using information made available in module handbook, specific reading list and/or on blackboard. It is envisaged, the learning methods will combine active on campus learning complemented with quality online learning. The teaching team has extensive teaching experience validated by the UK professional body the Advance HE and they observe sensitivity in conveying learning materials to students who come from all walks of life and the international background. The majority of teaching sessions are recorded (with some exceptions on the basis of pedagogical and/or data protection reasons) and accessible to all students in blackboard, giving learners the opportunity to regularly access and review these contents. In addition to the teaching sessions a variety of supporting materials will be made available to students via the Blackboard Virtual Learning Environment (VLE) and library to aid and enhance their studies. Typically, a 20 credit module consists of 200 hours of student engagement and within these 200 hours, there

will be scheduled contact time (onsite and online) and time where students are expected to engage in independent learning activities, including the completion of assessments. Extra workshops and drop-in sessions are regularly made available to enhance learning.

Teaching methods

A variety of teaching methods and approaches are used throughout the MSc Pharmaceutical Science course, including formal lectures, practical sessions, laboratory simulations along with student-centred learning activities such as workshops and tutorials, group work, mini-conference with poster sessions and oral presentations. Some of these sessions will be delivered on-site using the classrooms and specialist teaching spaced (e.g. laboratories, computer suites) within the School of Life Sciences and others will be delivered online through the Blackboard Virtual Learning Environment (VLE). A variety of external speakers will bring industry into the classroom helping students develop key insights into the professional landscape within the pharmaceutical sciences. These combined teaching approaches aim to improve both students' knowledge in the field of pharmaceutical science as well as helping to develop their critical faculties and employability skills through an experiential approach. In addition, the key communication skills required by any professional scientist are developed throughout the course.

Teaching methods are flexible and make use of a variety of media in technology enhanced teaching rooms with a fixed pc but with the option for lecturers and students to use their own devices as well for interactive activities. Rooms are also equipped with visualisers and whiteboards to allow a variety of interactive teaching styles to be utilised.

The University of Westminster uses the Blackboard Virtual Learning Environment (VLE) which functions both at a course and modular level with every course and module having a dedicated Blackboard site, all accessible from the user's homepage. Module Blackboard sites host teaching sessions that are delivered online but also act as a focal point for interaction between staff and students away from the classroom environment. They contain administrative and teaching content for the module, allow students to participate in learning activities and interact with staff and their peers in open discussion for a. Blackboard is also used to manage the online submission of coursework, plagiarism checking and return of student marks via the grade centre, improving the flexibility of student access and learning.

Students will be shown how different tools including Generative AI can be legitimately used to support their learning and professional activities. However, they will also be briefed on the limitations of these tools, their scope for safe ethical use and why improper use of AI during their course to directly produce an output for an assessment would be a breach of academic integrity.

Commitment to Equality, Diversity and Inclusion:

The School of Life Sciences is committed to the University of Westminster Equality, Diversity and Inclusion (EDI) policy with a local implementation based on three central elements:

- **Our commitment** is to ensure an inclusive, safe and supportive learning, working and social environment which enables scientific research and teaching to flourish and encourages our future scientists to grow and realise their true potential.

- **Our goal** is to empower all students and staff to critically reflect on their understanding and positionality, with respect to the wide-ranging global scientific perspectives (past and present); encouraging the open debate of differing points of view.

- **Our pledge** is to respect and value our diverse Life Sciences community (within and beyond the University of Westminster) and foster an equitable culture as we move forward in the field.

These three elements inform and direct all of our learning, teaching and research activities and have been central to our course design process as can be seen in the learning outcomes at module and course level. All staff and students in the school of Life Sciences are expected to embrace and respect these values.

We ensure that as high as possible a proportion of our teaching material is delivered in fully accessible ways. We also support our students progress with a personal tutoring program and a full range of extracurricular opportunities. Students are encouraged to integrate theory with practice as they study. Our students receive continuous formative feedback through online activities, group and one-to-one tutorials and periodic reviews, designed to give multiple points of guidance throughout the programme and before any summative assessments.

There is an increasing emphasis being placed on EDI within the pharmaceutical industry and inclusion of under-represented groups in the profession has become a major focus of many employers and professional bodies such as British Pharmacological Association. Within the context of the MSc Pharmaceutical Science course, we aim to train a new generation of Pharmaceutical Scientists who will actively address key national and global issues which underpin medicines development and access with specific emphasis on how to change these practices to improve health inequalities. Students will have the opportunity to share their own lived experiences in medicines access. Working together on assessment activities they will develop key transferable skills and a working awareness of how EDI links to

meeting the UN global sustainability goals and the realisation of a more equitable society.

Assessment methods

The assessment methods adopted in this course aim primarily to assess the learning outcomes detailed in each constituent module of the course as well as provide students with opportunities to assess their own strengths and areas to focus on improving. Although the nature and style of the assessments varies in accordance with the type of module in question, each module will have a component of formative (not marked/not graded assessment) and summative assessments (marked/graded assessment). The formative assessments will allow students an opportunity to check their own learning as well as become confident with the varied types of practical activities and transferable skills integrated into each module.

Overall, the assessment methods are constructively aligned with the teaching methods and are designed, on one hand to develop and examine students' analytical, evaluation and synthesis skills, These assessments are scaffolded to help students develop their confidence, knowledge and understanding of the application of both subject specific knowledge and transferable skills in contexts often encountered in settings in Pharmaceutical Science or associated professions. These include proposals and presentations delivered both singly or in groups which mimic pitches or pharmaceutical consultancy briefings where key information and concepts need to be carefully and concisely delivered to key stakeholders in settings with challenging time or content volume restrictions.

Detailed instructions for each piece of assessment are available in each module handbook, the following encapsulates the core assessment methods used in this course:

- product development strategies and mock funding bids
- preparation of technical reports or white papers
- practical skills assessments
- data handling and evaluation exercises
- development of infographic materials, abstracts (peer review style) or lay summaries
- individual and group presentations/pitches

Generally, written assessments have a word count limit ranging from 1000 words (technical report/brief writing) to 10000 words for dissertation/project while oral presentations range from 10 min for individual presentations to 30-35 min for group presentations (plus time for questions). Within both written and orally delivered assessments the creation and judicious use of audiovisual aids such as explanatory figures/slides and graphics will be heavily emphasised. In selected instances these assessments will be completed by groups of students. These assessments have been designed to help students develop key transferable skills required for effective working in a team including group planning, communication, negotiation and project management as well as an appreciation of how everyone within a group can bring different skills and strengths to the team. These core skills are required in many jobs within this sector.

The process of developing and writing a cap-stone dissertation of significant length provides students the opportunity to demonstrate in-depth understanding of their chosen topic within pharmaceutical science integrating the curricular themes from their subject specific core modules with practical skills in data collection; analysis and interpretation; and the ability to evaluate, synthesise and present material in an academically rigorous and professional way. These are key L7 attributes which employers will want to see developed within graduates.

Graduate Attribute	Evident in Course Outcomes
Critical and creative thinker	02, 03, 04, 05, 06, 07, 08
Literate and effective communicator	09, 10
Entrepreneurial	05, 06
Global in outlook and engaged in communities	04, 06
Socially, ethically and environmentally aware	05, 06, 09

Course Structure

This section shows the core and option modules available as part of the course and their credit value. Full-time Postgraduate students study 180 credits per year. Additional free text information on the choices may also be included, for example where students must choose one of two modules.. Course structures can be subject to change each academic year following feedback from a variety of sources.

Modules

Level 7

Module Code	Module Title	Status	PT Year (where applicable)	UK credit	ECTS
	Analytical Techniques and Quality Processes	Core	1	20	10
	Biotherapeutics and Regenerative Medicines	Core	1	20	10
	Drug Discovery, Design and Development	Core	1	20	10
7BIOM032W	Postgraduate Project	Core	2	40	20
7BIOM033W	Postgraduate Research Methods	Core	2	20	10
	Drug Delivery, Formulation and Manufacturing	Core	Various	20	10
7BIOM041W	Bioinformatics	Option	Various	20	10
7HMDS002W	Communicating Science	Option	Various	20	10
7BIOL001W	Fermentation Technology	Option	Various	20	10
7BIOT004W	Science, Technology and Commercialisation	Option	Various	20	10

Please note: Not all option modules will necessarily be offered in any one year. In addition, timetabling and limited spaces may mean you cannot register for your first choice of option modules.

Professional body accreditation or other external references

Course management

This course is one of a number of programmes in the School of Life Sciences, part of the College of Liberal Arts and Sciences within the University of Westminster, and is managed by a designated course leader. In addition to the course specific role of the course leader, the Head of School, other senior school staff and the Associate Heads of College, also provide support and management at their respective levels. The course leader is also collectively supported in the management and running of the course by the course teaching team through their responsibilities for individual modules and contributions to planning. Students will meet your course leader, teaching team and members of the school senior management during arrivals week, a programme of events designed to help them with enrolment, registration, and orientation to the university, its processes and the culture of higher education.

The course is monitored each year by the course leader and senior members of the School and College to ensure that it is running effectively and that issues that might affect the student experience have been appropriately addressed. Each course will have Course Representative meetings throughout the year and staff will consider the outcomes from these meetings, evidence of student progression and achievement and the external examiner's reports to evaluate the effectiveness of the course. All courses are reviewed annually as part of the School, College and University Annual Monitoring processes, reporting finally to the Academic Council of the University which has overall responsibility for the maintenance of quality and standards in the University.

Academic regulations

The current Handbook of Academic Regulations is available at westminster.ac.uk/academic-regulations.

Course specific regulations apply to some courses.

Academic Support

Upon arrival, an induction programme will introduce you to the staff responsible for the course, the campus on which you will be studying, the Library and IT facilities, additional support available and to your Campus Registry. You will be provided with the Course Handbook, which provides detailed information about the course. Each course has a course leader or Director of Studies. All students enrolled on a full-time course and part time students registered for more than 60 credits a year have a personal tutor, who provides advice and guidance on academic matters. The University uses a

Virtual Learning Environment called Blackboard where students access their course materials, and can communicate and collaborate with staff and other students. Further information on Blackboard can be found at https://www.westminster.ac.uk/current-students/studies/your-student-journey/when-you-arrive/blackboard

The Academic Learning Development Centre supports students in developing the skills required for higher education. As well as online resources in Blackboard, students have the opportunity to attend Study Skills workshops and one to one appointments. Further information on the Academic Learning Development Centre can be found at westminster.ac.uk/academic-learning-development.

Learning support includes four libraries, each holding a collection of resources related to the subjects taught at that site. Students1 can search the entire library collection online through the Library Search service to find and reserve printed books, and access electronic resources (databases, e-journals, e-books). Students can choose to study in the libraries, which have areas for silent and group study, desktop computers, laptops for loan, photocopying and printing services. They can also choose from several computer rooms at each campus where desktop computers are available with the general and specialist software that supports the courses taught in their College. Students can also securely connect their own laptops and mobile devices to the University wireless network.

Support Services

The University of Westminster Student and Academic Services department provide advice and guidance on accommodation, financial and legal matters, personal counselling, health and disability issues, careers, specialist advice for international students and the chaplaincy providing multi-faith guidance. Further information on the advice available to students can be found at https://www.westminster.ac.uk/student-advice

The University of Westminster Students' Union also provides a range of facilities to support students during their time at the University. Further information on UWSU can be found at https://www.westminster.ac.uk/students-union

How do we ensure the quality of our courses and continuous improvement?

The course was initially approved by a University Validation Panel. University Panels normally include internal peers from the University, academic(s) from another university. a representative from industry and a Student Advisor.

The course is also monitored each year by the College to ensure it is running effectively and that issues which might affect the student experience have been appropriately addressed. Staff will consider evidence about the course, including the evidence of student surveys, student progression and achievement and reports from external examiners, in order to evaluate the effectiveness of the course and make changes where necessary.

A Course revalidation takes place periodically to ensure that the curriculum is up-to-date and that the skills gained on the course continue to be relevant to employers. Students meet with revalidation panels to provide feedback on their experiences. Student feedback from previous years is also part of the evidence used to assess how the course has been running.

How do we act on student feedback?

Student feedback is important to the University and student views are taken seriously. Student feedback is gathered in a variety of ways.

- Through student engagement activities at Course/Module level, students have the opportunity to express their voice in the running of their course. Course representatives are elected to expressly represent the views of their peers. The University and the Students' Union work together to provide a full induction to the role of the course representatives.
- There are also School Representatives appointed jointly by the University and the Students' Union who meet with senior School staff to discuss wider issues affecting student experience across the School. Student representatives are also represented on key College and University committees.;
- All students are invited to complete a questionnaire before the end of each module. The feedback from this will inform the module leader on the effectiveness of the module and highlight areas that could be enhanced.
- Final year Undergraduate students will be asked to complete the National Student Survey which helps to inform the national university league tables.

This programme specification provides a concise summary of the main features of the course and the learning outcomes that a student might reasonably be expected to achieve and demonstrate, if they take full advantage of the learning opportunities that are provided. This specification is supplemented by the Course Handbook, Module proforma and Module Handbooks provided to students. Copyright in this document belongs to the University of Westminster. All rights are reserved. This document is for personal use only and may not be reproduced or used for any other purpose, either in