Aston University

PROGRAMME SPECIFICATION

(2013-14)

Programme Title	MSc Pharmaceutical Sciences
UCAS/JACS Code	
School/Subject Area	LHS, Pharmacy
Final Award	MSc
Interim Award(s)	Diploma (120 credits) Certificate (60 credits)
Mode(s) of Study	FT
Normal Length of Programme	1 year FT (12 months)
Total Credits	180
Programme Accredited By	N/A
Dates Programme Specification Written and Revised	August 07 Revised Aug 09

Educational Aims of the Programme	This programme aims to raise to an advanced level the awareness, skills and knowledge of scientists working in the Pharmaceutical and Medical fields in relation to the formulation and design of drug carriers systems and the specific requirements of a given drug in combination with its desired pharmacological action and its intended route of administration. The main goal of this programme is to prepare students for an academic or industrial career in the Pharmaceutics/Pharmacology arena – an area in considerable demand in response to the continued increase in development of highly complex and sensitive drug molecules. The programme provides specialist training and practical experience the design and development of effective drug delivery systems, as well as promoting directly applicable skills for career and professional development. This course is designed to provide a rigorous postgraduate scheme of education and training for life science or physical science-based graduate students seeking employment in the pharmaceutical industry or at the life sciences interface. Students will gain an overview of Drug Delivery and have hands-on experience of Pharmaceutical Formulation and Drug Delivery. This will enable them to communicate across disciplinary boundaries whist having depth in their own area. The course is also an excellent foundation for studies at the PhD level. In doing so, it aims to: 1. develop the students' understanding of the biology of specific targets for drug-based intervention 2. provide an overview of the role of molecular modelling in rational drug design 3. Provide an understanding of the biopharmaceutical, pharmacokinetic and physicochemical principles important in the design and formulation of drug dosage systems. 4. address the latest advances in Pharmacology in particular the new chemistry underlying brain function, the neurochemical and neuroanatomical basis of the common neuropathologies, and pharmacotherapeutic approaches to CNS disease. 5. provide an insight into the regulatory procedures and laboratory processes required for analysis of pharmaceutical drug delivery products. 6. develop research skills and transferable skills relevant to drug delivery in preparation for a career in the pharmaceutical industry or academia develop students' understanding of advanced research methodology to enable the carry out independent work of publishable standard

Relevant Subject Benchmark Statements and other current External and Internal Strategies, Policies or Research used to inform programme outcomes	UK Quality Code Part A.1 (2011). The expertise of staff will also provide a good source of benchmarking against other programmes available.

TAUGHT STAGE

Programme Structures and Requirements: Levels, Modules and Credits

Module Title	Credits	Level	Module Code	Core/Option	Condoneable Y/N	Pre-requisite(s) Y/N
Research Methods : Professional Development and communication skills	20	7	PHM054	Core	Y	
Drug Dosage Form Design	20	7	PHM010	Core	Y	
Drug Discovery	20	7	PHM008	Core	Y	
Chemotherapy and Selective Toxicity	20	7	PHM009	Core	Y	
Principles of Product Analysis and Validation	10	7	PHM015	Core	Y	
General Pharmacology	20	7	PHM016	Core	Y	
Research Skills	10	7	PHM013	Core	Y	
TOTAL	120					

DISSERTATION STAGE

Programme Structures and Requirements: Levels, Modules and Credits

Module Title	Credits	Level	Module Code	Core/Option	Condoneable Y/N	Pre-requisite(s) Y/N
Research Project	60	7	PHM012	Core	N	
TOTAL	60					

Programme Outcomes, Learning and Teaching and Assessment Strategies			
A. Knowledge and Understanding			
	On successful completion of their programme, students are expected to have knowledge and understanding of:	Learning, Teaching and Assessment Strategies to enable outcomes to be achieved and demonstrated	
		Learning and Teaching Methods	Assessment Methods
1	The basis for the selective action of anti-infective agents	Lectures, essay, CAL classes, group presentation [PHM009]	Essay [PHM009] Presentation [PHM009]
2	The basis for cancer chemotherapy	Lectures, essay, CAL classes, seminar [PHM009]	Essay [PHM009] Seminar [PHM009]
3	An overview of the cross-disciplinary nature of drug discovery	Lectures, essay, seminar [PHM008]	Examination [PHM008] Essay [PHM008] Seminar [PHM008]
4	Pharmacokinetics and bio-distribution in the context of drug delivery and controlled drug release from dosage forms	Lectures, practical classes, computer assisted learning, directed and independent study in both individual and group formats [PHM010]	Examination [PHM010] Coursework submission [PHM010]
5	The latest advances in pharmacology, particularly pharmacotherapeutic approaches to CNS disease	Lectures and independent study	Examination Coursework submission
6	Product analysis and validation	Lectures, practical classes, seminars, directed and independent study in both individual and group formats [PHM015]	Examination [PHM015] Coursework submission [PHM015] Seminar [PHM015]
7	Ability to recognise and address ethical issues relevant to conducting research	Seminar Group Discussion Directed and independent Study in both individual and group formats	Ethics Proposal [PHM013] Mock grant [PHM013] Oral Interview [PHM054] Written CV [PHM054]
8	Potential sources and techniques used for obtaining research funding		
9	The importance of communication skills to professional development		

10	The necessary constituents and presentation style for written and oral academic presentations	Seminar Group discussion Directed and independent study at both the individual and group level [PHM012]	Research Abstract [PHM012] Poster Presentation [PHM012]
11	Appreciation of and sensitivity to needs/objectives of undergraduate teaching and assessment		Lecture Handout
12	The requirements and processes involved in publishing research		Research Abstract [PHM012] Critical Review [PHM012]

B.	Intellectual Skills		
	On successful completion of their programme, students are expected to be able to:	Learning, Teaching and Assessment Strategies to enable outcomes to be achieved and demonstrated	
		Learning and Teaching Methods	Assessment Methods
1	Synthesise knowledge from a variety of disciplines	Lectures [PHM008, PHM009, PHM010,PHM015] CAL [PHM009], Essay [PHM009, PHM008] Seminars [PHM009, PHM008]	Examination [PHM009, PHM008, BI4006, BI4011] Essay [PHM009, PHM008] Seminar [PHM009, PHM008] Practical Report [PHM012]
2	Critically analyse the differences in biochemical processes between the host and infectious organisms or cancer cells.	Lectures, CAL classes, essay and seminars [PHM009, PHM008]	Examination [PHM009, PHM008] Essay [PHM009, PHM008] Seminar [PHM009, PHM008]
3	Identify and develop appropriate methods to be used and data to be acquired	Lectures, lab based sessions [PHM012]	Practical reports [PHM012] Seminar [PHM012]
4	Use and apply good Laboratory Practice	Practicals [PHM010, PHM015, PHM012]	Practical course work [PHM010, PHM015]
4	Analyse data and apply statistics	Practicals [PHM010, PHM015, PHM012]	Practical reports [PHM010, PHM015, PHM012]
5	Critically analyse one's own and others' work	Discussions with supervisor during extended project [PHM013]	Poster presentation [PHM012] Project report (incorporating literature review) [PHM012]
6	Critically read and evaluate scientific literature.	Essay [PHM009, PHM008] Seminar [PHM009, PHM008] Project [PHM012] Lecture, group discussion, directed and independent study at an individual level [PHM009]	Essay [PHM009, PHM008] Annotated Bibliography [PHM012] Seminar [PHM009, PHM008] Project report [PHM012] Research Abstract [PHM012] Poster Presentation [PHM012] Critical Review [PHM012]

C. Professional Skills			
	On successful completion of their programme, students are expected to be able to:	Learning, Teaching and Assessment Strategies to enable outcomes to be achieved and demonstrated	
		Learning and Teaching Methods	Assessment Methods
1	Demonstrate and apply an understanding of site directed drug delivery and targeting	Lectures, course work [PHM010]	Examination [PHM010] Essay plan [PHM010] Annotated bibliography [PHM012] Coursework [PHM012]
2	Operate across the discipline boundaries in the field of Pharmaceutics.	Lectures [PHM009, PHM008] Essay [PHM009, PHM008] Seminars [PHM009, PHM008]	Examination [PHM008, PHM009, PHM01 PHM016] Essay [PHM008] Seminar [PHM008]
3	Demonstrate grant writing skills, conduct a risk assessment, and complete an ethics proposal for submission to a review board	Seminar Group Discussion Group and independent study [PHM012, PHM013]	Minigrant Ethics Proposal Oral Interview [PHM012]
4	Communicate effectively to other academics and to students.	Seminar Group Discussion Directed and independent Study at an individual level [PHM008,PHM009]	Research Abstract [PHM012] Poster Presentation [PHM012]

D. Transferable Skills			
	On successful completion of their programme, students are expected to show:	Learning, Teaching and Assessment Strategies to enable outcomes to be achieved and demonstrated	
		Learning and Teaching Methods	Assessment Methods
1	Effective written communication	Essay [PHM009, PHM008] Lecture, group discussion, directed and independent study at an individual level [PHM008]	Examination [PHM010, PHM015, PHM016] Essay [PHM009] Project report [PHM012] Poster presentation [PHM012] Ethics proposal [PHM013] Written CV [PHM054] Research Abstract [PHM012]
2	Effective oral communication	Seminar , Lecture, group discussion, directed and independent study at an individual level [PHM009, PHM008]	Seminar [PHM009] Oral interview [PHM054] Lecture
3	Independent study, including good time management (	Directed reading (all modules).	is assessed in all submitted coursework.
4	Job interview skills	Seminar Group Discussion Independent Study [PHM054]	Oral Interview [PHM054] Written CV [PHM054]
5	IT Skills / Powerpoint presentation	CAL classes [PHM010] Seminar Group Discussion Independent Study [PHM008, PHM009]	Lecture [PHM010]

Entry Requirements	Applicants must hold at least a 2nd class honours degree in a life Sciences - based subject e.g., chemistry, biochemistry, pharmacy, pharmaceutical technology, chemical engineering, pharmacology, physiology, physical science, biotechnology or biological chemistry from a UK University, or when outside the UK a degree or qualification deemed to be at least of equivalent standing. Students whose first language is not English must demonstrate a satisfactory command of written and spoken English. For international students this is demonstrated by an IELTS score of 6.5 or higher overall, but with no score below a 6.0 or equivalent qualifications.

Programme Regulations	The programme is governed by the General Regulations for Postgraduate Taught Programmes. In addition, the following Regulations apply: <u>Failure in modules</u> Students who fail to pass 180 credits may be eligible for the award of Postgraduate Diploma or Certificate if they have passed a minimum of 120 or 60 credits respectively.
General Regulations (http://www1.aston.ac.uk/registry/for-staff/regsandpolicies/general-regulations/) and the Regulations for the programme (above) take precedence over other information sources such as student handbooks if there is a conflict. If there is a conflict between General Regulations and Programme Regulations then General Regulations take precedence unless an exemption has been approved.	

Further Information	

This specification provides a concise summary of the main features of the programme and the threshold learning outcomes that a student might normally be expected to achieve and demonstrate if they take full advantage of the learning opportunities that are provided. **The individual modules included in the programme may differ from those listed in this programme specification as our programmes as our programmes are continuously reviewed.** Information on admissions requirements and career opportunities is available in the relevant prospectus. More detailed information on the learning outcomes, content and teaching, learning and assessment methods of each module can be found in the appropriate module specifications and programme handbook(s) which are available to students on enrolment.