The School of Pharmacy
University of London

Programme Specification

1. Programme Title:	**Master of Research** (MRes title depends on research area – see section 26)
2. Degree Award	Master of Research (MRes)
3. Interim Awards (If applicable)	-
4. Awarding Institution	University of London
5. Teaching Institution	The School of Pharmacy
6. Department (If applicable)	Various
7. Level of Study	Postgraduate - Level 7
8. Mode of Study	Full-time
9. Registration Period	Minimum: 12 months Maximum: 36 months
10. UCAS or JACS code	B200 Pharmacology, Toxicology and Pharmacy
11. UK Credits (ECTS)	180 (90 ECTS)
12. First Entry in	September 2010
13. Language of study	English
14. Accreditation	-
15. Programme Director	Professor Anne Stephenson
16. Produced/revised	Produced: October 2010

17. Reference Points for creating this Programme Specification
The QAA Framework for Higher Education Qualifications: http://www.qaa.ac.uk/academicinfrastructure/FHEQ/default.asp The University of London Regulations http://www.london.ac.uk/976.html?&no_cache=1&sword_list[]=regulations

18. Admissions Requirements

Candidates must have a good degree in biomedical sciences, chemistry, biochemistry, microbiology, pharmacology, pharmacy, pharmaceutical sciences, physical sciences or a related field from a recognised University.

There are two entry points during the year: the first in Semester A (late September) and the second in Semester B (late February).

English Language Proficiency
Candidates must also be able to demonstrate an adequate proficiency in English.
Applicants whose first language is not English must have a minimum of 7.0 in IELTS (with a minimum score of 6.5 in each section) or 263 in ToEFL (627 if paper-based) with equivalent minimum scores.

Additional Requirements
Overseas students will have to gain a visa for entry to the UK to study the programme and will also have to obtain an Academic Technology Approval Scheme (ATAS) Certificate prior to applying for their visa. Further details can be found at the following link:
http://www.fco.gov.uk/en/about-us/what-we-do/services-we-deliver/atas/

Application Process
MRes applicants will have access to the School of Pharmacy web-page profiles of Principal Investigators (PIs) and their research interests grouped according to the major research themes within the School. PIs lead the laboratories in which the student will work but they will not necessarily supervise the student's research. Some PIs are likely to appear in more than one grouping. The research groupings are:

- Cancer drug discovery
- Drug delivery, formulation and materials science
- Medical and molecular microbiology
- Molecular and systems neuroscience
- Pharmacognosy, ethnobotany and phytochemistry
- Nanomedicine
- Pharmacology and toxicology
- Biochemistry and biotechnology
- Medicinal and polymer chemistry
- Structure-based drug design

Individual staff research profiles within these groupings outlining the type of research project available can be viewed at http://www.pharmacy.ac.uk/mres.html

Applicants will complete and submit the postgraduate application form and indicate up to three research group leaders in the School that they would like to join. Registry will monitor applications to ensure that they comply with the requirements for MRes study and will consult with the Programme Director of the MRes. Applications that fulfill requirements will then be circulated to the PI's chosen by the applicant. The final decision on acceptance of the student into a laboratory of choice will be the PI's. In the event of more than one PI agreeing to accept the student then the student will be given the choice.

19. Educational Aims of the Programme

The MRes is a full-time postgraduate programme that is conducted primarily as an in-depth and novel research project at the forefront of research in the area of medical and pharmaceutical sciences. Students will be expected to compliment this research with the study of Masters-level taught courses in subject areas related to the research. Students will also attend courses that develop the research skills of the student.

The MRes is intended for those who wish to prepare for PhD-level research or to pursue a career in medical or pharmaceutical research, the pharmaceutical industry or government regulatory body.

Students will expect to become proficient research scientists with a range of technical and academic skills that ensure this outcome and will have greater in depth knowledge of the field of research that they have studied.

20. Structure and Content of the Programme

The MRes will comprise both a taught component (20%) and a larger research component (80%).

Research Dissertation
MRes students will join a research group immediately upon registration under the supervision of an Academic Principal Investigator (PI) in the School of Pharmacy. The student will carry out a programme of full-time research equivalent to approximately 10 months duration. This research will be written up as a dissertation at the end of the period of study. The student will be assessed by an oral presentation of the work to staff and peers, by the written content of the dissertation and by a *viva voce* examination.

Modules
The MRes student will also study a specialist option or combination of modules from the MPharm or MSc courses within the School of Pharmacy that is equivalent to 48hr of contact time. This will either be:

- 1 x 48 hour module; or
- 2 x 24 hour modules

This study can be at any time during the 12 month MRes depending on the timetabling of the modules. The PI will recommend to the student the appropriate modules that are relevant to the topic of research being carried out. The student will sit a written examination in these modules at the same time and in the same manner as the MPharm and MSc students. MRes students will be required to complete any coursework for these modules; however, the coursework element will not contribute to the final mark for the taught options. The specialist modules and options that will be available are listed in section 20 and may vary from year to year. A full list will be provided at the start of the programme.

The MRes student will attend appropriate courses from the PhD training programme that cover research skills, presentation and scientific writing skills. MRes Students will attend and complete the PhD research training programme that runs throughout the year.

21. Modules			
Code	**Title**	**Hours**	**Type**
PHAYM032	Dissertation		Core
PHAYM008	Advanced Cardiovascular Pharmacology	24 hr	Elective
PHAYM016	Anti-Cancer Drug Development	24 hr	Elective
PHAYM023	Biopharmaceuticals	28 hr	Elective
PHAYM001	Clinical Pharmaceutics: Medicines for children	24 hr	Elective
PHAYM009	CNS Drugs of Abuse	24 hr	Elective
PHAYM007	CNS Pharmacology and Disorders	24 hr	Elective
PHAYM035	Curing Cancer: New targets, new drugs and new problems	48 hr	Elective
PHAYM010	Epileptic Disorders: Insight and Therapy	24 hr	Elective
PHAYM024	Intelligent Design of Medicines	28 hr	Elective
PHAYM005	Modern Aspects of Drug Design	24 hr	Elective
PHAYM015	Molecular Basis of Disease	48 hr	Elective
PHAYM030	Nanomedicines and targeted delivery	48 hr	Elective
PHAYM019	Natural Products and Medicinal Plants in Drug Discovery	24 hr	Elective
PHAYM017	New Drug Targets in the CNS	24 hr	Elective
PHAYM022	Overcoming Biological Barriers	48 hr	Elective
PHAYM004	Pharmaceutical Analysis and Drug Discovery	24 hr	Elective
PHAYM018	Pharmacogenomics and Biomarkers	24 hr	Elective
PHAYM020	Structure-based Drug Design	24 hr	Elective
PHAYM026	Therapeutic Uses of Plants – Benefits and Risks	48 hr	Elective
PHAYM006	Women's Health	24 hr	Elective

22. Learning Outcomes
On completing this programme of study and passing all required assessments, students will be able to:

Knowledge and Understanding

KU1	Demonstrate detailed knowledge and understanding of the core facts, concepts, principles and theories which are relevant to their subject area.
KU2	Undertake original research in their specialist area of study.
KU3	Demonstrate knowledge of advanced research techniques within their field of study and be able to employ these appropriately in relation to their own work.
KU4	Critically discuss the relevance of their research in relation to published work in the field.

Teaching and Learning Methods
Lectures and seminars for taught modules.
Further reading around the research area.
Laboratory work
Participation in the research training programme.

Assessment
Unseen examinations for taught modules
Research dissertation
Oral presentation
Viva voce examination

Cognitive and Intellectual Skills

CI1	Identify, summarise and evaluate the literature and research evidence already available on their specific area of research and integrate this within the context of their own work.
CI2	Define research problems and formulate research questions and test hypotheses using appropriate methodologies and data analysis techniques.
CI3	Select the most appropriate strategies for their research and evaluation with a thorough understanding of the challenges of producing valid data which can be reproduced.
CI4	Assess and critically analyse the research evidence produced.
CI5	Demonstrate a critical understanding of good experimental design.
Teaching and Learning Methods Further reading around the research area. Laboratory work Participation in the research training programme. Guided support from the supervisor(s) and senior members of their research team.	
Assessment Unseen Examinations for taught modules Research dissertation Oral presentation Viva voce examination	

Practical/Professional Skills

PS1	Apply the principles of good experimental design and analysis to their own research.
PS2	Design and execute a significant piece of research.
PS3	Use laboratory techniques to produce primary data and maintain good records of all laboratory work and analysis.
PS4	Prepare technical reports and be able to present the data to different audiences.
PS5	Utilise and apply statistical and computing software as appropriate and be able to analyse numerical, graphical and textual data.
PS6	Produce a Personal Development Record which covers their progression through the programme.
PS7	Demonstrate an awareness and understanding of the ethical and legal aspects of research.
PS8	Demonstrate safe handling of chemical and biological materials taking into account their physical and chemical properties including any specific hazards associated with their use
Teaching and Learning Methods Lectures and seminars for taught modules. Further reading around the research area. Laboratory work Participation in the research training programme. Guided support from the supervisor(s) and senior members of their research team.	
Assessment Unseen examinations for taught modules Research dissertation Oral presentation Viva voce examination	

Transferable and Key Skills

TK1	Demonstrate effective oral and written communication skills through coursework, oral presentation and written reports.
TK2	Use and apply IT software appropriately in relation to their work (i.e. PowerPoint, Word, Excel and other packages specific to their research).
TK3	Plan and manage their time effectively.
TK4	Demonstrate their ability to be a critical and independent learner and to review published work without bias.
TK5	Integrate and evaluate information and evidence from a variety of sources
TK6	Work as part of a team and develop effective working relationships with peers, supervisors and support staff.

Teaching and Learning Methods
Lectures and seminars for taught modules.
Further reading around the research area.
Laboratory work
Participation in the research training programme.
Guided support from the supervisor(s) and senior members of their research team.

Assessment
Unseen examinations for taught modules
Research dissertation
Oral presentation
Viva voce examination

23. Teaching and Learning Methods

The taught modules comprise weekly lectures and seminars given by members of academic staff and external guest speakers who are experts in their field. Some of these classes will be shared with fourth year students on the Master of Pharmacy degree. Teaching and learning methods include:

- General and programme-specific induction at the start of the year covering research training, events and the VLE.
- Problem based learning in coursework
- Oral presentations
- School of Pharmacy seminar programme
- PhD training programme/MRes Dissertation preparation
- Research Days and Careers Day
- Field trips
- Attendance at conferences
- Personal Development Portfolio
- English language classes

24. Assessment Methods

There are three components of assessment:

1. Personal Development Portfolio (Pass/Fail)
   Students must provide evidence of attendance and completion of any associated coursework of the research skills training course. This material will be kept as a personal development portfolio that will be presented to and confirmed as acceptable by the supervisor and the Director of the MRes.

2. Taught Modules (20% of Final mark)
   The 48hr taught course component will be examined by a three hour written examination. Students will also be required to complete any related coursework (e.g. essay, report, presentations); however, this will not contribute to the final marks for the taught element. The taught course component will contribute 20% of the final MRes mark.

3. The research component (80% of final mark)
   The research component will be assessed by the following three elements:

   a) A written dissertation marked by the main supervisor and a second member of staff in the field of research who may be the second supervisor, and moderated by the Programme Director. (60% of the final MRes mark).

   b) An oral presentation of the work to the Programme Director (or nominee), supervisors and at least two other members of staff. (5% of the final MRes mark).

   c) A viva voce panel with the supervisor, Programme Director (or nominee) and another member of academic staff in the field of research who may be the second supervisor. (15% of the final MRes mark).

25. Programme Regulations

The pass mark is 50% in the written examination and 50% in all other assessments with an overall mark of 50% required for the award of the MRes degree. Students who achieve an overall mark of 70% or higher are awarded the MRes with distinction. Students who achieve an overall mark of 60-69.9% are awarded the MRes with merit.

Students who do not pass an assessment at the first attempt may, at the discretion of the examiners, be referred and allowed to retake the assessment. The pass mark on re-assessment is 50% for all components of the MRes.

All course materials and assessments are in English. Students may not take an English language dictionary into examinations.

Students may be required to attend a borderline viva voce examination at the end of the course if they are borderline between pass and fail or pass and distinction. This is in accordance with the Programme Regulations.

26. Final and Interim Awards

Students are enrolled for the Master of Research. There are currently no other exit points for this programme.

The degree awarded will depend on the subject area of the research project and will be agreed with the supervisor and Programme Director. The following list of award titles is not exhaustive.

- MRes in Cancer Drug Discovery
- MRes in Drug Delivery, Formulation and Materials Science
- MRes in Medical and Molecular Microbiology
- MRes in Molecular and Systems Neuroscience
- MRes in Pharmacognosy, Ethnobotany and Phytochemistry
- MRes in Nanomedicine
- MRes in Pharmacology and Toxicology
- MRes in Biochemistry and Biotechnology
- MRes in Medicinal and Polymer Chemistry
- MRes in Structure-based Drug Design

Masters Degree	180 credits
Taught Modules	Level HE7
Dissertation	Level HE7

27. Student Support and Guidance

The School provides a friendly and supportive environment. The School operates a very active Pastoral Care Scheme which students are informed about during induction week. Your learning and personal welfare are supported by:

- The Research Project Supervisor who will serve as your Personal Tutor for the duration of your studies.
- The Programme Director who is responsible for the organisation and management of the programme and programme team.
- The Programme Team who are available outside of class if students have questions or need additional help understanding materials.
- The Postgraduate Programme Manager.
- The School uses the services of The Gower Street Practice (a GP surgery with links to the University of London) and if necessary students may be referred there for professional help.
- Library staff, who run induction sessions for new students and teaching sessions on information retrieval, online searching and specialist database searching for more advanced students. A range of customised leaflets on all Library services are available in the Library and on the web. Students can obtain help from Library staff via the Enquiry/Issue Desk, by telephone, fax or e-mail.
- Computer Unit staff, who provide IT support for students and for computer based teaching sessions.
- The Teaching Office, which issues timetables and handles the submission and return of hard copy coursework.
- The Registry, which is responsible for admissions, examinations, student records,

accommodation, Access to Learning Funds and student loans, grants and bursaries.

- The Academic Disability Tutor and the Disability Coordinator in Registry both of whom are members of the School Welfare Committee.

Communication between students and staff is facilitated by:

- Learning and teaching materials on the dedicated MRes section of Blackboard VLE, which is accessible via the web
- Student cohort e-mail lists
- Web-based timetable

Built into the curriculum are various sessions to support students' learning. These include:

- Induction to library and computer facilities at the start of the programme
- Cross-cultural induction for international students at the start of the programme
- English language classes for students whose first language is not English
- Feedback sessions on coursework and examinations
- Workshops on plagiarism
- Induction to research processes

28. Facilities

- Two large lecture theatres, a small lecture theatre and numerous classrooms
- Four teaching laboratories
- Extensive research laboratories
- Pharmacy practice suite
- Sterile products suite
- An extensive library, with evening and weekend opening during term time and containing 15,000 volumes, including textbooks. Access to 4,000 electronic journals and 150 print journals, online and CD-ROM databases and a web-based catalogue system
- Borrowing privileges at other Universities
- Borrowing privileges at the General Pharmaceutical Council Library
- Borrowing privileges at the British Library
- Reference privileges at other university libraries within the M25 Consortium of Higher Education Libraries, which consists of 140 libraries in London and the South East
- Computer facilities include: student e-mail and Blackboard e-learning facility, wireless internet access throughout the building and laptop-borrowing from the School library
- Access to the University of London Careers Group
- Access to the University of London Housing Services
- Access to the University of London intercollegiate halls of residence
- Access to The Gower Street Practice
- Use of facilities, services, clubs and societies at the University of London Union (ULU)
- Student's Union, with multi-cultural societies and sports clubs within the School
- Refectory, serving hot and cold meals
- Junior Common Room with bar and games
- Lounge area, with sofas and computer stations

29. Further Study and Career Opportunities

The School holds an annual Career's Day for PhD and MSc and MRes students with invited speakers and employers from a wide variety of professions (industry, government, academia, finance etc). An advisor from the University of London Careers Group also runs sessions on CV writing, job applications and interview techniques. Students may take advantage of all the services offered by the university's Career Group which is based in the University of London Union building on Malet Street. Students coming from countries outside the EU may now extend their student visa for two years after completing the MRes in order to gain experience in the UK.

30. Ensuring Quality and Standards

- An External examiner is appointed for the programme
- Annual Course Review
- Periodic Course Review
- Programme amendments approved by School Quality Assurance Committee (QAC)
- Student feedback and evaluation

31. Student Evaluation of the Programme

- Students will be given the opportunity of providing feedback at the end of the taught modules and the programme.
- Students will also be members of the Course Board which will oversee the running of the Programme.
- Students can feed through issues to their representatives on the Joint Committee of Academic Board and Students (JCABS).

Document Version

Version	***Changes***	***Date***
1.0	New programme approved	21 September 2010