

Programme Specification (PG)

Awarding body / institution:	Queen Mary University of London
Teaching institution:	Queen Mary University of London
Name of final award and title:	MSc Neuroscience PG Dip Neuroscience PG Cert Neuroscience
Name of interim award(s):	PG Cert Neuroscience PG Dip Neuroscience
Duration of study / period of registration:	PG Cert, 12 months, PT; PG Dip 12 months FT; MSc, 12 months, FT
Queen Mary programme code(s):	
QAA Benchmark Group:	N/A
FHEQ Level of Award:	Level 7
Programme accredited by:	N/A
Date Programme Specification approved:	9 Oct 2024
Responsible School / Institute:	Blizard Institute

Schools / Institutes which will also be involved in teaching part of the programme:

N/A

Collaborative institution(s) / organisation(s) involved in delivering the programme:

N/A

Programme outline

In modern medicine and biomedical sciences there is an increasing need for scientists and clinicians who understand the challenges of developing better treatments, and master the knowledge involved in the successful drug discovery from the laboratory bench to the clinic. These aspects are included in the concept of "drug discovery and translational medicine". There is a strong move towards such discovery strategies in medicine, exemplified by the development of centres for translational research in many prestigious academic institutions worldwide. In the UK, the Medical Research Council and the National Institute for Health Research have recently launched a joint strategy aimed at strengthening such bench to bed strategic research, including the development of better treatments for neurological disorders. However, the training of specialist scientist and clinicians in this area of neuroscience remains at a very early stage in many countries, including the UK. In particular, the need for more elite physician in the UK is exemplified by surveys such as that carried out by the British Medical Association and the Medical Schools Council [previously the Council of Heads of Medical Schools], who have highlighted the difficulty in filling top-level clinical research positions in Britain's top medical institutions.

From the inception of this post-graduate programme in 2009 as originally titled MSc in Translational Neuroscience, when there

was no other similar post-graduate programme in the UK or even in the USA, there has been a growing realisation of the importance of this field and the need of development of programmes. MSc and MRes programmes in the field of translational discovery in Neuroscience or Neurology are now offered by several UK institutions. The students taking our MSc programme will develop general and transferable skills in the field of drug discovery and drug development, including drug targeting, screening and preclinical efficacy and safety testing, and clinical trial management, combined with in-depth knowledge in chosen specialities such as neuro-oncology, neurotrauma, neuroinflammatory, neurodegenerative diseases. Neurology is a medical field where the clinical unmet needs are numerous, and the scope for high quality development of new treatments is critical. In particular, there is an urgent need for neuroscience and neurology specialists to support the increasing clinical demand for better care and support of patients suffering from neurological disorders. A post-graduate course in Neuroscience, with a strong focus on discovery medical research, organised in London could not only attract overseas students with an interest in this field but would also contribute significantly to the high quality training of the next generation of physician scientists specialising in neurology in the UK. We expect that a successful graduate training programme in Neuroscience will have strong support from the Association of British Neurologists, the British Neuroscience Association and the Federation of European Neuroscience Societies.

Aims of the programme

To provide a critical insight into modern concepts in the neurobiology relevant to major diseases of the nervous system
To identify clinical unmet needs in selected disease areas in neurology
To critique new approaches to disease diagnosis and the assessment of treatment efficacy
To discuss the process of drug discovery, including the pre-clinical phase and clinical drug development
To evaluate and appraise the knowledge required to design, organise and run a clinical trial
To discuss the legal processes underlying intellectual property rights and the governance of clinical trials
To synthesise information regarding the translational process using specific examples in neurological pathology

What will you be expected to achieve?

Students who successfully complete the programme will have detailed knowledge of the drug discovery and development process, clinical trial design and methodology, and the regulatory environment.
The research project provides training in laboratory skills and research techniques, data analysis, oral presentation skills, and critical appraisal of the scientific literature.
This training will provide essential transferable skills for a future career path, and also provides excellent training for students who wish to pursue a PhD.

Academic Content:

A 1	Demonstrate a comprehensive and detailed knowledge of translational science and the steps involved in drug discovery and drug development as applied to neuroscience, its application and an awareness of the provisional nature of such knowledge.
A 2	Demonstrate the ability to critique the clinical specific needs and discovery challenges in specific areas of neurology.
A 3	Evaluate advanced scholarship critically in evidence-based neuroscience, and make a case for alternative and innovative approaches.

Disciplinary Skills - able to:

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B 1	Produce scholarly work, to demonstrate skills of analysis, synthesis, reflection and critical evaluation.
B 2	Contextualise the practical, scientific and ethical framework of the research process.
B 3	Evaluate advanced scholarship critically in evidence-based neuroscience, and make a case for alternative approaches.

Attributes:	
C 1	Synthesise information in a manner that is innovative, utilizing knowledge or processes from the forefront of the discipline/practice and from a wide range of sources.
C 2	Demonstrate good skills in critical appraisal of the literature and written presentation.
C 3	Apply an individualised approach towards case-studies, via evidence-based education and practice in neuroscience.
C 4	Demonstrate the ability to evaluate data and apply the bench- to- the clinic process, addressing a translational medicine issue.
C 5	Undertake a scientific and evidence-based approach to prepare a dissertation related to neuroscience.
C 6	Demonstrate initiative and originality in problem-solving.

How will you learn?

Learning strategy

- Students will maintain a file of the work carried out in the core module, which could be used subsequently during the subsequent specialised modules and the project module.
- As self-directed learning is a major component of each module, students will be encouraged to be pro-active in identifying their own learning needs as modules progress. As a guide, the typical number of hours that a student should expect to spend studying is 10 hours per credit.
- Each student will be followed throughout the programme by the Programme Director and by a personal tutor, designated on entry to the course. The personal tutors will advise on issues arising from the course, and will act as mentors and advise on postcourse employment and further training opportunities.
- Students will have full access to the college/medical school library and student computing facilities.
- Students will be encouraged to attend seminar programmes organised regularly in the Centre for Neuroscience, Surgery and Trauma, Blizard Institute, the School of Medicine and Dentistry and the College.
- The course will use the virtual learning environment provided by the College (QMPlus). This enables lecture notes and handout material to be available electronically, with potential for discussion and question boards.

Gradually, this will permit whole modules to be delivered on-line, so that some of the course could be undertaken in future as distance-learning.

How will you be assessed?

Assessment strategy:

Full attendance is expected throughout the course and is a pre-requisite for successful completion of the programme (legitimate reasons for absence excused).

The full programme comprises taught modules (to the total value of 120 credits) plus the research project (equivalent to 60 credits), with each credit contributing equally to the final mark.

Modules will be assessed through a variety of ways including in-course written assignments, oral presentations, group projects,

research proposals and a final written examination. Specific details are indicated on each individual Module Proposal form. The research or literature project modules will be assessed via an oral presentation and dissertation.

How is the programme structured?

Please specify the structure of the programme diets for all variants of the programme (e.g. full-time, part-time - if applicable). The description should be sufficiently detailed to fully define the structure of the diet.

The MSc in Neuroscience is a one year, full-time programme. Students must undertake modules to the value of 180 credits for the MSc. Each 15 credit taught module involves approximately 30 hours of contact time plus 120 hours of independent study. Individual study time could be spent preparing for, or following up on formal study sessions; reading; producing written work; completing projects; and revising for examinations. The direction of the individual study will be guided by the formal study sessions, along with the reading lists and assignments. From May to July (Semester 3), students will work on their research projects.

The programme is structured with elective modules in Semester 2; students are able to develop in depth understanding of current research relevant to translational research in neuroscience through a choice of electives. In Semester 3, the research project consolidates knowledge and skills learned in previous semester through the conduct of novel research. This supervised research project may be either laboratory or literature based. Compulsory modules are provided in Semester 1. These modules aim to galvanise the strong foundation in the principles of translational science including drug discovery and development, with focus on evidence-based neuroscience research. In addition, students gain additional appreciation of research methodologies and essential generic skills.

For an academic start in January, the students will start with Semester 2 modules.

Semester 2--- Choice of taught electives (15 credits each- 4 must be taken)

Students must select at least 3 neuroscience modules from the list of 5 Neuroscience Options; a fourth option may be chosen from the 2 Regenerative Medicine Options:

Neuroscience Options

Neurotrauma and Stroke module - ICMM927

Neuroinflammatory and Autoimmune diseases module - ICMM928

Neurodegenerative Diseases module - ICMM929

Chronic Pain and Epilepsy module - ICMM930

Neuro-oncology module - ICMM931

Regenerative Medicine Options

Tissue-specific stem cells - ICM7144

Induced pluripotent stem cells and genome engineering- ICM7145

>>Pg Diploma students do not take the semester 3 module.

MSc Students only;

Semester 3-- Core Research component (60 credits)

Research Project and Dissertation -ICMM932

Semester 1-- Compulsory taught modules:

1. Fundamentals of Drug Discovery and Drug Development ICMM926 (45 credits) 2. Research skills and methodology - ICMM132 (15 credits)

>>PG Certificate only;

Semester 2 -

Choice of 1 taught elective (15 credits):

Neuroscience Options

Neurotrauma and Stroke module - ICMM927

Neuroinflammatory and Autoimmune diseases module - ICMM928

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Neurodegenerative Diseases module - ICMM929
Chronic Pain and Epilepsy module - ICMM930
Neuro-oncology module - ICMM931

Regenerative Medicine Options
Tissue-specific stem cells - ICM7144
Induced pluripotent stem cells and genome engineering- ICM7145

Semester 1 - Compulsory taught module:
1. Fundamentals of Drug Discovery and Drug Development ICMM926 (45 credits)

Academic Year of Study

Module Title	Module Code	Credits	Level	Module Selection Status	Academic Year of Study	Semester
Neurotrauma and Stroke	ICMM927	15	7	Elective	1	Semester 2
Neuroinflammatory and Autoimmune Disease	ICMM928	15	7	Elective	1	Semester 2
Neurodegenerative Disease	ICMM929	15	7	Elective	1	Semester 2
Chronic pain and epilepsy	ICMM930	15	7	Elective	1	Semester 2
Neuro-oncology	ICMM931	15	7	Elective	1	Semester 2
Tissue specific stem cells	ICM7144	15	7	Elective	1	Semester 2
Induced pluripotent stem cells and genome engineering	ICM7145	15	7	Elective	1	Semester 2
Research Project and Dissertation	ICMM932	60	7	Core	1	Semester 3
Fundamentals of Drug Discovery and Drug Development	ICMM926	45	7	Compulsory	1	Semester 1
Research Skills and Methodology	ICMM132	15	7	Compulsory	1	Semester 1

What are the entry requirements?

A 2:1 or above at undergraduate level in Biological Sciences, Neuroscience, Pharmacology, Physiology, Biochemistry, Biomedical Science, Medicine, Pharmacy or a related discipline.

Applicants with a 2:2 degree will be considered on an individual basis.

How will the quality of the programme be managed and enhanced? How do we listen to and act on your feedback?

The Student Voice Committee provides a formal means of communication and discussion between Schools and its students. The committee consists of student representatives from each year in the school/institute together with appropriate representation from staff within the school/institute. It is designed to respond to the needs of students, as well as act as a forum for discussing programme and module developments. Staff-Student Liaison Committees meet regularly throughout the year.

Each school operates a Learning and Teaching Committee, or equivalent, which advises the School/Institute Director of Education on all matters relating to the delivery of taught programmes at school level including monitoring the application of relevant QM policies and reviewing all proposals for module and programme approval and amendment before submission to Taught Programmes Board. Student views are incorporated in this Committee's work in a number of ways, such as through student membership, or consideration of student surveys.

All schools operate a Programme Review of their taught undergraduate and postgraduate provision. The process is normally organised at a School-level basis with the Head of School, or equivalent, responsible for the completion of the school's Programme Reviews. Schools/institutes are required to produce a separate Programme Review for undergraduate programmes and for postgraduate taught programmes using the relevant Undergraduate or Postgraduate Programme Review pro-forma. Students' views are considered in this process through analysis of the NSS and module evaluations.

What academic support is available?

Programme induction for orientation and introducing study skills.

- Research Skills and Methodology Module in Semester 1 includes: practical laboratory techniques, seminars focused on writing, development of critical appraisal skills, training in statistical analysis, and workshops teaching oral presentation skills.
- Course handbook with timetable, other course information and contact details.
- Dedicated intranet website with access to lecture material, assignments and other course information.
- Library facilities with electronic access from distant sites.
- Personal Tutor System: each student will meet with the Programme Director once a semester. They will also be assigned, at the beginning of the course, a personal tutor who will act as a mentor to provide support and advice during the course, and advice for career development and further training opportunities.

Programme-specific rules and facts

N/A

How inclusive is the programme for all students, including those with disabilities?

Queen Mary has a central Disability and Dyslexia Service (DDS) that offers support for all students with disabilities, specific learning differences and mental health issues. The DDS supports all Queen Mary students: full-time, part-time, undergraduate, postgraduate, UK and international at all campuses and all sites.

Students can access advice, guidance and support in the following areas:

- Finding out if you have a specific learning difference like dyslexia
- Applying for funding through the Disabled Students' Allowance (DSA)
- Arranging DSA assessments of need
- Special arrangements in examinations

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- Accessing loaned equipment (e.g. digital recorders)
- Specialist one-to-one "study skills" tuition
- Ensuring access to course materials in alternative formats (e.g. Braille)
- Providing educational support workers (e.g. note-takers, readers, library assistants)
- Mentoring support for students with mental health issues and conditions on the autistic spectrum.

Links with employers, placement opportunities and transferable skills

There are no formal employer links for this programme. However, the programme will offer an opportunity for graduates to further their career prospects within their own professional specialty, through the acquisition of:

1. A broad knowledge of translational research in neuroscience
2. An understanding of the steps involved in drug development
3. Acquisition of skills for carrying out clinical trials within their area of interest in neuroscience.
4. Development of transferable skills, including:
 - communicating effectively to diverse audiences via oral presentations and written reports
 - working collaboratively as part of a team
 - conducting work in a professional manner, mindful of intellectual and ethical integrity

Programme Specification Approval

Person completing Programme Specification:

Professor Adina T. Michael-Titus and Dr Jordi L. Tremoleda

Person responsible for management of programme:

Ms. Priti Dixit

Date Programme Specification produced / amended by School / Institute Education Committee:

1st October 2024

Date Programme Specification approved by Taught Programmes Board:

9 Oct 2024