

Programme Title: Cancer and Molecular Pathology and Genomics



Programme Specification

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| Awarding Body/Institution | Queen Mary University of London |
| Teaching Institution | Queen Mary University of London |
| Name of Final Award and Programme Title | MSc /Pg Dip Cancer and Molecular Pathology and Genomics |
| Name of Interim Award(s) | Pg Dip / Pg Cert |
| Duration of Study / Period of Registration | 1 year full time, 2 years part time |
| QM Programme Code / UCAS Code(s) | MSc: A4V8 (DL FT) A4VC (DL PT) A4VA (FT) A4VE (PT) Pg Dip: A4V0(DL FT) |
| QAA Benchmark Group | |
| FHEQ Level of Award | Level 7 |
| Programme Accredited by | |
| Date Programme Specification Approved | 08/02/2024 (via TLC) |
| Responsible School / Institute | Barts Cancer Institute |

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

Wolfson Institute of Population Health

Institution(s) other than Queen Mary that will provide some teaching for the programme

Programme Outline

General:

This programme is provided by the Barts Cancer Institute (BCI) within Barts and the London School of Medicine.

The Barts Cancer Institute is a Cancer Research UK Centre of Excellence, which forms part of a national framework to deliver world-leading research, improved patient care and greater public engagement.

We bring together scientific and clinical groups of international reputation in the fields of molecular biology, genomics, molecular diagnostics and pathology. Together with state-of-the art laboratories, this concentration of expertise and facilities provides an excellent setting for the delivery of the MSc in Cancer and Molecular Pathology and Genomics.

Recent advances in molecular technology have had a major impact on our understanding of disease and the way in which diseases are investigated, diagnosed and treated. Use of molecular techniques to inform diagnostic and treatment decisions is becoming more frequent in Pathology and other clinical disciplines, and this is likely to continue to expand. There is therefore an urgent need for healthcare professionals and scientists to develop the skills and knowledge necessary to support and advance the translation of technology into the clinical arena.

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This course combines core teaching of disease mechanisms and molecular technologies with an emphasis on development of critical and practical skills that will prepare students to undertake higher level research in an academic, professional or industrial setting.

This programme is offered in the following modes of study:

- Onsite - 1 year full time
- Onsite - 2 year part time

Delivered onsite through lectures, seminars and practicals

- Distance Learning - 1 year full time
- Distance Learning - 2 year part time

Delivered through our virtual learning platform using lecture capture videos and zoom.

This programme is offered the following awards

- MSc award: 180 credits consisting of 120 credits of taught units and a 60 credit Dissertation

All teaching is delivered by research active scientists and clinicians.

Aims of the Programme

This course aims to respond to a national and international need for clinicians, scientists and allied professions who can apply a molecular approach to the investigation, diagnosis and management of clinical disease.

It will provide theoretical and practical knowledge of modern molecular technologies as applied to human disease, with an emphasis on cancer, and train students in the application and interpretation of advanced molecular technologies. A fundamental part of the course is teaching in scientific, bioinformatic and transferable skills which will equip students with the tools to develop an academic research career.

The laboratory based research project is an integral component of the course which will provide students with valuable experience of the research process, including preparation of a thesis.

What Will You Be Expected to Achieve?

On completion of the course students will:

- Demonstrate a core understanding of human pathology and molecular biology.
- Have an in-depth knowledge of the principles and applications of molecular technologies as applied to human disease.
- Be proficient in experimental design, bioinformatics, data mining and interpretation.
- Demonstrate skills in oral and written presentation and in critical review of the literature.
- Contribute to the research process through experience of a laboratory project placement.
- Understand the ethical framework of the research process.

Academic Content:

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| A 1 | have a good grounding in the molecular and cellular biology relevant to cancer |
| A 2 | have a thorough knowledge of the principles underlying the diagnosis and treatment of cancer |
| A 3 | have a thorough knowledge of the key methodological techniques of cancer research |

| Disciplinary Skills - able to: | |
|--------------------------------|--|
| B 1 | demonstrate skills in gathering, recording, analysing and presenting information |
| B 2 | contribute to the research activity and knowledge base in molecular pathology |
| B 3 | apply knowledge gained from the programme in their own professional role |

| Attributes: | |
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| C 1 | experienced in oral and poster presentation |
| C 2 | experience of working as part of a research-active group |
| C 3 | significant laboratory or clinical research experience |

How Will You Learn?

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| <p>Learning strategy</p> <ul style="list-style-type: none">• The provision of key generic skills in the Science Skills Module will enable the students to maximise their ability to learn through later modules.• Students will maintain a file of practical work carried out in the core module which could be used subsequently during the project module.• As self-directed learning is the major component of each module students will be encouraged to be pro-active in identifying their own learning needs as modules progress.• Each student will be assigned a personal tutor (lecturer grade or above) on entry to the course. This tutor will advise on issues arising from the course, and will act as a mentor to advise on post course 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 the weekly seminar programmes in Medical Oncology and Molecular Oncology, as well as the CRUK Clinical Centre Distinguished Guest Speaker Programme (6 lectures per year). Students will be encouraged to keep a logbook of seminars attended to enhance the environment of proactive learning.• Increasingly the course will be developed using a virtual learning environment (WebCT) now provided by the college. This will initially enable lecture notes and handout material to be available electronically, provide space for discussion and question boards. Subsequently this will permit whole modules to be delivered on-line so that some of the course can be undertaken as distance-learning. |
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How Will You Be Assessed?

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| <p>Assessment of individual modules vary and are designed to test the module learning outcomes. Assessments include:</p> <ul style="list-style-type: none">*presentations (oral and poster)*viva*written essays*practicals*examination <p>For DL students assessed presentations are given via a video link.</p> |
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How is the Programme Structured?

Please specify the full time and part time programme diets (if appropriate).

The full Masters course involves studying 180 credits. This includes:

- 105 credits of compulsory taught modules
- 15 credits of elective taught modules
- core dissertation which is equal to 60 credits

Full time students study 60 credits in semester 1 (September - December, delivered as 2 or 3 days teaching each week on Tuesday/Wednesday /Thursday) and are then examined on those modules in early January. Students study a further 60 credits in semester 2 (January - April, delivered over 3 days each week, Tuesday, Wednesday and Thursday), with module exams at the end of that period.

Part-time students study 60 credits in year 1 and 60 credits in year 2. The dissertation module is taken in the second year of study.

Distance learning students can study the course either full-time or part-time. (DL codes are in brackets)

Academic Year of Study FT - Year 1

| Module Title | Module Code | Credits | Level | Module Selection Status | Academic Year of Study | Semester |
|--|----------------------|---------|-------|-------------------------|------------------------|------------|
| Basic Pathology | CANM915 (CANM115) | 15 | 7 | Compulsory | 1 | Semester 1 |
| Cancer Biology | CANM902 (CANM102) | 15 | 7 | Compulsory | 1 | Semester 1 |
| Research Methods | CANM937 (CANM137) | 15 | 7 | Compulsory | 1 | Semester 1 |
| Research Lab Skills | CANM938 (CANM138) | 15 | 7 | Compulsory | 1 | Semester 2 |
| Cancer Screening and Prevention | IPH7116 (IPH7109) | 7.5 | 7 | Compulsory | 1 | Semester 2 |
| Genomic Approaches to Cancer | CANM940 (CANM140) | 7.5 | 7 | Compulsory | 1 | Semester 2 |
| Molecular Diagnostic and Therapeutics | CANM921 (CANM121) | 15 | 7 | Compulsory | 1 | Semester 1 |
| Molecular Pathology of Solid Tumours | CANM924 (CANM124) | 15 | 7 | Compulsory | 1 | Semester 2 |
| Biological Therapies | CANM907 (CANM107) | 15 | 7 | Elective | 1 | Semester 2 |
| Molecular Targeted Therapies and Immunotherapy for Blood Cancers | CANM935 (CANM135) | 15 | 7 | Elective | 1 | Semester 2 |

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| Module Title | Module Code | Credits | Level | Module Selection Status | Academic Year of Study | Semester |
|--------------------------|--|---------|-------|-------------------------|------------------------|------------|
| Lab Project Dissertation | CANM939 (CANM139) CANM936 (CANM136) | 60 | 7 | Elective | 1 | Semester 3 |

Academic Year of Study PT - Year 1

| Module Title | Module Code | Credits | Level | Module Selection Status | Academic Year of Study | Semester |
|--|-------------------|---------|-------|-------------------------|------------------------|------------|
| Cancer Biology | CANM902 (CANM102) | 15 | 7 | Compulsory | 1 | Semester 1 |
| Basic Pathology | CANM915 (CANM115) | 15 | 7 | Compulsory | 1 | Semester 1 |
| Molecular Pathology of Solid Tumours | CANM924 (CANM124) | 15 | 7 | Compulsory | 1 | Semester 2 |
| Biological Therapies | CANM907 (CANM107) | 15 | 7 | Elective | 1 | Semester 2 |
| Molecular Targeted Therapies and Immunotherapy for Blood Cancers | CANM935 (CANM135) | 15 | 7 | Elective | 1 | Semester 2 |

Academic Year of Study PT - Year 2

| Module Title | Module Code | Credits | Level | Module Selection Status | Academic Year of Study | Semester |
|--|-------------------|---------|-------|-------------------------|------------------------|------------|
| Molecular Diagnostics and Therapeutics | CANM921 (CANM121) | 15 | 7 | Compulsory | 2 | Semester 1 |
| Research Methods | CANM937 (CANM137) | 15 | 7 | Compulsory | 2 | Semester 1 |
| Cancer Screening and Prevention | IPH7116 (IPH7109) | 7.5 | 7 | Compulsory | 2 | Semester 2 |
| Research Lab Skills | CANM938 (CANM138) | 15 | 7 | Compulsory | 2 | Semester 2 |
| Genomic Approaches to Cancer | CANM940 (CANM140) | 7.5 | 7 | Compulsory | 2 | Semester 2 |

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| Module Title | Module Code | Credits | Level | Module Selection Status | Academic Year of Study | Semester |
|-----------------------------|--|---------|-------|-------------------------|------------------------|------------|
| Lab Project or Dissertation | CANM939 (CANM139) or CANM936 (CANM136) | 60 | 7 | Core | 2 | Semester 3 |

What Are the Entry Requirements?

The course is aimed at pathologists, graduate scientists wishing to pursue a career in research and other professionals allied to medicine working in healthcare or industry.

For admission to the programme students will need either;

- a good degree (2i or above, or 2ii with extenuating circumstances confirmed by an academic referee) or degree equivalent from a recognised academic institution
- or
- an appropriate professional qualification with relevant work experience.

Students for whom English is a second language will also require a minimum IELTS 7 or TOEFL 610 score.

In addition to the above, students taking the course as a Distance Learning option will need access to computer and good internet connection, and will need to be within reasonable travelling distance of a British Council test centre or partner university to sit invigilated examinations.

How Do We Listen and Act on Your Feedback?

The Staff-Student Liaison Committee provides a formal means of communication and discussion between schools/institutes 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/institute operates a Learning and Teaching Committee, or equivalent, which advises the School/Institute Director of Taught Programmes 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 the committee's work in a number of ways, such as through student membership, or consideration of student surveys.

All schools/institutes operate an Annual Programme Review of their taught undergraduate and postgraduate provision. APR is a continuous process of reflection and action planning which is owned by those responsible for programme delivery; the main document of reference for this process is the Taught Programmes Action Plan (TPAP) which is the summary of the school/institute's work throughout the year to monitor academic standards and to improve the student experience. Students' views are considered in this process through analysis of the NSS and module evaluations.

Academic Support

Before students start we run a full day induction with option talk presentations, Q&A from last year's students and talks by the course director and Academic Coordinator to ensure the new students are fully informed of what to expect as students. All of this information is also provided in the course guide and on QMPlus.

In week one, a programme of induction for orientation and introducing study skills.

Course Guide and Module Guides with timetable, other course information and contact details of all relevant personnel.

QMPlus - dedicated intranet website with access to lecture material, assignments and other course information.

Library facilities with electronic access from distant sites.

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Mentor System: There are a pool of mentors, that you can approach for advice on career development and further training opportunities. These mentors have a range of expertise between them and are not part of the course management team. The course directors meet with all students once a term as a minimum and more frequently where appropriate to discuss progress and offer career advice. The academic coordinator acts as a main point of contact and meets with students on a weekly basis through drop in sessions. The QMUL also provides IT classes, English language workshops and study skills sessions which are available to all students.

Programme-specific Rules and Facts

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Specific Support for Disabled Students

Queen Mary has a central Disability and Dyslexia Service (DDS) that offers support for all students with disabilities, specific learning difficulties 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 difficulty like dyslexia
- Applying for funding through the Disabled Students' Allowance (DSA)
- Arranging DSA assessments of need
- Special arrangements in examinations
- 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)
- Access to specialist mentoring support for students with mental health issues and Autistic Spectrum Disorders.

Links With Employers, Placement Opportunities and Transferable Skills

This programme will provide students with the skills and experience necessary to pursue further academic research at PhD/MD level. It will also provide a strong foundation for those working in a clinical, pharmaceutical or diagnostic setting.

On competition there will be an opportunity for the top students to apply for one of the Institute's PhD studentships.

The distance learning option allows flexible learning and can be undertaken as part of Continuing Professional Development while employed by the National Health Service.

Programme Specification Approval

Person completing Programme Specification

Ellis Murrell

Programme Title: Cancer and Molecular Pathology and Genomics

Person responsible for management of programme

Pia Cronin

**Date Programme Specification produced/amended
by School Learning and Teaching Committee**

8 Feb 2024

**Date Programme Specification approved by
Taught Programmes Board**

08/02/2024 (via TLC)