

Programme Title: MSc Cancer & Molecular and Cellular Biology



Programme Specification

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 & Molecular and Cellular Biology MSc
Name of Interim Award(s)	Pg Dip/ Pg Cert
Duration of Study / Period of Registration	1 year full time, 2 years part time & by DL
QM Programme Code / UCAS Code(s)	MSc: A3P3 (DL FT) A3P4 (DL PT) A3P1 (FT) A3P2 (PT) Pg DIP: A4P3(DL FT)
QAA Benchmark Group	n/a
FHEQ Level of Award	Level 7
Programme Accredited by	n/a
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.

Cancer is the cause of over 25% of all deaths in the UK. Despite major advances in treatment over the last 25 years, over half of the 270,000 new cancer cases registered in the UK each year will go on to die of their disease. New treatment options are clearly required, a process that will require staff at all levels of the development process to be appropriately trained and skilled in cancer therapeutics and new treatment development.

This course is designed to give you a detailed and thorough understanding of molecular and cell biology based on knowledge of cancer biology, pathology, drug development and research methodologies and techniques.

The laboratory-based projects forms a key component of the MSc programme, where students will be fully integrated into one

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of the Institute's 6 research centres.

This will provide you with a good grounding in the use and evaluation of cancer therapies and lab techniques which will enhance your career prospects in many areas of early phase clinical trials and clinical drug development in the cancer setting. It will also provide proven theoretical and practical skills suitable for entry to a PhD degree course.

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 interactive skype sessions.

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

The specific aims of the programme are to provide participants with a clear understanding of the scientific basis underlying the principles and practice of cancer therapeutics and the development, evaluation and implementation of new treatments. This will be underpinned by a thorough knowledge of cancer biology and pathology, research methodologies, drug development and regulatory issues.

Students will gain hands on experience of research during the lab project.

This knowledge and experience will provide you with a good grounding in the use and evaluation of cancer therapies which will enhance career prospects in many areas of academic research, early phase clinical trials and clinical drug development in the cancer setting. It will also provide proven theoretical and practical skills suitable for entry to a PhD degree course.

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:

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:	
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?

Module and project teaching will comprise the following;

- Whole-group seminars/lectures on specific topics. Tutors and students will be encouraged to develop a tutorial atmosphere in which dialogue and discussion can take place.
- Whole-group practical classes in small groups to address a specific practical method or topic. These will be recorded in the student's practical files.
- Whole-group demonstrations. These will take place in Institute laboratories or the class-room to address specific technologies (i.e. expression array technology) or methods (i.e. array data analysis).
- Student presentations on specific topics.
- Individual tuition will take place for all students during the 4-unit project, or for students who require additional input in a particular topic area.
- Key generic skills will be acquired from each of the above.
- Teaching material will be available on the College internet site via VLE.
- The majority of the teaching rooms and the practical lab are on the Charterhouse Square campus. Some teaching may take place at St Bartholomew's Hospital, which is 5 minutes walk from Charterhouse Square.

The provision of key skills in the core module Research Skills and Sciences will enable students to maximise their ability to understand and learn from other modules. Students will maintain a file of practical work carried out in the core module which will be useful during the project module.

As self-directed learning is the major component of each module students will be encouraged to identify their own learning needs as modules progress. All students will have access to named personal mentors (lecturer grade or above) on entry to the course. These mentors will provide advice on issues arising from the course itself, and on issues such as post course employment and further training opportunities.

Students will have full access to the College/Medical School library and student computing facilities. The course is delivered using a virtual learning environment provided by the college. This enables lecture notes and handout material to be available electronically, provides space for discussion and question boards and allows assessed work to be uploaded remotely. For Distance Learning students lectures and tutorials are captured and uploaded immediately onto the VLE. The captured lecture includes classroom audio, all projected slides or images and whiteboard annotations made by the lecturer.

Classroom teaching will also involve a real time assessment of the group understanding of the topic being covered using the Turning Point student response system. This involves questions embedded into presentations to which the students respond, using an individual unit that provides an anonymous response with a single click. This ensures that feedback is received from all students in the group, and provides students with a guide to their own understanding of a particular topic.

How Will You Be Assessed?

Assessment of individual modules vary and are designed to test the module learning outcomes. Assessments include:

*presentations (oral and poster)

*viva

*written essays

*practicals

*examination

For DL students assessed presentations are given via a video link.

How is the Programme Structured?

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

The full Masters course requires students to complete 180 credits.

This includes:

- 105 credits of compulsory taught modules
- 15 credits of elective taught modules
- 60 Credit core dissertation

Full time students take between 60 and 75 credits in semester 1 (Sept - Dec, delivered as up to three days teaching each week Tuesday/Wednesday/Thursday). Examinations take place in the January examination period.

Students take between 45 and 60 credits in semester 2 (Jan - April, delivered over 3 days each week, Tuesday, Wednesday and Thursdays). Examination take place in the May/June examination period.

Part-time students study between 52.5 and 67.5 credits in year 1 and between 52.5 and 67.5 credits in year 2. The lab project module is undertaken from Semester 3 of the second year.

Distance learning students can study the course either full-time or part-time, and follow the same programme diet as their campus based counterparts.

**Where it is not feasible for a student to undertake a lab placement, they will undertake a 60 credit theory base dissertation (CANM936)

Pg Diploma students are not required to take the Lab Project and follow the same diet as their MSc counterparts.

Academic Year of Study FT - 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
Cancer Pharmacology	CANM903 (CANM103)	15	7	Compulsory	1	Semester 1
Research Methods	CANM937 (CANM137)	15	7	Compulsory	1	Semester 1

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Module Title	Module Code	Credits	Level	Module Selection Status	Academic Year of Study	Semester
Research Lab Skills	CANM938 (CANM138)	15	7	Compulsory	1	Semester 2
Biological Therapies	CANM907 (CANM107)	15	7	Compulsory	1	Semester 2
Cancer Screening and Prevention	IPH7116 (IPH7109)	7.5	7	Elective	1	Semester 2
Drug Development	CANM906 (CANM106)	7.5	7	Compulsory	1	Semester 2
Genomic Approaches to Cancer	CANM940 (CANM140)	7.5	7	Compulsory	1	Semester 2
Molecular Diagnostic & Therapeutics	CANM921 (CANM121)	15	7	Compulsory	1	Semester 1
Paediatric & Adolescent Oncology	CANM911 (CANM111)	7.5	7	Elective	1	Semester 2
either Dissertation, or Lab Project	CANM936 (CANM136) CANM939 (CANM139)	60	7	Core	1	Semester 3
Pathology of Cancer and Imaging	CANM951 (CANM151)	15	7	Elective	1	Semester 1

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
Cancer Pharmacology	CANM903 (CANM103)	15	7	Compulsory	1	Semester 1
Pathology of Cancer and Imaging	CANM951 (CANM151)	15	7	Elective	1	Semester 1
Biological Therapies	CANM907 (CANM107)	15	7	Compulsory	1	Semester 2

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Module Title	Module Code	Credits	Level	Module Selection Status	Academic Year of Study	Semester
Paediatric and Adolescent Oncology	CANM911 (CANM111)	7.5	7	Elective	1	Semester 2
Cancer Screening and Prevention	IPH7116 (IPH7109)	7.5	7	Elective	1	Semester 2
Genomic Approaches to Cancer	CANM940 (CANM140)	7.5	7	Compulsory	1	Semester 2

Academic Year of Study PT - Year 2

Module Title	Module Code	Credits	Level	Module Selection Status	Academic Year of Study	Semester
Pathology of Cancer and Imaging	CANM951 (CANM151)	15	7	Elective	2	Semester 1
Molecular Diagnostics and Therapeutics	CANM921 (CANM121)	15	7	Compulsory	2	Semester 1
Research Methods	CANM937 (CANM137)	15	7	Compulsory	2	Semester 1
Drug Development	CANM906 (CANM106)	7.5	7	Compulsory	2	Semester 2
Paediatric and Adolescent Oncology	CANM911 (CANM111)	7.5	7	Elective	2	Semester 2
Cancer Prevention and Screening	CANM912 (CANM112)	7.5	7	Elective	2	Semester 2
Research Lab Skills	CANM938 (CANM138)	15	7	Compulsory	2	Semester 2
either Dissertation, or Lab Project	CANM936 (CANM136) CANM939 (CANM139)	60	7	Core	2	Semester 3

What Are the Entry Requirements?

The course is aimed at 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

Students are encouraged to interact with academic staff during classroom teaching to foster a tutorial-like learning environment. Members of the teaching staff, (typically the module lead and 1 other), mark all assessed work and provide written feedback on the in-course assessments. Students are able to view that written feedback at any time. Indeed, in semester 1 feedback is given on research Skills practical write-ups within 1-2 weeks of submission to enable students to incorporate that feedback into their subsequent write-ups. Feedback on progress and performance is given to students individually at the end of each semester by the Course Director, with the proviso that all marks are provisional until confirmed by the relevant examination boards.

If a student is having difficulty with a particular module, topic or practical, additional teaching support can be provided. Students also have access to named personal mentors who can advise on areas in which the student may be having difficulty, or an issues such as post-course employment.

Programme-specific Rules and Facts

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,

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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.

Our graduate destinations include: PhD studentships (internal and external to the Institute), medical school, laboratory research positions.

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

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)