

Programme Title: BSc Genetics and 'with year abroad' extramural year variant



## Programme Specification (UG)

Awarding body / institution:	Queen Mary University of London
Teaching institution:	Queen Mary University of London
Name of final award and programme title:	BSc (Hons) Medical Genetics, BSc (Hons) Medical Genetics with year abroad
Name of interim award(s):	
Duration of study / period of registration:	3 year (4 years with year abroad)
QMUL programme code / UCAS code(s):	C431 C43Y
QAA Benchmark Group:	
FHEQ Level of Award :	Level 6
Programme accredited by:	
Date Programme Specification approved:	
Responsible School / Institute:	School of Biological & Behavioural Sciences

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

Barts and The London School of Medicine and Dentistry

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

### Programme outline

The rationale for the Medical Genetics programme is to provide training for students with an interest in medically orientated genetics. Genetics is at the heart of research into human diseases, because of its direct role in disease and because of the instruments used to study disease. Understanding in this area unifies areas across biology from genetics, molecular biology, physiology, statistics, biochemistry and population genetics, enabling transfer of knowledge between fields. The programme "Medical Genetics" has been designed to enable the students to find the value and importance of fundamental, yet targeted research in medicine. The students will be directed through essential courses available in SBBS enabling them to move easily between the disciplines. The knowledge and skills gained will enable students to take up a diverse range of post-graduate training programmes, and career routes in biology and medical research. The target population is students with a general interest in medicine, genetics, and in medical research.

### Aims of the programme

To provide a general foundation in biological sciences with a significant and balanced input of medical genetics training. Compulsory modules direct the students towards the genetics and ecology of human disease. To provide an environment to develop transferable skills in public speaking, verbal reasoning, report writing and database mining.

Furthermore to:

- Provide a rational, flexibly structured and coherent programme of study which is relevant to the needs of employers, facilitate the professional development of the student and lay the foundations for a successful career to the benefit of the economy and society;
- provide a sound knowledge base in the fields studied and develop key transferable skills in the areas of communication, numeracy, information technology, working with others, problem solving, time and task management;
- foster the development of an enquiring, open-minded and creative attitude, tempered with scientific discipline and social awareness, which encourages lifelong learning.

### What will you be expected to achieve?

You will be expected to achieve the following learning outcomes:

### Please note that the following information is only applicable to students who commenced their Level 4 studies in 2017/18, or 2018/19

In each year of undergraduate study, students are required to study modules to the value of at least 10 credits, which align to one or more of the following themes:

- networking
- multi- and inter-disciplinarity
- international perspectives
- enterprising perspectives.

These modules will be identified through the Module Directory, and / or by your School or Institute as your studies progress.

Academic Content:	
A 1	Key concepts in genetics and genetic diseases
A 2	Evolutionary theory and how this is applied to the study and management of disease.
A 3	How the molecular perspective understanding in medical genetics is derived from the disciplines of classical, chromosomal, population and molecular genetics.
A 4	How evolutionary understanding is derived from studies from interaction between human populations, viruses and sexually transmitted disease

Disciplinary Skills - able to:	
B 1	Reason critically.
B 2	Apply medical genetics knowledge and principles, in combination with problem-solving skills, in a wide range of theoretical and practical situations.
B 3	Use advanced theories and concepts to explain/rationalize phenomena in medical genetics, and to investigate unfamiliar problems.
B 4	Conduct practical work efficiently and with due regard for safety.
B 5	Use a wide range of laboratory and analytical equipment, as well as computational tools and packages.
B 6	Analyse and evaluate/interpret the results of controlled experiments
B 7	Retrieve, filter and collate genetics data from a variety of information sources.
B 8	Prepare scientific/technical reports.
B 9	Plan, undertake and report a bibliographically-based piece of research.
B 10	Identify and formulate problems.

Attributes:	
C 1	Communicate effectively by written and/or verbal means.
C 2	Capacity for independent learning, and to work independently.
C 3	Able to participate constructively as a member of a group/team, with skills to influence, negotiate and lead.
C 4	Assess the relevance, importance and reliability of the ideas of others and different sources of information.
C 5	Competent in the use of computer-based technology, including the manipulation and analysis of quantitative data.
C 6	Awareness of the role and impact of science in society, including the global perspective.
C 7	Use information for evidence-based decision-making and creative thinking.

### How will you learn?

Acquisition of knowledge is achieved mainly through lectures and directed independent learning. Understanding is reinforced through a combination of tutorial workshops, problem classes and laboratory classes (depending upon the module concerned), including regular feedback on submitted work. Additional learning support is provided through Queen Mary's online learning environment and the facilities of the QMUL Student PC Service.

## How will you be assessed?

Testing of the knowledge base is generally through a combination of unseen written examinations and assessed coursework. The exact nature of the coursework varies from module to module and may include work in the form of laboratory experiment write-ups, essays and/or problem sheets. The coursework mark may also include a contribution from computer-based assessments and in-course tests. Specific modules (if taken) include assessed oral examinations, oral presentations and extended reports/dissertations.

## 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.

Students are required to register for modules to a value of 120 credits in each academic year. These modules are chosen from those offered in the C100/C10Y programme diet, as detailed below.

In the first year, you will study 120 credits, comprising the following:

- 6 x 15 credit compulsory modules (totalling 90 credits, across Semesters A & B)
- 3 x 10 credit compulsory modules (totalling 30 credits, across Semesters A & B)

In the second year, you will study 120 credits, comprising the following:

Compulsory modules (totalling 60 credits):

- BIO209 Research methods and communication (15 credits)
- BIO213 Cell Biology and Developmental Genetics (15 credits)
- BIO223 Genes and Bioinformatics (15 credits)
- BIO227 Human Genetic Disorders (15 credits)
- 4x15 credit elective modules from the discipline elective group (totalling 60 credits, across Semester A & B)

Choice between electives is generally unrestricted, but with the exceptions that:

- you must not register for more than 75 credits in total in any given semester
- you must check that you satisfy the prerequisites before registering for any elective module

To be eligible for the award of BSc (Hons) Biology with year abroad, students must take SBC5000 after the 2nd year and then return to QMUL the following year to complete the Year 3 diet in their 4th Year of study.

In third year, you will study 120 credits comprising the following:

- 1 x elective module from the Research Project group (totalling 30 credits, across Semesters A & B)
- BIO329 Professional Skills and Development for Biologists (15 credits)
- BIO327 Functional Genomics and Epigenetics (15 credits)
- BIO324 Advanced Human Genetic Disorders (15 credits)
  
- 3 x 15 credit elective modules from the discipline elective group (totalling 45 credits, across Semester A & B)

Choice between electives is generally unrestricted, but with the exceptions that:

- you must not register for more than 75 credits in total in any given semester
- you must check that you satisfy the prerequisites before registering for any elective module

Programme Title: BSc Genetics and 'with year abroad' extramural year variant

Academic Year of Study FT - Year 1

Module Title	Module Code	Credits	Level	Module Selection Status	Academic Year of Study	Semester
Practical Molecular & Cellular Biology	BIO192	10	4	Compulsory	1	Semester 2
Cells	BIO116	15	4	Compulsory	1	Semester 1
Evolution	BIO113	15	4	Compulsory	1	Semester 1
Molecular Genetics	BIO163	15	4	Compulsory	1	Semester 1
Essential Skills for Biology	BIO100	10	4	Compulsory	1	Semesters 1 & 2
Practical Biology	BIO190	10	4	Compulsory	1	Semester 1
Physiology	BIO125	15	4	Compulsory	1	Semester 2
Basic Biochemistry	BIO161	15	4	Compulsory	1	Semester 2
Tissue Biology	BMD181	15	4	Compulsory	1	Semester 2

Academic Year of Study FT - Year 2

Module Title	Module Code	Credits	Level	Module Selection Status	Academic Year of Study	Semester
Compulsory modules:			5	Compulsory		
Research methods and communication	BIO209	15	5	Compulsory	2	Semester 1
Genes and Bioinformatics	BIO223	30	5	Compulsory	2	Semester 1
Cell Biology and Developmental Genetics	BIO213	15	5	Compulsory	2	Semester 2
Human Genetic Disorders	BIO227	15	5	Compulsory	2	Semester 1

Programme Title: BSc Genetics and 'with year abroad' extramural year variant

Module Title	Module Code	Credits	Level	Module Selection Status	Academic Year of Study	Semester
Remaining modules in the elective pool:		0	5	Elective	2	
Microbial physiology and growth	BIO231	15	5	Elective	2	Semester 2
Comparative and Integrative Physiology	BIO215	15	5	Elective	2	Semester 1
Metabolic pathways	BIO265	15	5	Elective	2	Semester 2
Infectious Disease Biology	BIO214	15	5	Elective	2	Semester 1
Basic immunology	BMD251	15	5	Elective	2	Semester 2
Biomedical Pharmacology	BMD225	15	5	Elective	2	Semester 2

Academic Year of Study FT - Year 1

Module Title	Module Code	Credits	Level	Module Selection Status	Academic Year of Study	Semester
The following modules must be taken to qualify for the degree 'with a year abroad'			5	Core		
SBCS Study Abroad Year	SBC5000	15	5	Core	3	Semesters 1 & 2

Academic Year of Study FT - Year 3

Module Title	Module Code	Credits	Level	Module Selection Status	Academic Year of Study	Semester
Professional Skills and Development for Biologists	BIO329	15	6	Compulsory	3	Semester 1
Biological Science Research Project (Project Elective)	BIO600	30	6	Elective	3	Semesters 1 & 2
Project skills in the life sciences (Project Elective)	BIO603	30	6	Elective	3	Semesters 1 & 2

Programme Title: BSc Genetics and 'with year abroad' extramural year variant

Module Title	Module Code	Credits	Level	Module Selection Status	Academic Year of Study	Semester
Engaging the Public with Science (Project Elective)	BMD606	30	6	Elective	3	Semesters 1 & 2
Advanced Human Genetic Disorders	BIO324	15	6	Compulsory	3	Semester 2
Functional Genomics and Epigenetics	BIO327	15	6	Compulsory	3	Semester 2
Population and Chromosome Genetics	BIO325	15	6	Elective	3	Semester 1
Infectious Disease Biology	BIO214	15	5	Elective	3	Semester 1
Reproductive and Developmental Biology	BIO337	15	6	Elective	3	Semester 2
Endocrine Physiology and Biochemistry	BMD311	15	6	Elective	3	Semester 1
Molecular Basis of Personalised Medicine	BMD383	15	6	Elective	3	Semester 2
Cancer Biology	BMD381	15	6	Elective	3	Semester 1
Advanced Immunology	BMD351	15	6	Elective	3	Semester 1
Biomedical Neuroscience	BMD325	15	6	Elective	3	Semester 1

### What are the entry requirements?

Candidates must be able to satisfy the general admissions requirements of the University and meet the requirements for this specific programme of study. This is usually achieved in one of the following ways (note - the entry-points tariff is subject to annual review):

For direct entry to the degree programme, candidates must usually possess ABB at A2 level, including a minimum of a grade B in 'A2' Biology, or equivalent qualifications. Chemistry (at A2 or AS-level) is desirable, but not essential.

or via

Admission to the QMUL Science and Engineering Foundation Programme (SEFP), and successful completion of the foundation year (defined by achievement of the minimum requirements for progression defined in the SEFP programme regulations, and the criteria specified in the SEFP Student Handbook for progression to this particular degree programme).

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

Quality of the programme will be managed and enhanced through institutional and School level reviews. These will take the form of the Annual Programme Review, Programme Teaching Groups, and Teaching and Learning Committee. Additionally, student feedback (via SSLC and Module Evaluations) will be considered when developing modules and programmes.

### What academic support is available?

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

The Teaching & Learning Committee advises the School's 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 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 consideration of student surveys and input from the SSLC.

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.

### Programme-specific rules and facts

None

### 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)
- Mentoring support for students with mental health issues and conditions on the autistic spectrum.

### Links with employers, placement opportunities and transferable skills

As a medical genetics graduate, you will be at the cutting edge of modern biology. Some students will enter frontline research through further training in Master's and PhD programmes. Others may put their skills to work in consulting, biomedical publishing, medical sales, or disease diagnosis and research, to name just a few options. The flourishing biotechnology industry,



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healthcare and forensic services also offer a variety of careers. Finally a good degree, together with a range of transferable skills, will make you attractive to a wide variety of employers seeking to recruit top-class graduates.

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## Programme Specification Approval

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**Person completing Programme Specification:**

Chris Bray

**Person responsible for management of programme:**

Sally Faulkner

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

12 Jan 2021

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