



Biological Sciences BSc programme handbook

Welcome and Overview

Welcome to the **School of Biological & Chemical Sciences (SBCS)**, and specifically to one of our four Biological Science BSc degree programmes: Biology (C100), Zoology (C300), Genetics (C400) or Medical Genetics (C431). Here in SBCS we have world-class research expertise in a wide variety of subjects, from large scale "whole organism" subjects like ecology and evolutionary biology, through genomics, epigenetics and physiology down to the scale of the cell and even further to the molecular components of life. Our four Biology BSc programmes offer the highest-quality training in the concepts and techniques necessary to gain a full understanding of the biological sciences, going all the way from the basics to the cutting edge of modern research, and we are delighted that you're joining us for the next three years. Whether your interests are in animal behaviour and ecology, the medical applications of genome sequencing, the structure of chromosomes or the way that proteins fold we have modules that should excite you, and if you don't yet know what you would like to specialise in then no problem: come and find out!

Key Names and Contacts

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Programme overviews



Close encounter with a giraffe on the third year Savannah Ecology Field course

The **Biology** BSc programme (C100) is the most flexible on offer within SBCS and offers the opportunity to study biology at all levels of organisation - ranging from the molecular to the cellular/organ levels, and from the organismal to the environmental levels. The programmes include training in fundamental topics and concepts applicable to all biologists and zoologists, such as taxonomy, evolution, molecular genetics and the cell as a biological unit. We have some suggested pathways through the programme for people with specific interests but you are also welcome to build your own bespoke set of modules to give you training and understanding in the concepts that are most important to you.

The **Genetics** BSc programme (C400) provides an in-depth understanding of how measurable attributes (phenotypes) arise from inherited DNA sequences. You'll study the three major types of genetics (inheritance patterns, population genetics, and molecular genetics) and provides a detailed analysis of how each of these impact on our understanding of evolution in a wide variety of organisms with an introduction to key principles of protein structure and function, the chemical sciences, cell biology, genetics and microbiology. Emphasis is given to molecular concepts of complex biological systems. SBCS is particularly strong in research into the new science of genomics, and this is reflected in the modules offered which will give a genuinely cutting-edge understanding of the subject.

The rationale for the **Medical Genetics** BSc programme (C431) 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. This programme has been designed to enable you to find the value and importance of fundamental, yet targeted research in medicine.

The **Zoology** BSc programme (C300) is specifically tailored for students with an interest in the biology of the animal kingdom. We have modules giving an in-depth look at the biology of a number of important groups of animals including both invertebrates and vertebrates, and there are opportunities to learn about animal behaviour, ecology, comparative physiology and palaeontology.

Each of the four biological science programmes prepare you for further study at the postgraduate level (MSc and PhD) and careers that require knowledge of biology, zoology, genetics or medical genetics, as appropriate.

Due to the common content of the first year modules, up until the end of Year 1, you can request a Change of Programme (CoP) between Biology, Genetics and Zoology (see Section 14). (Should you wish to request a change from any of these programmes on to Medical Genetics, your request would have to be received by 01 December 2018 since students enrolled on the Medical Genetics BSc study different modules in Semester B). Because of the option to switch between biological sciences for your second and third years of study, this handbook details each of the biological science degree programmes.

In closing, can we reiterate our welcome to QMUL, to SBCS, and specifically to one of the four biological science degree programmes. We hope that you find this programme handbook useful and that, over the next 3 years, you find your undergraduate degree to be as enjoyable as it is educational. We hope that you will make the most of the opportunities for personal and professional development offered by the wide range of compulsory and elective modules that each build on the breadth of expertise offered by academic colleagues in the Department of Biology, as well as by colleagues from Bart's & the London School of Medicine & Dentistry. All of the staff involved in your degree wish you **good luck** with your studies and look forward to supporting your personal and career aspirations over the course of your degree and, beyond that, when you graduate and become an alumnus of QMUL.

Dr Dave Hone: Senior Lecturer in Zoology, Director of Teaching and Learning [Biological Sciences]

Professor Stephen Rossiter: Head of the Biology Department, SBCS.

Programme aims and structure

Because of the common modules and the option to transfer between biological programmes, the programme aims for all four biological science degrees are broadly similar with relatively subtle differences. In addition to the specific programme aims presented by degree programme, all four programmes aim to:

- * Provide a rational, flexibly structured and coherent programme of study which is relevant to the needs of employers, facilitates your professional development and lays the foundations for a successful career which is 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.

All of our programmes share a common first year structure which is designed to make sure that everyone enters the second year with a really strong understanding of all of the ideas, facts and concepts which will be needed for successful advanced study in biology. The modules which you take in first year are, therefore, designed to give you a broad and fundamental understanding of all of the aspects of the biological sciences which everyone studying in these fields needs. The only exception is C431 Medical genetics which has one module (Tissue biology) which replaces the Ecology module which students taking other programmes take. Years two and three have more flexibility, and students taking all of our programmes will have a mix of compulsory and elective modules. The compulsory modules teach topics which everyone with a degree in that particular subject should have a good understanding of, whereas the elective modules allow specialisation and deeper learning in the subjects that really interest you.

In the programme outlines provided on the following pages, **compulsory** modules are denoted in standard text whereas **elective** modules are denoted in *italicised text*. In each academic year, any modules indicated by the postscript “F” (i.e. the compulsory Year 1 module BIO123 and the elective Year 2 and 3 modules BIO291, BIO293, BIO391 and BIO395) entail residential fieldcourses of between 4 consecutive nights and 2 weeks in duration.

The credit value of each module is denoted in parentheses. In each academic year, you must study 120 credits (such that you study a total of 360 credits over the course of your 3 year BSc). We recommended that where elective modules are available, you should select a total of 60 credits to study in Semester A and a total of 60 credits in Semester B. If you wish to study more credits in one or other Semester, you should discuss this with your Academic Advisor and then with the Director of Teaching and Learning for Biological Sciences, Dr Hone, before making your pre-selection. You may not enrol for more than 75 credits in any given semester.

To assist your choice of electives most appropriate to your interests and career aspirations, we want you to have every opportunity to research the elective modules available to you prior to module pre-selection (which happens in the month of May). We will provide you with published information that outline the module content and in Semester B, we also organise a “Module Fair” at which you can meet with Module Organisers and senior students who have studied each module to ask any questions about elective modules that you might wish to take in the next academic year.

Please note that some elective modules have to operate caps on the maximum number of students that the module can accommodate, e.g. field-based modules where a finite number of students can be accommodated in the field station. In this case, acceptance on to a module with capped numbers may be contingent on your academic performance prior to the point of module selection (typically your Year 1 academic performance).

The modules listed in the programme outlines which follow are indicative only. Every effort will be made to run all of the modules advertised in these degree programme outlines. However, to offer you the best educational experience while at QMUL, in any one year, a module advertised on the following pages may not be offered if:

- (a) the numbers of students eligible to select a particular module (either too many or too few) would provide you with a compromised student experience;
- (b) academic staff with the requisite experience are unavailable to teach a module (e.g. through ill health, injury or retirement)

Likewise, dependent on staff availability and appropriate quality assurance, we may be able to add new modules to subsequent years of your degree programme and improve even further your choice of elective modules.

C100 Biology Aims and Structure

The Biology BSc programme aims to provide students with an understanding of the living world across a wide range of levels of biological organisation, from molecules to ecosystems. In later years, you will be able to choose to specialise in particular fields within biology or to take a more integrated approach to your degree by covering a broad range of modules (subject to timetabling constraints). You will receive instruction in key biological concepts, the theories that underpin these concepts and the applications of biological knowledge to important problems facing the world today (e.g., emerging human diseases and climate change). In addition to developing key biological skills, you will also develop essential transferable skills that will further strengthen your future career prospects.

C100 Biology learning outcomes

This table summarises what we call the *learning outcomes* from your degree: what we think someone who has graduated from this programme should have learnt.

Academic Content	<p>On successful completion of your BSc programme, you will have studied:</p> <ol style="list-style-type: none">1. Biology as a whole, with the possibility to specialise on particular areas (e.g. whole organism biology as opposed to more biochemical, molecular or microbial aspects) or to take a more holistic overview of the discipline by integrating across a wide range of fields.2. How biological systems operate over a range of levels of organisation, from molecules to ecosystems.3. The importance of variation in biology (e.g. genetic diversity within humans; biodiversity and species richness in ecosystems) and how to deal with it (e.g. via data handling and use of statistical techniques).4. The dynamics and structure of biological systems (e.g. protein structure; enzyme kinetics; population dynamics).5. Cause-and-effect relationships and the role of experiments in testing (and developing) biological theories. Students should develop knowledge of the general scientific process, and how it is applied to biological systems in particular.6. How biological systems respond to perturbations (e.g. infections of pathogens; climate change in ecosystems) and to recognise the symptoms of those responses (e.g. disease in humans; global species loss).
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<p>Disciplinary Skills</p>	<p>On successful completion of your BSc programme, you will be able to:</p> <ol style="list-style-type: none"> 1. Reason critically. 2. Identify and formulate problems. 3. Apply biological knowledge and principles, in combination with problem-solving skills, in a wide range of theoretical and practical situations. 4. Use advanced theories and concepts to explain/rationalize biological phenomena, and to investigate unfamiliar problems. 5. Conduct practical work efficiently and with due regard for safety. 6. Use a wide range of laboratory and analytical equipment, as well as computational tools and packages. 7. Analyse and evaluate/interpret the results of controlled experiments. 8. Retrieve, filter and collate biological data from a variety of information sources. 9. Prepare scientific/technical reports. 10. Plan, undertake and report a bibliographically-based piece of research.
<p>Attributes</p>	<p>On successful completion of your BSc programme, you will be able to:</p> <ol style="list-style-type: none"> 1. Communicate effectively by written and/or verbal means. 2. Capacity for independent learning, and to work independently. 3. Able to participate constructively as a member of a group/team, with skills to influence, negotiate and lead. 4. Assess the relevance, importance and reliability of the ideas of others and different sources of information. 5. Competent in the use of computer-based technology, including the manipulation and analysis of quantitative data. 6. Awareness of the role and impact of science in society, including the global perspective. 7. Use information for evidence-based decision-making and creative thinking.

Structure of the Biology Programme

Bold text indicates a compulsory module: all others are elective.

	SEMESTER A	SEMESTER B
Year 1	BIO100 Essential Skills for Biologists (10) BIO111 Cell Biology (15) BIO113 Evolution (15) BIO163 Molecular Genetics (15) BIO190 Practical Molecular & Cellular Biology (10)	BIO100 Essential Skills for Biologists (10) BIO123 Ecology (15) F BIO125 Physiology (15) BIO161 Basic Biochemistry (15) BIO192 Practical Biology (10)
Year 2	BIO211 Animal & Plant Diversity (15) BIO213 Cell Biology & Developmental Genetics (15) BIO215 Comparative & Integrative Physiology (15) BIO221 Evolutionary Genetics (15) BIO223 Genes & Bioinformatics (15) BIO269 Techniques for Biological & Chemical Sciences (15) BIO291 Marine & Animal Diversity (15) F*	BIO209 Research Methods & Communication I (15) BIO231 Microbial Physiology & Growth (15) BIO241 Transmission Genetics (15) BIO263 Membrane & Cellular Biochemistry (15) BIO265 Metabolic Pathways (15) BIO293 Ecological Interactions (15) F
Year 3	BIO309 Research Methods & Communication II (15) BIO311 Behavioural Ecology (15) BIO323 Human Genetics & Genomics (15) BIO325 Population & Chromosome Genetics (15) BIO391 Savannah Ecology & Conservation (15) F* BIO395 Species: Dinosaurs to DNA (15) F*	BIO327 Functional Genomics & Epigenetics (15) BIO331 Mammals & Evolution (15) BIO333 Neuroscience: From Molecules to Behaviour (15) BIO335 Parasites & Infectious Diseases (15) BIO337 Reproductive & Developmental Biology (15) BIO343 Climate Change & Conservation Challenges (15)
	BIO600 Biological Sciences Research Project (30) OR BIO603 Project Skills in the Life Sciences (30)	

F Denotes a module with a field course, **F*** Denotes a field-based module which runs in August/September before the start of semester A.

Year 1: All Year 1 modules are compulsory to ensure that all students on the degree programme have the requisite understanding to prepare them for Years 2 and 3 of the degree programme. Note that BIO100 runs over Semester A and B and is worth 10 credits in total, not 10 in each semester.

Year 2: There is only 1 compulsory, 15 credit Year 2 module: BIO209 (Research Methods and Communication I), leaving you with a choice of 7 elective modules from a choice of 12.

Year 3: There is only 1 compulsory, 15 credit Year 3 module: BIO309 (Research Methods and Communication II). In addition, you must select one of the two 30 credit modules: either BIO600 (Biological Sciences Research Project) or BIO603 (Project Skills in the Life Sciences). In order to have a free choice between these two 30 credit options, you will need to perform well in Year 1 of your degree, typically scoring in excess of 65% (if not 70%) in each of your Year 1 modules. If you are not above the 70th percentile for Year 1 average marks, you will have to study BIO603 in Year 3. This leaves you with a choice of 5 elective modules (75 credits) from 13 potential electives.

What modules should I take in the second and third years of my biology degree?

One of the great strengths of our biology degree is the variety of modules available, but this is also something that can cause a degree of choice overload. To help you plan your path we have produced four suggestions for different routes that you could take, depending on your personal interests. These are entirely optional and there is nothing wrong with mixing and matching a bit, or if you wish following your own path completely: these are suggestions that are there to help and that's all.

Cell biology and physiology

This gives you training in what you might think of as “traditional” biology, with an emphasis on the processes occurring within the organism. In year 2 you'll learn about cell biology from the scale of the individual protein upwards, plus physiology and developmental processes and metabolism. In third year you can choose to specialise more in molecular biology or you can focus more on physiology and you can also choose to take an in-depth module on the new science of genomics. This provides good training for biologists who are interested in biology from a medical or veterinary viewpoint, or in biotechnology, or who just want to know what makes animals and people work the way they do.

Year 2		Year 3	
Semester A	Semester B	Both semesters: Research project or project skills in the life sciences	
BIO213 Cell biology and developmental genetics	BIO209 Research methods and communication	Semester A	Semester B
BIO223 Genes and bioinformatics	BIO265 Metabolic pathways	BIO309 Research methods and communication II	
BIO269 Techniques for biological and chemical sciences	BIO231 Microbial physiology and growth	<i>5 from the following 7:</i>	
BIO215 Comparative and integrative physiology	BIO263 Membrane and cellular biochemistry	BMD311 Endocrine physiology and biochemistry	BIO335 Parasites and infectious disease
		BIO 361 Membrane proteins	BIO333 Neuroscience: from molecules to behaviour
		BIO363 Molecular basis of disease	BIO337 Reproductive and developmental biology

Molecular genetics and genomics

If you follow this path you will learn a lot of molecular and cell biology and physiology, but you'll also gain a strong focus on the science of heredity: genetics from the molecular to the population level, and genomics and epigenetics. You'll have the option in third year to learn more about neuroscience, or to increase your knowledge of physiology and development or of the molecular processes that underlie all of life. This programme is suitable for those with an interest in biomedical or veterinary genetics and for those who are interested in applying genetic and genomic science to cellular and physiological processes in other areas.

Year 2		Year 3	
Semester A	Semester B	Both semesters: Research project or project skills in the life sciences	
BIO213 Cell biology and developmental genetics	BIO209 Research methods and communication	Semester A	Semester B
BIO223 Genes and bioinformatics	BIO241 Transmission genetics	BIO309 Research methods and communication II	
BIO221 Evolutionary genetics	BIO265 Metabolic pathways	BIO325 Population and chromosome genetics	BIO327 Functional genomics and epigenetics
BIO215 Comparative and integrative physiology	BIO263 Membrane and cellular biochemistry	<i>3 from the following 5:</i>	
		BMD311 Endocrine physiology and biochemistry	BIO333 Neuroscience: from molecules to behaviour
		BIO 361 Membrane proteins	BIO337 Reproductive and developmental biology
		BIO363 Molecular basis of disease	

Evolutionary and ecological genetics and genomics

The biology department at QMUL has particularly strong expertise in evolutionary and ecological genetics, and we have a considerable amount of world-leading research in the application of genomics to evolutionary and ecological questions. This leads us to this unusual but potentially very rewarding path which blends whole-organism and population scale processes with genetics and genomics. If you're interested in the genetics of whole populations, or you're interested in evolutionary biology or ecology and you want to know how these sciences are being transformed by genomics then you should consider these options.

Year 2		Year 3	
Semester A	Semester B	Both semesters: Research project or project skills in the life sciences	
BIO213 Cell biology and developmental genetics	BIO209 Research methods and communication	Semester A	Semester B
BIO223 Genes and bioinformatics	BIO241 Transmission genetics	BIO309 Research methods and communication II	
BIO221 Evolutionary genetics	BIO234 Ecological interactions I	BIO325 Population and chromosome genetics	BIO327 Functional genomics and epigenetics
BIO211 Animal and plant diversity	BIO294 Ecological interactions II	<i>3 from the following 7:</i>	
		BIO311 Behavioural ecology	BIO335 Parasites and infectious disease
		BIO397 Species: dinosaurs to DNA	BIO331 Mammals and evolution
		BIO392 Savannah ecology and conservation	BIO337 Reproductive and developmental biology
			BIO343 Climate change and conservation challenges

Ecology and Conservation

This path is designed for those who are interested in biology at the scale of the organism, population or community. If you're interested in how ecosystems fit together, how evolution shapes animal behaviour or how we can understand and plan for the impacts of habitat loss and climate change then you should consider these options.

Year 2		Year 3	
Semester A	Semester B	Both semesters: Research project or project skills in the life sciences	
BIO223 Genes and bioinformatics	BIO209 Research methods and communication	Semester A	Semester B
BIO221 Evolutionary genetics	BIO234 Ecological interactions I	BIO309 Research methods and communication II	
BIO211 Animal and plant diversity	BIO294 Ecological interactions II	BIO311 Behavioural ecology	BIO331 Mammals and evolution
BIO215 Comparative and integrative physiology		BIO392 Savannah ecology and conservation	BIO343 Climate change and conservation challenges
BIO291 Marine and animal diversity		<i>1 from the following 5:</i>	
		BIO325 Population and chromosome genetics	BIO335 Parasites and infectious disease
		BIO397 Species: dinosaurs to DNA	BIO337 Reproductive and developmental biology
			BIO333: Neuroscience: from molecules to behaviour

C400 Genetics Aims and Structure

The Genetics BSc programme aims to provide a general foundation in biological sciences with a significant and balanced input of genetics training. Compulsory modules will direct you towards understanding of genetics in cell biology and development, evolutionary processes, speciation and genomics. It will also provide an environment to develop transferable skills in public speaking, verbal reasoning, report writing and database mining. The genetics programme has considerable flexibility, although not as much as the biology programme, in order to allow specialisation in ecological or evolutionary genetics as well as “classical” genetics or genomics. While we don’t think we need to give entire suggested streams as we do for the biology programme we do give some suggestions below for modules that might fit with particular interests.

C400 Genetics learning outcomes

This table summarises what we call the learning outcomes from your degree: what we think someone who has graduated from this programme should have learnt.

Academic Content	<p>On successful completion of your BSc programme, you will have studied:</p> <ol style="list-style-type: none">1. Key concepts in genetics, development and evolution.2. Evolutionary theory and how this is applied to the speciation, biosystematics and development.3. How an understanding of evolution can be derived from studies of interaction between populations, species and communities.4. Understanding of evolutionary genetics from the molecular perspective, derived from the disciplines of classical, chromosomal, population and molecular genetics.
Disciplinary Skills	<p>On successful completion of your BSc programme, you will be able to:</p> <ol style="list-style-type: none">1. Reason critically.2. Identify and formulate problems.3. Apply biological and genetics knowledge and principles, in combination with problem-solving skills, in a wide range of theoretical and practical situations.4. Use advanced theories and concepts to explain/rationalize phenomena in genetics, and to investigate unfamiliar problems.5. Conduct practical work efficiently and with due regard for safety.6. Use a wide range of laboratory and analytical equipment, as well as computational tools and packages.7. Analyse and evaluate/interpret the results of controlled experiments.

	<ol style="list-style-type: none"> 8. Retrieve, filter and collate biological data from a variety of information sources. 9. Prepare scientific/technical reports. 10. Plan, undertake and report a bibliographically-based piece of research.
Attributes	<p>On successful completion of your BSc programme, you will be able to:</p> <ol style="list-style-type: none"> 1. Communicate effectively by written and/or verbal means. 2. Capacity for independent learning, and to work independently. 3. Able to participate constructively as a member of a group/team, with skills to influence, negotiate and lead. 4. Assess the relevance, importance and reliability of the ideas of others and different sources of information. 5. Competent in the use of computer-based technology, including the manipulation and analysis of quantitative data. 6. Awareness of the role and impact of science in society, including the global perspective. 7. Use information for evidence-based decision-making and creative thinking.

Structure of the Genetics programme

Bold text indicates a compulsory module: all others are elective.

	SEMESTER A	SEMESTER B
Year 1	BIO100 Essential Skills for Biologists (10) BIO111 Cell Biology (15) BIO113 Evolution (15) BIO163 Molecular Genetics (15) BIO190 Practical Molecular & Cellular Biology (15)	BIO100 Essential Skills for Biologists (10) BIO123 Ecology (15) F BIO125 Physiology (15) BIO161 Basic Biochemistry (15) BIO192 Practical Biology (15)
Year 2	BIO221 Evolutionary Genetics (15) BIO223 Genes & Bioinformatics (15) BIO211 Animal & Plant Diversity (15) BIO213 Cell Biology & Developmental Genetics (15) BIO215 Comparative & Integrative Physiology (15) BIO227 Human Genetic Disorders (15) BIO291 Marine & Animal Diversity (15) F*	BIO209 Research Methods & Communication I (15) BIO241 Transmission Genetics (15) BIO231 Microbial Physiology & Growth (15) BIO263 Membrane & Cellular Biochemistry (15) BIO265 Metabolic Pathways (15) BIO293 Ecological Interactions (15) F
Year 3	BIO309 Research Methods & Communication II (15) BIO325 Population & Chromosome Genetics (15) BIO311 Behavioural Ecology (15) BIO323 Human Genetics & Genomics (15) BIO361 Membrane Proteins (15) BIO391 Savannah Ecology & Conservation (15) F* BIO395 Species & Their Relationships: Dinosaurs to DNA (15) F*	BIO327 Functional Genomics & Epigenetics (15) BIO331 Mammals & Evolution (15) BIO333 Neuroscience: From Molecules to Behaviour (15) BIO335 Parasites & Infectious Diseases (15) BIO337 Reproductive & Developmental Biology (15) BIO341 Environmental Microbiology (15) BIO365 Enzyme Catalysis (15)
	BIO600 Biological Sciences Research Project (30) OR BIO603 Project Skills in the Life Sciences (30)	

F Denotes a module with a field course, F* Denotes a field-based module which runs in August/September before the start of semester A.

Year 1: All Year 1 modules are compulsory to ensure that all students on the degree programme have the requisite understanding to prepare them for Years 2 and 3 of the degree programme. Note that BIO100 runs over Semester A and B and is worth 10 credits in total, not 10 in each semester.

Year 2: There are **4 compulsory**, 15 credit Year 2 modules: **BIO209** (Research Methods and Communication I), **BIO221** (Evolutionary Genetics), **BIO223** (Genes & Bioinformatics) and **BIO241** (Transmission Genetics). This will leave you with a choice of **4 elective** modules (60 credits) from 9 potential electives. While you can select various combinations from the modules listed above, the following combinations of Year 2 modules are suggested if you have an interest in a specific aspect of genetics:

Aspect of Genetics	Semester A	Semester B
Cellular & molecular genetics	BIO213, BIO269	BIO209, <i>BIO231</i> , <i>BIO263</i> , <i>BIO265</i>
Whole organism genetics	BIO211, BIO215	BIO209, <i>BIO231</i>
Ecological genetics	BIO211, BIO291	BIO209, <i>BIO293</i>
Evolutionary genetics	BIO213, BIO221, BIO223	BIO209, <i>BIO241</i>

Year 3: There are **3 compulsory**, 15 credit Year 3 modules: **BIO309** (Research Methods and Communication II), **BIO325** (Population & Chromosome Genetics) and **BIO327** (Functional Genomics & Epigenetics). In addition, you must select one of the two 30 credit modules: **either BIO600** (Biological Sciences Research Project) **or BIO603** (Project Skills in the Life Sciences). In order to have a free choice between these two 30 credit options, you will need to perform well in Year 1 of your degree, typically scoring in excess of 65% (if not 70%) in each of your Year 1 modules. If you are not above the 70th centile for Year 1 average marks, you will have to study BIO603 in Year 3. This leaves you with a choice of **3 elective** modules (45 credits) from 12 potential electives. While you can select various combinations from the modules listed above, the following module combinations are suggested if you have an interest in a specific aspect of genetics:

Aspect of Genetics	Semester A	Semester B
Cellular & molecular genetics	BIO309, <i>BIO361</i> , BIO600 or BIO603	<i>BIO327, BIO333, BIO335,</i> <i>BIO341, BIO365</i>
Whole organism genetics	BIO309, <i>BIO311, BIO391</i> , BIO600 or BIO603	<i>BIO331, BIO333, BIO335,</i> <i>BIO337, BIO341</i>
Ecological genetics	BIO309, <i>BIO311, BIO391</i> , BIO600 or BIO603	<i>BIO327, BIO331, BIO341</i>
Evolutionary genetics	BIO309, <i>BIO321, BIO323,</i> <i>BIO325, BIO395,</i> BIO600 or BIO603	<i>BIO327, BIO331</i>

C431 Medical Genetics Aims and Structure

The Medical Genetics BSc programme aims to provide a general foundation in biological sciences with a significant and balanced input of medical genetics training. Compulsory modules will direct you towards the genetics and ecology of human disease. This programme will provide an environment to develop transferable skills in public speaking, verbal reasoning, report writing and database mining.

C431 Medical Genetics learning outcomes

This table summarises what we call the *learning outcomes* from your degree: what we think someone who has graduated from this programme should have learnt.

Academic Content	On successful completion of your BSc programme, you will have studied: <ol style="list-style-type: none">1. Key concepts in genetics and genetic diseases.2. Evolutionary theory and how this is applied to the study and management of disease.3. How the molecular perspective understanding in medical genetics is derived from the disciplines of classical, chromosomal, population and molecular genetics.4. How evolutionary understanding is derived from studies from interaction between human populations, viruses and sexually transmitted diseases.
Disciplinary Skills	On successful completion of your BSc programme, you will be able to: <ol style="list-style-type: none">1. Reason critically.2. Identify and formulate problems.3. Apply biological and genetics knowledge and principles, in combination with problem-solving skills, in a wide range of theoretical and practical situations.4. Use advanced theories and concepts to explain/rationalize phenomena in medical genetics, and to investigate unfamiliar problems.5. Conduct practical work efficiently and with due regard for safety.6. Use a wide range of laboratory and analytical equipment, as well as computational tools and packages.7. Analyse and evaluate/interpret the results of controlled experiments.8. Retrieve, filter and collate biological data from a variety of information sources.

	<p>9. Prepare scientific/technical reports.</p> <p>10. Plan, undertake and report a bibliographically-based piece of research.</p>
<p>Attributes</p>	<p>On successful completion of your BSc programme, you will be able to:</p> <ol style="list-style-type: none"> 1. Communicate effectively by written and/or verbal means. 2. Capacity for independent learning, and to work independently. 3. Able to participate constructively as a member of a group/team, with skills to influence, negotiate and lead. 4. Assess the relevance, importance and reliability of the ideas of others and different sources of information. 5. Competent in the use of computer-based technology, including the manipulation and analysis of quantitative data. 6. Awareness of the role and impact of science in society, including the global perspective. 7. Use information for evidence-based decision-making and creative thinking.

Structure of the Medical Genetics programme

Bold text indicates a compulsory module: all others are elective.

	SEMESTER B	SEMESTER B
Year 1	BIO100 Essential Skills for Biologists (10) BIO111 Cell Biology (15) BIO113 Evolution (15) BIO163 Molecular Genetics (15) BIO191 Practical Molecular & Cellular Biology (15)	BIO100 Essential Skills for Biologists (10) BMD181 Tissue Biology (15) BIO125 Physiology (15) BIO161 Basic Biochemistry (15) BIO193 Practical Biology (15)
Year 2	BIO221 Evolutionary Genetics (15) BIO227 Human Genetic Disorders (15) BIO213 Cell Biology & Developmental Genetics (15) BIO215 Comparative & Integrative Physiology (15) BMD211 Human Molecular Biology (15)	BIO209 Research Methods & Communication I (15) BIO241 Transmission Genetics (15) BIO231 Microbial Physiology & Growth (15) BIO265 Metabolic Pathways (15) BMD251 Basic Immunology (15)
Year 3	BIO309 Research Methods & Communication II (15) BIO323 Human Genetics & Genomics (15) BIO325 Population & Chromosome Genetics (15) BIO361 Membrane Proteins (15) BIO363 Molecular Basis of Disease (15) BMD311 Endocrine Physiology & Biochemistry (15)	BIO327 Functional Genomics & Epigenetics (15) BIO333 Neuroscience: From Molecules to Behaviour (15) BIO335 Parasites & Infectious Diseases (15) BIO337 Reproductive & Developmental Biology (15) BMD351 Advanced Immunology (15) BMD381 Cancer Biology (15) BMD383 Molecular Basis of Personalised Medicine (15)
	BIO600 Biological Sciences Research Project (30) OR BIO603 Project Skills in the Life Sciences (30)	

Year 1: All Year 1 modules are compulsory to ensure that all students on the degree programme have the requisite understanding to prepare them for Years 2 and 3 of the degree programme. Note that BIO100 runs over Semester A and B and is worth 10 credits in total, not 10 in each semester.

Year 2: There are **4 compulsory**, 15 credit Year 2 modules: **BIO209** (Research Methods and Communication I), **BIO221** (Evolutionary Genetics), **BIO227** (Human Genetics Disorders) and **BIO241** (Transmission Genetics). This will leave you with a choice of 4 elective modules (60 credits) from 6 potential electives. (There are no specific, recommended modules for Year 2 on the Medical Genetics degree; all 6 potential electives are equally relevant.)

Year 3: There are **4 compulsory**, 15 credit Year 3 modules: **BIO309** (Research Methods and Communication II), **BIO323** (Human Genetics & Genomics), **BIO325** (Population & Chromosome Genetics) and **BIO327** (Functional Genomics & Epigenetics). In addition, you must select one of the two 30 credit modules: **either BIO600** (Biological Sciences Research Project) or **BIO603** (Project Skills in the Life Sciences). In order to have a free choice between these two 30 credit options, you will need to perform well in Year 1 of your degree, typically scoring in excess of 65% (if not 70%) in each of your Year 1 modules. If you are not above the 70th centile for Year 1 average marks, you will have to study BIO603 in Year 3. This leaves you with a choice of **2 elective** modules (30 credits) from 9 potential electives. Of the elective modules listed on the previous page, the two with the most direct relevance to medical (human) genetics are BIO363 and BMD383.

C300 Zoology Aims and Structure

The Zoology BSc programme aims to provide students with an understanding of the phylogeny, morphology, physiology, behaviour and ecology of animals, exploiting the specialist expertise of SBCS staff who study mammals, birds, fish and a variety of invertebrates.

C300 Zoology learning outcomes

This table summarises what we call the learning outcomes from your degree: what we think someone who has graduated from this programme should have learnt.

Academic Content	<p>On successful completion of your BSc programme, you will have studied:</p> <ol style="list-style-type: none">1. Animal development, morphology and physiology.2. How evolutionary theory and comparative genomics provide frameworks for understanding animal diversity, behaviour and ecology.3. The neural mechanisms that underlie sensation and behaviour in animals and an understanding of the adaptive significance of animal behaviour.4. Current thinking and controversies on animal phylogenetic relationships and understanding of how biological data is used to investigate animal phylogeny.
Disciplinary Skills	<p>On successful completion of your BSc programme, you will be able to:</p> <ol style="list-style-type: none">1. Reason critically.2. Identify and formulate problems.3. Apply zoological knowledge and principles, in combination with problem-solving skills, in a wide range of theoretical and practical situations.4. Use advanced theories and concepts to explain/rationalize zoological phenomena, and to investigate unfamiliar problems.5. Propose plausible schemes for zoological synthesis (subject to areas of specialisation)6. Conduct practical work efficiently and with due regard for safety.7. Use a wide range of laboratory and analytical equipment, as well as computational tools and packages.8. Analyse and evaluate/interpret the results of controlled experiments.9. Retrieve, filter and collate biological data from a variety of information sources.10. Prepare scientific/technical reports.11. Plan, undertake and report a bibliographically-based piece of research.

Attributes

On successful completion of your BSc programme, you will be able to:

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

Structure of the Zoology programme

Bold text indicates a compulsory module: all others are elective.

	SEMESTER A	SEMESTER B
Year 1	BIO100 Essential Skills for Biologists (10) BIO111 Cell Biology (15) BIO113 Evolution (15) BIO163 Molecular Genetics (15) BIO191 Practical Molecular & Cellular Biology (15)	BIO100 Essential Skills for Biologists (10) BIO123 Ecology (15) F BIO125 Physiology (15) BIO161 Basic Biochemistry (15) BIO193 Practical Biology (15)
Year 2	BIO211 Animal & Plant Diversity (15) BIO215 Comparative & Integrative Physiology (15) BIO213 Cell Biology & Developmental Genetics (15) BIO221 Evolutionary Genetics (15) BIO223 Genes & Bioinformatics (15) BIO291 Marine & Animal Diversity (15) F*	BIO209 Research Methods & Communication I (15) BIO231 Microbial Physiology & Growth (15) BIO241 Transmission Genetics (15) BIO293 Ecological Interactions (15) F
Year 3	BIO309 Research Methods & Communication II (15) BIO311 Behavioural Ecology (15) BIO323 Human Genetics & Genomics (15) BIO325 Population & Chromosome Genetics (15) BIO391 Savannah Ecology & Conservation (15) F* BIO395 Species: Dinosaurs to DNA (15) F* PSY315 Animal Behaviour & Cognition (15)	BIO327 Functional Genomics & Epigenetics (15) BIO331 Mammals & Evolution (15) BIO333 Neuroscience: From Molecules to Behaviour (15) BIO335 Parasites & Infectious Diseases (15) BIO337 Reproductive & Developmental Biology (15) BIO343 Climate Change & Conservation Challenges (15)
	BIO600 Biological Sciences Research Project (30) OR BIO603 Project Skills in the Life Sciences (30)	

F Denotes a module with a field course, F* Denotes a field-based module which runs in August/September before the start of semester A.

Year 1: All Year 1 modules are compulsory to ensure that all students on the degree programme have the requisite understanding to prepare them for Years 2 and 3 of the degree programme. Note that BIO100 runs over Semester A and B and is worth 10 credits in total, not 10 in each semester.

Year 2: There are **3 compulsory**, 15 credit Year 2 modules: **BIO209** (Research Methods and Communication I), **BIO211** (Animal & Plant Diversity) and **BIO215** (Comparative & Integrative Physiology). This will leave you with a choice of **5 elective** modules (75 credits) from 7 potential electives. While you can select various combinations from the modules listed above, the following combinations of Year 2 modules are suggested if you have an interest in a specific aspect of zoology:

Aspect of Zoology	Semester A	Semester B
Cellular & molecular biology	<i>BIO213</i>	BIO209, <i>BIO231</i>
Whole organism biology	BIO211, BIO215	BIO209, <i>BIO231</i>
Ecology / ecosystems	BIO211, <i>BIO291</i>	BIO209, <i>BIO293</i>
Genes / evolution	<i>BIO213, BIO221, BIO223</i>	BIO209, <i>BIO241</i>

Year 3: There is **only 1 compulsory**, 15 credit Year 3 module: **BIO309** (Research Methods and Communication II). In addition, you must select one of the two 30 credit modules: **either BIO600** (Biological Sciences Research Project) **or BIO603** (Project Skills in the Life Sciences). In order to have a free choice between these two 30 credit options, you will need to perform well in Year 1 of your degree, typically scoring in excess of 65% (if not 70%) in each of your Year 1 modules. If you are not above the 70th centile for Year 1 average marks, you will have to study BIO603 in Year 3. This leaves you with a choice of **5 elective** modules (75 credits) from 14 potential electives. While you can select various combinations from the modules listed on the previous page, the following combinations of Year 3 modules are **recommended** if you have an interest in a specific aspect of zoology:

Aspect of Zoology	Semester A	Semester B
Cellular & molecular biology	BIO309, BIO600 <i>or</i> BIO603	<i>BIO327, BIO333, BIO335, BIO341</i>
Whole organism biology	BIO309, <i>BIO311, BIO391,</i> <i>PSY315,</i> BIO600 <i>or</i> BIO603	<i>BIO331, BIO333, BIO335, BIO337, BIO341</i>
Ecology / ecosystems	BIO309, <i>BIO311, BIO391,</i> BIO600 <i>or</i> BIO603	<i>BIO327, BIO331, BIO341, BIO343</i>
Genes / evolution	BIO309, <i>BIO321, BIO323,</i> <i>BIO325, BIO395,</i> BIO600 <i>or</i> BIO603	<i>BIO327, BIO331, BIO343</i>

Learning and assessment

How Will You Learn?

You will acquire knowledge and develop your understanding mainly through lectures and directed independent study. Your understanding will be reinforced through a combination of tutorial workshops, problem classes and laboratory classes (depending upon the modules which you study), including regular feedback on submitted work. Students taking Biology, Genetics or Zoology will have the opportunity to take part in a variety of field-taught modules as well. Additional learning support is provided through Queen Mary's online learning environment, QMplus, and the facilities of the QMUL Student PC Service.

Each practical class is likely to be repeated two or more times in the same week. You will be allocated (randomly) to a specific practical group to attend the practical class on a given date/time. If you are unable to attend on the assigned date/time (e.g., if you are allocated to a Wednesday afternoon, but have sports commitments, or if you are allocated to a Friday afternoon but need to attend jumah or to get home before shabbat), you are required to (a) negotiate a swap with a fellow student from a different group and then (b) email the Module Organiser with details of that swap (confirming who you will be swapping with). If you are unable to negotiate a swap for an assessed practical class, you may be able to submit a claim for extenuating circumstances provided the reason for non-attendance is (i) unforeseeable and (ii) beyond your control, and you can provide documentary evidence to support your application.

What Is “Independent Study”?

For every hour of contact with academic staff, you will be expected to devote between **3 - 5 hours** to independent study. This may include staff-directed exercises (e.g. completion of coursework assignments) or self-directed independent study. There are various forms of independent study which include:

- preparation (in advance of a lecture/tutorial/practical class)
- consolidation of material introduced by the lecturer/tutor (e.g. writing up your lecture notes)
- elaboration / extension (e.g. reading around the topic after the lecture)
- application (i.e. reinforcing your understanding of a topic by applying any principles introduced in a lecture/tutorial/practical class to a new scenario)

You might be expecting to prepare and consolidate, since these activities most closely resemble the “homework” for Secondary/Further Education. However, to succeed in your undergraduate degree at university, you will have to make time to elaborate/extend and apply new knowledge in order to develop the depth of understanding required if you are to be recommended for first or upper second class honours.

How Will You Be Assessed?

For each module that comprises your biological science degree, your knowledge and understanding will generally be tested through a combination of assessed coursework and unseen written examinations. For the *majority* of modules, the coursework to exam weighting will be as follows:

	Coursework	Exam
Year 1	25%	75%
Year 2	25%	75%
Year 3	20%	80%

For some modules (e.g. field-based modules), a higher proportion of marks will be derived from the coursework, and there are some modules which are assessed entirely by coursework and in-class assessments and with no written exam. Please check the module details on QMPlus to confirm the exact coursework:exam weighting for each module.

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.

The weighting of marks available for a given component should be reflected in the amount of time that you will need to commit to working on each element. For example, where 25% of the module marks are available for coursework, you should expect to devote 25% of 150 hours (i.e. approximately 37 hours) to completing the coursework elements to the best of your ability. The remaining 75% of 150 hours (i.e. approximately 113 hours) should be devoted to attending lectures/tutorials and independent study to ensure you understand the module content well enough to achieve a high grade in the module exam. The default exam durations and structures also differ between years, as follows:

	Default exam duration	Number of sections	Section A	Section B	Section C
Year 1	1.5 hours	2	Multiple Choice Questions (50% of mark)	Short Answer Questions (choice of 1 from 2) (50% of mark)	N/A
Year 2	2 hours	3	Multiple Choice Questions (25% of mark)	Short Answer Questions (choice of 1 from 2) (25% of mark)	Essay (choice of 1 from 3) (50% of mark)
Year 3	3 hours	3	Multiple Choice Questions (33.3% of mark)	Essay (choice of 1 from 3) (33.3% of mark)	Essay (choice of 1 from 3) (33.3% of mark)

To progress beyond Year 1 of each BSc, you must pass at least 6 modules x 15 credits (i.e. 90 credits in total). To progress beyond Year 2, you must pass at least 195 credits cumulatively from Year 1 and 2 modules. To graduate

with a BSc degree, you must pass at least 315 credits across your 3 year BSc degree. (An alternative way of considering these criteria is that you can fail no more than 3 x 15 credit modules across 3 years.)

Feedback and Support

How Do We Listen And Act On Your Feedback?

You are strongly encouraged to provide informal feedback to Module Organisers and/or to the relevant Programme Director where you can see a way that your teaching could be significantly improved or you have cause for complaint. If you feel uncomfortable approaching a Module Organiser and/or Programme Director, you can also make any suggestions/raise any concerns by email to: sbcs-studentvoice@qmul.ac.uk. This email address is monitored daily by several colleagues so you can reasonably expect a response within 3 working days if you use the “student voice” email account.

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

The Teaching & Learning Committee (TLC) advises the School's Director of Taught Programmes (DTP), Dr Bray, 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 (TPB). 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 (APR) 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 National Student Survey (NSS), Queen Mary Student Survey (QMSS) and module evaluations.

Academic Support

You will be provided with a personal tutor, referred to as an **Academic Advisor**, who will serve as your main point of contact for advice regarding academic matters and for assistance with pastoral concerns, throughout your whole programme. SBCS no longer operates the system of “office hours” since all advisees may have very different patterns of availability dependent on their choice of elective modules. Instead you can schedule an appointment to meet with your Advisor via email. Moreover, if and when your Advisor is unavailable or cannot help with a specific problem, the School has several experienced Programme Tutors and a Student Support Officer plus Student Support Assistant who can address any concerns that you might have. (The DTP is always happy to schedule meetings with individual students and/or small groups of students, but only where they have not been able to resolve issues with their Academic Advisors/Programme Tutors or the Student Support Officer/Assistant).

SBCS also operates a [Peer Assisted Study Support \(PASS\) programme](#) for peer guidance.

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.

Advice And Counselling

Queen Mary has an Advice and Counselling Service (ACS), based in Geography Square, that offers support for all students at all stages of their degree studies. The full range of services offered by the ACS is detailed on their website (www.welfare.qmul.ac.uk). On this website, you will find a series of self-help and guidance booklets covering such diverse issues as adapting to life as a student at university through making a claim for extenuating circumstances to requesting an interruption of studies or withdrawing.

Supporting “The Student Transition” And Improving Your Preparation For Postgraduate Study And/Or Employment

Alongside studying compulsory and elective modules covering a range of biological and/or genetic topics, there will also be opportunities for your personal growth and to develop ‘graduate attributes’ alongside your BSc degree. To support your transition into and through Higher Education, colleagues in SBCS have devised online materials and exercises in the Personal & Professional Development (PPD) pages of QMPlus at: <https://qmplus.qmul.ac.uk/course/view.php?id=6200> <https://qmplus.qmul.ac.uk/course/view.php?id=6201>.

Change Of Programme

Due to the common content of the first year modules, up until the end of Year 1 (01 August 2019), you can request a Change of Programme (CoP) between Biology, Genetics & Zoology. Should you wish to request a change from Biology, Genetics or Zoology on to C431 Medical Genetics or from Medical Genetics on to Biology, Genetics or Zoology, your request would have to be received by 01 December 2019 since students enrolled on the Medical Genetics programme study different modules to students reading Biology, Genetics or Zoology in Semester B.

Should you wish to be considered for a Change of Programme, you will need to complete a CoP form, available from the SBCS reception. Before signing and submitting your form you should meet with your Academic Advisor or a relevant Programme Tutor to discuss the pros and cons of switching programmes. You should then return the completed and signed form to the SBCS reception to be considered and, if possible, approved by Dr Michael as the DTP. As soon as a decision has been reached, you will be emailed and advised of the outcome of your application by the SBCS SSO.

You may request a single CoP during your degree. In each academic year, there are four deadlines for requesting a CoP, these being:

- | | |
|-------------------------|--|
| 01 December 2019 | where there are implications for the Semester B modules required on the new programme; |
| 01 February 2020 | where you would like your CoP to be approved before entry to the exams; |
| 01 April 2020 | approval of the CoP will be considered at the June Exam Board meeting, contingent on passing the requisite number of credits; |
| 01 August 2020 | approval of the CoP will be considered at the September Exam Board meeting, contingent on passing the requisite number of credits. |

Approval will be contingent on (a) there being places available on the programme onto which you would like to transfer, and (b) meeting the admissions criteria for the new programme. (Although the admissions criteria are identical for Biology, Genetics and Zoology, you may require higher A level grades/an IB score to transfer on to C431 Medical Genetics.)

Further study and industrial links

Opportunities For Postgraduate Study In The School Of Biological & Chemical Sciences

On completion of your BSc degree, you might wish to embark on a postgraduate research degree to become a Doctor of Philosophy (PhD). Increasingly, competitive applicants for PhD opportunities have not only a high class honours degree (first or upper second class honours), but they will also have completed a postgraduate taught Master of Science (MSc) or Masters by Research (MRes) degree (commonly with a Merit or Distinction).

At the time of writing, SBSC offers the following biological MSc degrees which exploit the research expertise of staff in the Departments of Organismal Biology and of Cell & Molecular Biology:

- MSc Aquatic Ecology by Research (AER)
- MSc Bioinformatics
- MSc Ecology and Evolutionary Biology (EEB)
- MSc Ecology and Evolutionary Genomics (EEG)
- MSc Freshwater and Marine Ecology (EEB)
- MSc Plant & Fungal Taxonomy, Diversity & Conservation (run in association with the Royal Botanical Gardens at Kew)

If you wish to know more about any of the MSc programmes listed above, you can contact the Director for Teaching & Learning [Postgraduate], Dr Christoph Eizaguirre (c.eizaguirre@qmul.ac.uk).

Links With Employers, Placement Opportunities And Transferable Skills

The Biology and Zoology degrees provide the ideal training for graduates that want a near-medical career in the life sciences. Half of our graduates find work or further training in the life sciences including teaching, research or environmental monitoring and regulation, sales work and careers in the growing biotechnology industry. The remaining half move on to other jobs or further training but take transferable skills from a scientific education: numeracy, computer literacy, data handling and analysis, descriptive and critical writing, familiarity with biotechnology and scientific methods. Recent roles for Biology and Zoology graduates include laboratory technician, data analyst, public health officer, market researcher, NHS administrator, medical representative and environmental consultant.

Our Genetics and Medical Genetics graduates will be at the cutting edge of modern biology. Some will choose to enter frontline research through further training in Master's and PhD modules. Others may put their skills to work in consulting, biomedical publishing, or medical sales. The flourishing biotechnology industry, 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.

Under QMUL's [International Exchange Programme](#) ('Global Opportunities'), students on most BSc and MSc programmes may have the opportunity to 'study abroad' at one of QMUL's partner universities for a full year between Years 1 and 2 of their BSc degree. If you wish to take advantage of this opportunity, you would have to request a CoP onto Biology / Genetics / Medical Genetics / Zoology with a Year Abroad. While the year overseas would not count towards your S3 College Mark and hence to your BSc/MSc classification, any Year Abroad should

include relevant modules and you would need to meet the pass standards of the overseas university in order to graduate with the title “Biology / Genetics / Medical Genetics / Zoology with a Year Abroad”. As you will appreciate, positions on such international exchanges are subject to a successful application and are awarded on a competitive basis. (If you wish to apply to transfer on to a Year Abroad programme, in the first instance, you should discuss the pros and cons with your Academic Advisor and a Programme Tutor, as appropriate.) SBCS offers several degrees “with a Year Abroad” because we appreciate the opportunities that this can provide for personal and professional growth, and for the acquisition of transferable skills that will enrich your CV and bolster your prospects for a graduate career.