

**PROGRAMME HANDBOOK FOR
BIOLOGICAL SCIENCE BSc DEGREE PROGRAMMES
Academic Year 2023-24**



(1) WELCOME & OVERVIEW

Welcome to the School of Biological & Behavioural Sciences (SBBS), where you have the opportunity to embark on one of our three exciting Biological Science degree programmes: Biology (C100), Zoology (C300), or Medical Genetics (C431).

The Biology and Zoology BSc programmes (C100 & C300) aim to provide comprehensive training in the biology of animals, plants, and other life forms, spanning from micro-organisms to macro-organisms. These programmes offer great flexibility and allow you to explore biology or zoology at various levels of organization, ranging from molecular and cellular to organismal and environmental levels. You will receive foundational training in essential topics such as taxonomy, evolution, molecular genetics, and cellular biology. Moreover, you can tailor your studies to focus on either "molecular-physiological" or "ecological-whole organism" approaches to biology or zoology.

For those with an interest in medically-oriented genetics, the Medical Genetics BSc programme (C431) is designed to provide specialized training. Genetics plays a pivotal role in understanding human diseases and their study. This programme integrates knowledge from genetics, molecular biology, physiology, biochemistry, and population genetics, fostering interdisciplinary learning and research. By exploring fundamental yet targeted research in medicine, you will gain a deeper understanding of its value and significance.

All three biological science programmes prepare you for further studies at the postgraduate level (MSc and PhD) and careers that require expertise in biology, zoology, or medical genetics. During the first year, the modules for Biology and Zoology programmes share common content, enabling you to request a Change of Programme (CoP) between these two options until the end of Year 1 (see Section 14). If you wish to switch to Medical Genetics, please submit your request by 01 December 2023, as the Medical Genetics BSc follows a different module structure in Semester B, and the change is subject to availability.

As you embark on this journey, I hope you find this programme handbook to be a valuable resource. Over the next 3 years, I trust that you will find your undergraduate degree not only educational but also enjoyable. Embrace the opportunities for personal and professional development through the wide range of compulsory and elective modules, tapping into the expertise of our esteemed academic colleagues from the Departments of Biology, the Department of Biochemistry, and Bart's & the London School of Medicine & Dentistry.

The entire staff is here to support you throughout your degree and beyond, as you pursue your personal and career aspirations. We wish you the best of luck with your studies, and we look forward to celebrating your success as a QMUL alumnus.

Once again, welcome to QMUL, SBBS, and the Biology/Zoology/Medical Genetics BSc degree programme.



Dr Sally Faulkner FHEA

Senior Lecturer in Biological Sciences, Programme Director & Director of Teaching and Learning, Biological Sciences

September 2023

(2) KEY NAMES / CONTACTS

ROLE	NAME	EMAIL ADDRESS
Director of Teaching & Learning (DTL) & Programme Director [Biological Sciences]	Dr Sally Faulkner	s.c.faulkner@qmul.ac.uk
Programme Tutors	Dr Jayne Dennis & Paul Hurd (Medical Genetics) Dr Joanne Littlefair & Dr Chris Faulkes (Biology & Zoology)	jayne.dennis@qmul.ac.uk p.j.hurd@qmul.ac.uk j.e.littlefair@qmul.ac.uk c.g.faulkes@qmul.ac.uk
Student Support Officer	Ms Shaheda Batha	s.batha@qmul.ac.uk
Director of Education, SBBS	Dr Steven Buckingham	s.buckingham@qmul.ac.uk
SBBS Undergraduate enquiries	Administrative team	sbbs-ug-enquiries@qmul.ac.uk
Academic Advisor	During induction week you will be informed of your academic advisor and how to contact them.	

Specific questions about a module should first be directed to the **Module Organiser (MO)** who is the person in charge of the specific module. Your **Academic Advisor** is your first point of contact regarding questions about your progress, general academic issues and personal issues which may affect your ability to study.

The **Programme Tutor** is a member of academic staff who can support you on matters both academic and personal, after you have already gone to the MO or your advisor and if the issue remains. The Tutor's role is to try to advise you on how resolve the issue or guide you to the appropriate external resource (e.g., counselling service), if appropriate.

The **Student Support Officer** is a member of the professional administrative staff who is responsible for administering Extenuating Circumstances.

The **Programme Director** is the member of the academic staff responsible for the academic curriculum and overall development of the biomedical sciences programme and is available for discussing broader concerns/suggestions about modules or the programme as a whole.

The **SBBS Director of Education** is responsible for overseeing the academic programmes at the level of the school.

With administrative questions, please email **SBBS Undergraduate Enquiries**.

(3) PROGRAMME AIMS

The Biological sciences BSc programmes will provide you with a broad undergraduate theory and practical training in Biosciences.

In addition to the specific programme aims presented by degree programme over the page, all three 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.



In addition to these specific programme aims, the BSc degree also aims to develop graduates with attributes in line with the University’s values and relevant to the needs of employers, such as graduates who:

- communicate effectively in a range of formats and respect others and their opinions;
- identify clear personal study and career goals and apply a resilient approach to life;
- engage critically with knowledge, demonstrate creative problem solving, apply their expertise to broader contexts and are digitally fluent;
- participate inclusively in different roles as part of a
- team and collaborate with a diverse range of colleagues;
- act honestly, ethically and promote socially responsible behaviour for a sustainable future.

(3.1) BIOLOGY (C100)

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.

(3.2) MEDICAL GENETICS (C431)

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. To provide an environment to develop transferable skills in public speaking, verbal reasoning, report writing and database mining.

(3.3) ZOOLOGY (C300)

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 SBBS staff who study mammals, reptiles, fish and a variety of invertebrates.

Please turn to the next page for an outline of the learning outcomes for each of the four biological science degree programmes

(4) WHAT WILL YOU BE EXPECTED TO ACHIEVE?

(4.1) BIOLOGY (C100)

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 (<i>e.g.</i> 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. Appreciation of the importance of variation in biology (<i>e.g.</i> genetic diversity within humans; biodiversity and species richness in ecosystems) and how to deal with it (<i>e.g.</i> via data handling and use of statistical techniques). 4. The dynamics and structure of biological systems (<i>e.g.</i> 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 (<i>e.g.</i> infections of pathogens; climate change in ecosystems) and to recognise the symptoms of those responses (<i>e.g.</i> disease in humans; global species loss).
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 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.
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.

(4.2) MEDICAL GENETICS (C431)

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 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	<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 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. 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.

(4.3) ZOOLOGY (C300)

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	<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.

(5) HOW WILL YOU LEARN?

In 2023-24 we will be using the best of in-person and online education. This means that all modules will have some material available which you are expected to study at your own pace. There will be on campus teaching which you are expected to attend and this will enable you to apply your asynchronous learning. Our on campus sessions will include interactive large group sessions (you may often hear these referred to as “lectures” because that’s what we used to do in these weekly sessions), small group tutorials and lab practicals. All of these sessions are called “synchronous” because students are learning at the same time and with academic staff. Conversely, online material is often called “asynchronous learning” and may include reading textbooks, watching videos or engaging in learning tasks on your own or in groups. Additional learning support is provided through Queen Mary’s online learning environment, **QMplus**, and the facilities of the QMUL Student PC Service.

The **practical classes** run 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.

(6) WHAT IS “INDEPENDENT STUDY”?

For **every hour of contact** with academic staff, you will be expected to devote **between 3 and 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.

(7) 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 some modules (e.g. field-based modules), a higher proportion of marks will be derived from the coursework, and in some cases (e.g. the final year research projects), the module will be assessed by coursework only 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.

Transferable skills are developed in a contextual manner throughout the teaching and learning programme, and are indirectly assessed as part of the normal assessment processes for the programme. For example, the assessment of the projects includes consideration of data-retrieval skills, report-writing skills and presentational skills.

For each module you should be working for 150 hours in total, this includes lectures, practical's, independent study and assignments. The weighting of marks available for a given component should therefore 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.

QMUL will have two main exam periods. The first period, lasting two weeks, will take place in January and will assess modules completed in Semester A. The second exam period, predominantly in May, will last four weeks and will include exams for modules completed in Semester B and year-long modules. The exam timetable will be released to students in approximately week 10 of each semester. Answers to frequently asked questions about semester-based exams are available on the QMUL website: <http://www.arcs.qmul.ac.uk/students/exams/semester-based-exams/>

End of module assessments will be conducted online for most modules, according to a schedule released by QMUL. Further details about the assignments will be available on QMplus nearer to the assessment periods. The default online exam structures differ between years, as follows:

Year 1	25 MCQs
Year 2	One essay from a choice of two, 1000 words
Year 3	One essay from a choice of two, 1500 words

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 and not more than 2 in any given year.*)

The threshold for passing a module is a final module mark over 40%, derived from the exam and/or coursework in the specified ratio. If you fail a module, you have one resit opportunity. The resit is usually an exam which supersedes all previous assessment, including coursework assessments (*i.e.* only the resit exam mark is counted). Additionally, the resit mark is capped at 40% which means that if you score higher than 40% in the resit exam then your mark will be recorded as 40% only. Resit exams take place in the Late Summer Exam period, which is usually the first two weeks in August.

(8) ACADEMIC INTEGRITY

Academic honesty is a very important consideration in this course and in your university career. We take a zero-tolerance approach to any form of academic dishonesty and misconduct, including but not limited to plagiarism, collusion, cheating (*i.e.*, providing or receiving unauthorized assistance on assignments or exams), and impersonation. It is your responsibility to be aware of the rules and policies associated with academic dishonesty. The University's Academic Misconduct Policy and Regulations for Assessment Offence can be found on the QMUL website. At QMUL, any instance of academic dishonesty or negligence must be reported confidentially to the department's Plagiarism Officer, who follows procedures outlined by the university.

(9) QUALITY ASSURANCE OF MARKS

The quality assurance measures for assessments and their marking are conducted in accordance with regulations set by the Academic Registry and Council Secretariat (ARCS), which sets regulations for the entire University.

Coursework is usually marked by lecturers. If there is more than one person marking an assignment, then the marking is usually moderated by checking a sample of papers to make sure the marking has been done consistently across markers.

In preparing exams, a minimum of two staff members plus an expert external to the University will scrutinize each paper in an attempt to make questions as clear as possible as well as to minimize errors.

Exams are marked only by lecturers and a certain percentage (depending on the level of the module and the number of students in the module) will be moderated or second-marked by another lecturer.

Following the marking of exam scripts, the department meets with an external expert to discuss the marks for each module and to discuss any issues that have taken place in an exam, in effort to make the experience as fair as possible for all students. After the department has determined that the grades are correct and fair, to our best knowledge and ability, the exam procedures and marks are ratified at the level of the University as well.

For more information about quality assurance of marks you can read the ARCS regulations for the current academic year on the QMUL website.

(10) HOW ARE THE PROGRAMMES STRUCTURED?

In the programme outlines provided on the following pages, **compulsory** modules are denoted in standard text whereas **elective** modules are denoted in *italicised* text. Some modules are in exclusive pairs (*i.e.* you may take one or the other, but not both) and others are elective but you must take at least one of them (*i.e.* you may take more than one if you wish). In each academic year, any modules indicated by the postscript “F” entail **residential fieldtrips** of between 1 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). It is **strongly 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, 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 normally happens in the month of **May**). We will provide you with **published information** that outline the module content and in Semester B, we will also organise a “**Module Elective 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.

(10.1) BIOLOGY (C100)

	SEMESTER A	SEMESTER B
Year 1	BIO100 Essential Skills for Biologists (10) BIO116 Cells (15) BIO113 Evolution (15) BIO163 Molecular Genetics (15) BIO190 Practical Molecular & Cellular Biology (10)	BIO100 Essential Skills for Biologists (10) BIO123 Ecology (15) BIO161 Basic Biochemistry (15) BIO192 Practical Biology (10) BIO125 Physiology (15)

Year 2	<p>BIO209 Research Methods & Communication (15)</p> <p>BIO212 Diversity of Life (30 across 2 semesters)</p> <p>BIO234 Ecological Interactions I (15)</p> <p>BIO215 <i>Comparative & Integrative Physiology</i> (15)</p> <p>BIO223 <i>Genes & Bioinformatics</i> (15) at least one of these</p> <p>BIO269 <i>Techniques for Biological & Chemical Sciences</i> (15)</p> <p>BIO214 <i>Infectious Disease Biology</i> (15)</p>	<p>BIO212 Diversity of Life (30)</p> <p>BIO213 <i>Cell Biology & Developmental Genetics</i> (15)</p> <p>BIO231 <i>Microbial Physiology & Growth</i> (15) must take at least one of these</p> <p>BIO263 <i>Membrane & Cellular Biochemistry</i> (15)</p> <p>BIO265 <i>Metabolic Pathways</i> (15)</p> <p>BIO294 <i>Ecological Interactions II</i> (15) must take at least one of these</p>
Year 3	<p>BIO329 Professional Skills and Development for Biologists (15)</p> <p>BIO311 <i>Behavioural Ecology</i> (15) either / or</p> <p>BIO361 <i>Membrane Proteins</i> (15) either / or</p> <p>BMD311 <i>Endocrine Physiology and Biochemistry</i> (15)</p> <p>BIO325 <i>Population & Chromosome Genetics</i> (15)</p> <p>BIO392 <i>Savannah Ecology and Conservation</i> (15)F at least one of these</p>	<p>BIO327 <i>Functional Genomics & Epigenetics</i> (15)</p> <p>BIO331 <i>Mammals & Evolution</i> (15) at least one of these</p> <p>BIO333 <i>Neuroscience: From Molecules to Behaviour</i> (15)</p> <p>BIO337 <i>Reproductive & Developmental Biology</i> (15)</p> <p>BIO343 <i>Climate Change & Conservation Challenges</i> (15) at least one of these</p> <p>BIO319 <i>Coding and Data Science</i> (15)</p> <p>BMD383 <i>Molecular Basis of Disease</i> (15)</p>
	<p>BIO600 Biological Sciences Research Project (30) OR</p> <p>BIO604 Structured Research Projects (30) OR BMD606 Engaging the Public in Science</p>	

* Field-based module which runs in August/September *prior to* 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 modules in Year 2, though one of these is worth 30 credits. Thus you can select 4 of the available 15 credit module options, though with some restrictions.

Year 3: There are 2 compulsory modules, in third year, one 15 credit module and in addition, you must select one of the 30 credit modules: either **BIO600** (Biological Sciences Research Project) or **BIO604** (Structured Research Projects). 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.

(10.2) MEDICAL GENETICS (C431)

	SEMESTER A	SEMESTER B
Year 1	BIO100 Essential Skills for Biologists (10) BMD116 Cells (15) BIO113 Evolution (15) BIO163 Molecular Genetics (15) BIO190 Practical Molecular & Cellular Biology (10)	BIO100 Essential Skills for Biologists (10) BMD181 Tissue Biology (15) BIO161 Basic Biochemistry (15) BIO192 Practical Biology (10) BIO125 Physiology (15)
Year 2	BIO209 Research Methods & Communication (15) BIO223 Genes and Bioinformatics (15) BIO227 Human Genetic Disorders (15) BIO214 <i>Infectious Disease Biology</i> (15) BIO215 <i>Comparative & Integrative Physiology</i> (15)	BIO213 Cell Biology and Developmental Genetics (15) BIO231 <i>Microbial Physiology & Growth</i> (15) BIO265 <i>Metabolic Pathways</i> (15) BMD251 <i>Basic Immunology</i> (15) BMD225 <i>Biomedical Pharmacology</i>
Year 3	BIO329 Professional Skills and Development for Biologists (15) BIO325 <i>Population & Chromosome Genetics</i> (15) BIO214 <i>Infectious Disease Biology</i> (15) BMD311 <i>Endocrine Physiology & Biochemistry</i> (15) BMD381 <i>Cancer Biology</i> (15) BMD351 <i>Advanced immunology</i> (15) BMD325 <i>Biomedical Neuroscience</i> (15)	BIO327 Functional Genomics & Epigenetics (15) BIO324 Advanced Human Genetic Disorders (15) BIO337 <i>Reproductive & Developmental Biology</i> (15) BMD383 <i>Molecular Basis of Personalised Medicine</i> (15) BIO319 <i>Coding and Data Science</i> (15)
	BIO600 Biological Sciences Research Project (30) OR BIO604 Structured Research Projects (30) OR BMD606 Engaging the Public in Science	

* Field-based module which runs in August/September *prior* to 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.

Year 3: There are 5 compulsory Year 3 modules, 4 of them are 15 credits and 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.

(10.3) ZOOLOGY (C300)

	SEMESTER A	SEMESTER B
Year 1	BIO100 Essential Skills for Biologists (10) BMD116 Cells (15) BIO113 Evolution (15) BIO163 Molecular Genetics (15) BIO190 Practical Molecular & Cellular Biology (10)	BIO100 Essential Skills for Biologists (10) BIO123 Ecology (15) BIO161 Basic Biochemistry (15) BIO192 Practical Biology (10) BIO125 Physiology (15)
Year 2	BIO209 Research Methods & Communication (15) BIO212 Diversity of Life (30 across two semesters) BIO234 Ecological Interactions I (15) F BIO215 <i>Comparative & Integrative Physiology</i> (15) BIO214 <i>Infectious Disease Biology</i> BIO223 <i>Genes & Bioinformatics</i> (15)	BIO212 Diversity of Life (30 across two semesters) BIO213 <i>Cell Biology and Developmental Genetics</i> (15) BIO263 <i>Membrane and Cell Biochemistry</i> (25) BIO265 <i>Metabolic pathways</i> (15) BIO231 <i>Microbial Physiology & Growth</i> (15) BIO294 <i>Ecological Interactions II</i> (15) F GEG5224 <i>Ecosystem Sciences</i> (15)
Year 3	BIO329 Professional Skills and Development for Biologists (15) BIO311 Behavioural Ecology (15) BIO325 <i>Population & Chromosome Genetics</i> (15) BIO214 <i>Infectious Disease Biology</i> BIO392 <i>Savannah Ecology & Conservation</i> (15) F* At least one of these BMD311 <i>Endocrine Physiology and Biochemistry</i> (15)	BIO331 Mammals & Evolution (15) BIO327 <i>Functional Genomics & Epigenetics</i> (15) BIO333 <i>Neuroscience: From Molecules to Behaviour</i> (15) BIO337 <i>Reproductive & Developmental Biology</i> (15) BIO343 <i>Climate Change & Conservation Challenges</i> (15) At least one of these BIO319 <i>Coding and Data Science</i> (15)
	BIO600 Biological Sciences Research Project (30) OR BIO604 Structured Research Projects (30) OR BMD606 Engaging the Public in Science	

* Field-based module which runs in August/September *prior* to 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**, Year 2 modules, two of which are 15 credits and one is 30 credits.

Year 3: There are **4 compulsory modules** in Year 3, three of these are 15 credit modules and 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.

(11) USING YOUR STUDENT VOICE

You are strongly encouraged to provide informal feedback to Module Organisers and/or to the 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.

The Student-Staff Liaison Committee (SSLC), Chaired by the Director for Student Experience, Dr Sophie Pettit, provides a formal means of communication and discussion between the School and its students. The committee consists of elected student representatives from each year of our degree programmes, together with staff representation from SBBS and SMD. 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 SBBS Teaching & Learning Committee (TLC) advises the Director of Education (DoE), Dr Buckingham, on all matters relating to the delivery of taught programmes at school level. This includes monitoring the application of relevant QM policies and reviewing proposals for module and programme amendment before submission to Taught Programmes Board (TPB).

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.

During the spring of their final year, students are invited to participate in a national survey of all publicly funded universities in the UK. This National Student Survey (NSS) is commissioned by the Office for Students on behalf of various government education and health agencies. It is independent of QMUL, which means we do not have any say in the questions asked. The data are very important to us: we examine the results carefully to improve our programmes

and people external to QMUL, such as prospective students, use the data to learn more about QMUL and our programmes.

(12) 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. SBBS 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).

SBBS also operates a Peer Assisted Study Support (**PASS**) programme for peer guidance.

(13) 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.

(14) 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.

(15) 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 SBBS SBBS SBBS 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>.

(16) CHANGE OF PROGRAMME

Due to the common content of the first year modules, up until the end of Year 1 (**01 August 2023**), you can request a Change of Programme (**CoP**) between Biology & Zoology. (*Should you wish to request a change from Biology or Zoology on to C431 Medical Genetics or from Medical Genetics on to Biology or Zoology, your request would have to be received by **01 December 2020** since students enrolled on the Medical Genetics programme study different modules to students reading Biology 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 **SBBS 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 SBBS reception to be considered and, if possible, approved by Dr Bray 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 SBBS 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** *where there are implications for the Semester B modules required on the new programme;*
- **01 February** *where you would like your CoP to be approved before entry to the exams;*
- **01 April** *approval of the CoP will be considered at the June Exam Board meeting, contingent on passing the requisite number of credits;*

- **01 August** *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.)

(17) OPPORTUNITIES FOR POSTGRADUATE STUDY IN THE SCHOOL OF BIOLOGICAL & BEHAVIOURAL 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, SBBS offers several biological MSc degrees which exploit the research expertise of staff in the Departments of Biology.

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

(18) 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.

Our 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.