

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



Programme Specification (UG)

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| Awarding body / institution: | Queen Mary University of London |
| Teaching institution: | Queen Mary University of London |
| Name of final award and programme title: | BSc (Hons) Biology, BSc (Hons) Biology with year abroad |
| Name of interim award(s): | CertHE, DipHE |
| Duration of study / period of registration: | 3 year (4 years with year abroad) |
| QMUL programme code / UCAS code(s): | C100, C10Y |
| QAA Benchmark Group: | |
| FHEQ Level of Award : | Level 6 |
| Programme accredited by: | |
| Date Programme Specification approved: | |
| Responsible School / Institute: | School of Biological & Behavioural Sciences |

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

Barts and The London School of Medicine and Dentistry

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

Programme outline

The rationale for the C100/C10Y Biology programme is to provide training in the biology of animals, plants and other forms of life in both micro-organismal and macro-organismal groups. The programme is the most flexible on offer within SBBS and it 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 programme includes training in fundamental topics and principles applicable to all biologists, such as taxonomy, evolution, molecular genetics and the cell as a biological unit. More specialised training is available should the students wish to refine their module choices - for instance by aligning their studies into more "physiological" versus "ecological" approaches to biology. The programme prepares students for further study at the postgraduate level (M.Sc and Ph.D) and careers that require knowledge of biology.

Aims of the programme

C100 Biology is designed 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 students are able to choose to specialise on particular fields within biology or to take a more integrated approach to their degree by covering a broad range of modules (subject to timetabling constraints). Students following this programme will receive instruction in key biological concepts, the theories that underpin

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these concepts, and the applications of biological knowledge to important problems facing the world today (e.g., emerging human diseases; climate change). In addition to developing key biological skills, students will also develop essential transferable skills that will further strengthen their future career prospects.

Furthermore to:

- provide a rational, flexibly structured and coherent programme of study which is relevant to the needs of employers, facilitates the professional development of the student 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.

What will you be expected to achieve?

You will be expected to achieve the following learning outcomes:

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

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

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

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

Academic Content:

| | |
|-----|--|
| A 1 | 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. |
| A 2 | how biological systems operate over a range of levels of organisation, from molecules to ecosystems. |

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| A3 | appreciation of 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). |
| A4 | cause-and-effect relationships and the role of experiments in testing (and developing) biological theories. Students should develop a knowledge of the general scientific process, and how it is applied to biological systems in particular. |
| A5 | 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). |
| A6 | the dynamics and structure of biological systems (e.g. protein structure; enzyme kinetics; population dynamics). |

| Disciplinary Skills - able to: | |
|--------------------------------|---|
| B1 | Reason critically. |
| B2 | Apply biological knowledge and principles, in combination with problem-solving skills, in a wide range of theoretical and practical situations. |
| B3 | Use advanced theories and concepts to explain/rationalize biological phenomena, and to investigate unfamiliar problems. |
| B4 | Conduct practical work efficiently and with due regard for safety. |
| B5 | Use a wide range of laboratory and analytical equipment, as well as computational tools and packages. |
| B6 | Analyse and evaluate/interpret the results of controlled experiments |
| B7 | Retrieve, filter and collate biological data from a variety of information sources. |
| B8 | Prepare scientific/technical reports. |
| B9 | Plan, undertake and report a bibliographically-based piece of research. |
| B10 | Identify and formulate problems. |

| Attributes: | |
|-------------|--|
| C1 | Communicate effectively by written and/or verbal means. |
| C2 | Capacity for independent learning, and to work independently. |
| C3 | Able to participate constructively as a member of a group/team, with skills to influence, negotiate and lead. |
| C4 | Assess the relevance, importance and reliability of the ideas of others and different sources of information. |
| C5 | Competent in the use of computer-based technology, including the manipulation and analysis of quantitative data. |
| C6 | Awareness of the role and impact of science in society, including the global perspective. |

C7

Use information for evidence-based decision-making and creative thinking.

How will you learn?

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

How will you be assessed?

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

How is the programme structured?

Please specify the structure of the programme diets for all variants of the programme (e.g. full-time, part-time - if applicable). The description should be sufficiently detailed to fully define the structure of the diet.

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

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

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

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

Compulsory modules (totalling 60 credits):

- BIO209 Research methods and communication (15 credits)
- BIO212 Diversity of Life (30 credits)
- BIO234 Ecological Interactions (15 credits)

Elective modules from the discipline elective group (totalling 60 credits, across Semesters A & B) including AT LEAST ONE of the following:

- BIO223 Genes and bioinformatics (15 credits)
- BIO231 Microbial physiology and growth (15 credits)
- BIO294 Ecological Interactions II (15 credits) (Field course)

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

- 1 x elective module from the Research Project group (totalling 30 credits, across Semesters A & B)
- 1 x compulsory module, BIO329 Professional Skills and Development for Biologists (15 credits, Semester 1)
- 5 x 15 credit elective modules from the discipline elective group (totalling 75 credits, across Semester A & B) including at

LEAST ONE of the following:

- BIO343 Climate Change and Conservation Challenges (15 credits)
- BIO331 Mammals and Evolution (15 credits)
- BIO392 Savannah Ecology and Conservation (15 credits) (field course)

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

- you must not register for more than 75 credits in total in any given semester
- you must check that you satisfy the prerequisites before registering for any elective module
- you must register for one of BIO600, BIO603 or BMD606 in the final year.
- students can register for one or other of BIO361 and BIO311, but not both.

Academic Year of Study FT - Year 1

| Module Title | Module Code | Credits | Level | Module Selection Status | Academic Year of Study | Semester |
|--|-------------|---------|-------|-------------------------|------------------------|-----------------|
| Practical Molecular & Cellular Biology | BIO192 | 10 | 4 | Compulsory | 1 | Semester 2 |
| Cells | BIO116 | 15 | 4 | Compulsory | 1 | Semester 1 |
| Evolution | BIO113 | 15 | 4 | Compulsory | 1 | Semester 1 |
| Molecular Genetics | BIO163 | 15 | 4 | Compulsory | 1 | Semester 1 |
| Essential Skills for Biology | BIO100 | 10 | 4 | Compulsory | 1 | Semesters 1 & 2 |
| Practical Biology | BIO190 | 10 | 4 | Compulsory | 1 | Semester 1 |
| Physiology | BIO125 | 15 | 4 | Compulsory | 1 | Semester 2 |
| Ecology | BIO123 | 15 | 4 | Compulsory | 1 | Semester 2 |
| Basic Biochemistry | BIO161 | 15 | 4 | Compulsory | 1 | Semester 2 |

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Academic Year of Study FT - Year 2

| Module Title | Module Code | Credits | Level | Module Selection Status | Academic Year of Study | Semester |
|---|-------------|---------|-------|-------------------------|------------------------|-----------------|
| Compulsory modules: | | | 5 | Compulsory | | |
| Research methods and communication | BIO209 | 15 | 5 | Compulsory | 2 | Semester 1 |
| Diversity of Life | BIO212 | 30 | 5 | Compulsory | 2 | Semesters 1 & 2 |
| Ecological Interactions I | BIO234 | 15 | 5 | Compulsory | 2 | Semester 1 |
| At least one of the following electives: | | | 5 | Elective | | |
| Genes and bioinformatics | BIO223 | 15 | 5 | Elective | 2 | Semester 1 |
| Microbial physiology and growth | BIO231 | 15 | 5 | Elective | 2 | Semester 2 |
| Ecological Interactions II | BIO294 | 15 | 5 | Elective | 2 | Semester 3 |
| Remaining modules in the elective pool: | | | 5 | Elective | | |
| Cell biology and developmental genetics | BIO213 | 15 | 5 | Elective | 2 | Semester 2 |
| Comparative and Integrative Physiology | BIO215 | 15 | 5 | Elective | 2 | Semester 1 |
| Membrane and cellular biochemistry | BIO263 | 15 | 5 | Elective | 2 | Semester 2 |
| Metabolic pathways | BIO265 | 15 | 5 | Elective | 2 | Semester 2 |
| Techniques for biological and chemical sciences | BIO269 | 15 | 5 | Elective | 2 | Semester 1 |
| Infectious Disease Biology | BIO214 | 15 | 5 | Elective | 2 | Semester 1 |

Academic Year of Study FT - Year 1

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| Module Title | Module Code | Credits | Level | Module Selection Status | Academic Year of Study | Semester |
|--|-------------|---------|-------|-------------------------|------------------------|-----------------|
| The following modules must be taken to qualify for the degree 'with a year abroad' | | | 5 | Core | | |
| SBCS Study Abroad Year | SBC201 | 15 | 5 | Core | 3 | Semesters 1 & 2 |

Academic Year of Study FT - Year 3

| Module Title | Module Code | Credits | Level | Module Selection Status | Academic Year of Study | Semester |
|---|-------------|---------|-------|-------------------------|------------------------|-----------------|
| Professional Skills and Development for Biologists | BIO329 | 15 | 6 | Compulsory | 3 | Semester 1 |
| Biological Science Research Project (Project Elective) | BIO600 | 30 | 6 | Elective | 3 | Semesters 1 & 2 |
| Structured Research Project (Project Elective) | BIO603 | 30 | 6 | Elective | 3 | Semesters 1 & 2 |
| Engaging the Public with Science (Project Elective) | BMD606 | 30 | 6 | Elective | 3 | Semesters 1 & 2 |
| Behavioural Ecology (if this elective is taken BIO361 cannot also be selected) | BIO311 | 15 | 6 | Elective | 3 | Semester 1 |
| Population and chromosome genetics | BIO325 | 15 | 6 | Elective | 3 | Semester 1 |
| Membrane proteins (if this elective is taken BIO311 cannot also be selected) | BIO361 | 15 | 6 | Elective | 3 | Semester 1 |
| Molecular basis of disease | BIO363 | 15 | 6 | Elective | 3 | Semester 1 |
| Savannah Ecology and Conservation* *at least one of the three starred module must be taken | BIO392 | 15 | 6 | Elective | 3 | Semester 1 |
| Functional genomics and epigenetics | BIO327 | 15 | 6 | Elective | 3 | Semester 2 |
| Neuroscience: from molecules to behaviour | BIO333 | 15 | 6 | Elective | 3 | Semester 2 |
| Mammals and evolution* *at least one of the three starred module must be taken | BIO331 | 15 | 6 | Elective | 3 | Semester 2 |

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| Module Title | Module Code | Credits | Level | Module Selection Status | Academic Year of Study | Semester |
|--|-------------|---------|-------|-------------------------|------------------------|------------|
| Reproductive and Developmental Biology | BIO337 | 15 | 6 | Elective | 3 | Semester 2 |
| Endocrine physiology and biochemistry | BMD311 | 15 | 6 | Elective | 3 | Semester 1 |
| Climate Change and Conservation Challenges* *at least one of the three starred module must be taken | BIO343 | 15 | 6 | Elective | 3 | Semester 2 |
| Coding Skills and Data Science | BIO319 | 15 | 6 | Elective | 3 | Semester 2 |

What are the entry requirements?

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

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

or via

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

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

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

What academic support is available?

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

The Teaching & Learning Committee advises the School's Director of Taught Programmes on all matters relating to the delivery of taught programmes at school level, including monitoring the application of relevant QM policies and reviewing proposals for module and programme approval and amendment before submission to Taught Programmes Board. Student views are incorporated in the committee's work in a number of ways, such as through consideration of student surveys and input from the

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SSLC.

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

Programme-specific rules and facts

None

Specific support for disabled students

Queen Mary has a central Disability and Dyslexia Service (DDS) that offers support for all students with disabilities, specific learning difficulties and mental health issues. The DDS supports all Queen Mary students: full-time, part-time, undergraduate, postgraduate, UK and international at all campuses and all sites.

Students can access advice, guidance and support in the following areas:

- Finding out if you have a specific learning difficulty like dyslexia
- Applying for funding through the Disabled Students' Allowance (DSA)
- Arranging DSA assessments of need
- Special arrangements in examinations
- Accessing loaned equipment (e.g. digital recorders)
- Specialist one-to-one "study skills" tuition
- Ensuring access to course materials in alternative formats (e.g. Braille)
- Providing educational support workers (e.g. note-takers, readers, library assistants)
- Mentoring support for students with mental health issues and conditions on the autistic spectrum.

Links with employers, placement opportunities and transferable skills

Half 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 graduate roles include:

laboratory technician,
data analyst,
public health officer,
market researcher.
NHS administrator,
medical representative,
environmental consultant.

Programme Specification Approval

Person completing Programme Specification:

Chris Bray

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Person responsible for management of programme:

Sally Faulkner

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

12 Jan 2021

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