

Programme Title: Biomedical Sciences (BSc) and 'with foundation', 'with year abroad' and 'Year in Industry' extramural variants



## Programme Specification (UG)

|   |   |
|---|---|
| Awarding body / institution:                | Queen Mary University of London               |
| Teaching institution:                       | Queen Mary University of London               |
| Name of final award and programme title:    | BSc (Hons) Biomedical Sciences                |
| Name of interim award(s):                   | CertHE, DipHE                                 |
| Duration of study / period of registration: | 3 years / 4 years                             |
| QMUL programme code / UCAS code(s):         | UBSF-QMBIOL1 (USBMS) / B990, CCX2, B99Y, B995 |
| QAA Benchmark Group:                        | Biomedical Sciences                           |
| 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:

School of Biological & Behavioural Sciences

Barts and The London School of Medicine and Dentistry

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

### Programme outline

Biomedical science is a diverse and progressive field curious about the causes, diagnosis and treatment of human disease. The Biomedical Sciences degree at Queen Mary University of London is delivered by the School of Biological and Chemical Sciences with substantial input from staff of the Barts and The London School of Medicine and Dentistry. This dynamic partnership draws on educational expertise and world-leading research across the breadth of biomedical sciences. The curriculum provides students with a strong grounding in human anatomy, physiology, pharmacology, genetics, cell biology, molecular biology, biochemistry, immunology and microbiology. Elective modules enable students to specialise their training in areas such as neuroscience, cancer biology, personalised medicine, drug design, endocrinology, medical genetics and stem cells. Practical sessions throughout the programme provide students with hands-on experience of scientific instruments while the final year research-oriented project enables students to develop team-working, analytical and presentation skills which graduates transfer into their careers. We have an excellent record of preparing our graduates for admission to medicine, dentistry and higher scientific programmes leading to research careers. Many graduates directly enter careers in the pharmaceutical, biotechnology and healthcare industries.

## Aims of the programme

Graduates of our Biomedical Sciences programme should:

1. Recall and understand key concepts and processes in human biology in healthy and diseased states,
2. Understand the scientific process, including rigorous experimental design and reporting of results in formats relevant for the intended audience,
3. Apply theoretical knowledge and creativity to solve problems and select the appropriate course of action
4. Critically analyse Information and data, both self-derived and obtained from external sources, and
5. Draw data and arguments from across sources and disciplines into a balanced synthesis of information.

## What will you be expected to achieve?

Students who successfully complete the programme will have knowledge and understanding of topics within biomedical sciences as well as the skills and attributes outlined in the 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 | In relation to human health and disease, describe and explain essential facts, theories and major principles in anatomy, physiology, biochemistry, genetics, cell biology, molecular biology, pharmacology, immunology and microbiology. |
|-----|--|

### Disciplinary Skills - able to:

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|-----|--|
| B 1 | Apply subject knowledge and understanding to address problems and make evidence-based decisions.   |
| B 2 | Plan an experiment in terms of hypothesis, samples, tests or observations, appropriate controls, observable outcomes and statistical analysis.                               |
| B 3 | Demonstrate competence in laboratory procedures and generation of reliable data in safe and ethical ways.  |
| B 4 | Identify, collate, process, analyse, interpret and present data generated locally or published globally.   |
| B 5 | Communicate to a variety of audiences using a range of formats and appropriate scientific language including appropriate acknowledgement of sources and avoiding plagiarism. |
| B 6 | Recognise moral and ethical issues in biomedical sciences and its application to healthcare.   |
| B 7 | Understand the wider context of biomedical sciences, including social, political, economic and commercial perspectives.  |

|                    |  |
|--------------------|--|
| <b>Attributes:</b> |  |
| C 1                | Identify personal, study and career goals, both short and long-term, and perform in a manner appropriate to achieving those goals.                                   |
| C 2                | Evaluate performance individually, within a team and of others.  |
| C 3                | Recognise and respect the views and opinions of others.  |
| C 4                | Use skills of negotiation and influence to achieve group goals.  |
| C 5                | Demonstrate skills for self-managed and lifelong learning, including working independently, adaptive working, time management, organisation and motivational skills. |
| C 6                | Year in industry variant: Expand professional network and enhance career prospects   |
| C 7                | Year abroad variant: gain a global perspective of science and increase students' cultural exposure   |

### How will you learn?

The programme integrates multiple modalities to progressively enable students' development. To achieve the academic and discipline aims of the programme, students learn through a combination of lectures, practical classes, interactive sessions, tutorials and independent study at our London campuses and off-site, all supported by QMULs online learning environment (QMplus). Practical skills are taught as part of organised practical classes, while interactive sessions reinforce knowledge and understanding and provide opportunities for the application of such knowledge to the solution of real problems. The foundations of graduate attributes are established in first year tutorials and consolidated throughout the programme, especially in the second year case-based learning tutorials and final-year research-oriented project work. Further support for students' learning is provided by the QMUL library, Disability & Dyslexia Service, Advice & Counselling Service, IT services and Advisors.

### How will you be assessed?

Assessment is through a combination of coursework assignments and unseen timed assessments. The exact nature of coursework varies between modules and may include mini-tests, essays, lab assignments, practical analysis and write-up, oral presentations and/or poster presentations. The final year research-oriented project will include an extended written dissertation. Feedback enables an iterative learning experience in which both knowledge and skills can be developed and strengthened.

### 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, normally consisting of four modules (totalling 60 credits) in each semester. These modules are chosen from those offered in the B990 programme diet, as follows:

In the first year, students study 8 x 15-credit compulsory modules totalling 120 credits, across Semesters A & B.

In the second year, students study 120 credits, comprising 7 x 15-credit compulsory modules across Semesters A & B plus one 15-credit elective module from the available electives in Semester A.

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

To be eligible for the award of BSc (Hons) Biomedical Sciences with Year in Industry, students must take SBC5001 after the 2nd year and then return to QMUL the following year to complete the Year 3 diet in their 4th Year of study.

In their final year, students study 120 credits comprising the following:

- 1 x compulsory 30-credit research project module across Semesters A & B: either BMD600, BMD606 or BIO603,
- 1 x compulsory 15-credit module: BMD321 Cellular Pathology & Blood Science (Semester B), and
- 5 x 15-credit elective modules totalling 60 credits across Semesters A & B.

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

- students must not register for more than 75 credits in total in any given semester
- students must check that they satisfy the prerequisites before registering for any elective module
- students must register for one of BMD600, BMD606 or BIO603 in the final year.

#### Academic Year of Study FT - Year 1

| Module Title                               | Module Code | Credits | Level | Module Selection Status | Academic Year of Study | Semester        |
|--|-------------|---------|-------|-------------------------|------------------------|-----------------|
| Essential Skills for Biomedical Scientists | BMD100      | 15      | 4     | Compulsory              | 1                      | Semesters 1 & 2 |
| Genetics                                   | BMD164      | 15      | 4     | Compulsory              | 1                      | Semester 1      |
| Human Anatomy                              | BMD113      | 15      | 4     | Compulsory              | 1                      | Semester 1      |
| Cells                                      | BMD116      | 15      | 4     | Compulsory              | 1                      | Semester 1      |
| The Microbial World and Humans             | BMD117      | 15      | 4     | Compulsory              | 1                      | Semester 1      |

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| Module Title            | Module Code | Credits | Level | Module Selection Status | Academic Year of Study | Semester   |
|-------------------------|-------------|---------|-------|-------------------------|------------------------|------------|
| Biomedical Physiology I | BMD121      | 15      | 4     | Compulsory              | 1                      | Semester 2 |
| Biomolecules of Life    | BMD123      | 15      | 4     | Compulsory              | 1                      | Semester 2 |
| Tissue Biology          | BMD181      | 15      | 4     | Compulsory              | 1                      | Semester 2 |

Academic Year of Study FT - Year 2

| Module Title                          | Module Code | Credits | Level | Module Selection Status | Academic Year of Study | Semester        |
|---------------------------------------|-------------|---------|-------|-------------------------|------------------------|-----------------|
| Case-based Biomedical Sciences        | BMD202      | 15      | 5     | Compulsory              | 2                      | Semesters 1 & 2 |
| Human Molecular Biology               | BMD211      | 15      | 5     | Compulsory              | 2                      | Semester 1      |
| Biomedical Physiology II              | BMD221      | 15      | 5     | Compulsory              | 2                      | Semester 1      |
| Essential Biochemistry for Human Life | BMD223      | 15      | 5     | Compulsory              | 2                      | Semester 2      |
| Biomedical Pharmacology               | BMD225      | 15      | 5     | Compulsory              | 2                      | Semester 2      |
| Clinical Microbiology                 | BMD231      | 15      | 5     | Compulsory              | 2                      | Semester 2      |
| Basic Immunology                      | BMD251      | 15      | 5     | Compulsory              | 2                      | Semester 2      |
| Comparative & Integrative Physiology  | BIO215      | 15      | 5     | Elective                | 2                      | Semester 1      |
| Human Genetic Disorders               | BIO227      | 15      | 5     | Elective                | 2                      | Semester 1      |
| Research design & analysis            | BMD205      | 15      | 5     | Elective                | 2                      | Semester 1      |
| Health Psychology                     | PSZ216      | 15      | 5     | Elective                | 2                      | Semester 1      |

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Academic Year of Study FT - Year 3

| Module Title   | Module Code | Credits | Level | Module Selection Status | Academic Year of Study | Semester        |
|--|-------------|---------|-------|-------------------------|------------------------|-----------------|
| Biomedical Sciences Research Project (Project Elective)      | BMD600      | 30      | 6     | Elective                | 3                      | Semesters 1 & 2 |
| Project: Engaging the Public with Science (Project Elective) | BMD606      | 30      | 6     | Elective                | 3                      | Semesters 1 & 2 |
| Structured Research Project (Project Elective)               | BIO604      | 30      | 6     | Elective                | 3                      | Semesters 1 & 2 |
| Cellular Pathology & Blood Science                           | BMD321      | 15      | 6     | Compulsory              | 3                      | Semester 2      |
| Endocrine Physiology & Biochemistry                          | BMD311      | 15      | 6     | Elective                | 3                      | Semester 1      |
| Biomedical Neuroscience                                      | BMD325      | 15      | 6     | Elective                | 3                      | Semester 1      |
| Advanced Immunology  | BMD351      | 15      | 6     | Elective                | 3                      | Semester 1      |
| Stem Cells & Regenerative Medicine                           | BMD363      | 15      | 6     | Elective                | 3                      | Semester 1      |
| Cancer Biology   | BMD381      | 15      | 6     | Elective                | 3                      | Semester 1      |
| Infectious Disease   | BMD323      | 15      | 6     | Elective                | 3                      | Semester 2      |
| Drug Design  | BMD358      | 15      | 6     | Elective                | 3                      | Semester 2      |
| Molecular Basis of Personalised Medicine                     | BMD383      | 15      | 6     | Elective                | 3                      | Semester 2      |
| Advanced Human Genetic Disorders                             | BIO324      | 15      | 6     | Elective                | 3                      | Semester 2      |
| Research Design & Analysis                                   | BMD205      | 15      | 5     | Elective                | 3                      | Semester 1      |

Academic Year of Study FT - Year 3

| Module Title | Module Code | Credits | Level | Module Selection Status | Academic Year of Study | Semester |
|--------------|-------------|---------|-------|-------------------------|------------------------|----------|
|--------------|-------------|---------|-------|-------------------------|------------------------|----------|

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| Module Title   | Module Code | Credits | Level | Module Selection Status | Academic Year of Study | Semester        |
|--|-------------|---------|-------|-------------------------|------------------------|-----------------|
| The following module must be taken to qualify for the degree 'with a year abroad'    |             |         |       |                         |                        |                 |
| SBCS Study Abroad Year   | SBC5000     | 120     | 5     | Core                    | 3                      | Semesters 1 & 2 |
| The following module must be taken to qualify for the degree 'with year in industry' |             |         |       |                         |                        |                 |
| Year in industry placement (Biomedical Sciences)                                     | SBC5001     | 120     | 5     | Core                    | 3                      | Semesters 1 & 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 a minimum total of AAB at A2 level on the UCAS points tariff system, including Biology and one other subject from Chemistry, Maths, Further Maths, Physics or Psychology, or equivalent qualifications.

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).

International students should be offering IELTS 6.5 (with a minimum of 6.0 in writing), or equivalent.

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

The quality of modules and the programme is reviewed, managed and enhanced through several channels. These include module evaluations and other survey data (including National Student Survey), discussion with course representatives, Student-Staff Liaison Committee, Annual Programme Review, Periodic Review, and the Programme Teaching Group (the latter reports to the Teaching and Learning Committee within SBCS and Student Undergraduate Learning Committee in SMD and thereafter broader QMUL education management structures).

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

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

All schools/institutes operate an Annual Programme Review of their taught undergraduate and postgraduate provision. APR is a continuous process of reflection and action planning which is owned by those responsible for programme delivery. Students' views are considered in this process through analysis of the NSS and module evaluations.

### What academic support is available?

Each student is provided with an Advisor (aka personal tutor) who is their main point of contact throughout their degree for

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advice regarding academic matters and for assistance with pastoral concerns. There is a schedule of 1-to-1 meetings between students and Advisors throughout the degree programme. In addition, students can contact their Advisor via email and, where appropriate, arrange a meeting. Moreover, if and when advisors are unavailable or cannot help with a specific problem, the School has several Programme Tutors to assist with student concerns, including four Biomedical Sciences Programme tutors. The School also operates a Peer Assisted Study Support programme for peer guidance. Outside of SBCS, students can obtain academic support through Learning Development and, where appropriate, through the Disability and Dyslexia Service.

### **How inclusive is the programme for all students, including those with disabilities?**

The Biomedical Sciences programme routinely admits and graduates students from a range of backgrounds, across the spectra of protected characteristics and with a variety of disabilities and learning requirements. We work with school, university and national initiatives (including the Equality, Diversity and Inclusion Committee, QMSU, and Athena SWAN) to create and foster a welcoming and inclusive learning environment.

In terms of disabilities, both physical and mental health, we work with the Disability and Dyslexia Service (DDS) to ensure appropriate support is provided to all our students. DDS provides advice, guidance and support in the following areas:

- Identifying students with specific learning requirements such as dyslexia
- Applying for funding through the Disabled Students' Allowance (DSA)
- Arranging DSA assessments of need
- Special arrangements in examinations
- Accessing loaned equipment
- 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.

### **Programme-specific rules and facts**

None.

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

A Biomedical Sciences degree will allow graduates to apply to study medicine or dentistry, to undertake and manage research or teach, to work in the pharmaceutical, biotechnology and healthcare industries or to train in the NHS Scientist Training Programme in areas such as Cytopathology, Clinical Microbiology, Genomic Counselling and Histopathology. There is a named academic who oversees the suite of careers-related activities in the programme. This academic works in collaboration with SBCS's dedicated Careers Consultant in Careers and Enterprise, an Employer Engagement and Internships Coordinator and also a Placements Coordinator. Together, this team promotes career opportunities and arranges a dynamic schedule of events which includes networking opportunities between students and employers.

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## **Programme Specification Approval**

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**Person completing Programme Specification:**

Dr Jayne Dennis



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**Person responsible for management of programme:**

Dr Jayne Dennis

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

6 Dec 2022

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