

PROGRAMME SPECIFICATION

Course record information

Name and level of final award:	BSc Honours Biological Sciences
	The BSc Honours Biological Sciences is a BSc degree that is Bologna FQ-EHEA first cycle degree or diploma compatible.
Name and level of intermediate awards:	Diploma of Higher Education Biological Sciences Certificate of Higher Education Biological Sciences
Awarding body/institution:	University of Westminster
Teaching Institution:	University of Westminster
Status of awarding body/institution:	Recognised Body
Location of delivery:	Central London
Language of delivery and assessment:	English
Mode, length of study and normal starting month:	Three years full time September start
QAA subject benchmarking group(s):	Biosciences Benchmark Statement
Professional statutory or regulatory body:	Accreditation by the Royal Society of Biology will be sought once the new programme is approved
Date of course validation/review:	6 June 2016
Date of programme specification approval:	22 August 2016
Valid for cohorts :	From September 2017
Course Leader	Dr Caroline Smith
UCAS code and URL:	C900 http://www.westminster.ac.uk/courses/undergraduate

Admissions requirements

There are standard minimum [entry requirements](#) for all undergraduate courses. Students are advised to check the standard requirements for the most up-to-date information.

westminster.ac.uk/courses/undergraduate/how-to-apply

For most courses a decision will be made on the basis of your application form alone. However, for some courses the selection process may include an interview to demonstrate your strengths in addition to any formal entry requirements.

More information can be found here: westminster.ac.uk/courses/undergraduate/how-to-apply

Aims of the course

The BSc Biological Sciences course has been designed to help students succeed in both scientific and non-science careers. The course is diverse and flexible, permitting the student the freedom to select modules and target their education towards their chosen career pathway. Each student will be exposed to an excellent foundation in the biosciences through their core modules, and will become aware of the global challenges facing humanity and the planet and the biological solutions to help overcome those challenges. The course is specifically designed so that students can choose to follow a molecular science thread, an applied bioscience thread or to construct their own thread through the module choices.

What will you be expected to achieve?

Learning outcomes are statements on what successful students have achieved as the result of learning. These are threshold statements of achievement the learning outcomes broadly fall into four categories:

- The overall **knowledge and understanding** you will gain from your course (KU).
- **Graduate attributes** are characteristics that you will have developed during the duration of your course (GA).
- **Professional and personal practice learning outcomes** are specific skills that you will be expected to have gained on successful completion of the course (PPP)
- **Key transferable skills** that you will be expected to have gained on successful completion of the course. (KTS)

Level 4 learning outcomes

Upon completion of level 4 you will be able to demonstrate:

- L4.1 Development of a key knowledge base in the Biological Sciences, in addition to the skills required in maintaining the knowledge base for future success. (KU, KTS, GA)
- L4.2 An ability to identify core issues/questions in biological problems and design simple experiments to resolve them. (KU, KTS)
- L4.3 Appreciation of the biological component of global issues, and gain some understanding of the work done towards resolving them. (KU, KTS, GA)
- L4.4 Development of professional communication skills and become comfortable in using professional software packages. (GA, KTS, PPP)

- L4.5 Confidence in sourcing and communicating information linked to specific issues, and to be aware of the limitations of any literature resources. (GA, KTS, PPP)
- L4.6 Familiarity with basic laboratory equipment and to develop the skills necessary in presenting and communicating experimental data and their limitations. (KU)
- L4.7 An awareness of the many career pathways available to a graduate of Biological Science, through an aspirations plan, and to recognise the skills necessary to succeed in these careers. (GA, KU, KTS, PPP)
- L4.8 Numeracy skills, through engagement with module assessments and activities and utilising additional resources as required. (KU, KTS, GA, PPP)

Level 5 learning outcomes

Upon completion of level 5 you will be able to demonstrate:

- L5.1 An enhanced key knowledge base in the Biological Sciences, and the use of key skills in maintaining the knowledge base for future success. (KU, KTS, GA)
- L5.2 The ability to highlight and explain core issues/questions in biological problems and design experiments to resolve them. (KU, KTS)
- L5.3 The ability to articulate and explain the biological component of global issues, and understand the professional approach taken towards resolving them. (KU, KTS, GA)
- L5.4 Enhanced communication skills and develop confidence in using software packages. (GA, KTS, PPP)
- L5.5 The skills required to reliably source and communicate information linked to specific biological issues, and to be able to explain the limitations of any literature resources. (GA, KTS, PPP)
- L5.6 Confident use, and explanation of, the use of basic laboratory equipment and refine the skills necessary for communicating experimental data and their limitations. (KU)
- L5.7 Maintenance of an aspirations plan showing chosen career pathways available to a graduate of Biological Science, and to recognise the development of the skills necessary to succeed in these careers. (GA, KU, KTS, PPP)
- L5.8 Extension of numeracy skills, through engagement with module assessments and activities and using experimental data, utilising additional resources as required. (KU, KTS, GA, PPP)

Level 6 learning outcomes

Upon completion of level 6 you will be able to demonstrate:

- L6.1 An in depth and analytical understanding of the key knowledge base in the Biological Sciences, and to maintaining the knowledge base for future success. (KU, KTS, GA)
- L6.2 Critical evaluation of the core issues/questions in biological problems and identify and propose new or novel approaches to their solution (KU, KTS)

- L6.3 In-depth examination explain the biological component of global issues, and the work done towards resolving them, proposing novel solutions where possible. (KU, KTS, GA)
- L6.4 Professional confident communication of scientific concepts with peers and the public and apply use of software packages to communication and research. (GA, KTS, PPP)
- L6.5 Identification, critical evaluation and synthesis of multiple sources of information to expand and develop their knowledge and understanding in biochemistry and related disciplines. (GA, KTS, PPP)
- L6.6 The competent use of laboratory equipment and/or scientific method in research, and problem solving, and to refine the skills necessary for analysis of experimental data and the limitations of its analysis. (KU)
- L6.7 The ability to complete an aspirations plan for the students chosen career pathway demonstrating that this pathway may change throughout life, and to recognise the need to continually update the skills necessary to succeed in a career. (GA, KU, KTS, PPP)
- L6.8 Effective application of numeracy skills as a part of research, and other activities as part of the course. (KU, KTS, GA, PPP)

How will you learn?

In this degree you will gain a sound foundation in biological sciences and a sound preparation in laboratory techniques and research tools. A core component of your final year is a project, in which you will undertake original research of your own under staff guidance in one of the diverse areas of biochemical research at Westminster.

Biological science is a pivotal degree discipline in the modern world and is fundamental to most of the biological sciences. Therefore biological science is intrinsically multidisciplinary and central to research and technological advances in many areas including the pharmaceutical industry, medical research, environmental technologies and food security. This is reflected in a range of option modules that allow you to develop your own specific interests and to acquire skills appropriate for your intended career.

The learning and teaching opportunities for the BSc Biological Sciences course will be a mixture of face to face teaching, independent work, laboratory work and training and online support activities. The face to face element will consist of large and small group lectures, seminars, tutorials, practicals and enquiry (problem) based learning and “flipped learning” sessions in which you use online material to prepare for tutorials in which academics guide you in the application of what you have learned.

Laboratory skills are critical for a biological scientist and the biological sciences course at Westminster includes a strong programme of laboratory sessions. Likewise computer based techniques are increasingly important to biochemistry and related fields and you will receive hands on training in bioinformatics.

Core lectures will generally address the whole year group, but in most modules these will be supported by learning activities in smaller tutorial groups. Module practicals will take place in the teaching laboratories at the New Cavendish Street site. Your final year Project will be

supported through focused tuition with your supervisor and you will be able to carry out your experimental work in the research facilities at the New Cavendish Street site.

Online resources will be provided where possible to help support you in your learning and some modules will make substantial use of blended learning approaches. You will be also be tasked with finding alternative resources for your own development after appropriate preparation. You will be supported in working independently to consolidate and enhance your understanding of the topics being taught.

The scheduled / supervised time represents only a proportion of study for each module (approximately one third overall). The remaining time is self-managed by you, so offering scope for you to develop your own knowledge and understanding, exploration and the emergence of the autonomy required of you in professional life.

How will you be assessed?

Assessment is an important tool for guiding your studies and helping you to improve your skills, knowledge and understanding. Your modules all use a mixture of “summative” assessments (in which the marks contribute to your overall module mark and can contribute to your degree classification) and “formative” assessments (which do not contribute to your mark but provide a vehicle for feedback to guide you in furthering your studies and assist you in optimising your performance in the summative assessments). You will also receive informal feedback in discussions with academic staff in tutorials and other sessions. This will include immediate guidance on how to improve your technical skills and laboratory practice during practicals and small group sessions discussing your final year project with your project supervisor.

Biological Sciences graduates are expected to display a range of skills and personal qualities as well as a wide knowledge of biochemistry and related disciplines and this is reflected in use of a number of diverse assessment types during your degree.

Many modules will use examinations and in-class tests. These can be used to evaluate your knowledge and understanding and your ability to construct reasoned arguments based on your knowledge. However, your skill in problem solving, analysing and interpreting data and carrying out calculations are also sometimes tested in this way and many of these are partly or completely “open book”.

Laboratory skills are a fundamental aspect of professional practice for a biological scientist and both formative and summative practical based assessments will test your ability to work accurately, effectively and safely while using a number of key techniques. Your accounts of your work allow you to demonstrate that you can interpret data and report research clearly, concisely and honestly. This will sometimes be as a conventional scientific report but in some modules you will be asked to use other formats such as posters, presentations or passages in a laboratory notebook.

Other types of assessment used to evaluate various graduate skills and aspects of scientific understanding, communication and practice may include essays, posters and other presentations, wikis and blogs and data analysis and interpretation exercises.

Working in groups or teams is essential in most careers, whether in science or in other areas, and you will work with other students to complete some assessments to help you develop these skills.

In your final year research project you will plan and carry out a short research programme investigating an appropriate subject. The primary assessment is a thesis written in the style of a short scientific paper thus testing the design and conduct of the project, the quality of data obtained, its analysis and interpretation, and the formation of reasoned conclusions based upon the results in the context of previous work in the area, as well as the clarity and professionalism with which the work is communicated. Therefore this brings together multiple aspects of your degree and provides direct evidence of your ability to work independently as a scientific professional.

Additionally, some modules assess learning outcomes or content from another module (called 'synoptic assessment'). This requires you to synthesise skills and knowledge from different modules and thereby promotes a broader perspective in your learning and encourages you to cultivate a flexible attitude that is receptive to multidisciplinary approaches.

Employment and further study opportunities

Graduates of Biological Sciences will be able to demonstrate the following five Graduate Attributes:

- Critical and creative thinkers
- Literate and effective communicator
- Entrepreneurial
- Global in outlook and engaged in communities
- Social, ethically and environmentally aware

Graduate Attribute	Evident in Course Learning Outcomes
Critical and creative thinker	4.1, 4.2, 4.5 5.1, 5.2, 5.5 6.1, 6.2, 6.5
Literate and effective communicator	4.4, 4.5, 4.6 5.4, 5.5, 5.6 6.4, 6.5, 6.6
Entrepreneurial	4.7 5.7 6.7
Global in outlook and engaged in communities	4.3 5.3 6.3
Socially, ethically and environmentally aware	4.2, 4.3 5.2, 5.3 6.2, 6.3

University of Westminster courses capitalise on the benefits that London as a global city and as a major creative, intellectual and technology hub has to offer for the learning environment and experience of our students.

BSc Biological Sciences aims to create graduates who are enthusiastic in articulating science and research, who have a competitive edge in the global careers market and who are confident and capable in any professional environment.

Course structure

This section shows the core and option modules available as part of the course and their credit value. Full-time Undergraduate students study 120 credits per year. Course structures can be subject to change each academic year following feedback from a variety of sources.

The named degree pathways under the existing Biological Sciences programme have been closed because of the University decision to discontinue courses with numbers beneath 30. We have decided to run a single Biological Sciences degree in the new Learning Futures scheme to rationalise modules offered. The transition table in Section 3.1 summarised the changes to the modules offered.

Credit Level 4				
Module code	Module title	Status	UK credit	ECTS
4BICH001W	Biochemistry	Core	20	10
4BIOL002W	Cell Biology	Core	20	10
4PHYM001W	Human Physiology	Core	20	10
4BICH003W	Science: History, Philosophy and Practice	Core	20	10
4BIOL001W	Applications of Biological Sciences	Core	20	10
4PHYM002W	Fundamentals of Pharmacology	Option	20	10
4BICH002W	Biological Chemistry	Option	20	10
4HRBM002W	Botany	Option	20	10
	University Elective	Option	20	10
Award of Certificate of Higher Education available				

Credit Level 5				
Module code	Module title	Status	UK credit	ECTS
5BIOM010W	Research Methods	Core	20	10
5BICH001W	Metabolic Biochemistry	Core	20	10
5EVBI001W	Contemporary Global Issues	Core	20	10
5BICH002W	Bioinformatics	Option	20	10
5BICH003W	Molecular Biology and Genetics	Option	20	10
5PHYM002W	Physiological Networks	Option	20	10
5PHYM003W	Systems Pharmacology	Option	20	10
5BIOL001W	Exploring the Microbial World	Option	20	10
5EVBI002W	Urban Living and the Environment	Option	20	10
5BIOM002W	Medical Genetics in Practice	Option	20	10
5BIOM003W	Molecular and Cellular Therapeutics	Option	20	10
5BIOM008W	Infection and Immunity	Option	20	10

5BIOM009W	Human Parasitology	Option	20	10
5PHYM001W	Medical Physiology	Option	20	10
	University Elective	Option	20	10
Award of Diploma of Higher Education available				

Credit Level 6				
Module code	Module title	Status	UK credit	ECTS
6BICH003W	UG Research Project	Core	40	20
6BIOL001W	Designing a Sustainable World	Core	20	10
6BICH002W	Proteins and Enzymes	Option	20	10
6PHYM003W	Advanced Pharmacology and Toxicology	Option	20	10
6PHYM002W	Topics in Neuroscience	Option	20	10
6EVBI001W	Global Ethics	Option	20	10
6BICH001W	Advanced Molecular Biology	Option	20	10
6BIOL003W	Applied Biotechnology	Option	20	10
6BIOL004W	Work Experience and Career Management Skills	Option	20	10
6BIOM007W	Cancer Biology	Option	20	10
6BIOL002W	Advanced Cell Biology	Option	20	10
6BIOM002W	Clinical Immunology and Immunohaematology	Option	20	10
6BIOM005W	Medical Microbiology in the Genomics Era	Option	20	10
6BIOM006W	Applied Medical Science	Option	20	10
	University Elective	Option	20	10
Award BSc available				
Award BSc Honours available.				

Please note: Not all option modules will necessarily be offered in any one year.

Professional Body Accreditation or other external references

Accreditation by the Royal Society of Biology will be sought once the new programme is approved.

Academic regulations

The current Handbook of Academic Regulations is available at westminster.ac.uk/academic-regulations

How will you be supported in your studies?

Course Management

Your course is managed through the Department of Life Sciences within the Faculty of Science & Technology. The Course Leader and the teaching team will meet you in the

induction programme and can help you with enrolment, registration, and orientation to the university, its processes and the culture of higher education. The Course Leader is responsible for development and management of the course in conjunction with the Head of Department, the Faculty Director of Learning and Teaching and the departmental Learning & Teaching co-ordinator.

The course is monitored each year by senior members of the Faculty to ensure that it is running effectively and that issues that might affect the student experience have been appropriately addressed. Each course will have Course Committee meetings throughout the year and staff will consider the outcomes from these meetings, evidence of student progression and achievement to evaluate the effectiveness of the course. The Academic Standards Group audits this process and the outcomes are reported to the Academic Council of the University, which has overall responsibility for the maintenance of quality and standards in the University.

Academic Support

Upon arrival, an induction programme will introduce you to the staff responsible for the course, the campus on which you will be studying, the Library and IT facilities, additional support available and to your Faculty Registry Office. You will be provided with the Course Handbook, which provides detailed information about the course. Each course has a course leader or Director of Studies. All students enrolled on a full-time course and part time students registered for more than 60 credits a year have a personal tutor, who provides advice and guidance on academic matters. The University uses a Virtual Learning Environment called Blackboard where students access their course materials, and can communicate and collaborate with staff and other students.

Learning Support

The Academic Learning Development Centre supports students in developing the skills required for higher education. As well as online resources in Blackboard, students have the opportunity to attend Study Skills workshops and one to one appointments.

Learning support includes four libraries, each holding a collection of resources related to the subjects taught at that site. Students¹ can search the entire library collection online through the Library Search service to find and reserve printed books, and access electronic resources (databases, e-journals, e-books). Students can choose to study in the libraries, which have areas for silent and group study, desktop computers, laptops for loan, photocopying and printing services. They can also choose from several computer rooms at each campus where desktop computers are available with the general and specialist software that supports the courses taught at their Faculty. Students can also securely connect their own laptops and mobile devices to the University wireless network.

Support Services

The University of Westminster Student Affairs department provide advice and guidance on accommodation, financial and legal matters, personal counselling, health and disability issues, careers, specialist advice for international students and the chaplaincy providing multi-faith guidance. The University of Westminster Students' Union also provides a range of facilities to support students during their time at the University.

How do we ensure the quality of our courses and continuous improvement?

The course was initially approved by a University Validation Panel in 2007. The panel included internal peers from the University, academic(s) from another university and a representative from industry. This helps to ensure the comparability of the course to those offered in other universities and the relevance to employers.

¹ Students enrolled at Collaborative partners may have differing access due to licence agreements.

The course is also monitored each year by the Faculty to ensure it is running effectively and that issues which might affect the student experience have been appropriately addressed. Staff will consider evidence about the course, including the outcomes from Course Committees, evidence of student progression and achievement and the reports from external examiners, to evaluate the effectiveness of the course. Each Faculty puts in to place an action plan. This may for example include making changes on the way the module is taught, assessed or even how the course is structured in order to improve the course, in such cases an approval process is in place.

A Course review takes place periodically to ensure that the curriculum is up-to-date and that the skills gained on the course continue to be relevant to employers. Students meet with review panels to provide feedback on their experiences. Student feedback from previous years e.g. from Course Committees is also part of the evidence used to assess how the course has been running.

How do we act on student feedback?

Student feedback is important to the University and student views are taken seriously. Student feedback is gathered in a variety of ways.

- Through Course Committees students have the opportunity to express their voice in the running of their course. Student representatives are elected to Committee to expressly represent the views of their peer. The University and the Students' Union work together to provide a full induction to the role of the student representatives.
- Each Faculty also has its own Faculty Student Forum with student representatives; this enables wider discussions across the Faculty. Student representatives are also represented on key Faculty and university committees.
- All students are invited to complete a questionnaire before the end of each module. The feedback from this will inform the module leader on the effectiveness of the module and highlight areas that could be enhanced.
- The University also has an annual Student Experience Survey which seeks the opinions of students about their course and University experience. Final year Undergraduate students will be asked to complete the National Student Survey which helps to inform the national university league tables.

Please note: This programme specification provides a concise summary of the main features of the course and the learning outcomes that a student might reasonably be expected to achieve and demonstrate if s/he takes full advantage of the learning opportunities that are provided. This specification should be read in conjunction with the Course Handbook provided to students and Module Handbooks, which provide more detailed information on the specific learning outcomes, content, teaching, learning and assessment methods for each module.

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Appendix 1

Course level learning outcomes are mapped to the modules in which they are delivered in the table below.

Table of Learning Outcomes for reference:

Level 4 outcomes
L4.1 Development of a key knowledge base in the Biological Sciences, in addition to the skills required in maintaining the knowledge base for future success. (KU, KTS, GA)
L4.2 An ability to identify core issues/questions in biological problems and design simple experiments to resolve them. (KU, KTS)
L4.3 Appreciation of the biological component of global issues, and gain some understanding of the work done towards resolving them. (KU, KTS, GA)
L4.4 Development of professional communication skills and become comfortable in using professional software packages. (GA, KTS, PPP)
L4.5 Confidence in sourcing and communicating information linked to specific issues, and to be aware of the limitations of any literature resources. (GA, KTS, PPP)
L4.6 Familiarity with basic laboratory equipment and to develop the skills necessary in presenting and communicating experimental data and their limitations. (KU)
L4.7 An awareness of the many career pathways available to a graduate of Biological Science, through an aspirations plan, and to recognise the skills necessary to succeed in these careers. (GA, KU, KTS, PPP)
L4.8 Numeracy skills, through engagement with module assessments and activities and utilising additional resources as required. (KU, KTS, GA, PPP)
Level 5 outcomes
L5.1 An enhanced key knowledge base in the Biological Sciences, and the use of key skills in maintaining the knowledge base for future success. (KU, KTS, GA)
L5.2 The ability to highlight and explain core issues/questions in biological problems and design experiments to resolve them. (KU, KTS)
L5.3 The ability to articulate and explain the biological component of global issues, and understand the professional approach taken towards resolving them. (KU, KTS, GA)
L5.4 Enhanced communication skills and develop confidence in using software packages. (GA, KTS, PPP)
L5.5 The skills required to reliably source and communicate information linked to specific biological issues, and to be able to explain the limitations of any literature resources. (GA, KTS, PPP)
L5.6 Confident use, and explanation of, the use of basic laboratory equipment and refine the skills necessary for communicating experimental data and their limitations. (KU)
L5.7 Maintenance of an aspirations plan showing chosen career pathways available to a graduate of Biological Science, and to recognise the development of the skills necessary to succeed in these careers. (GA, KU, KTS, PPP)
L5.8 Extension of numeracy skills, through engagement with module assessments and activities and using experimental data, utilising additional resources as required. (KU, KTS, GA, PPP)
Level 6 outcomes
L6.1 An in depth and analytical understanding of the key knowledge base in the Biological Sciences, and to maintaining the knowledge base for future success. (KU, KTS, GA)
L6.2 Critical evaluation of the core issues/questions in biological problems and identify and propose new or novel approaches to their solution (KU, KTS)
L6.3 In-depth examination explain the biological component of global issues, and the work done towards resolving them, proposing novel solutions where possible. (KU, KTS, GA)
L6.4 Professional confident communication of scientific concepts with peers and the public and apply use of software packages to communication and research. (GA, KTS, PPP)

L6.5 Identification, critical evaluation and synthesis of multiple sources of information to expand and develop their knowledge and understanding in biochemistry and related disciplines. (GA, KTS, PPP)

L6.6 The competent use of laboratory equipment and/or scientific method in research, and problem solving, and to refine the skills necessary for analysis of experimental data and the limitations of its analysis. (KU)

L6.7 The ability to complete an aspirations plan for the students chosen career pathway demonstrating that this pathway may change throughout life, and to recognise the need to continually update the skills necessary to succeed in a career. (GA, KU, KTS, PPP)

L6.8 Effective application of numeracy skills as a part of research, and other activities as part of the course. (KU, KTS, GA, PPP)

Upon completion of each level you will be able to demonstrate:

Modules		Level 4 – Course Learning Outcomes							
		LO4.1	LO4.2	LO4.3	LO4.4	LO4.5	LO4.6	LO4.7	LO4.8
4BICH003W	Science: History, Philosophy and Practice	✓	✓	✓	✓	✓	✓	✓	✓
4BICH001W	Biochemistry	✓	✓	✓	✓	✓	✓	✓	✓
4BIOL002W	Cell Biology	✓	✓	✓	✓	✓	✓	✓	
4PHYM001W	Human Physiology	✓	✓	✓	✓	✓	✓	✓	
4BIOL001W	Applications of Biological Sciences	✓	✓	✓	✓	✓	✓	✓	

Modules		Level 5 – Course Learning Outcomes							
		LO5.1	LO5.2	LO5.3	LO5.4	LO5.5	LO5.6	LO5.7	LO5.8
5BIOM010W	Research Methods	✓	✓		✓	✓	✓	✓	✓
5BICH001W	Metabolic Biochemistry	✓	✓	✓	✓		✓	✓	✓
5EVBI001W	Contemporary Global Issues	✓	✓	✓	✓		✓	✓	

Modules		Level 6 – Course Learning Outcomes							
		LO6.1	LO6.2	LO6.3	LO6.4	LO6.5	LO6.6	LO6.7	LO6.8
6BICH003W	UG Research Project	✓	✓	✓	✓	✓	✓	✓	✓
6BIOL001W	Designing a Sustainable World	✓	✓	✓	✓	✓		✓	