

Programme Specification: Undergraduate

For students starting in Academic Year 2017/2018

1. Course Summary

Names of programme(s) and award title(s)	BSc (Hons) Biology BSc (Hons) Biology with International Year (see Annex A for details) BSc (Hons) Biology with Work Placement BSc (Hons) Studies in Biology BSc (Hons) Studies in Biology with International Year BSc (Hons) Studies in Biology with Work Placement
Award type	Single Honours
Mode of study	Full time
Framework of Higher Education Qualification (FHEQ) level of final award	Level 6
Duration	3 years 4 years if taken with an Applied Life Sciences Placement or the International Year option
Location of study	Keele University – main campus
Accreditation (if applicable)	BSc (Hons) Biology is accredited by the Royal Society of Biology. This includes the awards with International Year and with Work Placement - see section 12 for further information
Regulator	Office for Students (OfS)
Tuition Fees	UK/EU students: Fee for 2017/18 is £9,250* International students: Fee for 2017/18 is £15,250** The fee for the placement year is calculated at 20% of the standard year fee The fee for the international year abroad is calculated at 15% of the standard year fee
Additional Costs	Refer to section 18

* These fees are regulated by Government. We reserve the right to increase fees in subsequent years of study in response to changes in government policy and/or changes to the law. If permitted by such change in policy or law, we may increase your fees by an inflationary amount or such other measure as required by government policy or the law. Please refer to the accompanying Student Terms & Conditions. Further information on fees can be found at <http://www.keele.ac.uk/studentfunding/tuitionfees/>

** We reserve the right to increase fees in subsequent years of study by an inflationary amount. Please refer to the accompanying Student Terms & Conditions for full details. Further information on fees can be found at <http://www.keele.ac.uk/studentfunding/tuitionfees/>

How this information might change: Please read the important information at <http://www.keele.ac.uk/student-agreement/>. This explains how and why we may need to make changes to the information provided in this document and to help you understand how we will communicate with you if this happens.

2. What is a Single Honours programme?

The Single Honours programme described in this document allows you to focus more or less exclusively on Biology. In keeping with Keele's commitment to breadth in the curriculum, the programme also gives you the opportunity to take some modules outside Biology, in other disciplines and in modern foreign languages as part of a 360-credit Honours degree. Thus it enables you to gain, and be able to demonstrate, a distinctive range of graduate attributes.

3. Overview of the Programme

The Programme provides a varied and deep coverage of modern biology, with emphasis on whole organisms. Because we offer a large choice of modules, students can weave a path through the course that reflects their particular interest, such as environmental, plant or animal biology. Alternatively, students can mix modules on different topics to give a broader view of the biological world.

In this single honours degree programme students will study a number of core modules in biology each year, adding optional core and approved elective modules to make up the eight modules taken at each level. The programme normally lasts three years, but it can be extended to four years if a placement year is undertaken between the second and final years.

4. Aims of the Programme

The broad aims of the programme are to:

- provide you with knowledge, understanding and skills relevant to biology;
- produce skilled and motivated graduates who are suitably prepared for further study or for employment within or outside their subject;
- cultivate interest in biology, particularly at the organismal level, within a caring and intellectually stimulating environment;
- promote the development of a range of employability skills, for use in all areas where numeracy and an objective, scientific approach to problem-solving are valued.

5. What you will learn

The intended learning outcomes of the programme (what students should know, understand and be able to do at the end of the programme), can be described under the following headings:

- Subject knowledge and understanding
- Subject specific skills
- Intellectual skills
- Key or transferable skills (including employability skills)

Subject knowledge and understanding

Successful students will be able to demonstrate knowledge and understanding of:

- the diversity of life and its evolution from the geological past to the present
- the complexity of biological processes and mechanisms of life at a range of hierarchical levels (molecular, cellular, organismal, community, ecosystem)

- the breadth of challenges addressed by the study of biology, such as environmental, physiological, ecological, behavioural issues
- the influence of human activities on living systems (and the converse)
- the basic experimental skills appropriate to the discipline of biology
- the practice and application of laboratory and field-work in the biological sciences
- the approaches to acquiring, interpreting, analysing biological data from a variety of sources, including the use of statistics
- the contribution of research to the development of biological knowledge
- the dynamic, plural and contested nature of the discipline and an awareness of the philosophical and ethical issues involved
- the use of biological terminology, nomenclature and classification systems
- the relevance of biology to practical problems and improving the quality and sustainability of life
- the applicability of the biosciences to the careers to which graduates will be progressing

Subject specific skills

Successful students will be able to:

- use a range of practical techniques for the acquisition, analysis and critical evaluation of biological information
- acquire a range of practical laboratory and field techniques to ensure competence in basic experimental skills
- sample, record and analyse data in the field and/or laboratory in a manner that ensures validity, accuracy, calibration, precision, replicability and highlights uncertainty during collection
- formulate a hypothesis, design, plan, conduct, collate, analyse, report on and evaluate a biological investigation
- recognise philosophical, moral and ethical issues relevant to the subject, and appreciate the need for ethical standards and professional codes of conduct
- undertake field and/or laboratory investigations of living systems in a responsible, safe and ethical manner, paying due attention to standard procedures (e.g., risk assessment, health and safety regulations, animal welfare, informed consent)

Intellectual skills

Successful students will be able to:

- assess the merits of contrasting theories, paradigms, concepts or principles
- think independently, set tasks and solve problems by a variety of methods
- make reasoned decisions and develop reasoned arguments
- obtain and interpret several lines of subject-specific evidence to formulate and test hypotheses
- make critical interpretations, evaluations and judgements of data and text
- analyse, synthesise and summarise information critically, including published research or reports
- apply biological understanding to familiar and unfamiliar problems, and emphasise the interdisciplinary nature of science and the validity of different points of view
- take responsibility for their own learning and reflect upon that learning

Key or transferable skills (including employability skills)

Successful students will be able to:

- develop an adaptable, flexible, sustainable and effective approach to study and work, including time management, creativity and intellectual integrity
- acquire, analyse, synthesise, summarise and present information and ideas from a wide range of sources: textual, numerical, verbal, graphical
- prepare, process, interpret and present data using appropriate qualitative and quantitative techniques, statistical programmes, spreadsheets and audio-visual technology
- use the internet and other electronic sources critically as a means of communication and a source of information
- cite and reference work in an appropriate manner, avoiding issues with plagiarism
- communicate effectively to a variety of audiences by written, spoken and graphical means using appropriate techniques and scientific language
- develop skills necessary for self-managed and lifelong learning, including working independently, organisational, enterprise and knowledge transfer skills
- work with others to achieve an objective in a respectful manner that is accepting of the viewpoints and opinions of others and evaluates the roles and development of team members
- motivate themselves and sustain that motivation over an extended period of time
- identify and work towards targets for personal, academic and career development

Keele Graduate attributes

Engagement with this programme will enable you to develop your intellectual, personal and professional capabilities. At Keele, we call these our ten Graduate Attributes and they include independent thinking, synthesizing information, creative problem solving, communicating clearly, and appreciating the social, environmental and global implications of your studies and activities. Our educational programme and learning environment is designed to help you to become a well-rounded graduate who is capable of making a positive and valued contribution in a complex and rapidly changing world, whichever spheres of life you engage in after your studies are completed.

Further information about the Keele Graduate Attributes can be found here: <http://www.keele.ac.uk/journey/>

6. How is the Programme taught?

Learning and teaching methods used on the programme vary according to the subject matter and level of the module. They include the following:

- **Traditional lectures** where the lecturer provides students with a framework for reading and independent study. Some lecture classes may feature guest speakers working in biology
- **Interactive learning** in large classes where students have the opportunity to work together in smaller groups, interact with the lecturer and reflect on their own learning. Interactive lectures may involve the use of voting systems or involve students in answering quick quizzes or writing short summaries
- **Practical classes** in laboratories are particularly important and involve the study and observation of biological material and provide training in a wide range of research techniques
- **Fieldwork** involves the study and observation of a wide range of living organisms in their communities and provides training in a range of field techniques
- **Tutorials** and seminars in small groups of students where key issues can be discussed in more depth. Students are expected to play a full part and, occasionally, to lead these discussions. Some tutorials and seminars consist largely of student presentations and many are based on scientific papers studied in advance

- **Independent study** based on directed reading from text books, research papers and research reviews
- **Web-based learning** using Keele University's virtual learning environment (KLE). The KLE is used to give students easy access to a wide range of resources and research tools, and as a platform for online discussions and quizzes
- **The experimental project** module in the final year provides the opportunity to undertake a piece of independent experimental research supervised and supported by a member of staff and usually within a research group

Apart from these formal activities, students are also provided with regular opportunities to talk through particular areas of difficulty, and any special learning needs they may have, with their tutors on a one-to-one basis.

These learning and teaching methods enable students to achieve the learning outcomes of the programme in a variety of ways. For example:

- Lectures and independent study allow students to gain knowledge and understanding of the diversity of life and the complexity of biological processes
- Seminars, tutorials and online discussions provide opportunities for students to ask questions about, and suggest answers to biological questions, and to present their own ideas to members of staff and other students using an appropriate medium of communication
- Interactive lectures, seminars, tutorials and web-based activities encourage students to reflect on their own learning and take responsibility for its development by addressing areas of difficulty, perhaps by discussing them with their fellow students or by getting additional help from a member of staff
- Laboratory practicals allow students to observe, analyse and interpret biological processes and use a range of techniques

Undertaking an experimental project with the support of an experienced researcher allows students to formulate relevant research questions and devise, carry out and analyse experiments to answer them.

7. Teaching Staff

Currently our core teaching staff are mainly from the School of Life Sciences. Teaching staff from the School of Pharmacy, School of Medicine and the University Hospitals of North Midlands NHS Trust also contribute to the Programme. All staff members are active in research or scholarship. Of the current academic staff in the School, a number have recognised or accredited teaching qualifications, are Fellows of the Higher Education Academy (HEA) and are Senior Fellows of the HEA. For information on the research interests and qualifications of staff from the School of Life Sciences, please see the School web page at: <https://www.keele.ac.uk/lifesci/people/>

The University will attempt to minimise changes to our core teaching teams, however, delivery of the programme depends on having a sufficient number of staff with the relevant expertise to ensure that the programme is taught to the appropriate academic standard.

Staff turnover, for example where key members of staff leave, fall ill or go on research leave, may result in changes to the programme's content. The University will endeavour to ensure that any impact on students is limited if such changes occur.

8. What is the Structure of the Programme?

The academic year runs from September to June and is divided into two semesters. The number of weeks of teaching will vary from course to course, but you can generally expect to attend scheduled teaching sessions between the end of September and mid-December, and from mid-January to the end of April.

Our degree courses are organised into modules. Each module is usually a self-contained unit of study and each is usually assessed separately with the award of credits on the basis of 1 credit = 10 hours of student effort. An outline of the structure of the programme is provided in the tables below.

There are four types of module delivered as part of this programme. They are:

- Compulsory core module – a module that you are required to study on this course;
- Optional core module – these allow you some limited choice of what to study from a list of modules;
- Programme approved elective module – subject-related modules that count towards the number of subject credits required by your degree;
- Free-standing elective module – a free choice of modules that count towards the overall credit requirement but not the number of subject-related credits.

Year 1 (Level 4)

Core modules	Credits	Elective modules	Credits
Diversity of Life	15	Introduction to Human Physiology	15
Cell and Molecular Biology	15	Human Physiology and Pathology	15
Genetics and Evolution	15	Understanding Animal Behaviour	15
Ecology and Environment	15	Plants: Sex, drugs and alcohol	15
		Freestanding elective or language module in each semester	15

Year 2 (Level 5)

Core modules	Credits	Elective modules	Credits
Life at the Extremes ¹	15	Human Genetics	15
Animal Adaptations	15	Neurodevelopment	15
Microbes viruses and Parasites	15	Nutrition and Energy Balance	15
Life at the Extremes ¹ (for Study Abroad only)	15	Health and Environment	15
Research and Analytical Skills	15	Learning and Memory	15
Living Together: Behaviour, Cooperation and Conflict	15	International Relations of the Environment	15
Current Topics in Biology	15	Freestanding elective or language module	15 / 30

¹ Life at the Extremes includes a field course

Year 3 (Level 6)

Core modules	Credits	Elective modules	Credits
Individual Study Project Modules		Applied Insect Ecology	15
Choose one of the following:			
Double Life Sciences Experimental Project (With Research Skills Assessment) ⁴	30		
	30		

Double Applied Life Sciences Placement ^{5 6}			
		Conservation Biology	15
		Human Parasitology	15
		Tropical Biology field course	15
		Applied Regenerative Medicine	15
		Communication Skills for Biologists	15
		Cancer Biology	15
		Life Sciences Dissertation	15
		Trees in their Environment	15
		Human Evolution	15
		Case Studies in Biotechnology	15
		Free standing elective or a language module	15 / 30

⁴ This is a 30 credit module consisting of 120 hrs of experimental work and a 9,000 word report.

⁵ This is a 30 credit module consisting of a 9,000 word report of the project work carried out on an Applied Life Sciences Placement. It replaces the experimental project.

⁶ Students taking this module in year three will be on Applied Life Sciences Placement and will return to take six modules (90 credits) at Level 6 in their fourth year.

For further information on the content of modules currently offered please visit:

www.keele.ac.uk/recordsandexams/az

Learning Outcomes

Subject Knowledge and Understanding		
Learning Outcome	Module in which this is delivered	Principal forms of assessment (of the Level Outcome) used
<i>Successful students will be able to demonstrate knowledge & understanding of:</i>		
U1. the diversity of life and its evolution from the geological past to the present	Diversity of Life, Genetics and Evolution, Life at the Extremes, Human Evolution	Multiple Choice Question (MCQ) exams, Essays, Unseen Exams, Seen Exams
U2. the complexity of biological processes and mechanisms of life at a range of hierarchical levels (molecular, cellular, organismal, community, ecosystem)	Cell and Molecular Biology, Diversity of Life, Ecology and the Environment, and Life at the Extremes	MCQ exams, essays, lab reports Unseen exams seen exams
U3. The breadth of challenges addressed by the study of biology, such as such as environmental, physiological, ecological, behavioural issues.	All modules except language and free electives	All assessments
U4. the influence of human	Ecology and Environment, Human	Essays, Scientific Reports, Unseen

activities on living systems (and the converse)	Physiology and Pathology, Greening Business, Life at the Extremes, Integrated Environmental Field Studies, International Relations of the Environment, Current Topics in Biology and Conservation Biology	Exams, Seen Exams , MCQ exams
U5. the basic experimental skills appropriate to the discipline of biology	Diversity of Life, Genetics and Evolution, Human Physiology and Pathology, Introduction to Human Physiology, Animal Adaptations, Living Together, Natures Tools and Life at the Extremes and the Research Project, Neurophysiology, Case studies in Biotechnology	Multiple-choice class tests and examinations, lab reports, project reports, dissertations
U6. the approaches to acquiring, interpreting, analysing biological data from a variety of sources, including the use of statistics	Diversity of Life, Genetics and Evolution, Cell and Molecular Biology, Research and Analytical Skills, Life at the Extremes, Animal Adaptations, Research Project, Neurological Basis of Brain Disease, Behavioural Neuroscience	Lab and field reports, project reports, dissertations
U7. the contribution of research to the development of biological knowledge	All modules, particularly those at level 6	Essays, reports, examinations, project reports, dissertations
U8. the dynamic, plural and contested nature of the discipline and an awareness of the philosophical and ethical issues involved	Human Evolution, Dissertation, Research Project, Conservation Biology, Current Topics in Biology Health and the Environment, International Relations of the Environment, Greening Business, Neurodevelopment, Neurological Basis of Brain Disease.	Essays, reports, examinations, project reports, dissertations
U9. the use of biological terminology, nomenclature and classification systems	All modules, particularly Life at the Extremes	All assessments
U10. the relevance of biology to practical problems and improving the quality and sustainability of life	Greening Business, Human Physiology and Pathology, Human Genetics, Integrated Environmental Field Studies, Current Topics in Biology, Health and Environment, Case Studies in Technology, International Relations of the Environment, Trees in their Environment, Applied Fish Biology, Project and Dissertation	Essays, reports, examinations, project reports, dissertations
U11. the applicability of the biosciences to the careers to which graduates will be progressing	All modules, particularly those at level 6	Essays, reports, examinations, project reports, dissertations

Subject Specific Skills

Learning Outcome	Module in which this is delivered	Principal forms of assessment (of the Level Outcome) used
<i>Successful students will be able to:</i>		
S1. use a range of practical techniques for the acquisition, analysis and critical evaluation of biological information	All modules with practical sessions, particularly Research and Analytical Skills, Life at the Extremes and the Research Project	Laboratory reports, laboratory performance, data analysis exercises, project reports, dissertations
S2. use a range of practical laboratory and field techniques to ensure competence in basic experimental skills	All modules with practical sessions, as well as Life at the Extremes, Conservation Biology and the Research Project or Applied Life Sciences Placement.	Laboratory reports, laboratory performance, data analysis exercises, project reports, dissertations
S3. sample, record and analyse data in the field and/or laboratory in a manner that ensures validity, accuracy, calibration, precision, replicability and highlights uncertainty during collection	All modules with practical sessions, particularly Life at the Extremes and Research and Analytical Skills	Laboratory reports, laboratory performance, data analysis exercises, project reports, dissertations
S4. formulate a hypothesis, design, plan, conduct, collate, analyse, report and evaluate on a biological investigation	All modules with practical sessions, particularly Life at the Extremes and Research and Analytical Skills. Also the Research Project or Applied Life Sciences Placement.	Laboratory reports, laboratory performance, data analysis exercises, project reports, dissertations
S5. recognise philosophical, moral and ethical issues relevant to the subject, and appreciate the need for ethical standards and professional codes of conduct	Genetics and Evolution, Ecology and Environment, Greening Business, International Relations of the Environment, Living Together, Health and Environment, Conservation Biology, Research Project, Applied Life Sciences Placement.	Dissertations, multiple choice tests, exams, practical reports
S6. undertake field and/or laboratory investigations of living systems in a responsible, safe and ethical manner, paying due attention to standard procedures (e.g., risk assessment, health and safety regulations, animal welfare, informed consent)	All modules with practical sessions and Life at the Extremes, Conservation Biology, Research Project and Applied Life Sciences Placement.	Laboratory reports, project reports

Intellectual Skills		
Learning Outcome	Module in which this is delivered	Principal forms of assessment (of the Level Outcome) used
<i>Successful students will be able to:</i>		
I1. assess the merits of contrasting theories, paradigms, concepts or principles	All modules, particularly those at level 6	Essays, reports, examinations, project reports, literature reviews
I2. think independently, set tasks and solve problems by a variety of methods	All modules with practical sessions, Life at the Extremes, Experimental Project, Applied Life Sciences	Laboratory reports, project reports,

	Placement	
13. make reasoned decisions and develop reasoned arguments	All modules, particularly those at level 6	Essays, project reports, literature reviews
14. obtain and interpret several lines of subject-specific evidence to formulate and test hypotheses	Experimental Project, Human Evolution and Applied Life Sciences Placement	Essays, project reports, literature reviews
15. make critical interpretations, evaluations and judgements of data and text	Research and Analytical Skills, Experimental Project, and level 6 taught modules	Essays, data analysis exercises, project reports, literature reviews
16. analyse, synthesise and summarise information critically, including published research or reports	Research and Analytical Skills, Experimental Project and level 6 taught modules	Essays, data analysis exercises, project reports, literature reviews
17. apply biological understanding to familiar and unfamiliar problems, and emphasise the interdisciplinary nature of science and the validity of different points of view	All modules, particularly level 6 modules	Essays, project reports, literature reviews
18. take responsibility for their own learning and reflect upon that learning	Experimental Project, all level 6 modules and to a lesser extent level 5 modules	Laboratory performance, Personal Development Planning, in course assessment and exams

Key or Transferable Skills (graduate attributes)		
Learning Outcome	Module in which this is delivered	Principal forms of assessment (of the Level Outcome) used
<i>Successful students will have the opportunity to develop:</i>		
E1. develop an adaptable, flexible, sustainable and effective approach to study and work, including time management, creativity and intellectual integrity	All modules, particularly the Life Sciences Research Projects and Applied Life Sciences Placements.	Essays, experimental projects, laboratory performance
E2. acquire, analyse, synthesise, summarise and present information and ideas from a wide range of sources: textual, numerical, verbal, graphical	All modules.	Essays, literature reviews
E3. prepare, process, interpret and present data using appropriate qualitative and quantitative techniques, statistical programmes, spreadsheets and programs for presenting data visually	All modules with practical sessions, particularly Life at the Extremes, Research and Analytical Skills, Life Sciences Research Projects and Applied Life Sciences Placements.	Project reports, data analysis exercises, laboratory reports
E4. use the internet and other electronic sources critically as a means of communication and a source of information	Many modules, particularly Current Topics in Biology, Research and Analytical Skills and Life Sciences Research Projects and Applied Life	Presentations, data analysis exercises, project reports

	Sciences Placements.	
E5. cite and reference work in an appropriate manner, avoiding issues with plagiarism	All modules	All assessments
E6. communicate effectively to a variety of audiences by written, spoken and graphical means using appropriate techniques and scientific language	All modules, particularly Living Together, Research and Analytical Skills, Human Evolution, Current Topics in Biology and Life Sciences Research Projects and Applied Life Sciences Placements.	Essays, oral presentations, reports, project reports
E7. develop skills necessary for self-managed and lifelong learning, including working independently, organisational, enterprise and knowledge transfer skills	All modules	Essays, project reports, literature reviews
E8. work with others to achieve an objective in a respectful manner that is accepting of the viewpoints and opinions of others and evaluates the roles and development of team members	All modules, particularly Diversity of Life, Life at the Extremes.	Laboratory performance
E9. motivate themselves and sustain that motivation over an extended period of time	All modules, particularly Life Sciences Research Projects and Applied Life Sciences Placements.	Laboratory performance, experimental project
E10. identify and work towards targets for personal, academic and career development	All modules	All assessments

9. Final and intermediate awards

Credits required for each level of academic award are as follows:

Honours Degree	360 credits	You will require at least 120 credits at levels 4, 5 and 6. You must accumulate at least 255 credits in Biology (out of 360 credits overall), with at least 60 credits in each of the three years of study, to graduate with a named single honours degree in Biology.
Diploma in Higher Education	240 credits	You will require at least 120 credits at level 4 or higher and at least 120 credits at level 5 or higher
Certificate in Higher Education	120 credits	You will require at least 120 credits at level 4 or higher

Biology with International Year: in addition to the above students must pass a module covering the international year in order to graduate with a named degree in Biology with International Year. Students who do not complete, or fail the international year, will be transferred to the three-year Biology programme.

Biology with Work Placement Year: in addition to the above students must pass a non-credit bearing module covering the work placement year in order to graduate with a named degree in Biology with Work Placement

year. Students who do not complete, or fail the placement year, will be transferred to the three-year Biology programme.

Alternative Awards

Students who do not pass the 30 credit Experimental Research Project or the 30 credit Applied Life Science Placement but who have enough credits to obtain a degree will be awarded BSc (Hons) Studies in Biology. This degree title is not accredited by the Royal Society of Biology.

10. How is the Programme assessed?

The wide variety of assessment methods used within Biology at Keele reflects the broad range of knowledge and skills that are developed as you progress through the degree programme. Teaching staff pay particular attention to specifying clear assessment criteria and providing timely, regular and constructive feedback that helps to clarify things you did not understand and helps you to improve your performance. The following list is representative of the variety of assessment methods used within Biology:

- **Unseen, closed and open book examinations** in different formats test students' knowledge and understanding of the subject. Examinations may consist of essay, short answer and/or multiple choice questions, and paper comprehension
- **Essays** allow you to demonstrate your ability to articulate ideas clearly using argument and reasoning skills and with close reference to the contexts and critical concepts covered in the modules. Essays also develop and demonstrate research and presentation skills (including appropriate scholarly referencing)
- **Laboratory reports** – structured proformas and full lab reports are formal summaries of work carried out in the laboratory and test students' understanding of the practical aspects of the programme and develop the skills necessary to enable students to present and analyse their results
- **Class tests** taken either conventionally or online via the Keele Learning Environment (KLE) assess students' subject knowledge and their ability to apply it in a more structured and focused way
- **Research projects and reports** test student's knowledge of different research methodologies and the limits and provisional nature of knowledge. They also enable students to demonstrate their ability to formulate research questions and to answer them using appropriate methods
- **Oral and poster presentations and reports** assess individual students' subject knowledge and understanding. They also test their ability to work effectively as members of a team, to communicate what they know orally and visually, and to reflect on these processes as part of their own personal development
- **Portfolios** may consist of a range of different pieces of work but routinely include a requirement that students provide some evidence of critical reflection on the development of their own learning
- **Peer assessment:** In some cases students will be involved in marking other students' work, usually with a prescriptive marking guide. This helps students to appreciate where marks are gained and lost and gives them the opportunity to see the common mistakes made by other students
- **Reviews** of other scholars' work test students' ability to identify and summarise the key points of a text and to evaluate the quality of arguments and the evidence used to support them. In the case of work based on empirical research, reviews also assess students' knowledge of research methodologies and their ability to make critical judgements about the appropriateness of different strategies for collecting and analysing data
- **Group activities** might include working on a collaborative project such as compiling a book chapter, or problem based learning cases

Marks are awarded for summative assessments designed to assess your achievement of learning outcomes. You

will also be assessed formatively to enable you to monitor your own progress and to assist staff in identifying and addressing any specific learning needs. Feedback, including guidance on how you can improve the quality of your work, is also provided on all summative assessments within three working weeks of submission, unless there are compelling circumstances that make this impossible, and more informally in the course of tutorial and seminar discussions.

11. Contact Time and Expected Workload

This contact time measure is intended to provide you with an indication of the type of activity you are likely to undertake during this programme. The data is compiled based on module choices and learning patterns of students on similar programmes in previous years. Every effort is made to ensure this data is a realistic representation of what you are likely to experience, but changes to programmes, teaching methods and assessment methods mean this data is representative and not specific.

Undergraduate courses at Keele contain an element of module choice; therefore, individual students will experience a different mix of contact time and assessment types dependent upon their own individual choice of modules. The figures below are an example of activities that a student may expect on your chosen course by year/stage of study. Contact time includes scheduled activities such as: lecture, seminar, tutorial, project supervision, demonstration, practical classes and labs, supervised time in labs/workshop, fieldwork and external visits. The figures are based on 1,200 hours of student effort each year for full-time students.

Activity	Year 1 (Level 4)	Year 2 (Level 5)	Year 3 (Level 6)
Scheduled learning and teaching activities	34%	28%	17%
Guided independent Study	66%	72%	83%
Placements	0%	0%	0%

Work Placement Year (only)	
Scheduled Learning and Teaching Activities	0%
Guided Independent Study	0%
Placements	100%

12. Accreditation

This programme is accredited by the Royal Society of Biology (RSB).

13. Regulations

The University Regulations form the framework for learning, teaching and assessment and other aspects of the student experience. Further information about the University Regulations can be found at: <http://www.keele.ac.uk/student-agreement/>

The following course specific regulations should be noted:

- Wearing a laboratory coat is compulsory in all classes held in laboratories. Students will not be allowed to attend the laboratory class without a laboratory coat.
- Students must wear appropriate clothing in the laboratories, including sensible footwear. Closed shoes and low heels should be worn. This is to avoid tripping and to protect the feet in the case of spillages. Long hair must be tied back. Students who are inappropriately dressed may, at the discretion of the member of staff in charge, be excluded from the class and recorded as being absent without good cause.
- Students who arrive late to laboratory classes may, at the discretion of the member of staff in charge, be excluded from the class and recorded as being absent without good cause.

A student who has completed a semester abroad will not normally be eligible to transfer onto the International Year option.

14. What are the typical admission requirements for the programme?

Subject	A-level	Subjects not included	International Baccalaureate	BTEC	Access to Higher Education Diploma	GCSE requirements
Biology (Single Honours)	ABB A level Applied Science, Biology, Chemistry, Environmental Science, Geography, Geology, Human Biology, Maths, Psychology, Sports Science or Statistics.	General Studies and Critical Thinking	34 points to include Higher Level Biology, Chemistry, Maths or Physics at 6 or above.	DDM You must have taken sufficient Science units, please contact us for advice	Obtain Access to Higher Education Diploma with 30 Level 3 credits at Distinction and 15 Level 3 credits at Merit. You must also have taken sufficient Science credits, please contact us for advice.	Maths @ C (or 4) English Lang @ C (or 4)

Applicants who are not currently undertaking any formal study or who have been out of formal education for more than 3 years and are not qualified to A-level or BTEC standard may be offered entry to the University's Foundation Year Programme.

Applicants for whom English is not a first language must provide evidence of a recognised qualification in English language. The minimum score for entry to the Programme is Academic IELTS 6.0 or equivalent.

Please note: All non-native English speaking students are required to undertake a diagnostic English language assessment on arrival at Keele, to determine whether English language support may help them succeed with their studies. An English language module may be compulsory for some students during their first year at Keele.

Accreditation of Prior Learning (APL) is considered on a case-by-case basis and those interested should contact the Programme Director. The University's guidelines on this can be found here:

<http://www.keele.ac.uk/qa/accreditationofpriorlearning/>

15. How are students supported on the programme?

Support for student learning on the Programme is provided in the following ways:

- Module tutors are responsible for providing support for learning on the modules. They also give individual feedback on in-course assessments and more general feedback on examinations.
- Tutors and demonstrators provide help and advice to students in laboratory sessions and during fieldwork.
- Every student is allocated to a personal tutor who is responsible for reviewing and advising on students' academic progress.
- Personal tutors also act as a first point of contact for students on non-academic issues that may affect their learning and can refer students on to a range of specialist health, welfare and financial services co-ordinated by the University's Student Support and Development Service.
- All members of teaching staff on the Biology Principal Programme are available to see students during office hours by appointment.

16. Learning Resources

Biology is taught in modern teaching rooms across the University, all of which are equipped with computers, internet access and electronic whiteboards or projection equipment. Rooms may be arranged either in traditional lecture format or more informally to allow students to work together in small groups.

Practical sessions are held in dedicated teaching laboratories within the School of Life Sciences. These were completely refitted in 2006. A £11 million new extension to the Huxley Building will provide additional teaching laboratory space and is expected to be up and running by the start of the 2017 academic year.

For final year projects, students will be working in research laboratories primarily in the Huxley Building, Guy Hilton Research Centre or Lennard Jones Building.

The learning resources available to students on the Programme include:

- The extensive collection of books and journals relevant to undergraduate study held in the University Library. Much of this material is also accessible online to Keele students from anywhere in the world with a University username and password.
- A smaller collection of biological publications and materials held in the Undergraduate Resource Room in the School of Life Sciences. The Resource Room is open at regular times during teaching periods and the resources are specifically related to the needs of students on Principal Programmes in the School of Life Sciences.
- The Keele Learning Environment (KLE) which provides easy access to a wide range of learning resources including lecture notes, electronic materials available in a repository maintained by the University Library and other resources – video, audio and text-based – accessible from external providers via the internet.

17. Other learning opportunities

Study abroad (semester)

Students on the Biology programme have the potential opportunity to spend a semester abroad in their second year studying at one of Keele's international partner universities.

Exactly which countries are available depends on the student's choice of degree subjects. An indicative list of countries is on the website (<http://www.keele.ac.uk/studyabroad/partneruniversities/>); however this does not guarantee the availability of study in a specific country as this is subject to the University's application process for studying abroad.

No additional tuition fees are payable for a single semester studying abroad but students do have to bear the costs of travelling to and from their destination university, accommodation, food and personal costs. Depending on the destination they are studying at additional costs may include visas, study permits, residence permits, and compulsory health checks. Students should expect the total costs of studying abroad to be greater than if they study in the UK, information is made available from the Global Education Team throughout the process, as costs will vary depending on destination

Whilst students are studying abroad any Student Finance eligibility will continue, where applicable students may be eligible for specific travel or disability grants. Students studying in Erasmus+ destinations may be eligible for grants as part of this programme. Students studying outside of this programme may be eligible for income dependent bursaries at Keele.

Students travel on a comprehensive Keele University insurance plan, for which there are currently no additional charges. Some governments and/or universities require additional compulsory health coverage plans; costs for this will be advised during the application process.

Study Abroad (International Year)

A summary of the International Year, which is a potential option for students after completion of year 2 (Level 5), is provided at Annex A.

Work placement

Students registered for Single Honours Biology may undertake an Applied Life Sciences Placement between years 2 and 3 (Levels 5 and 6). This forms part of the Applied Life Sciences Placement module at level 6. Whilst on placement students may or may not receive payment from their placement employers and will have to meet their own living expenses. They are also liable for University fees (at a reduced rate).

Other opportunities

Other learning opportunities for Biology students vary from year to year, but include a week-long coastal ecology field course in North Wales. Between their second and third year, students may also have the opportunity to spend time in Malaysia or to join an Operation Wallacea or similar expedition, carrying out conservation-based research in various parts of the tropics. These options may incur additional costs.

During their time at Keele, students also have the opportunity to hear from, and talk to, a range of guest speakers and presenters including researchers from around the world. Some of these activities are timetabled as part of taught modules, others are organised separately, but all are widely advertised and undergraduate students are always welcome to attend.

18. Additional costs

Biology Programme Costs

There is an 8 day Field-course accommodated at Bangor University during the summer vacation between the first and second years. The School meets the cost of this, but the student will be expected to pay for their own travel to Bangor. The compulsory residential field course is subsidised by the School of Life Sciences and you pay no fees to attend. You are required to cover your own transport costs to and from Bangor University and maintenance costs during the field course (for example food, appropriate clothing, etc.).

Learning opportunities as outlined above may be available and may incur additional costs.

Activity	Estimated cost
Field courses - compulsory (Part of the module LSC-20055 Life at the Extremes)	School Pays
Travel to Bangor University to Fieldcourse	Student pays

These costs have been forecast by the University as accurately as possible but may be subject to change as a result of factors outside of our control (for example, increase in costs for external services). Forecast costs are reviewed on an annual basis to ensure they remain representative. Where additional costs are in direct control of the University we will ensure increases do not exceed 5%.

As to be expected there will be additional costs for inter-library loans and potential overdue library fines, print and graduation.

We do not anticipate any further additional costs for this undergraduate programme.

19. Quality management and enhancement

The quality and standards of learning in Biology are subject to a continuous process of monitoring, review and enhancement.

- The Learning and Teaching Committee of the School of Life Sciences is responsible for reviewing and monitoring quality management and enhancement procedures and activities across the School.
- Individual modules and the Biology Programme as a whole are reviewed and enhanced every year in the annual programme review which takes place at the end of the academic year and as part of the University's Curriculum Annual Review and Development (CARD) process.
- The programmes are run in accordance with the University's Quality Assurance procedures and are subject to periodic reviews under the Internal Quality Audit (IQA) process.

Student evaluation of, and feedback on, the quality of learning on every Biology module takes place every year using a variety of different methods:

- The results of student evaluations of all modules are reported to module leaders and reviewed by the Programme Committee as part of the Curriculum Annual Review and Development (CARD) process.
- Findings related to the Biology Programmes from the annual National Student Survey (NSS), and from regular surveys of the student experience conducted by the University, are subjected to careful analysis and a planned response at programme and School level.
- Feedback received from representatives of students in all three years of the Biology Programme is considered and acted on at regular meetings of the Programmes Staff/Student Liaison Committee.

The University appoints senior members of academic staff from other universities to act as external examiners on all programmes. They are responsible for:

- Approving examination questions
- Confirming all marks which contribute to a student’s degree
- Reviewing and giving advice on the structure and content of the programme and assessment procedures

Information about current external examiner(s) can be found here:

<http://www.keele.ac.uk/ga/externalexaminers/currentexternalexaminers/>

20. The principles of programme design

The Biology Programme described in this document has been drawn up with reference to, and in accordance with the guidance set out in, the following documents:

- UK Quality Code for Higher Education, Quality Assurance Agency for Higher Education: <http://www.qaa.ac.uk/quality-code>
- QAA Subject Benchmark Statement: Biosciences (2015) http://www.qaa.ac.uk/docs/qaa/subject-benchmark-statements/sbs-biosciences-15.pdf?sfvrsn=4eef781_24
- Keele University Regulations and Guidance for Students and Staff: <http://www.keele.ac.uk/regulations>

21. Document Version History

Version history	Date	Notes
Date first created	October 2016	
Revision history	V2.0: April 2017	Changes to elective module offer in Year 2 to make the options more relevant to the programme [minor – no reissue]
	V3.0: August 2017	Revisions due to RSB accreditation requirements. Includes: addition of alternative degree titles for students who a) completed the work placement and b) compensated the ISP modules at Level 6; addition of DH Biology and Biochemistry as an accredited pathway; minor changes to the experimental project module at Level 6 (now with research skills assessment). [major – reissued]
	V4.0: April 2019	- Level 5: 'Life at the Extremes' added as a compulsory module only for students who do study abroad in semester 1 of Level 5; - 'Applied Regenerative Medicine' and 'Cancer Biology' replace both 'Applied Fish Biology' and 'Developmental Biology' as optional modules at

		Level 6; also Communication Skills for Biologists changes from a compulsory to an optional module
Date approved	16/10/2017	

Annex A

BSc (Hons) Biology with International Year

International Year Programme

Students registered for Single Honours Biology may either be admitted for or apply to transfer during their period of study at Level 5 to the Single Honours 'Biology with International Year'. Students accepted onto this programme will have an extra year of study (the International Year) at an international partner institution after they have completed Year 2 (Level 5) at Keele.

Students who successfully complete both the second year (Level 5) and the International Year will be permitted to progress to Level 6. Students who fail to satisfy the examiners in respect of the International Year will normally revert to the BSc (Hons) Biology and progress to Level 6 on that basis. The failure will be recorded on the student's final transcript.

Study at Level 4, Level 5 and Level 6 will be as per the main body of this document. The additional detail contained in this annex will pertain solely to students registered for 'BSc (Hons) Biology with International Year'.

International Year Programme Aims

In addition to the programme aims specified in the main body of this document, the international year programme of study aims to provide students with:

1. Personal development as a student and a researcher with an appreciation of the international dimension of their subject
2. Experience of a different culture, academically, professionally and socially

Entry Requirements for the International Year

Students may apply to the 4-year programme during Level 5. Admission to the International Year is subject to successful application, interview and references from appropriate staff.

The criteria to be applied are:

- Academic Performance (an average of 60% across all modules at Level 5 is normally required)
- General Aptitude (to be demonstrated by application for study abroad, interview during the 2nd semester of year 2 (Level 5), and by recommendation of the student's personal tutor, 1st and 2nd year tutors and programme director)

Student Support

Students will be supported whilst on the International Year via the following methods:

- Phone or Skype conversations with Study Abroad tutor, in line with recommended Personal Tutoring meeting points.
- Support from the University's Global Education Team

Learning Outcomes

In addition to the learning outcomes specified in the main text of the Programme Specification, students who complete a Keele undergraduate programme with International Year will be able to:

- a. Describe, discuss and reflect upon the cultural and international differences and similarities of different learning environments
- b. Discuss the benefits and challenges of global citizenship and internationalisation
- c. Explain how their perspective on their academic discipline has been influenced by locating it within an international setting.

In addition, students who complete 'BSc (Hons) Biology with International Year' will be able to:

- i) Use independent research skills to identify relevant information resources on a range of subjects related, or complementary, to Biology.
- ii) Demonstrate the use of critical thinking skills, augmented by creativity and curiosity, in discussing the application of their International Year studies to Biology.

These learning outcomes will all be assessed by the submission of a satisfactory individual learning agreement, the successful completion of assessments at the partner institution and the submission of the reflective portfolio element of the international year module.

Course Regulations

Students registered for the 'BSc (Hons) Biology with International Year' are subject to the course specific regulations (if any) and the University regulations. In addition, during the International Year, the following regulations will apply:

Students undertaking the International Year must complete 120 credits, which must comprise *at least 40%* in the student's discipline area.

This may impact on your choice of modules to study, for example you will have to choose certain modules to ensure you have the discipline specific credits required.

Students are barred from studying any Biology module with significant overlap to Level 6 modules to be studied on their return. Significant overlap with Level 5 modules previously studied should also be avoided.

Additional costs for the International Year

Tuition fees for students on the International Year will be charged at 15% of the annual tuition fees for that year of study, as set out in Section 1. The International Year can be included in your Student Finance allocation, to find out more about your personal eligibility see: www.gov.uk

Students will have to bear the costs of travelling to and from their destination university, accommodation, food and personal costs. Depending on the destination they are studying at additional costs may include visas, study permits, residence permits, and compulsory health checks. Students should expect the total costs of studying abroad be greater than if they study in the UK, information is made available from the Global Education Team throughout the process, as costs will vary depending on destination.

Students studying in Erasmus+ destinations may be eligible for grants as part of this programme. Students studying outside of this programme may be eligible income dependent bursaries at Keele.

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