

Programme Specification: Undergraduate

For students starting in Academic Year 2020/21

1. Course Summary

Names of programme and award title(s)	BSc (Hons) Biology BSc (Hons) Biology with International Year (see Annex for details) BSc (Hons) Biology with Work Placement Year (see Annex for details) BSc (Hons) Studies in Biology BSc (Hons) Studies in Biology with International Year BSc (Hons) Studies in Biology With Work Placement Year
Award type	Combined Honours
Mode of study	Full-time
Framework of Higher Education Qualification (FHEQ) level of final award	Level 6
Normal length of the programme	3 years; 4 years with the International Year between years 2 and 3
Maximum period of registration	The normal length as specified above plus 3 years
Location of study	Keele Campus
Accreditation (if applicable)	For students who specialise in Biology at Level 6, or combine with Biochemistry, the degree is accredited by the Royal Society of Biology (excluding "Studies in" routes). For further details see the section on Accreditation.
Regulator	Office for Students (OfS)
Tuition Fees	<p>UK/EU students:</p> <p>Fee for 2020/21 is £9,250*</p> <p>International students:</p> <p>Fee for 2020/21 is £15,000** (if combined with a non-laboratory-based Principal Subject) or £16,250** (if combined with a laboratory-based Principal Subject)</p> <p>The fee for the international year abroad is calculated at 15% of the standard year fee</p>

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.

* 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/>

2. What is a Combined Honours programme?

NB: all students who study a science Principal subject are candidates for the degree of Bachelor of Science (with Honours) (BSc Hons) irrespective of their second Principal subject.

Combined Honours degrees are degrees that are taken in two different subjects, resulting in an X and Y degree title. If you are taking a Combined Honours programme, these will be the two subjects you applied for. These are referred to as your Principal Subjects.

In a Combined Honours degree you must take at least 135 credits in each Principal Subject (270 credits in total), accrued over all three levels of study, with at least 45 credits at each level of study (Levels 4, 5 and 6) in each of two Principal Subjects (90 credits per year). The remaining available credits can be filled with modules from these subjects or other subjects entirely.

As a Combined Honours student you can choose to study just one subject in your final year of study, taking a minimum of 90 credits in this subject. This will result in an X with Y degree title.

3. Overview of the Programme

The Programme provides a broad and varied coverage of modern biology, with emphasis on humans and their impact on the environment. In the first year you will look at some fundamental concepts in the biological sciences such as cells, genetics, evolution and molecular biology in addition to the anatomy and physiology of humans. In the second year, the focus shifts to the adaptability of life to differing environments and the biology of pathogens, you will also learn how to design an experiment and analyse data. You can also begin to tailor your degree to your own interests, with the module options available. Students may combine Biology with the Principal Programme in Biochemistry if they also wish to have a detailed coverage of biochemical and molecular aspects of biology. Training is also provided in employability skills that will help you to reach your potential in your chosen career, whether or not this is in biology. Distinctive features of this programme are the innovative methods of assessment used in many modules, the many opportunities to broaden your life and educational experience, the community spirit generated by the campus based living and learning environment, and the multidisciplinary research activities of the staff in the School of Life Sciences.

4. Aims of the programme

The broad aims of the programme are to:

- provide students 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, with an environmental focus, 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.
- promote the development of independent research skills to enable you to undertake relevant postgraduate study

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)

In Combined Honours Biology and in Biology (Major) successful students will achieve all the Intended Learning Outcomes (ILOs) listed below. In the Biology (Minor) route they will achieve all the ILOs with the exception of those listed as being taught in level 6 modules only (I6, I7 and I8) and will achieve others taught partly at level 6 molecular aspects of biology. Training is also provided in employability skills that will help you to reach your potential in your chosen career, whether or not this is in biology.

Subject knowledge and understanding

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

- U1 the diversity of life and its evolution from the geological past to the present
- U2 the complexity of biological processes and mechanisms of life at a range of hierarchical levels (molecular, cellular, organismal, community, ecosystem)
- U3 the influence of human activities on living systems (and the converse)
- U4 the basic experimental skills appropriate to the discipline of biology

- U5 the approaches to acquiring, interpreting, analysing biological data from a variety of sources, including the use of statistics
- U6 the contribution of research to the development of biological knowledge
- U7 the dynamic, plural and contested nature of the discipline and an awareness of the philosophical and ethical issues involved
- U8 the use of biological terminology, nomenclature and classification systems
- U9 the relevance of biology to practical problems and improving the quality and sustainability of life
- U10 the applicability of the biosciences to the careers to which graduates will be progressing

Subject specific skills (Practical skills)

Successful students will be able to:

- SP1 use a range of practical techniques for the acquisition, analysis and critical evaluation of biological information
- SP2 use a range of practical laboratory and field techniques to ensure competence in basic experimental skills
- SP3 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
- SP4 formulate a hypothesis, design, plan, conduct, collate, analyse, report and evaluate on a biological investigation
- SP5 recognise philosophical, moral and ethical issues relevant to the subject, and appreciate the need for ethical standards and professional codes of conduct
- SP6 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:

- SI1 assess the merits of contrasting theories, paradigms, concepts or principles
- SI2 think independently, set tasks and solve problems by a variety of methods
- SI3 make reasoned decisions and develop reasoned arguments
- SI4 obtain and interpret several lines of subject-specific evidence to formulate and test hypotheses
- SI5 make critical interpretations, evaluations and judgements of data and text
- SI6 analyse, synthesise and summarise information critically, including published research or reports
- SI7 apply biological understanding to familiar and unfamiliar problems, and emphasise the interdisciplinary nature of science and the validity of different points of view
- SI8 take responsibility for their own learning and reflect upon that learning

Key or transferable skills (including employability skills)

Successful students will be able to:

- E1 develop an adaptable, flexible, sustainable and effective approach to study and work, including time management, creativity and intellectual integrity
- E2 acquire, analyse, synthesise, summarise and present information and ideas from a wide range of sources: textual, numerical, verbal, graphical
- E3 prepare, process, interpret and present data using appropriate qualitative and quantitative techniques, statistical programmes, spreadsheets and programs for presenting data visually
- E4 use the internet and other electronic sources critically as a means of communication and a source of information
- E5 cite and reference work in an appropriate manner, avoiding issues with plagiarism

- E6 communicate effectively to a variety of audiences by written, spoken and graphical means using appropriate techniques and scientific language
- E7 develop skills necessary for self-managed and lifelong learning, including working independently, organisational, enterprise and knowledge transfer skills
- 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
- E9 motivate themselves and sustain that motivation over an extended period of time
- E10 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 Personal Tutors or module lecturers 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

Our core teaching staff are mainly from the School of Life Sciences. Teaching staff from the School of Pharmacy and Bioengineering,

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.

As part of probationary requirements, new staff must complete a postgraduate certificate in teaching at HE level, which is recognised by SEDA. Several Life Sciences' staff members have been awarded Keele's prestigious Excellence in Teaching and Learning awards and several were awarded a KeeleSU Education Award for personal tutoring.

There is a growing culture of higher education research and several members of staff are active in this field, with members of staff having already completed an MA in Teaching and Learning and several others in the process of doing so. In recent years several teaching innovation projects have been run by Life Sciences staff and several new projects have been proposed. Members of the School of Life Sciences hold recognised or accredited teaching qualifications and a number are Fellows or Associates of the Higher Education Academy (HEA) and a number are Senior Fellows of the HEA.

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 three types of module delivered as part of your programme. They are:

- Compulsory modules - a module that you are required to study on this course;
- Optional modules - these allow you some limited choice of what to study from a list of modules;
- Elective modules - a free choice of modules that count towards the overall credit requirement but not the number of subject-related credits.

A summary of the total credit requirements per year is as follows, with a minimum of 90 subject credits (compulsory plus optional) required for each year across both of your Principal Subjects. This document has information about *Biology* modules only; please also see the document for your other subject.

For further information on the content of modules currently offered, including the list of elective modules, please visit:

<https://www.keele.ac.uk/recordsandexams/modulecatalogue/>

Year	Compulsory	Optional		Electives	
		Min	Max	Min	Max
Level 4	60	0	0	0	0
Level 5	45	15	15	0	0
Level 6	0	60	105	0	0

In year 3 there is the option to choose to specialise in one of your subjects, taking a minimum of 105 credits in this subject rather than taking modules from both subjects. The remaining 15 credits can come from your other combined honours subject. This is called the 7 + 1 route.

Students specialising in biology have to take the core module LSC-30059 Communication Skills for Biologists

Combined honours students must take 60 credits of biology content at level 6, of which 15 credits must be ISP module. Biology and Biochemistry CH students can take pool their 2 x 15 credits of ISP required into the 30 credit double project or placement modules

Module Lists

Level 4

Compulsory modules	Module Code	Credits	Period
Physiology and Anatomy	LSC-10074	30	Semester 1-2
Fundamentals of Biology	LSC-10085	30	Semester 1-2

Level 5

Compulsory modules	Module Code	Credits	Period
Microbes, Viruses and Parasites	LSC-20073	15	Semester 1
Environmental Biology	LSC-20097	15	Semester 1
Research and Analytical Skills	LSC-20056	15	Semester 2

Optional modules	Module Code	Credits	Period
Human Impact on the Environment, scientific perspectives	ESC-20017	15	Semester 1
Current Topics in Biology	LSC-20074	15	Semester 1
Biodiversity Crisis	LSC-20093	15	Semester 2
Health and the Environment	PTY-20020	15	Semester 2

Level 5 Module Rules

LSC-20097: please note, this module includes a field course during the summer vacation between Levels 4 and 5

Level 6

Optional modules	Module Code	Credits	Period
Ecotoxicology and Risk Assessment	ESC-30056	15	Semester 1
Applied Life Sciences Placement - ISP	LSC-30019	15	Semester 1
Conservation Biology	LSC-30043	15	Semester 1
Tropical Biology Field Course	LSC-30066	15	Semester 1
Insect Ecology and Pest Management	LSC-30070	15	Semester 1
Double Applied Life Sciences Placement - ISP	LSC-30038	30	Semester 1-2
Life Sciences Double Experimental Project (with research skills assessment)	LSC-30045	30	Semester 1-2
Life Sciences Single Experimental Project (with research skills assessment) - ISP	LSC-30048	15	Semester 1-2
Life Sciences Dissertation	LSC-30050	15	Semester 1-2
Human Evolution	LSC-30030	15	Semester 2
Plant Science and Sustainability	LSC-30076	15	Semester 2

If you choose to specialise in this subject in your final year you will study the following modules:

Compulsory modules	Module Code	Credits	Period
Communication Skills for Biologists	LSC-30059	15	Semester 2

Optional modules	Module Code	Credits	Period
Ecotoxicology and Risk Assessment	ESC-30056	15	Semester 1
Human Parasitology	LSC-30036	15	Semester 1
Conservation Biology	LSC-30043	15	Semester 1
Case Studies in Biotechnology	LSC-30051	15	Semester 1
Tropical Biology Field Course	LSC-30066	15	Semester 1
Insect Ecology and Pest Management	LSC-30070	15	Semester 1
Double Applied Life Sciences Placement - ISP	LSC-30038	30	Semester 1-2
Life Sciences Double Experimental Project (with research skills assessment)	LSC-30045	30	Semester 1-2
Human Evolution	LSC-30030	15	Semester 2
Cancer Biology	LSC-30061	15	Semester 2
Plant Science and Sustainability	LSC-30076	15	Semester 2

Level 6 Module Rules

Rules relevant to combined honours students (including those taking Biology AND Biochemistry)

Combined Honours students **must** take **ONE** 15 credit ISP module (LSC-30019, LSC-30048 **or** LSC-30050)

LSC-30045: only available to students studying Biology and Biochemistry or specialising in Biology.

LSC-30038 and LSC-30019: only available to students doing a work placement year. The Double Placement is only available to students studying Biology and Biochemistry with Work Placement Year or specialising in Biology with Work Placement Year. These students will not take LSC-30045 or LSC-30048.

LSC-30050: only available to combined honours students whose second subject is outside of the School of Life Sciences, These students will not take LSC-30048 or LSC-30019

Rules relevant to students specialising in Biology in the final year:

Major route students **must** take **ONE** 30 credit ISP module (LSC-30045 **or** LSC-30038)

LSC-30038: only available to students specialising in Biology with Work Placement Year

Rules relevant to all biology students:

LSC-30066: this module includes a field course at USM Malaysia which takes place during the summer vacation between Levels 5 and 6.

LSC-30036: this module can only be taken by students who have studied LSC-20015 or LSC-20073

Learning Outcomes

The table below sets out what students learn in the programme and the modules in which that learning takes place. Details of how learning outcomes are assessed through these modules can be found in module specifications.

Level 4

In Year 1 (Level 4) and Year 2 (Level 5) these learning outcomes are achieved in the compulsory modules which all students are

required to take. Some of these outcomes may also be achieved or reinforced in elective modules together with other outcomes not stated here. In Year 3 (Level 6) the stated outcomes are achieved by taking any of the modules offered in each semester. Core material across biology is covered in years 1 and 2, whereas students specialise in their choice of topics in year 3 and cover topics in detail.

Subject Knowledge and Understanding	
Learning Outcome	Module in which this is delivered
U1. the diversity of life and its evolution from the geological past to the present	Fundamentals of Biology - LSC-10085
U2. the complexity of biological processes and mechanisms of life at a range of hierarchical levels (molecular, cellular, organismal, community, ecosystem)	Fundamentals of Biology - LSC-10085
U3. the influence of human activities on living systems (and the converse)	Physiology and Anatomy - LSC-10074
U4. the basic experimental skills appropriate to the discipline of biology	Physiology and Anatomy - LSC-10074 Fundamentals of Biology - LSC-10085
U5. the approaches to acquiring, interpreting, analysing biological data from a variety of sources, including the use of statistics	Fundamentals of Biology - LSC-10085 Physiology and Anatomy - LSC-10074
U6. the contribution of research to the development of biological knowledge	Fundamentals of Biology - LSC-10085 Physiology and Anatomy - LSC-10074
U7. the dynamic, plural and contested nature of the discipline and an awareness of the philosophical and ethical issues involved	Fundamentals of Biology - LSC-10085 Physiology and Anatomy - LSC-10074
U8. the use of biological terminology, nomenclature and classification systems	Physiology and Anatomy - LSC-10074 Fundamentals of Biology - LSC-10085
U9. the relevance of biology to practical problems and improving the quality and sustainability of life	Fundamentals of Biology - LSC-10085 Physiology and Anatomy - LSC-10074

Subject Specific Skills	
Learning Outcome	Module in which this is delivered
SP1. use a range of practical techniques for the acquisition, analysis and critical evaluation of biological information	Fundamentals of Biology - LSC-10085 Physiology and Anatomy - LSC-10074
SP2. use a range of practical laboratory and field techniques to ensure competence in basic experimental skills	Fundamentals of Biology - LSC-10085 Physiology and Anatomy - LSC-10074
SP3. 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	Fundamentals of Biology - LSC-10085 Physiology and Anatomy - LSC-10074
SP4. formulate a hypothesis, design, plan, conduct, collate, analyse, report and evaluate on a biological investigation	Physiology and Anatomy - LSC-10074 Fundamentals of Biology - LSC-10085 All modules with practical sessions
SP5. recognise philosophical, moral and ethical issues relevant to the subject, and appreciate the need for ethical standards and professional codes of conduct	Fundamentals of Biology - LSC-10085 Physiology and Anatomy - LSC-10074
SP6. 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)	Fundamentals of Biology - LSC-10085 Physiology and Anatomy - LSC-10074

Key or Transferable Skills (graduate attributes)	
Learning Outcome	Module in which this is delivered
E1. develop an adaptable, flexible, sustainable and effective approach to study and work, including time management, creativity and intellectual integrity	Physiology and Anatomy - LSC-10074 Fundamentals of Biology - LSC-10085
E2. acquire, analyse, synthesise, summarise and present information and ideas from a wide range of sources: textual, numerical, verbal, graphical	Physiology and Anatomy - LSC-10074 Fundamentals of Biology - LSC-10085
E3. prepare, process, interpret and present data using appropriate qualitative and quantitative techniques, statistical programmes, spreadsheets and programs for presenting data visually	Physiology and Anatomy - LSC-10074 Fundamentals of Biology - LSC-10085
E4. use the internet and other electronic sources critically as a means of communication and a source of information	Fundamentals of Biology - LSC-10085 Physiology and Anatomy - LSC-10074
E5. cite and reference work in an appropriate manner, avoiding issues with plagiarism	Physiology and Anatomy - LSC-10074 Fundamentals of Biology - LSC-10085
E6. communicate effectively to a variety of audiences by written, spoken and graphical means using appropriate techniques and scientific language	Physiology and Anatomy - LSC-10074 Fundamentals of Biology - LSC-10085
E7. develop skills necessary for self-managed and lifelong learning, including working independently, organisational, enterprise and knowledge transfer skills	Fundamentals of Biology - LSC-10085 Physiology and Anatomy - LSC-10074
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	Physiology and Anatomy - LSC-10074 Fundamentals of Biology - LSC-10085
E9. motivate themselves and sustain that motivation over an extended period of time	Fundamentals of Biology - LSC-10085 Physiology and Anatomy - LSC-10074
E10. identify and work towards targets for personal, academic and career development	Physiology and Anatomy - LSC-10074 Fundamentals of Biology - LSC-10085

Level 5

Subject Knowledge and Understanding	
Learning Outcome	Module in which this is delivered
U1. the diversity of life and its evolution from the geological past to the present	Biodiversity Crisis - LSC-20093 Environmental Biology - LSC-20097 Microbes, Viruses and Parasites - LSC-20073
U2. the complexity of biological processes and mechanisms of life at a range of hierarchical levels (molecular, cellular, organismal, community, ecosystem)	Biodiversity Crisis - LSC-20093 Environmental Biology - LSC-20097 Microbes, Viruses and Parasites - LSC-20073
U3. the influence of human activities on living systems (and the converse)	Biodiversity Crisis - LSC-20093 Current Topics in Biology - LSC-20074 Human Impact on the Environment, scientific perspectives - ESC-20017 Health and the Environment - PTY-20020 Environmental Biology - LSC-20097 Microbes, Viruses and Parasites - LSC-20073

Subject Knowledge and Understanding	
Learning Outcome	Module in which this is delivered
U4. the basic experimental skills appropriate to the discipline of biology	Environmental Biology - LSC-20097 Human Impact on the Environment, scientific perspectives - ESC-20017 Research and Analytical Skills - LSC-20056
U5. the approaches to acquiring, interpreting, analysing biological data from a variety of sources, including the use of statistics	Biodiversity Crisis - LSC-20093 Current Topics in Biology - LSC-20074 Microbes, Viruses and Parasites - LSC-20073 Human Impact on the Environment, scientific perspectives - ESC-20017 Environmental Biology - LSC-20097 Research and Analytical Skills - LSC-20056 Health and the Environment - PTY-20020
U6. the contribution of research to the development of biological knowledge	Biodiversity Crisis - LSC-20093 Current Topics in Biology - LSC-20074 Microbes, Viruses and Parasites - LSC-20073 Human Impact on the Environment, scientific perspectives - ESC-20017 Environmental Biology - LSC-20097 Research and Analytical Skills - LSC-20056 Health and the Environment - PTY-20020 Especially LSC-20074 - Current Topics in Biology
U7. the dynamic, plural and contested nature of the discipline and an awareness of the philosophical and ethical issues involved	Biodiversity Crisis - LSC-20093 Current Topics in Biology - LSC-20074 Microbes, Viruses and Parasites - LSC-20073 Human Impact on the Environment, scientific perspectives - ESC-20017 Environmental Biology - LSC-20097 Research and Analytical Skills - LSC-20056 Health and the Environment - PTY-20020 Especially LSC-20074 - Current Topics in Biology
U8. the use of biological terminology, nomenclature and classification systems	Environmental Biology - LSC-20097 Microbes, Viruses and Parasites - LSC-20073
U9. the relevance of biology to practical problems and improving the quality and sustainability of life	Biodiversity Crisis - LSC-20093 Current Topics in Biology - LSC-20074 Human Impact on the Environment, scientific perspectives - ESC-20017 Health and the Environment - PTY-20020 Environmental Biology - LSC-20097 Microbes, Viruses and Parasites - LSC-20073

Subject Specific Skills	
Learning Outcome	Module in which this is delivered
SP1. use a range of practical techniques for the acquisition, analysis and critical evaluation of biological information	Biodiversity Crisis - LSC-20093 Human Impact on the Environment, scientific perspectives - ESC-20017 Research and Analytical Skills - LSC-20056 Environmental Biology - LSC-20097
SP2. use a range of practical laboratory and field techniques to ensure competence in basic experimental skills	Biodiversity Crisis - LSC-20093 Human Impact on the Environment, scientific perspectives - ESC-20017 Research and Analytical Skills - LSC-20056 Environmental Biology - LSC-20097
SP3. 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	Biodiversity Crisis - LSC-20093 Human Impact on the Environment, scientific perspectives - ESC-20017 Research and Analytical Skills - LSC-20056 Environmental Biology - LSC-20097
SP4. formulate a hypothesis, design, plan, conduct, collate, analyse, report and evaluate on a biological investigation	Environmental Biology - LSC-20097
SP5. recognise philosophical, moral and ethical issues relevant to the subject, and appreciate the need for ethical standards and professional codes of conduct	Biodiversity Crisis - LSC-20093 Current Topics in Biology - LSC-20074 Microbes, Viruses and Parasites - LSC-20073 Human Impact on the Environment, scientific perspectives - ESC-20017 Environmental Biology - LSC-20097 Research and Analytical Skills - LSC-20056 Health and the Environment - PTY-20020 All modules
SP6. 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)	Environmental Biology - LSC-20097

Intellectual skills	
Learning Outcome	Module in which this is delivered
SI1. assess the merits of contrasting theories, paradigms, concepts or principles	Biodiversity Crisis - LSC-20093 Current Topics in Biology - LSC-20074 Human Impact on the Environment, scientific perspectives - ESC-20017 Health and the Environment - PTY-20020 Microbes, Viruses and Parasites - LSC-20073
SI2. think independently, set tasks and solve problems by a variety of methods	Biodiversity Crisis - LSC-20093 Current Topics in Biology - LSC-20074 Microbes, Viruses and Parasites - LSC-20073 Human Impact on the Environment, scientific perspectives - ESC-20017 Environmental Biology - LSC-20097 Research and Analytical Skills - LSC-20056 Health and the Environment - PTY-20020

Intellectual skills	
Learning Outcome	Module in which this is delivered
SI3. make reasoned decisions and develop reasoned arguments	Biodiversity Crisis - LSC-20093 Current Topics in Biology - LSC-20074 Microbes, Viruses and Parasites - LSC-20073 Human Impact on the Environment, scientific perspectives - ESC-20017 Environmental Biology - LSC-20097 Research and Analytical Skills - LSC-20056 Health and the Environment - PTY-20020
SI4. obtain and interpret several lines of subject-specific evidence to formulate and test hypotheses	Environmental Biology - LSC-20097 Human Impact on the Environment, scientific perspectives - ESC-20017 Research and Analytical Skills - LSC-20056
SI5. make critical interpretations, evaluations and judgements of data and text	Current Topics in Biology - LSC-20074 Microbes, Viruses and Parasites - LSC-20073 Human Impact on the Environment, scientific perspectives - ESC-20017 Environmental Biology - LSC-20097 Research and Analytical Skills - LSC-20056 Health and the Environment - PTY-20020
SI6. analyse, synthesise and summarise information critically, including published research or reports	Biodiversity Crisis - LSC-20093 Current Topics in Biology - LSC-20074 Microbes, Viruses and Parasites - LSC-20073 Human Impact on the Environment, scientific perspectives - ESC-20017 Environmental Biology - LSC-20097 Research and Analytical Skills - LSC-20056 Health and the Environment - PTY-20020
SI7. apply biological understanding to familiar and unfamiliar problems, and emphasise the interdisciplinary nature of science and the validity of different points of view	Health and the Environment - PTY-20020 Environmental Biology - LSC-20097 Research and Analytical Skills - LSC-20056 Microbes, Viruses and Parasites - LSC-20073 Biodiversity Crisis - LSC-20093 Current Topics in Biology - LSC-20074 Human Impact on the Environment, scientific perspectives - ESC-20017
SI8. take responsibility for their own learning and reflect upon that learning	Biodiversity Crisis - LSC-20093 Current Topics in Biology - LSC-20074 Microbes, Viruses and Parasites - LSC-20073 Human Impact on the Environment, scientific perspectives - ESC-20017 Environmental Biology - LSC-20097 Research and Analytical Skills - LSC-20056 Health and the Environment - PTY-20020

Key or Transferable Skills (graduate attributes)	
Learning Outcome	Module in which this is delivered
E1. develop an adaptable, flexible, sustainable and effective approach to study and work, including time management, creativity and intellectual integrity	Biodiversity Crisis - LSC-20093 Current Topics in Biology - LSC-20074 Microbes, Viruses and Parasites - LSC-20073 Health and the Environment - PTY-20020 Environmental Biology - LSC-20097 Research and Analytical Skills - LSC-20056 Human Impact on the Environment, scientific perspectives - ESC-20017

Key or Transferable Skills (graduate attributes)	
Learning Outcome	Module in which this is delivered
E2. acquire, analyse, synthesise, summarise and present information and ideas from a wide range of sources: textual, numerical, verbal, graphical	Environmental Biology - LSC-20097 Health and the Environment - PTY-20020 Microbes, Viruses and Parasites - LSC-20073 Current Topics in Biology - LSC-20074 Biodiversity Crisis - LSC-20093 Research and Analytical Skills - LSC-20056 Human Impact on the Environment, scientific perspectives - ESC-20017
E3. prepare, process, interpret and present data using appropriate qualitative and quantitative techniques, statistical programmes, spreadsheets and programs for presenting data visually	Human Impact on the Environment, scientific perspectives - ESC-20017 Research and Analytical Skills - LSC-20056 Environmental Biology - LSC-20097 Health and the Environment - PTY-20020 Microbes, Viruses and Parasites - LSC-20073 Current Topics in Biology - LSC-20074 Biodiversity Crisis - LSC-20093
E4. use the internet and other electronic sources critically as a means of communication and a source of information	Human Impact on the Environment, scientific perspectives - ESC-20017 Biodiversity Crisis - LSC-20093 Current Topics in Biology - LSC-20074 Microbes, Viruses and Parasites - LSC-20073 Health and the Environment - PTY-20020 Environmental Biology - LSC-20097 Research and Analytical Skills - LSC-20056
E5. cite and reference work in an appropriate manner, avoiding issues with plagiarism	Biodiversity Crisis - LSC-20093 Current Topics in Biology - LSC-20074 Microbes, Viruses and Parasites - LSC-20073 Health and the Environment - PTY-20020 Environmental Biology - LSC-20097 Research and Analytical Skills - LSC-20056 Human Impact on the Environment, scientific perspectives - ESC-20017
E6. communicate effectively to a variety of audiences by written, spoken and graphical means using appropriate techniques and scientific language	Research and Analytical Skills - LSC-20056 Environmental Biology - LSC-20097 Health and the Environment - PTY-20020 Microbes, Viruses and Parasites - LSC-20073 Current Topics in Biology - LSC-20074 Biodiversity Crisis - LSC-20093 Human Impact on the Environment, scientific perspectives - ESC-20017
E7. develop skills necessary for self-managed and lifelong learning, including working independently, organisational, enterprise and knowledge transfer skills	Health and the Environment - PTY-20020 Human Impact on the Environment, scientific perspectives - ESC-20017 Research and Analytical Skills - LSC-20056 Environmental Biology - LSC-20097 Microbes, Viruses and Parasites - LSC-20073 Current Topics in Biology - LSC-20074 Biodiversity Crisis - LSC-20093
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	Health and the Environment - PTY-20020 Environmental Biology - LSC-20097 Research and Analytical Skills - LSC-20056 Human Impact on the Environment, scientific perspectives - ESC-20017 Microbes, Viruses and Parasites - LSC-20073 Current Topics in Biology - LSC-20074 Biodiversity Crisis - LSC-20093

Key or Transferable Skills (graduate attributes)	
Learning Outcome	Module in which this is delivered
E9. motivate themselves and sustain that motivation over an extended period of time	Microbes, Viruses and Parasites - LSC-20073 Current Topics in Biology - LSC-20074 Biodiversity Crisis - LSC-20093 Health and the Environment - PTY-20020 Human Impact on the Environment, scientific perspectives - ESC-20017 Research and Analytical Skills - LSC-20056 Environmental Biology - LSC-20097
E10. identify and work towards targets for personal, academic and career development	Human Impact on the Environment, scientific perspectives - ESC-20017 Research and Analytical Skills - LSC-20056 Environmental Biology - LSC-20097 Current Topics in Biology - LSC-20074 Microbes, Viruses and Parasites - LSC-20073 Health and the Environment - PTY-20020 Biodiversity Crisis - LSC-20093

Level 6

Subject Knowledge and Understanding	
Learning Outcome	Module in which this is delivered
U1. the diversity of life and its evolution from the geological past to the present	All modules
U2. the complexity of biological processes and mechanisms of life at a range of hierarchical levels (molecular, cellular, organismal, community, ecosystem)	All modules
U3. the influence of human activities on living systems (and the converse)	All modules, particularly Conservation Biology
U4. the basic experimental skills appropriate to the discipline of biology	All modules, especially Life Sciences Research Projects
U5. the approaches to acquiring, interpreting, analysing biological data from a variety of sources, including the use of statistics	All modules, particularly Research Projects and Conservation Biology
U6. the contribution of research to the development of biological knowledge	All modules
U7. the dynamic, plural and contested nature of the discipline and an awareness of the philosophical and ethical issues involved	All modules
U8. the use of biological terminology, nomenclature and classification systems	All modules
U9. the relevance of biology to practical problems and improving the quality and sustainability of life	All modules

Subject Specific Skills	
Learning Outcome	Module in which this is delivered
SP1. use a range of practical techniques for the acquisition, analysis and critical evaluation of biological information	All modules particularly Conservation Biology, Applied Insect Ecology, Research Projects Applied Life Sciences Placements
SP2. use a range of practical laboratory and field techniques to ensure competence in basic experimental skills	All modules with practical sessions, and the Life Sciences Research Projects or Applied Life Sciences Placements
SP3. 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 research projects and placements
SP4. formulate a hypothesis, design, plan, conduct, collate, analyse, report and evaluate on a biological investigation	All modules with practical sessions, Also the Life Sciences Research Projects or Applied Life Sciences Placements
SP5. recognise philosophical, moral and ethical issues relevant to the subject, and appreciate the need for ethical standards and professional codes of conduct	Human Evolution, Communication Skills for Biologists, Conservation Biology, Life Sciences Research Projects, Applied Life Sciences Placements
SP6. 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 including Conservation Biology, Life Sciences Research Projects and Applied Life Sciences Placements

Intellectual skills	
Learning Outcome	Module in which this is delivered
SI1. assess the merits of contrasting theories, paradigms, concepts or principles	All modules
SI2. think independently, set tasks and solve problems by a variety of methods	All modules with practical sessions, Research Projects and Applied Life Sciences Placements
SI3. make reasoned decisions and develop reasoned arguments	All modules
SI4. obtain and interpret several lines of subject-specific evidence to formulate and test hypotheses	All modules, particularly Life Sciences Research Projects and Applied Life Sciences Placements
SI5. make critical interpretations, evaluations and judgements of data and text	Experimental Project, and level 6 taught modules
SI6. analyse, synthesise and summarise information critically, including published research or reports	Sciences Experimental Projects, Placements, Life Sciences Dissertation and level 6 taught modules
SI7. 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
SI8. take responsibility for their own learning and reflect upon that learning	Life Sciences Dissertation and Life Sciences Experimental Projects, Communication Skills for Biologists

Key or Transferable Skills (graduate attributes)	
Learning Outcome	Module in which this is delivered
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
E2. acquire, analyse, synthesise, summarise and present information and ideas from a wide range of sources: textual, numerical, verbal, graphical	All modules
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, Life Sciences Research Projects and Applied Life Sciences Placements
E4. use the internet and other electronic sources critically as a means of communication and a source of information	All modules, particularly Life Sciences Research Projects and Applied Life Sciences Placements, Communication Skills for Biologists
E5. cite and reference work in an appropriate manner, avoiding issues with plagiarism	All modules
E6. communicate effectively to a variety of audiences by written, spoken and graphical means using appropriate techniques and scientific language	All modules, particularly Life Sciences Research Projects and Applied Life Sciences Placements Communication Skills for Biologists
E7. develop skills necessary for self-managed and lifelong learning, including working independently, organisational, enterprise and knowledge transfer skills	All modules
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 Communication Skills for Biologists
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
E10. identify and work towards targets for personal, academic and career development	All modules

9. Final and intermediate awards

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

Honours Degree	360 credits	<p>You will require at least 120 credits at levels 4, 5 and 6</p> <p>You must accumulate a minimum of 135 credits in each Principal Subject (270 credits in total), with at least 45 credits at each level of study (Levels 4, 5 and 6) in each of two Principal Subjects (90 credits per year). Your degree title will be 'subject X and subject Y'.</p> <p>If you choose to study one Principal subject in your final year of study a minimum of 90 credits in that subject is required. Your degree title will be 'subject X with subject Y'.</p>
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

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

Work Placement Year option: 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 including the 'work placement year' wording. Students who do not complete, or fail the work placement year, will be transferred to the three-year version of the programme.

10. How is the Programme Assessed?

The wide variety of assessment methods used on this programme 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 on your programme:

- **Unseen and seen examinations** in different formats test students' knowledge and understanding of biology. Examinations may consist of essay, short answer and/or multiple choice questions
- **Essays**, including those based on case study material, also test the quality and application of subject knowledge. In addition they allow students to demonstrate their ability to carry out basic bibliographic research and to communicate their ideas effectively in writing in an appropriate scholarly style using the Harvard system of referencing
- **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
- **Dissertations and Literature Reviews** are critical reviews of other scholars' work and 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
- **Experimental projects** test students' knowledge of research methodologies and their ability to carry them out. They also enable students to demonstrate their ability to formulate research questions, design experiments, carry them out and analyse the results
- **Laboratory reports** are formal summaries of work carried out in the laboratory, presenting analysed data and conclusions. They test a range of practical laboratory skills and the ability to collect analyse and present data
- **Oral and poster presentations and reports** assess 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

	Scheduled learning and teaching activities	Guided independent Study	Placements
Year 1 (Level 4)	31%	69%	0%
Year 2 (Level 5)	22%	78%	0%
Year 3 (Level 6)	19%	81%	0%

12. Accreditation

The programme for all students who specialise in Biology at level 6 or combine with Biochemistry is accredited by the Royal Society of Biology.

Students should note that to be awarded Royal Society of Biology accreditation they must achieve a minimum standard of 40% in the Life Sciences Double Experimental Project (with research skills assessment), or equivalent placement module. Students that condone this module may still be eligible for the award Studies in Biology.

13. University 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/>

If this programme has any exemptions, variations or additions to the University Regulations these will be detailed in an Annex at the end of this document titled 'Programme-specific regulations'.

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

Where a programme has an "International Year" option and a "Placement Year" option, students may elect to follow either the International Year or Placement Year, but not both.

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

See the relevant course page on the website for the admission requirements relevant to this programme:
<https://www.keele.ac.uk/study/>

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.

Recognition of Prior Learning (RPL) 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 in Biology and on their other Principal Programme.
- 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 Services.

All members of teaching staff on the Biology Programme are available to see students during office hours, if available, and 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 and the £11 million new extension to the Huxley Building providing additional teaching laboratory space was opened in 2017/18 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 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 in the Annex for the International Year.

Work Placement Year

Students registered for Combined Honours or who specialise in Biology may undertake an industrial placement between years 2 and 3. This forms part of the Applied Life Sciences Placement module at Level 6.

Students wishing to carry out an industrial placement in the UK will be responsible for organising their own placement, with the support of the module tutors. This allows students to choose when and where to carry out their industrial placement, taking into consideration the potential living and travel expenses incurred and the effect on other opportunities available to earn money. Students are encouraged to consider the potential costs incurred in carrying out the Work Placements at the time of setting these up. Some placements attract a stipend or salary, which should be discussed with the potential employer before accepting the placement. Further guidance and support on these considerations is available from the module tutors.

Some Work Placements are available at our partner research institutes throughout continental Europe. These placements attract a stipend from the European Union under the ERASMUS, but you should consider whether the amount offered will cover the costs of accommodation, travel and subsistence before accepting the placement. The ERASMUS tutor in the School of Life Sciences will give any guidance and support required.

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

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 hosted at Bangor University (School pays)	£0.00
Field courses - optional hosted at USM Malaysia	£1,200
Equipment Waterproof clothing for field work	£75
Travel to Bangor University and to any placement abroad or in the UK	Unable to Estimate
Other additional costs - none anticipated	
Total estimated additional costs	£1,275

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 costs for this undergraduate programme.

19. Quality management and enhancement

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

- The School Education Committee is responsible for reviewing and monitoring quality management and enhancement procedures and activities across the School.
- Individual modules and the 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.
- 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 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 annual programme review.
- Findings related to the programme 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 programme is considered and acted on at regular meetings of the Student Staff Voice 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/qa/externalexaminers/currentexternalexaminers/>

20. The principles of programme design

The 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) <https://www.qaa.ac.uk/quality-code/subject-benchmark-statements?indexCatalogue=document-search&searchQuery=Biosciences&wordsMode=AllWords>
- Keele University Regulations and Guidance for Students and Staff: <http://www.keele.ac.uk/regulations>
- [RSB Accreditation Handbook](#)

21. Annex - International Year

Combined Honours Biology with International Year

Please note: in order to be eligible to take the International Year option your other subject must also offer this option. Please refer to the information published in the course document for your other subject.

<p>International Year Programme</p> <p>Students registered for this Combined Honours programme may either be admitted for or apply to transfer during their period of study at Level 5 to the Combined Honours programme in both their principal subjects, providing that they meet the progression criteria outlined in this document. Students accepted onto the International Year programme will have an extra year of study at an international partner institution after they have completed Year 2 (Level 5) at Keele.</p> <p>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 Combined Honours programme without the International Year and progress to Level 6 on that basis. The failure will be recorded on the student's final transcript.</p> <p>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 the International Year option.</p>
<p>International Year Programme Aims</p> <p>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:</p> <ol style="list-style-type: none"> 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
<p>Entry Requirements for the International Year</p>

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 in Semester 1 at Level 5 is normally required. Places on the International Year are then conditional on achieving an average mark of 54% across all Level 5 modules with no module fails. Where no Semester 1 marks have been awarded performance in 1st year marks and ongoing 2nd year assessments are taken into account)
- 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)

Students may not register for both an International Year and a Placement Year.

Student Support

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

- Phone or Skype conversations with Study Abroad tutors, 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:

1. Describe, discuss and reflect upon the cultural and international differences and similarities of different learning environments
2. Discuss the benefits and challenges of global citizenship and internationalisation
3. Explain how their perspective on their academic discipline has been influenced by locating it within an international setting.
4. Use independent research skills to identify relevant information resources on a range of subjects related, or complementary, to Biology.
5. Demonstrate the use of critical thinking skills, augmented by creativity and curiosity, in discussing the application of their International Year studies to Biology.

Please note that students on Combined Honours programmes with International Year must meet the subject-specific learning outcomes for BOTH their principal subjects.

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 International Year are subject to the programme-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 module with significant overlap to the 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.

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.

22. Annex - Work Placement Year

Biology with Work Placement Year

Work Placement Year summary

Students registered for this programme may either be admitted for or apply to transfer during their studies to the 'with Work Placement Year' option (NB: for Combined Honours students the rules relating to the work placement year in the subject where the placement is organised are to be followed). Students accepted onto this programme will have an extra year of study (the Work Placement Year) with a relevant placement provider after they have completed Year 2 (Level 5) at Keele.

Students who successfully complete both the second year (Level 5) and the Work Placement Year will be permitted to progress to Level 6. Students who fail to satisfactorily complete the Work Placement Year will normally revert to the 3-year programme 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 the Work Placement Year option.

Work Placement Year Programme Aims

In addition to the programme aims specified in the main body of this document, the Work Placement Year aims to provide students with:

1. Experience in the use of biological sciences in a commercial, government or other external organisation.

Entry Requirements for the Work Placement Year

Admission to the Work Placement Year is subject to successful application, interview and references from appropriate staff. Students have the opportunity to apply directly for the 4-year 'with work placement year' degree programme, or to transfer onto the 4-year programme at the end of Year-1 and in Year-2 at the end of Semester 1. Students who are initially registered for the 4-year degree programme may transfer onto the 3-year degree programme at any point in time, prior to undertaking the year-long work placement. Students who fail to pass the work placement year, and those who fail to meet the minimum requirements of the work placement year module (minimum 30 weeks full time (1,050 hours), or equivalent, work placement), will be automatically transferred onto the 3-year degree programme.

The criteria to be applied are:

- A good University attendance record and be in 'good academic standing'.
- Passed all Year-1 and Year-2 Semester 1 modules with an overall module average of > 60%
- General Aptitude (to be demonstrated by application(s) to relevant placement providers with prior agreement from the Programme Lead, 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 Lead)
- Students undertaking work placements will be expected to complete a Health and Safety checklist prior to commencing their work experience and will be required to satisfy the Health and Safety regulations of the company or organisation at which they are based.
- (*International students only*) Due to visa requirements, it is not possible for international students who require a Tier 4 Visa to apply for direct entry onto the 4-year with Work Placement Year degree programme. Students wishing to transfer onto this programme should discuss this with student support, the academic tutor for the work placement year, and the Programme Lead. Students should be aware that there are visa implications for this transfer, and it is the student's responsibility to complete any and all necessary processes to be eligible for this programme. There may be additional costs, including applying for a new Visa from outside of the UK for international students associated with a transfer to the work placement programme.

Students may not register for both an International Year and a Work Placement Year; students registered for 'Biology with Work Placement Year' are exempt from studying an International Year.

Student Support

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

- Regular contact between the student and a named member of staff who will be assigned to the student as their University supervisor. The University supervisor will be in regular contact with the student throughout the year, and be on hand to provide advice (pastoral or academic) and liaise with the Placement supervisor on the student's behalf if required.
- Two formal contacts with the student during the placement year: the University supervisor will visit the student in their placement organization at around the 5 weeks after placement has commenced, and then visit again (or conduct a telephone/video call tutorial) at around 15 weeks into the placement.
- Weekly supervision sessions will take place with the placement supervisor (or his/her nominee) throughout the duration of the placement.

Learning Outcomes

In addition to the learning outcomes specified in the main text of the Programme Specification, students who complete the 'with Work Placement Year' option will be able to:

1. Critically appraise scientific literature gleaned from database searches on a research topic
2. Formulate a research question, appropriate hypotheses and declare a project title will be
3. Plan and execute a hypothesis-driven experiment, including an appraisal of relevant health, safety and ethical issues
4. Analyse, evaluate and discuss the results of an experimental study
5. Produce a concise, scientific report that critically appraises the research hypothesis

These learning outcomes will be assessed the 30 or 15 credit Applied Life Science module (LSC-30038 or LSC-30019 respectively), which involves:

1. LSC-30038 is assessed by a 9,000 word report of the work carried out during the Work Placement Year
2. LSC-10019 is assessed by a 5,000 word report on the work carried out during the Work Placement Year

Regulations

Students registered for the 'with Work Placement Year' option are subject to programme-specific regulations (if any) and the University regulations. In addition, during the Work Placement Year, the following regulations will apply:

- Students undertaking the Work Placement Year must successfully complete the 30 Credit module LSC-30038 Double Applied Life Sciences Placement or the 15 Credit module LSC-30019 Single Applied Life Science Placement
- In order to ensure a high quality placement experience, each placement agency will sign up to a placement contract (analogous to a service level agreement).
- Once a student has been accepted by a placement organisation, the student will make a pre-placement visit and a member of staff identified within the placement contract will be assigned as the placement supervisor. The placement supervisor will be responsible for ensuring that the placement experience meets the agreed contract agreed with the University.
- The placement student will also sign up an agreement outlining his/her responsibilities in relation to the requirements of each organisation.

Students will be expected to behave professionally in terms of:

(i) conforming to the work practices of the organisation; and

(ii) remembering that they are representatives of the University and their actions will reflect on the School and have an impact on that organisation's willingness (or otherwise) to remain engaged with the placement.

Additional costs for the Work Placement Year

Tuition fees for students on the Work Placement Year will be charged at 20% of the annual tuition fees for that year of study, as set out in Section 1. The Work Placement 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 placement provider, accommodation, food and personal costs. Depending on the placement provider additional costs may include parking permits, travel and transport, suitable clothing, DBS checks, and compulsory health checks.

A small stipend may be available to students from the placement provider during the placement but this will need to be explored on a placement-by-placement basis as some organisations, such as charities, may not have any extra money available. Students should budget with the assumption that their placement will be unpaid.

Eligibility for student finance will depend on the type of placement and whether it is paid or not. If it is paid, this is likely to affect student finance eligibility, however if it is voluntary and therefore unpaid, should not affect student finance eligibility. Students are required to confirm eligibility with their student finance provider.

International students who require a Tier 4 visa should check with the Immigration Compliance team prior to commencing any type of paid placement to ensure that they are not contravening their visa requirements.

23. Annex - Programme-specific regulations

Programme Regulations: [Programme Name]

Final Award and Award Titles	<p>BSc (Hons) Biology</p> <p>BSc (Hons) Biology with International Year</p> <p>BSc (Hons) Biology with Work Placement Year</p> <p>BSc (Hons) Studies in Biology</p> <p>BSc (Hons) Studies in Biology with International Year</p> <p>BSc (Hons) Studies in Biology With Work Placement Year</p>
Intermediate Award(s)	<p>Diploma in Higher Education</p> <p>Certificate in Higher Education</p>
Last modified	August 2019
Programme Specification	https://www.keele.ac.uk/qa/programmespecifications

The University's Academic Regulations which can be found on the Keele University website (<https://www.keele.ac.uk/regulations/>)[1] apply to and regulate the programme, other than in instances where the specific programme regulations listed below over-ride them. These programme regulations list:

- *Exemptions* which are characterised by the omission of the relevant regulation.
- *Variations* which are characterised by the replacement of part of the regulation with alternative wording.
- *Additional Requirements* which set out what additional rules that apply to students in relation to this programme.

The following **exemptions, variations** and **additional requirements** to the University regulations have been checked by Academic Services and have been approved by the Faculty Education Committee.

A) EXEMPTIONS

The clause(s) listed below describe where an exemption from the University's Academic Regulations exists:

For the whole duration of their studies, students on this Programme are exempt from the following regulations:

- **No exemptions apply.**

B) VARIATIONS

The clause(s) listed below describe where a variation from the University's Academic Regulations exists:

Variation 1: Self-Certification

This programme varies from Regulation B3.8.

Self-certification of illness as a reason for absence from compulsory classes will be accepted for no more than two periods of absence, each covering no more than 7 days, per semester. Any subsequent absence for reasons of illness must be accompanied by a doctor's note.

Additional Requirements

The programme requirements listed below are in addition to the University's Academic Regulations:

Additional requirement 1: Royal Society of Biology Accreditation

Students must achieve a pass standard in the Life Sciences Double Experimental Project with research skills assessment (or, subject to agreement, Double Applied Life Sciences Placement) to attain an accredited degree. For students who do not fulfil the conditions of this regulation, the degree award will be '*Studies in Biology*' and the degree will not be accredited by the Royal Society of Biology.

Additional requirement 2: Attendance

Attendance at tutorials, seminars, workshops and laboratory sessions on this programme is compulsory. Failure to attend a class without good cause will result in an informal warning. Failure to attend any subsequent classes without good cause will lead to the issuing of a formal University warning in accordance with the Academic Warnings Policy and could result in the requirement to withdraw from the university. Attendance at lectures is expected, but is not compulsory.

Additional requirement 3: Laboratory, lecture and tutorial classes

1. Wearing a laboratory coat is compulsory in all laboratories. Students will not be allowed to attend the laboratory class without a laboratory coat.
2. 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.
3. 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.
4. Students who display serious misconduct in any class may, at the discretion of the member of staff in charge, be excluded from the class and recorded as being absent without good cause. Serious misconduct involves wilful damage to property, injury or threat to persons, or persistent disruption of teaching.
5. The unauthorised use of mobile phones or headphones is not permitted in any class.
6. Students are not permitted to record, video or photograph taught sessions or meetings with staff, except with the permission in advance of the staff concerned. Permission will be given where this is part of an approved disability adjustment. Any permission to record, video or photograph is for personal use only and all recordings, videos or photographs remain the property of the presenter and Keele University.

Additional requirement 4: Health and Safety

Students are required to read and follow the procedures in the School of Life Sciences Safety Handbook, which is available from the Biomedical Science Noticeboard.

Additional requirement 5: Fieldwork

1. Students who display serious misconduct on the Field Courses (part of LSC-20055 Life at the Extremes or LSC-20054 Life at the Extremes (Semester 2) and of LSC-30066 Tropical Biology Field Course) will be asked to leave and students on LSC-20055 or LSC-20054 will be required to attend the next Field Course as a re-assessment at their own expense. Serious misconduct involves wilful damage to property, injury to persons, improper use of safety equipment and/or failure to attend commitments.
2. Students that do not attend the field course in LSC-20055 Life at the Extremes will be required to cover the cost of attending the field course the following year. These costs can be waived if non-attendance is beyond the student's control and evidence of valid exceptional circumstances is submitted.

[1] References to University Regulations in this document apply to the content of the University's Regulatory Framework as set out on the University website here <https://www.keele.ac.uk/regulations/>.

Version History

This document

Date Approved: 01 April 2020

Previous documents

Version No	Year	Owner	Date Approved	Summary of and rationale for changes
1	2019/20	EDWARD MCCAULEY	17 September 2019	