Course Information Document: Undergraduate

For students starting in Academic Year 2022/23

1. Course Summary

Names of programme and award title(s)	BSc (Hons) Biochemistry BSc (Hons) Biochemistry with International Year (see Annex for details) BSc (Hons) Biochemistry with Work Placement Year (see Annex for details) BSc (Hons) Studies in Biochemistry BSc (Hons) Studies in Biochemistry with International Year BSc (Hons) Studies in Biochemistry 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 either an Applied Life Sciences Placement or 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 Biochemistry at Level 6, or combine with Biology, Human Biology or Neuroscience, 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	**UK students:** Fee for 2022/23 is £9,250* **International students:** Fee for 2022/23 is £17,900** The fee for the international year abroad is calculated at 15% of the standard year fee

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/*

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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?

In a combined honours Biochemistry degree you will study two different, though complementary subjects, with both subjects appearing in your degree title as X and Y, for example Biochemistry and Biology. Across all levels you will study 60 credits of modules in each of your subjects. Alternatively, in your final year you can choose to specialise in just one subject, resulting in an X with Y degree title, for example Biochemistry with Biology. Specialising in Biochemistry will require you to take a minimum of 105 credits of Biochemistry modules, with the option to take a relevant module from your other subject, or to study a full 120 credits of Biochemistry modules.

3. Overview of the Programme

The Biochemistry programme can be taken as part of a combined honours degree. This broad educational remit has been a distinctive feature of Keele's academic philosophy since it was founded in 1953. The course is also available as a single honours programme or as an integrated MSci, detailed in separate specifications.

The Keele Biochemistry programme provides a broad and varied coverage of modern biochemistry, where you will investigate the most exciting areas of 21st Century life science and medical research. Studying life at the molecular level offers the opportunity to investigate the core topics in the life sciences today, from unlocking the secrets of the human genome to the individually tailored molecular therapies of the future, developing a deeper understanding of important structure-function relationships such as how knowledge of the three-dimensional structure of biological macromolecules gives us insight into diverse biochemical processes. The Keele Biochemistry programme places particular emphasis on human and mammalian biochemistry, especially as it relates to health and disease. As well as developing core knowledge in the subject, supported with a comprehensive laboratory programme, you will also develop a range of key transferable and employability skills related to the critical evaluation of scientific literature, effective communication in a variety of formats and teamwork. Additional opportunities, such as the applied life sciences placement, study abroad and a range of final year optional modules give you greater flexibility to tailor the structure and content of your programme to own interests and career goals.

Distinctive features of the course include:

- A contemporary curriculum, with a focus on biochemistry and molecular biology in health and disease, which has been designed to meet requirements for Royal Society of Biology Accreditation;
- Innovative and relevant assessments, designed to foster creativity;
- A core laboratory programme delivered in well-equipped modern laboratories and a wide range of final year research projects;
- The Undergraduate Student Research Conference, giving you the opportunity to present the outcomes of your final year research project in the context of a realistic research conference experience;
- The option to take an Applied Life Sciences Placement between level 5 and level 6;
- The option to include study abroad either as a semester abroad at level 5 or an International Year between level 5 and level 6;
- The opportunity to study a language alongside your programme.

4. Aims of the programme

The broad aims of the programme are to:

- provide you with core knowledge, understanding and skills relevant to Biochemistry
- produce skilled and motivated graduates who are suitably prepared for further study or for employment within or outside their field
- cultivate interest in the biosciences, particularly at the cellular and molecular 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
- 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)

Subject knowledge and understanding

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

- the chemistry that underlies biological process and their study, including chemical and thermodynamic principles applied to biochemical catalysis and the role of enzymes and other proteins in determining the function and fate of cells and organisms.
- the essential features of cell metabolism and its control, developing from a broad understanding of core processes related to cellular respiration and photosynthesis to the application of this in context to acquired and inherited disease
- the principles that determine the three-dimensional structure of biological macromolecules (including nucleic acids, proteins and carbohydrates) and be able to explain detailed examples of how structure enables function
- the molecular basis of genetics and gene expression, including the structure, arrangement, expression, and regulation of genes, and relevant experimental methods for their study and/or manipulation
- the structure, function and organisation of a wide range of cell types (both prokaryotic and eukaryotic), including subcellular organelles and transport processes the signal transduction mechanisms of extra- and intra-cellular receptors in cell signalling pathways controlling cellular activities and how these can be investigated experimentally
- the innate and adaptive immune system, including the main cell types involved, the structural basis for pathogen recognition and key effector functions related to host defence and experimental methods for their study or manipulation
- experimental methods for the investigation of relevant areas of biochemistry and molecular biology, including the scientific method, hypothesis-driven investigation and the critical nature of evidence and scientific debate
- current developments in biochemistry and molecular biology, including areas of ethical or public concern

Subject specific skills

Successful students will be able to:

- evaluate scientific literature with a full and critical understanding, while addressing such questions as content, context, aims, objectives, quality of information, and its interpretation and application
- attain competence in a range of laboratory techniques and employ a variety of methods (including computational studies related to bioinformatics and the use of small molecule and macromolecular databases) in investigating, acquiring, recording and analysing information relevant to biochemistry and molecular biology
- design, conduct, analyse, report and evaluate biochemical experiments, acknowledging an awareness of the validity, accuracy, calibration, precision and reproducibility of results
- work safely and responsibly in the laboratory with awareness of standard procedures such as risk assessment, COSHH, relevant health and safety regulations
- recognise philosophical and ethical issues relevant to the subject, including those relating to animal welfare and procedures for obtaining informed consent
- apply scientific method, planning an analytical skills to carry out a research project
- apply biochemical understanding to familiar and unfamiliar problems

Intellectual skills

Successful students will be able to:

- assess the merits of contrasting theories, paradigms, concepts or principles and develop reasoned arguments
- identify, analyse and solve problems by a variety of methods, either individually and/or cooperatively
- make critical interpretations, evaluations and judgements of data
- obtain, analyse and summarise several lines of subject-specific evidence to formulate and test hypotheses, with critical interpretation of quantitative and qualitative research findings
- take responsibility for their own learning and reflect upon that learning
- construct grammatically correct documents in an appropriate academic style using and referencing relevant ideas and evidence
- understand the importance of academic and research integrity

Key Employability skills

Successful students will be able to:

- develop an adaptable, flexible, sustainable and effective approach to learning and study, 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 programs for presenting data visually
- use the internet and other electronic sources effectively and critically as a means of communication and a source of information
- cite and reference work in an appropriate manner, ensuring academic integrity and the avoidance of plagiarism whether intentional or not
- 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 identify and achieve collaborative goals and responsibilities and perform in a respectful manner that is accepting of the viewpoints and opinions of others
- motivate themselves and sustain that motivation over an extended period of time
- identify and work towards targets for personal, academic and career development

We are committed to developing not only your intellectual, but also personal and professional skills. Alongside our innovative programme, Keele University offers a wide range of enriching activities that offer added value and aim to maximise your potential.

Further information can be found at: http://www.keele.ac.uk/journey/

6. How is the programme taught?

Diversity, flexibility and inclusivity is at the heart of our Education Strategy. Your Student Voice helps us to shape what we do and we include students, local employers and professional bodies in our decision-making process.

The delivery of our programme will include the following types of activities:

Online lectures. Traditional 'lectures' are often delivered online using short videos, directed reading, key learning outcomes and Forms that you can use to ask questions anonymously. This approach will give you far more flexibility to study where, when and how you choose.

Campus-based tutorials and workshops. Often designed to support online lectures. Tutorials and workshops help promote social learning, develop a sense of community and give you an opportunity to deepen your understanding of core issues, ask questions, reflect on your own learning, and discuss content with other students and your tutors. Other workshops will also support data analysis and report writing, including IT literacy, as well as supporting you in developing skills in computational and bioinformatic analysis.

Laboratory practicals. A comprehensive laboratory programme covering a diverse range of modern biochemical and molecular techniques designed to train you in the skills needed for a career in biochemistry. The programme will also develop skills in experimental design through enquiry-based learning and will ensure you develop both independent and team-based skills.

Live, online tutorials, workshops and drop-in sessions . Often used to host plenary sessions. These plenary sessions are optional, added value and may cover topics common to all students such as: note taking and meet your alumni at Level 4; IT and data analysis at Level 5 and writing retreats and careers at Level 6.

Independent study. Based on directed reading from text books, research papers and research reviews to support your learning of the core material and deepen your understanding of the subject.

Life Sciences Double Experimental Project (with research skills assessment) gives you the opportunity to undertake a piece of independent experimental research supervised and supported by a member of staff.

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 by contacting module lecturers on a one-to-one basis.

7. Teaching Staff

University life is not just about the content of your degree. It is also an opportunity to network, to speak to people working in fields that excite you. Here in Life Sciences, you will meet a diverse range of staff that you can see by using the following link: (https://www.keele.ac.uk/lifesci/people/). We also invite speakers from the School of Pharmacy, School of Medicine and the University Hospitals of 4 North Midlands to enrich your learning. Our staff include world-leading researchers, clinical practitioners and experts in learning and

teaching. As part of their training, all staff complete post-graduate courses on learning and teaching. Some take this to Masters level and beyond, choosing to specialise in pedagogic research to ensure that our programmes are taught to the very highest standards. Members of the School of Life Sciences hold recognised or accredited teaching qualifications and the majority are Fellows or Associates of the Higher Education Academy (HEA), whilst a number are Senior Fellows of the HEA. 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.

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 is divided into two taught semesters. Each semester will generally have twelve weeks of teaching followed by three weeks of final assessments. Details of each semester can be found using the following link: https://www.keele.ac.uk/students/academiclife/keydates/. Our programme is organised into discrete modules. Each module is assessed independently and awarded a set number of credits (usually 15 or 30). A 15-credit module equates to 150 hours of student work. Some modules are compulsory and you are required to complete them. Others are optional, giving you some choice in what you want to study.

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 combined honours subjects (minimum of 45 credits of subject-specific content for each subject). This document has information about *Biochemistry* modules only where you are required to study a full 60 credits of core Biochemistry modules at levels 4 and 5, with 60 credits of core and optional modules at level 6; please also see the programme specification for your other chosen subject.

For further information on the content of modules currently offered, 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	60	0	0	0	0
Level 6	15	45	60	0	0

At level 6 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, specialising in Biochemistry means you must take a 30 credit ISP (independent study project) research project. If you continue with a combined honours programmme at level 6 you must take a minimum of 15 credits as an ISP. If you are combining with Biology, Human Biology or Neuroscience you must still select a 30 credit ISP module as a requirement for accreditation, split between the two subjects.

Module Lists

Level 4

Compulsory modules	Module Code	Credits	Period
Biochemistry	LSC-10064	30	Semester 1
Core Practical Skills	LSC-10087	0	Semester 1-2
Molecular Cell Biology	LSC-10066	30	Semester 2

LSC-10087 is a core, zero-credit module. All lab-work across this Level of study will be coordinated through this module and assessed within other credit-bearing modules across the year where appropriate. This module also provides helpful academic support and development material that provide added value to

enhance your overall student experience. Students who fail this module and are studying a RSB accredited combination will transfer to Studies in Biochemistry. This is not accredited by the RSB.

Level 5

Compulsory modules	Module Code	Credits	Period
Gene and Protein Engineering	LSC-20003	15	Semester 1
Molecular, Cellular and Structural Immunology	LSC-20015	15	Semester 1
Practical Skills in Bioscience	LSC-20107	0	Semester 1-2
Metabolism in Health and Disease	LSC-20016	15	Semester 2
Cell Signalling	LSC-20085	15	Semester 2

LSC-20107 is a core, zero-credit module. All lab-work across this Level of study will be coordinated through this module and assessed within other credit-bearing modules across the year where appropriate. This module also provides helpful academic support and development material that provide added value to enhance your overall student experience. Students who fail this module and are studying a RSB accredited combination will transfer to Studies in Biochemistry. This is not accredited by the RSB

Level 6

Compulsory modules	Module Code	Credits	Period
Bioinformatics and Science Communication	LSC-30057	15	Semester 1-2

Optional modules	Module Code	Credits	Period
Structural Biology & Macromolecular Function	LSC-30016	15	Semester 1
Applied Life Sciences Placement - ISP	LSC-30019	15	Semester 1
Advances in Medicine	LSC-30028	15	Semester 1
Human Parasitology	LSC-30036	15	Semester 1
Double Applied Life Sciences Placement - ISP	LSC-30038	30	Semester 1
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
Cancer Biology	LSC-30061	15	Semester 2
Medical Glycobiology (Level 6)	LSC-30065	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
Bioinformatics and Science Communication	LSC-30057	15	Semester 1-2

Optional modules	Module Code	Credits	Period
Structural Biology & Macromolecular Function	LSC-30016	15	Semester 1
Advances in Medicine	LSC-30028	15	Semester 1
Human Parasitology	LSC-30036	15	Semester 1
Case Studies in Biotechnology	LSC-30051	15	Semester 1
Tropical Biology Field Course	LSC-30066	15	Semester 1
Biology of Disease - ISP	LSC-30015	15	Semester 1-2
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
Cancer Biology	LSC-30061	15	Semester 2
Medical Glycobiology (Level 6)	LSC-30065	15	Semester 2

Level 6 Module Rules

- 15 or 30 credits of independent study modules must be selected
- Students specialising in Biochemistry or combining with Biology, Human Biology or Neuroscience (i.e. RSB accredited routes) MUST take either LSC-30045 or LSC-30038
- LSC-30045 and LSC-30038: these modules are NOT available to students on non RSB-accredited subject combinations
- LSC-30048 and LSC-30019: these modules are NOT available to students specialising in Biochemistry or doing RSB-accredited combinations

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 a minimum of 135 credits in each subject (270 credits in total), with at least 45 credits at each level of study (Levels 4, 5 and 6) in each of your two subjects (90 credits per year). Your degree title will be 'subject X and subject Y'. If you choose to study one 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'.
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 'international year' wording. Students who do not complete, or fail the international year, will be transferred to the three-

year version of the programme.

10. How is the Programme Assessed?

Our assessment strategy is designed to be authentic and diverse so that you can develop key skills that meet academic, professional body and employer expectations. Module managers will provide appropriate guidance for each assessment and the marking criteria that will be used to assess your work.

Our assessment strategy will help you to develop and evidence your ability to:

Provide evidence-based solutions to current scientific problems. Most often this is assessed through a range of essays, portfolios and literature reviews.

Present scientific findings. Often these are lab reports or experimental projects that test your ability to pose scientific hypotheses, design experiments, understand methodologies, present findings, analyse data and situate your work in the current literature. Other assessments will also develop your skills in accessing, manipulating and presenting the outcomes of computational investigations, including in bioinformatics and the use of small molecule and macromolecular databases.

Communicate effectively with a range of audiences. These can include scientific posters, patient information leaflets, wikis, blogs or oral presentations, as well as more standard laboratory reports, proformas and literature reviews.

Work professionally. Your final year, independent research project will give you an opportunity to demonstrate a range of professional skills such as leadership, innovation, time keeping, communication and the ability to work safely and ethically.

Work effectively in a team. Most often this is assessed through group presentations but can also include competencies such as working together in the lab or other group assignments, such as the optimisation and product of commercial laboratory assay kit for metabolite quantification.

Solve problems in a time-limited fashion. Often in the work environment we are asked to solve problems in a relatively short amount of time. Our online tests and end-of-semester, online, open-book examinations will help you to evidence these skills.

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, which we aim to provide within three working weeks of submission. This is often phrased in terms of strengths, weaknesses and ways to improve to help you focus on key areas that can improve the quality of your work in the future.

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)	21%	79%	0%
Year 2 (Level 5)	29%	71%	0%
Year 3 (Level 6)	9%	91%	0%

12. Accreditation

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

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 Biochemistry. Students are also required to obtain a pass mark for the Level 4 Core Practical Skills and Level 5 Practical Skills in Bioscience modules in order to remain on the accredited routes, else the award title will be Studies in Biochemistry

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.

14. Other Learning Opportunities

We are committed to offering a rich and diverse student experience that goes far beyond your degree.

Most years, we are able to offer range of different opportunities to enrich your student experience. These can include:

Study abroad. You could apply to spend one semester at Level 5 studying in one of our international partner universities. This not only gives you valuable international experience, but can also allow you to study a complimentary subject - such as epidemiology or molecular biology - in greater detail, whilst remaining complementary to the your programme of study at Keele. The marks that you achieve whilst studying abroad will count to your overall attainment across Level 5.

International year. Is similar to study abroad, but here you choose to take an additional year in between Levels 5 and 6 studying in one of our international partner universities. More information can be found at: http://www.keele.ac.uk/studyabroad/partneruniversities/

Industrial placements. You could apply to a range of national and international employers for an industrial placement. These take place in between Level 5 and 6 and usually last 6-9 months. They provide excellent work experience and an opportunity to collect data for your Level 6 independent research student project.

Secondments. These are shorter industrial placements that usually take place over the summer in between Level 5 and 6 and usually last between 2-8 weeks. They can be based locally in one of our research labs here at Keele, nationally or internationally. For example, often some our students will travel to Malaysia to work with our partner *Universiti Sains Malaysia.*

Tropical field trip. You could apply for our School tropical field that takes place in Malaysia. These are

often more conservational in nature, but again provide fantastic international experience and of course, will complement and broaden your programme of study in Biochemistry. *Note: the Tropical Biology Field Course module is only available to students specialising in Biochemistry in their final.*

Operation Wallacea. This is a private company that supports a wide range of student projects with a particular focus on biodiversity and climate research. More information can be found at: https://www.opwall.com

Note: the opportunities described above are limited and dependent on external providers. We may not be able to offer them every year and there will be additional costs if you do successfully secure a place. We discuss all of these options in more detail across Level 4 and Level 5 so you can make an informed decision

Other opportunities

There are a number of schemes available from e.g. the Wellcome Trust that provide bursaries for students to gain laboratory experience in the summer vacation between level 5 and 6. Staff in Life Sciences have hosted these bursaries in the past and students who are interested can approach staff, who will have to submit an application on the students' behalf to the funding bodies (usually in January or February). Staff may also be willing to host students in their laboratories during the summer vacation on a voluntary basis.

Other learning opportunities for Biochemistry students vary from year to year but include 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 as part of a school-wide seminar programme, but are widely advertised and undergraduate students are always welcome to attend.

15. Additional Costs

Activity	**Estimated cost**
Field courses - compulsory	£N/A
Field courses - optional	£N/A
Equipment: Text books (mainly require in levels 4 and 5) Calculator and writing materials	£250
Travel	£N/A
Other additional costs: Replacement lab coat if allocated one is lost	£12
Total estimated additional costs	**£262**

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 programme.

16. Annex - International Year

Biochemistry 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.

International Year Programme

At Level 5 you can apply to transfer onto our International Year pathway. If successful, you will have an additional year of study at one of our international partner Universities once you have completed Level 5 here 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 Combined Honours programme without the International Yearand 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 International Year option.

International Year Programme Aims

In addition to the programme aims for Biochemistry, we also aim to:

1. Enhance your personal development to give you an insight into the international dimension of Biochemistry
2. Give you an 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 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

We have a dedicated Study Abroad tutor within Life Sciences that will will stay in touch with you throughout your International Year, effectively acting as an additional Personal Tutor. There is also support available for Keele's Global Opportunities Team (https://www.keele.ac.uk/study/studyabroad/)

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 Biochemistry.
5. Demonstrate the use of critical thinking skills, augmented by creativity and curiosity, in discussing the application of their International Year studies to Biochemistry.

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

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 they will study 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 who meet external eligibility criteria 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.

17. Annex - Work Placement Year

Biochemistry with Work Placement Year

Work Placement Year summary

Students registered for this programme may apply to transfer during level 4 or 5 to the 'with Work Placement Year' option. 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 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 4-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, Level 6 and Level 7 will be as per the main body of this document. The additional detail contained in this annex will pertain solely to students taking MSci Biochemistry the Work Placement Year

(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).

Work Placement Year Programme Aims

In addition to the programme aims for Biochemistry, we also aim to:

- Provide experience of working in a subject-related laboratory or work place within an industrial, academic or public institution either in the UK or abroad.

Entry Requirements for the Work Placement Year

Transfer onto Work Placement Year is subject to a selection process as described below:

- Academic performance. Evidenced by good overall engagement with your programme, passing all modules across Level 4 and semester 1 of Level 5 with an overall grade average of >60%.
- General aptitude. Evidenced by suitable references provided by an academic member of staff (usually your Personal Tutor) and interview.
- Health and safety. Evidenced by completion of a Keele Health and Safety checklist and compliance with health and safety requirements of your placement provider.
- (International students only) You should be aware that there may be additional visa implications for this transfer, and it is your responsibility to complete any and all necessary processes to be eligible for this pathway. 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.

Student Support

We have a dedicated Industrial Placement tutor within Life Sciences that can act as a point of contact for you before, during or after your placement year. You will also be assigned a Placement Supervisor. This will be an academic member of the School who will maintain regular contact with you throughout your placement and will become your project supervisor at Level 6. The School Director of Education will also act as an important contact throughout the process, that you can contact them in strict confidence at any point during your placement if you have any concerns about your placement provider or overall experience.

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. Demonstrate an ability to successfully work within their placement institution and to learn practical skills and develop their science base within the scope of their work project.

These learning outcomes will be assessed through the 15 or 30 -credit bearing Work Placement Year modules (LSC-30019 or LSC-30038).

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 either 'Applied Life Sciences Placement (LSC-30019)' for non-RSB accredited combinations or Double Applied Life Sciences Placement (LSC-30038) for RSB accredited combinations. 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.

18. Annex - Programme-specific regulations

Programme Regulations: Biochemistry

Final Award and Award Titles	BSc (Hons) Biochemistry BSc (Hons) Studies in Biochemistry
Intermediate Award(s)	Diploma in Higher Education Certificate in Higher Education
Last modified	September 2021
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: No variations apply

Additional Requirements

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

Additional requirement 1: Laboratory, lecture and tutorial classes

1.1 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.

1.2 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.

1.3 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.

1.4 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.

1.5 The unauthorised use of mobile phones or headphones is not permitted in any class.

1.6 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.

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

Additional requirement 2: Royal Society of Biology Accreditation

2.1 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. Students must also achieve a pass mark in both of the zero-credit, lab-based modules and levels 4 and 5. For students who do not fulfil the conditions of this regulation, the degree award will be 'Studies in Biochemistry' and the degree will not be accredited by the Royal Society of Biology.

[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/.

Additional requirement 3: Work Placements, Exchange Periods and Study Abroad

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

Version History

This document

Date Approved: 01 February 2022

Previous documents

Version No	Year	Owner	Date Approved	Summary of and rationale for changes
1	2021/22	DAVID WATSON	08 February 2021	
1.1	2020/21	DAVID WATSON	12 November 2020	Minor change to LSC-30065 (Medical Glycobiology) to move to SEM2
1	2020/21	DAVID WATSON	18 December 2019	
1.2	2019/20	DAVID WATSON	12 November 2020	Minor change - LSC-30015 now a SEM 1-2 module and LSC-30065 moved to SEM2
1.1	2019/20	DAVID WATSON	20 January 2020	Additional optional module added to Level 6 (Major route only) - LSC-30066: Tropical Biology Field Course
1	2019/20	EDWARD MCCAULEY	17 September 2019	