

## Programme Specification: Undergraduate

### For students starting in Academic Year 2020/21

#### 1. Course Summary

<b>Names of programme and award title(s)</b>	BSc (Hons) Biomedical Science BSc (Hons) Biomedical Science with International Year (see Annex for details) BSc (Hons) Biomedical Science with Work Placement Year (see Annex for details) BSc (Hons) Applied Biomedical Science BSc (Hons) Studies in Biomedical Sciences BSc (Hons) Studies in Biomedical Sciences with International Year BSc (Hons) Studies in Biomedical Sciences with Work Placement Year
<b>Award type</b>	Single Honours
<b>Mode of study</b>	Full-time
<b>Framework of Higher Education Qualification (FHEQ) level of final award</b>	Level 6
<b>Normal length of the programme</b>	3 years; 4 years with either a 46-week Life Sciences placement or Applied Biomedical Science placement, or the International Year option between Levels 2 and 3
<b>Maximum period of registration</b>	The normal length as specified above plus 3 years
<b>Location of study</b>	Keele Campus
<b>Accreditation (if applicable)</b>	The Biomedical Science course, with or without the International Year or Work Placement Year, is accredited by the Royal Society of Biology and the Institute of Biomedical Science (IBMS). The Applied Biomedical Science (ABMS) course is also approved by the Health & Care Professions Council (HCPC). For further details see the section on Accreditation.
<b>Regulator</b>	Office for Students (OfS)
<b>Tuition Fees</b>	<p><b>UK/EU students:</b></p> <p>Fee for 2020/21 is £9,250*</p> <p><b>International students:</b></p> <p>Fee for 2020/21 is £16,250**</p> <p>The fee for the international year abroad is calculated at 15% of the standard year fee</p> <p>The fee for the work placement year is calculated at 20% 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

## 2. What is a Single Honours programme?

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

## 3. Overview of the Programme

Biomedical Science (BMS) is taken as a Single Honours course for all years of study. Biomedical Science is a blend of those sciences that contribute to medical research and understanding of disease. Biomedical Science students need to be able to integrate concepts from many branches of biology in order to understand the diagnosis and treatment of human diseases. These areas of biology include human physiology, biochemistry, pathology, immunology, neuroscience and molecular and cell biology. In order to fulfil these requirements and thereby provide a multidisciplinary learning environment experienced by all students at Keele, the course is delivered by staff from many disciplines within the School of Life Sciences, in collaboration with the School of Pharmacy, the School of Medicine and the University Hospitals of North Midlands NHS Trust. The programme includes the opportunity to graduate with an Applied Biomedical Science (ABMS) degree, which incorporates a clinical placement leading to the opportunity to complete the Health and Care Professions Council (HCPC) Standards of Proficiency for Biomedical Scientists. The Biomedical Science course is Institute of Biomedical Science (IBMS)-accredited and the ABMS course is both HCPC-approved and IBMS-accredited. Both courses are accredited by the Royal Society of Biology. Successful ABMS students are eligible to apply for registration with the HCPC and also receive the IBMS Certificate of Competence, making them eligible for Licentiate membership of the IBMS.

Throughout this document, the term 'Biomedical Science' is used to refer to both BMS and ABMS routes, unless specifically indicated otherwise.

The Programme provides a broad and varied coverage of modern biochemistry and cell biology with emphasis on the biochemical and molecular aspects of health and disease. Staff provide a friendly and supportive environment.

Training is also provided in the employability skills that will help you to reach your potential in your chosen career. Distinctive features of this programme are:

- The course is accredited by the Institute of Biomedical Science (IBMS) and the Royal Society of Biology.
- The course draws on the resources and expertise of external practitioners from the Royal Stoke University Hospital's Pathology Department and takes an integrated approach to studying the disease process from a biomedical practitioner's perspective.
- Students may undertake a Life Sciences placement year between their second and third years at Keele.
- Students may undertake an international year between their second and third years at Keele (see Annex A for criteria and details). This option is accredited by the Royal Society of Biology and the Institute of Biomedical Science.
- Students may study abroad at a partner university for one semester in year 2. N.B. this option is NOT accredited by the Royal Society of Biology or the Institute of Biomedical Science and will result in an award of Studies in Biomedical Sciences.

Students may, at the end of their first year, apply for transfer to Applied Biomedical Science, a Health and Care Professions Council (HCPC)-approved route incorporating integrated training and hospital laboratory placements (subject to placement availability and a competitive selection process). Successful Applied Biomedical Science graduates will have met the HCPC Standards of Proficiency for Biomedical Scientists and will have the qualifications necessary for eligibility to register with the HCPC.

## 4. Aims of the programme

The broad aims of the programme are to:

- provide you with core knowledge, understanding and skills relevant to Biomedical Science;
- provide an appropriate qualification for a career as a Biomedical Scientist;
- 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

- Key or transferable skills (including employability skills)

## **Subject knowledge and understanding**

Successful students will be able to:

- U1 at Level 4, demonstrate knowledge and understanding of biological science core topics, underpinning biomedical science, including anatomy, molecular biology and molecular genetics; biochemistry including macromolecular structure and function, enzymes and catalysis, metabolism and its control, cell biology, cell signalling, membranes and transport; human physiology and pathology
- U2 at Level 4, demonstrate knowledge and understanding of key subjects in biomedical science including: cellular pathology including histology and cytology, clinical biochemistry, immunology and microbiology, haematology and blood transfusion science
- U3 at Level 5, demonstrate knowledge and understanding of core topics listed in U1 and U2 and also including biotechnology, information technology and structural and cellular immunology
- U4 at Level 6, demonstrate knowledge and understanding of selected areas of the core curriculum listed in U1-U3 and including biology of disease and acquisition, analysis and communication of information
- U5 be able to integrate knowledge of the core science and specialist subject areas through study of the biology of disease
- U6 demonstrate knowledge and understanding of the methods by which biomedical data are obtained, including analytical and preparative laboratory techniques
- U7 be able to demonstrate the ability to mine, manipulate and interpret data from small molecule and macromolecular databases
- U8 demonstrate a critical understanding of the scientific method, formulation and testing of hypotheses and understanding that scientific knowledge is complex, contested and subject to continuous advance
- U9 use appropriately the terminology and nomenclature of the discipline
- U10 be aware of current developments in Biomedical Science including areas of ethical or public concern
- U11 develop an appreciation of the interdisciplinary nature of science and of the validity of different points of view

## **Subject specific skills**

Successful students will be able to:

- P1 use a range of laboratory techniques for the acquisition and analysis of information relevant to the subject
- P2 design, conduct, analyse, report and evaluate biomedical experiments
- P3 work safely and responsibly in the laboratory with awareness of standard procedures, COSHH and good laboratory practice (GLP)
- P4 apply biomedical understanding to familiar and unfamiliar problems
- P5 apply scientific method, planning and analytical skills to carry out a research project
- P6 recognise philosophical and ethical issues relevant to the subject
- P7 Applied Biomedical Science students will be able to demonstrate competence in all the Health Professions Council Standards of Proficiency for Biomedical Scientists

## **Intellectual skills**

Successful students will be able to:

- I1 assess the merits of contrasting theories and explanations and develop reasoned arguments
- I2 identify, analyse and solve problems, whether familiar or unfamiliar, individually and/or co-operatively
- I3 make reasoned decisions
- I4 evaluate evidence and make critical judgements
- I5 abstract and synthesise information and make critical interpretations of data and text

- I6 take responsibility for their own learning and reflect upon that learning
- I7 construct grammatically correct documents in an appropriate academic style, using and referencing relevant ideas and evidence
- I8 understand the importance of academic and research integrity

### **Key or transferable skills (including employability skills)**

Successful students will be able to:

- E1 develop and sustain effective approaches to learning and study, including time management, flexibility, creativity and intellectual integrity
- E2 acquire, analyse, synthesise, summarise and present information and ideas from a wide range of sources: textual, numerical, verbal and graphical
- E3 prepare, process and present data using appropriate qualitative and quantitative techniques: statistical programmes, spreadsheets and programmes for presenting data visually
- E4 use the Internet and other electronic resources, effectively and critically, as a means of communication and a source of information
- E5 communicate effectively by written, spoken and graphical means using appropriate techniques and scientific language
- E6 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
- E7 develop skills necessary for self-managed and lifelong learning, including working independently, organisational, enterprise and knowledge transfer skills
- E8 motivate themselves and sustain that motivation over an extended period of time
- E9 cite and reference work in an appropriate manner, ensuring academic integrity and the avoidance of plagiarism, whether intentional or not

### **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 and practical classes will be taught by practising Biomedical Scientists from local Pathology Departments
- **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
- **Practicals** in laboratories are particularly important and involve gaining skills in modern biochemical and medical laboratory techniques and provide training in a wide range of research 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. In particular, Problem Based Learning (PBL) is the student-centred learning style, using clinical scenarios, for at least two modules and is incorporated into other modules across the three years of study. Some tutorials and seminars consist largely of student presentations
- **Independent study** based on directed reading from textbooks, research papers and research reviews
- **Web-based learning** using the 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
- In the **dissertation** module, Biology of Disease, taken in their final year, the opportunity to undertake a piece of independent study, with generic support provided through tutorials

- The opportunity to undertake a piece of **independent experimental research** supervised and supported by a member of staff and usually within a research group
- Students on the Applied Biomedical Science route will have the opportunity to undertake a **clinical placement** between Levels 5 & 6 and to attempt completion of the HCPC Standards of Proficiency for Biomedical Science, through the ABMS Placement Portfolio

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 cellular processes and the complexity of biochemical processes
- **Seminars, tutorials and online discussions** provide opportunities for students to ask questions about, and suggest answers to, biomedical 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 generate, analyse and interpret experimental data and to use a range of techniques relevant to the study of modern biochemistry and medical laboratory sciences
- 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

The teaching staff are mainly from the School of Life Sciences (<https://www.keele.ac.uk/lifesci/people/>). Teaching staff from the School of Pharmacy, School of Medicine and the University Hospitals of North Midlands NHS Trust also contribute to the Programme. Most staff are active in bioscience research and qualified to PhD level or equivalent professional level. 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. A number of members of staff are HCPC-registered Biomedical Scientists. Additionally, we draw on expertise of Pathology practitioners from local hospitals, particularly Royal Stoke University Hospital, to deliver certain Pathology-specific elements of the programme.

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 programme to programme, 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 credit requirements per year is as follows, with a minimum of 90 subject credits (compulsory plus optional) required for each year.

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	120	0	0	0	0
Level 5	90	15	30	0	15
Level 6	30	90	90	0	0

## Module Lists

### Level 4

Compulsory modules	Module Code	Credits	Period
Biochemistry	LSC-10064	30	Semester 1
Clinical Applications of Biomedical Science I	LSC-10070	30	Semester 1-2
Physiology and Anatomy	LSC-10074	30	Semester 1-2
Molecular Cell Biology	LSC-10066	30	Semester 2

### 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
Clinical Applications of Biomedical Science II	LSC-20089	30	Semester 1-2
Metabolism in Health and Disease	LSC-20016	15	Semester 2
Research and Analytical Skills	LSC-20056	15	Semester 2

Optional modules	Module Code	Credits	Period
Human Genetics	LSC-20050	15	Semester 1
Microbes, Viruses and Parasites	LSC-20073	15	Semester 1
Professional Relationships	LSC-20040	15	Semester 1-2
Cell Signalling	LSC-20085	15	Semester 2

### Level 5 Module Rules

**Study Abroad modules** - Students opting to study abroad for one semester (as opposed to the International Year option) may undertake Study Abroad in only one of the semesters of Level 5. The required modules must be selected from the relevant semester of study abroad. If a student elects to undertake the semester-long Study Abroad option, the degree award will be '*Studies in Biomedical Sciences*'; the degree will NOT be accredited by the IBMS and therefore will not fulfil the required academic qualification for eligibility for HCPC registration as a Biomedical Scientist. The year-long International Year option is Royal Society of Biology- and IBMS-accredited.

## Level 6

Compulsory modules	Module Code	Credits	Period
Biology of Disease - ISP	LSC-30015	15	Semester 2
Bioinformatics and Science Communication	LSC-30057	15	Semester 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
Double Applied Life Sciences Placement - ISP	LSC-30038	30	Semester 1
Biomedical Engineering	LSC-30055	15	Semester 1
Brain Disease	LSC-30063	15	Semester 1
Tropical Biology Field Course	LSC-30066	15	Semester 1
Applied Regenerative Medicine	LSC-30068	15	Semester 1
Life Sciences Double Experimental Project (with research skills assessment)	LSC-30045	30	Semester 1-2
Clinical Pathology	LSC-30009	15	Semester 2
Case Studies in Biomedical Sciences	LSC-30026	15	Semester 2
Cancer Biology	LSC-30061	15	Semester 2

### Level 6 Module Rules

- 30 credits of independent modules must be selected: i.e. either LSC-30045 'Life Sciences Double Experimental Project (with research skills assessment)' or LSC-30038: Double Applied Life Sciences Placement
- LSC-30038: The Double Applied Life Sciences Placement module may replace Life Sciences Double Experimental Project (with research skills assessment) if the nature of the placement is deemed suitable and the work carried out meets the criteria of the research project module.

### Alternative Levels 5 and 6, leading to award of Applied Biomedical Science (ABMS)

#### Year 2 (Level 5)

<b>Compulsory modules</b>	<b>Module Code</b>	<b>Credits</b>	<b>Semester</b>
Gene & Protein Engineering	LSC-20003	15	1
Molecular, Cellular & Structural Immunology	LSC-20015	15	1
Clinical Applications of Biomedical Science II	LSC-20089	30	1+2
Professional Relationships	LSC-20040	15	1+2
Metabolism in Health and Disease	LSC-20016	15	2
Research & Analytical Skills	LSC-20056	15	2
<b>Optional modules</b>	<b>Module Code</b>	<b>Credits</b>	<b>Semester</b>
Human Genetics	LSC-20050	15	1
Microbes, Viruses & Parasites	LSC-20073	15	1
Cell Signalling	LSC-20085	15	2

### Year 3 (Level 6)

<b>Compulsory modules</b>	<b>Module Code</b>	<b>Credits</b>	<b>Semester</b>
Biology of Disease	LSC-30015	15	2
Bioinformatics & Science Communication	LSC-30057	15	2
Case Studies in Biomedical Science	LSC-30026	15	2
Double Applied Biomedical Sciences Placement*	LSC-30044	30	1+2
<b>Optional modules</b>	<b>Module Code</b>	<b>Credits</b>	<b>Semester</b>
Advances in Medicine	LSC-30028	15	1
Applied Regenerative Medicine	LSC-30068	15	1
Biomedical Engineering	LSC-30055	15	1
Brain Disease	LSC-30063	15	1
Human Parasitology	LSC-30036	15	1
Structural Biology & Macromolecular Function	LSC-30016	15	1
Cancer Biology	LSC-30061	15	2
Clinical Pathology	LSC-30009	15	2

#### *Module rules:*

\* Applied Biomedical Science students must achieve a pass grade for the Double Applied Biomedical Science Placement module. If this module is failed, the student will revert to the Biomedical Science route or Studies in Biomedical Sciences award, if all of the requirements of the Biomedical Science award are not met (i.e. if a mark of less than 40% is achieved: see Regulation 11.9). In this case, the mark for the Double Applied Biomedical Science Placement module will be substituted *in lieu* of the Life Sciences Double Experimental Project (with research skills assessment) module.

### 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.

<b>Subject Knowledge and Understanding</b>	
<b>Learning Outcome</b>	<b>Module in which this is delivered</b>
U1 demonstrate knowledge and understanding of biological science core topics, underpinning biomedical science, including anatomy, molecular biology and molecular genetics; biochemistry including macromolecular structure and function, enzymes and catalysis, metabolism and its control, cell biology, cell signalling, membranes and transport; human physiology and pathology	All modules
U2 demonstrate knowledge and understanding of key subjects in biomedical science including cellular pathology including histology and cytology, clinical biochemistry, immunology and microbiology, haematology and blood transfusion science	Clinical Applications of Biomedical Science I - LSC-10070
U6 demonstrate knowledge and understanding of the methods by which biomedical data are obtained, including analytical and preparative laboratory techniques	All modules, particularly those with practical classes
U8 demonstrate knowledge and understanding of the scientific method, formulation and testing of hypotheses and understanding that scientific knowledge is complex, contested and subject to continuous advance	All modules, particularly those with practical classes
U9 use appropriately the terminology and nomenclature of the discipline	All modules

<b>Subject Specific Skills</b>	
<b>Learning Outcome</b>	<b>Module in which this is delivered</b>
P1 use a range of laboratory techniques for the acquisition and analysis of information relevant to the subject	All modules with practical sessions
P2 design, conduct, analyse, report and evaluate biomedical experiments	All modules with practical sessions
P3 work safely and responsibly in the laboratory with awareness of standard procedures, COSHH and good laboratory practice (GLP)	All modules with practical sessions
P4 apply biomedical understanding to familiar and unfamiliar problems	All modules
P6 recognise philosophical and ethical issues relevant to the subject	All modules, particularly Clinical Applications of Biomedical Science I
I2 identify, analyse and solve problems, whether familiar or unfamiliar, individually and/or co-operatively	All modules with practical sessions, Clinical Applications of Biomedical Science I
I3 make reasoned decisions	All modules
I5 abstract and synthesise information and make critical interpretations of data and text	All modules with practical sessions, Clinical Applications of Biomedical Science I
I6 take responsibility for their own learning and reflect upon that learning	All modules, particularly Clinical Applications of Biomedical Science I
I7 Construct grammatically correct documents in an appropriate academic style, using and referencing relevant ideas and evidence	All modules where there are written assessments
I8 Understand the importance of academic and research integrity	All modules especially those with associated laboratory work

<b>Key or Transferable Skills (graduate attributes)</b>	
<b>Learning Outcome</b>	<b>Module in which this is delivered</b>
E1 develop and sustain effective approaches to learning and study, including time management, flexibility, creativity and intellectual integrity	All modules
E2 acquire, analyse, synthesise, summarise and present information and ideas from a wide range of sources: textual, numerical, verbal and graphical	All modules, particularly Clinical Applications of Biomedical Science I
E3 Prepare, process and present data using appropriate qualitative and quantitative techniques: statistical programmes, spreadsheets and programmes for presenting data visually	All modules with practical sessions
E4 use the internet and other electronic sources, effectively and critically, as a means of communication and a source of information	All modules, particularly Clinical Applications of Biomedical Science I
E5 communicate effectively by written, spoken and graphical means using appropriate techniques	All modules
E6 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	Most modules will have some element of group work, particularly Clinical Applications of Biomedical Science I
E7 develop skills necessary for self-managed and lifelong learning, including working independently, organisational, enterprise and knowledge transfer skills	All modules, particularly Clinical Applications of Biomedical Science I
E9 Cite and reference work in an appropriate manner, ensuring academic integrity and the avoidance of plagiarism whether intentional or not	All modules

## **Level 5**

<b>Subject Knowledge and Understanding</b>	
<b>Learning Outcome</b>	<b>Module in which this is delivered</b>
U3 Demonstrate knowledge and understanding of core topics listed in U1 & U2 at Level 4 and also including biotechnology, information technology and structural and cellular immunology	All Level 5 modules, particularly Clinical Applications of Biomedical Science II, Research & Analytical Skills and Molecular, Cellular & Structural Immunology
U5 be able to integrate knowledge of the core science and specialist subject areas through study of the biology of disease	All modules
U6 demonstrate knowledge and understanding of the methods by which biomedical data are obtained, including analytical and preparative laboratory techniques	All modules, particularly those with practical classes
U8 demonstrate knowledge and understanding of the scientific method, formulation and testing of hypotheses and understanding that scientific knowledge is complex, contested and subject to continuous advance	All modules, particularly those with practical classes
U9 use appropriately the terminology and nomenclature of the discipline	All modules
U10 be aware of current developments in Biomedical Science including areas of ethical or public concern	All modules, particularly Clinical Applications of Biomedical Science II and Professional Relationships
U11 develop an appreciation of the interdisciplinary nature of science and of the validity of different points of view	All modules, particularly Clinical Applications of Biomedical Science II

<b>Subject Specific Skills</b>	
<b>Learning Outcome</b>	<b>Module in which this is delivered</b>
P1 use a range of laboratory techniques for the acquisition and analysis of information relevant to the subject	All modules with practical sessions
P2 design, conduct, analyse, report and evaluate biomedical experiments	All modules with practical sessions
P3 work safely and responsibly in the laboratory with awareness of standard procedures, COSHH and good laboratory practice (GLP)	All modules with practical sessions
P4 apply biomedical understanding to familiar and unfamiliar problems	All modules
P6 recognise philosophical and ethical issues relevant to the subject	All modules, particularly Clinical Applications of Biomedical Science II and Professional Relationships
I2 identify, analyse and solve problems, whether familiar or unfamiliar, individually and/or co-operatively	All modules with practical sessions, Clinical Applications of Biomedical Science II
I3 make reasoned decisions	All modules
I4 evaluate evidence and make critical judgements	Research and Analytical Skills - LSC-20056
I5 abstract and synthesise information and make critical interpretations of data and text	All modules with practical sessions, Clinical Applications of Biomedical Science II
I6 take responsibility for their own learning and reflect upon that learning	All modules, particularly Clinical Applications of Biomedical Science II
I7 Construct grammatically correct documents in an appropriate academic style, using and referencing relevant ideas and evidence	All modules where there are written assessments
I8 Understand the importance of academic and research integrity	All modules especially those with associated laboratory work

<b>Key or Transferable Skills (graduate attributes)</b>	
<b>Learning Outcome</b>	<b>Module in which this is delivered</b>
E1 develop and sustain effective approaches to learning and study, including time management, flexibility, creativity and intellectual integrity	All modules
E2 acquire, analyse, synthesise, summarise and present information and ideas from a wide range of sources: textual, numerical, verbal and graphical	All modules
E3 Prepare, process and present data using appropriate qualitative and quantitative techniques: statistical programmes, spreadsheets and programmes for presenting data visually	All modules with practical sessions
E4 use the internet and other electronic sources, effectively and critically, as a means of communication and a source of information	All module, particularly Research & Analytical Skills
E5 communicate effectively by written, spoken and graphical means using appropriate techniques	All modules
E6 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	Most modules will have some element of group work, particularly Professional Relationships
E7 develop skills necessary for self-managed and lifelong learning, including working independently, organisational, enterprise and knowledge transfer skills	All modules, particularly Professional Relationships, Research & Analytical Skills
E9 Cite and reference work in an appropriate manner, ensuring academic integrity and the avoidance of plagiarism whether intentional or not	All modules

## **Level 6**

<b>Subject Knowledge and Understanding</b>	
<b>Learning Outcome</b>	<b>Module in which this is delivered</b>
U4 Demonstrate knowledge and understanding of selected areas of the core curriculum listed in U1-3 at Level 4 and 5 and including biology of disease and acquisition, analysis and communication of information	All modules, particularly Biology of Disease and Bioinformatics & Science Communication
U5 Be able to integrate knowledge of the core science and specialist subject areas through study of the biology of disease	All modules
U6 Demonstrate knowledge and understanding of the methods by which biomedical data are obtained, including analytical and preparative laboratory techniques	All modules
U7 Be able to demonstrate the ability to mine, manipulate and interpret data from small molecule and macromolecular databases	Bioinformatics and Science Communication - LSC-30057
U8 demonstrate knowledge and understanding of the scientific method, formulation and testing of hypotheses and understanding that scientific knowledge is complex, contested and subject to continuous advance	All modules, particularly project/placement modules
U9 use appropriately the terminology and nomenclature of the discipline	All modules
U10 be aware of current developments in Biomedical Science including areas of ethical or public concern	All modules
U11 develop an appreciation of the interdisciplinary nature of science and of the validity of different points of view	All modules

<b>Subject Specific Skills</b>	
<b>Learning Outcome</b>	<b>Module in which this is delivered</b>
P1 use a range of laboratory techniques for the acquisition and analysis of information relevant to the subject	Project/placement modules
P2 design, conduct, analyse, report and evaluate biomedical experiments	Project/placement modules
P2 work safely and responsibly in the laboratory with awareness of standard procedures, COSHH and good laboratory practice (GLP)	Project/placement modules
P4 apply biomedical understanding to familiar and unfamiliar problems	All modules
P5 apply scientific method, planning and analytical skills to carry out a research project	Project/placement modules
P6 recognise philosophical and ethical issues relevant to the subject	All modules, Case Studies in Biomedical Science
P7 Applied Biomedical Science students will be able to demonstrate competence in all the Health and Care Professions Council Standards of Proficiency for Biomedical Scientists	Double ABMS Placement
I1 assess the merits of contrasting theories and explanations and develop reasoned arguments	All modules
I2 identify, analyse and solve problems, whether familiar or unfamiliar, individually and/or co-operatively	Project/placement modules, Biology of Disease, Case Studies in Biomedical Science
I3 make reasoned decisions	All modules
I4 evaluate evidence and make critical judgements	All modules, particularly project/placement modules, Dissertation, Double ABMS Placement
I5 abstract and synthesise information and make critical interpretation of data and text	All modules, particularly project/placement modules, Dissertation, Double ABMS Placement
I6 take responsibility for their own learning and reflect upon that learning	Project/placement modules, double ABMS placement
I7 Construct grammatically correct documents in an appropriate academic style, using and referencing relevant ideas and evidence	All modules where there are written assessments
I8 Understand the importance of academic and research integrity	All modules especially those with associated laboratory work

<b>Key or Transferable Skills (graduate attributes)</b>	
<b>Learning Outcome</b>	<b>Module in which this is delivered</b>
E1 develop and sustain effective approaches to learning and study, including time management, flexibility, creativity and intellectual integrity	All modules
E2 acquire, analyse, synthesise, summarise and present information and ideas from a wide range of sources: textual, numerical, verbal and graphical	All modules, Case Studies in Biomedical Science, project/placement modules Biology of Disease, Double ABMS Placement
E3 Prepare, process and present data using appropriate qualitative and quantitative techniques: statistical programmes, spreadsheets and programmes for presenting data visually	Project/placement modules, Double ABMS Placement
E4 use the internet and other electronic sources, effectively and critically, as a means of communication and a source of information	All modules, particularly project/placement modules, Double ABMS Placement
E5 communicate effectively by written, spoken and graphical means using appropriate techniques	All modules
E6 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	Modules with some element of group work, particularly Case Studies in Biomedical Science, ABMS Placement
E7 develop skills necessary for self-managed and lifelong learning, including working independently, organisational, enterprise and knowledge transfer skills	All modules, Biology of Disease, Case Studies in Biomedical Science, Double ABMS Placement
E8 motivate themselves and sustain that motivation over an extended period of time	All modules, particularly Biology of Disease, project/placement modules, Double ABMS Placement
E9 Cite and reference work in an appropriate manner, ensuring academic integrity and the avoidance of plagiarism whether intentional or not	All modules

## 9. Final and intermediate awards

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

<b>Honours Degree</b>	360 credits	<p>You will require at least 120 credits at levels 4, 5 and 6</p> <p>You must accumulate at least 270 credits in Biomedical Science or Applied Biomedical Science (out of 360 credits overall), with at least 90 credits in each of the three years of study*, to graduate with a named single honours degree in Biomedical Science or Applied Biomedical Science.</p> <p>*An exemption applies for students transferring from a Combined Honours programme - see point 3.4 here: <a href="https://www.keele.ac.uk/regulations/regulationc3/">https://www.keele.ac.uk/regulations/regulationc3/</a></p> <p>N.B. The award will be 'Studies in Biomedical Science' if the Study Abroad option is taken and/or if a pass standard is not achieved in the Level 6 Double Experimental Project module or Double Applied Life Sciences Placement module (see Section 13; regulations 1, 2 and 11). A 'Studies in Biomedical Science' degree is not accredited by the Institute of Biomedical Science or Royal Society of Biology.</p>
<b>Diploma in Higher Education</b>	240 credits	You will require at least 120 credits at level 4 or higher and at least 120 credits at level 5 or higher
<b>Certificate in Higher Education</b>	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 'with 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 examinations** in different formats test students' knowledge and understanding of biomedical science. 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
- **Computer exercises** might include contributing to wikis or blogs or using bioinformatics tools
- **Group activities** might include working on a collaborative project such as compiling a book chapter
- **Dissertations** 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** consist of a number of different pieces of work, such as witness statements, annotated laboratory protocols or data, examples of in-course assessment, that together provide evidence to support the achievement of the intended learning outcomes. Generally, they require some evidence of critical reflection on the development of the students' own learning
- **Critical reflection** is an increasingly important skill, used more and more in the workplace, particularly the health care professions, to underpin Continuing Professional Development (CPD). It strengthens individuals' abilities to learn from experience by requiring them to think carefully and write about what and how they have learnt in a given experience, and how it would inform their future practice

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
<b>Year 1 (Level 4)</b>	24%	76%	0%
<b>Year 2 (Level 5)</b>	24%	76%	0%
<b>Year 3 (Level 6)</b>	12%	88%	0%

## 12. Accreditation

The programme includes the opportunity to graduate with an Applied Biomedical Science (ABMS) degree, which incorporates a clinical placement leading to the completion of the Health and Care Professions Council (HCPC) Standards of Proficiency for Biomedical Scientists.

All routes through the programme except for Studies in Biomedical Sciences, with or without Work Placement or International Year, are accredited by the Royal Society of Biology and the Institute of Biomedical Science (IBMS). The ABMS course is also approved by the Health & Care Professions Council (HCPC). Successful ABMS students are eligible to apply for registration with the HCPC and also receive the IBMS Certificate of Competence, making them eligible for Licentiate membership of the IBMS.

Please note the following:

- **Module Attainment:** Students should note that to be awarded IBMS and 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). For an HCPC-approved ABMS award, students must pass all assessment elements of the Double Applied Biomedical Science Placement module including the portfolio.
- **Regulations:** Your programme has professional accreditation and there are specific regulations, which you have to agree to abide by, as detailed below.
- **Study abroad (one semester only):** Because studying abroad has implications for IBMS accreditation of the Biomedical Science degree (students taking Study Abroad are not eligible for an IBMS-accredited degree) students wishing to Study Abroad must discuss this in advance with the School of Life Sciences 'Study Abroad tutor' and the Biomedical Science Programme Director.

## 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'.

## 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/>

Admission with advanced standing for direct entry into Level 5 is considered on an individual basis for students who have successfully completed studies equivalent to Level 4 of an IBMS-accredited Biomedical Science programme.

Students on the Applied Biomedical Science programme cannot be exempted from any module that assesses any of the HCPC's standards of proficiency.

## 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 Biomedical Science.
- 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 Biomedical Science programme are available to see students during office hours, if available, and by appointment.

## 16. Learning Resources

Biomedical Science is taught in modern teaching rooms across the University, almost 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.

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 programmes in the School of Life Sciences. There are also networked PCs available for student use and printing facilities.
- 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.

Individuals taking Biomedical Science should note, however, that those taking the Study Abroad option may have a limited choice of suitable overseas institutions and will graduate with an award of "Studies in Biomedical Sciences", which is not accredited by the IBMS nor the Royal Society of Biology. The Study Abroad option is not available to students on the Applied Biomedical Science route.

Because studying abroad has implications for IBMS accreditation of the Biomedical Science degree (students taking Study Abroad are not eligible for an IBMS-accredited degree) students wishing to Study Abroad must discuss this in advance with the School of Life Sciences 'Study Abroad tutor' and the Biomedical Science Programme Director.

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. The Biomedical Science with International Year is accredited by the Royal Society of Biology and the Institute of Biomedical Science.

### **Other opportunities**

In addition to the Life Sciences placement option (4 year programme) and the ABMS placement, there may be a number of opportunities open to students in the School of Life Sciences to apply for a small number of summer placements abroad (for example, Malaysia).

There are a number of schemes available, for example from the Wellcome Trust, that provide bursaries for students to gain laboratory experience in the summer vacation between their 2nd and 3rd years. 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 Biomedical Science 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 but are widely advertised and undergraduate students are always welcome to attend.

## **18. Additional Costs**

Applied Biomedical Science students will incur additional costs to prepare them for their clinical placement. These costs will cover a full course of Hepatitis B vaccination and a Disclosure and Barring Services (DBS) enhanced check (2017 prices approximately £120 and £44, respectively).

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/ga/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: Biomedical Sciences (2015) <https://www.qaa.ac.uk/quality-code/subject-benchmark-statements?indexCatalogue=document-search&searchQuery=biomedical&wordsMode=AllWords>
- Keele University Regulations and Guidance for Students and Staff: <http://www.keele.ac.uk/regulations>
- Health and Care Professions Council Standards of Education & Training, 2014
- Health and Care Professions Council Standards of Proficiency - Biomedical Scientists, 2014
- Health and Care Professions Council Standards of Conduct, Performance & Ethics, 2016
- [Accreditation Guidance Documentation of the Institute of Biomedical Science](#)

## 21. Annex - International Year

### Biomedical Science with International Year

<p><b>International Year Programme</b></p> <p>Students registered for this Single Honours programme may either be admitted for or apply to transfer during their period of study at Level 5 to the International Year option. Students accepted onto this option will have an extra year of study (the International Year) at an international partner institution after they have completed Year 2 (Level 5) at Keele.</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 standard programme 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><b>International Year Programme Aims</b></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"> <li>1. Personal development as a student and a researcher with an appreciation of the international dimension of their subject</li> <li>2. Experience of a different culture, academically, professionally and socially</li> </ol>
<p><b>Entry Requirements for the International Year</b></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 tutor, in line with recommended Personal Tutoring meeting points.
- Support from the University's Global Education Team

### **Learning Outcomes**

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

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

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](http://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

### Biomedical Science 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 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

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.

### **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.
- One formal contact 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. This may be followed up with a second visit, or telephone call, if the need arises.

### **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 non-credit bearing Work Placement Year module LSC-30038 (30-credits).

### **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 Double Applied Life Sciences Placement Module (LSC-30038)
- 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](http://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: Biomedical Science**

<b>Final Award and Award Titles</b>	BSc (Hons) Biomedical Science BSc (Hons) Biomedical Science with International Year BSc (Hons) Biomedical Science with Work Placement Year BSc (Hons) Applied Biomedical Science BSc (Hons) Studies in Biomedical Sciences BSc (Hons) Studies in Biomedical Sciences with International Year BSc (Hons) Studies in Biomedical Sciences with Work Placement Year
<b>Intermediate Award(s)</b>	Diploma in Higher Education Certificate in Higher Education
<b>Last modified</b>	July 2019
<b>Programme Specification</b>	<a href="https://www.keele.ac.uk/qa/programmespecifications">https://www.keele.ac.uk/qa/programmespecifications</a>

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.

The Biomedical Science programme and the Applied Biomedical Science programme are subject to regulations that are required for their accreditation by the Institute of Biomedical Science (IBMS); the Applied Biomedical Science is also subject to regulations required by the Health and Care Professions Council (HCPC). These are detailed below.

## 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:

### **Regulations applying to Biomedical Science**

1. If the semester-long Study Abroad option is taken, the degree award will be '*Studies in Biomedical Sciences*', the degree will NOT be accredited by the IBMS and therefore will not fulfil the required academic qualification for HCPC registration as a Biomedical Scientist.
2. 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 Biomedical Science degree. For students who do not fulfil the conditions of this regulation, the degree award will be '*Studies in Biomedical Sciences*', the degree will NOT be accredited by the IBMS and therefore will not fulfil the required academic qualification for eligibility for HCPC registration as a Biomedical Scientist. The degree award of '*Studies in Biomedical Sciences*' is not accredited by the Royal Society of Biology.

### **Regulations applying to Biomedical Science and Applied Biomedical Science**

1. 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 Regulation C3.9 and could result in the requirement to withdraw from the university. Attendance at lectures is expected, but is not compulsory. Applied Biomedical Science students should note that certain components of their portfolio may not be achievable if they have not attended particular sessions, including lectures. Attendance at these sessions will be recorded.
2. 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.
3. The Applied Life Sciences placement is open to Biomedical Science students who have successfully progressed from Level 5 to Level 6 and who have not opted to take Applied Biomedical Science. Students applying for placements at National Health Service institutions may be asked to disclose any criminal convictions, police cautions, charges or court cases, whether previous, including those considered 'spent', pending or which may arise during the course of the placement period. Failure to disclose any such information could result in dismissal from their placement and/or disciplinary action. Applied Biomedical Science students who do not fulfil the conditions of this regulation satisfactorily, with respect to their Applied Biomedical Science placement, will revert to the Biomedical Science route.

### **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.

**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 on the KLE.

### **Applied Biomedical Science-specific regulations**

The Applied Biomedical Science programme is subject to further criteria required by the Health and Care Professions of Council (HCPC):

1. Students on the Applied Biomedical Science programme are subject to the University Regulation on Fitness to Practise ([University Regulation B5](#)). The Terms of Reference for the Health and Conduct Committee are given in Annex C.
2. Selection criteria apply to transfer onto the Applied Biomedical Science programme from Level 4 Biomedical Science:

Successful candidates are required to:

- demonstrate a good command of reading, writing and spoken English, evidenced by their Level 4 coursework;
- progress to Level 5;
- demonstrate their aptitude for the role of Biomedical Scientist, through interviews applying the NHS person specification for a trainee Biomedical Scientist post;
- undergo an enhanced Disclosure and Barring Service (DBS) disclosure process prior to acceptance onto the course, including any spent and unspent criminal convictions and cautions. The University follows the DBS Code of Practice (see <https://www.gov.uk/government/publications/dbs-code-of-practice>) and can provide a copy of this Code on request. Please note that having a criminal record is not necessarily a bar to obtaining a place on this course. Disclosure is mandatory but each

case will be considered individually. As a guide, conviction of a criminal offence or acceptance of a police caution for any of the following types of behaviour is likely to result in serious consideration of rejection of an application for transfer onto the ABMS course:

- Violence
- Abuse
- Sexual misconduct
- Supplying drugs illegally
- Child pornography
- Offences involving dishonesty
- Offences for which you received a prison sentence

This is not a full list. Applicants should also note that the NHS is exempt from certain aspects of the rehabilitation of offenders act. This means that for many appointments (including Biomedical Scientists) applicants must disclose all criminal convictions or accepted police cautions even if the offence is considered to be spent. Disclosure of a criminal record will not automatically prevent employment, each case will be considered individually;

- demonstrate that they have completed a course of Hepatitis B vaccination prior to undertaking their placement;
  - demonstrate that they have no medical/health issues that may affect their fitness to practise. This will be assessed by the University's Occupational Health department either before (if medical issues have been identified) or at the start of the programme. A health screening questionnaire must be completed by students holding a place on prior to the start of their Level 5 studies.
1. Applied Biomedical Science students must attend full-time at their allocated hospital(s) during the full period of their vacation placement periods, abide by their conditions of contract and partake fully in the provided training programme. Students who do not fulfil the conditions of this regulation satisfactorily will revert to the Biomedical Science route.
  2. Applied Biomedical Science students must achieve a pass grade for the Double Applied Biomedical Science Placement module. If this module is failed, the student will revert to the Biomedical Science route (or Studies in Biomedical Sciences award, if all of the requirements of the Biomedical Science award are not met (i.e. if a mark of less than 40% is achieved: see point 9 above (see BMS-specific regulations above)). In this case, the mark for the Double Applied Biomedical Science Placement module will be substituted *in lieu* of the Life Sciences Double Experimental Project (with research skills assessment) module.
  3. Students who are awarded an Applied Biomedical Science degree will have met the HCPC's Standards of Proficiency for Biomedical Scientists and will be eligible to apply for HCPC registration (subject to the conditions given in point 9 above).
  4. Applied Biomedical Science students must complete a course of vaccination against hepatitis B before starting their placement. Students may be required to pay the cost of this (approximately £120 in 2016).
  5. Applied Biomedical Science applicants must undergo an enhanced DBS disclosure before being accepted on the ABMS route. Students may be required to pay the cost of this (£44 in 2016).
  6. Students should note that an aegrotat award cannot provide eligibility for admission to the HCPC register. In addition, applicants for registration are required to provide further information to the HCPC, including a health reference from a medical practitioner (who must not be a relative) and a character reference from 'someone of professional standing in the community'. Registration is required to work as a qualified Biomedical Scientist in the NHS.
  7. Applied Biomedical Science graduates will also receive the IBMS Certificate of Competence and are eligible for Licentiate Membership of the IBMS.

[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:** 18 December 2019

### Previous documents

Version No	Year	Owner	Date Approved	Summary of and rationale for changes
1	2019/20	GLENN HUSSEY	18 December 2019	