# Programme Specification: Post Graduate Taught

# For Academic Year 2025/26

## 1. Course Summary

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|---|---|
| **Names of programme and award title(s)** | Master in Microbiology and Immunology (MSci)<br>Master in Microbiology and Immunology (MSci) with International Year (see Annex for details)<br>Master in Microbiology and Immunology (MSci) with Work Placement Year (see Annex for details) |
| **Award type** | Single Honours (Masters) |
| **Mode of study** | Full-time |
| **Framework of Higher Education Qualification (FHEQ) level of final award** | Level 7 |
| **Normal length of the programme** | 4 years; 5 years with either the International Year or Placement 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)** | Not applicable |
| **Regulator** | Office for Students (OfS) |
| **Tuition Fees** | **UK students:**<br>Fee for 2025/26 is £9,535*<br>**International students:**<br>Fee for 2025/26 is £17,700**<br>The fee for the international year abroad is calculated at 15% of the standard year fee<br>The fee for the work placement year is calculated at 20% 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/*

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

## 2. Overview of the Programme

This programme is designed to provide you with a strong grounding in the key principles of microbiology and immunology, enabling a broad and varied coverage of modern biological sciences. You will investigate some of the most exciting areas of current life sciences research, developing a deeper understanding of core molecular biology, biological processes, and host-pathogen interactions. The Microbiology and Immunology programme will introduce you to the biology, biochemistry and physiology of viruses and microorganisms including bacteria, fungi, and parasites, together with the role of the immune system in defending the body against infection from pathogens. The MSci fourth year of study is designed to enable you to enhance your employability and subject-specific knowledge through development of advanced problem solving and communication skills. You will develop enhanced research skills in the critical evaluation of scientific literature and in the design and conduct of an authentic research study.

In microbiology there is a particular emphasis on host-pathogen interactions, the diseases these can cause, the development of novel diagnostic and therapeutic approaches, as well as their wider application in biotechnology and their critical roles in global ecosystems, including interactions within key plant and animal hosts.Immunology explores the enormous diversity of the human immune system, and how such knowledge is essential in the development of new biotechnological approaches to disease treatment and prevention, such as vaccines. You will also explore how the extraordinary specificity of components of the immune system, such as antibodies, can be exploited in development of targeted molecular therapies in diseases including cancer. Knowledge of the development and function of different components of the immune response is also essential in our understanding of autoimmune disease and other disorders of the immune system, such as immunodeficiency.

During the programme you will receive research training in experimental design, practical techniques, and data analysis. The core laboratory programme delivered in our state-of-the-art David Attenborough and Central Science Laboratories enables development of hands-on practical skills within modern research techniques. This will culminate in the opportunity to undertake a final year research project (laboratory or computer based) under expert guidance of our teaching and research staff. You will also present the outcomes of your final year research project at our Undergraduate Student Research Conference in the context of a realistic research conference experience. Throughout the course we will equip you with employability skills enabling you to explore the wide variety of options available to you. There will also be the option to engage in deeper experiential learning opportunities through undertaking a Work Placement year between level 5 and level 6, or as shorter placement options alongside your studies, or to include study abroad either as a semester abroad at level 5 or an International Year between level 5 and level 6.

An experiential period of professional practice immersed in research culture during the MSci fourth year extended research project, will support you in developing higher-level independent technical and analytical skills through hypothesis-driven enquiry, supported by your academic supervisor and wider research team. The skills and attributes developed here will be of particular value for those looking to continue in a research career, such as further study to PhD level, working in industry or wider bioscience sector. These may be in academic research at the cutting edge of new discoveries, in industry roles exploring the commercial application of biological technology, such as pharmaceutical development or within healthcare industries, such as in medicine, nursing or public health policy and regulation.

## 3. Aims of the programme

The broad aims of the programme are to enable you to:

- provide you with core knowledge, understanding and skills relevant to the study of Microbiology and Immunology;
- 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 in context to research and development in Microbiology and Immunology, 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 an advanced level in the acquisition and analysis of scientific data and the critical evaluation of scientific literature, to show originality in the application of knowledge;
- enable you to specialise in Microbiology and Immunology to a masters level through a four year integrated Masters programme, developing key skills and programme outcomes to an advanced level.

## 4. 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 demonstrate knowledge and understanding of:

- core biological topics that underpin the study of microbiology and immunology including: anatomy, molecular biology; molecular genetics; biochemistry; macromolecular structure and function; enzymes, catalysis and metabolism; cell biology; cell signalling; membranes and transport; human physiology and pathology
- the structure, physiology and biochemistry of bacteria, viruses, fungi and parasites, their identification and classification, interactions with their host and their environment in global ecosystems
- the molecular basis of genetics and gene expression, including the structure, arrangement, expression, and regulation of genes, in application to the diversity of microorganisms and viruses, and the generation and selection of diversity in the immune system
- the development, function and disorders of the innate and adaptive immune system, the structural basis for pathogen recognition and key effector functions, in context to infectious and inflammatory disease he development and application of existing, novel and emerging diagnostics and therapeutics in the prevention and/or treatment of infectious disease, disorders of the immune system and other conditions
- experimental methods for the investigation of relevant areas of microbiology, immunology and molecular biology, including the scientific method, hypothesis-driven investigation and the critical nature of evidence and scientific debate
- current developments in microbiology and immunology, including areas of ethical or public concern

In addition to those outcomes listed above, which are developed across levels 4-7 as appropriate, MSci Microbiology and Immunology students will also be able to demonstrate advanced knowledge and understanding of:

- the principles and applications of cutting-edge research methodologies and techniques in the study of Microbiology, Immunology and wider Biosciences to an advanced level
- the context of their extended research project in relation to on-going research activity in their field of study and the wider biosciences

## Subject specific skills

Successful students will be able to:

- critically evaluate scientific literature to an advanced level with a full and critical understanding, while addressing such questions as content, context, aims, objectives, quality of information, and its interpretation and application
- demonstrate competence in a range of core and advanced 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, with critical appraisal of the validity, accuracy, calibration, precision and reproducibility of results and disseminate outcomes in a variety of formats
- critically evaluate complex methodologies and research techniques to an advanced level in areas of contemporary Microbiology and Immunology
- work safely and responsibly in the laboratory with awareness of standard procedures such as risk assessment, COSHH, and 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 and analytical skills to carry out an enquiry based, authentic research project with critical appraisal of research impact
- apply biological understanding to familiar and unfamiliar problems
- develop an understanding of the processes involved in research dissemination and the acquisition of research funding

## Key or transferable skills (including 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 acquiring and presenting data visually to an advanced level
- use a range of digital resources effectively and critically as a means of communication and a source of information
- cite and reference work in an appropriate manner, ensuring academic integrity
- 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

**Keele Graduate Attributes**

The Keele Graduate Attributes are the qualities (skills, values and mindsets) which you will have the opportunity to develop during your time at Keele through both the formal curriculum and also through co- and extra-curricular activities (e.g., work experience, and engagement with the wider University community such as acting as ambassadors, volunteering, peer mentoring, student representation, membership and leadership of clubs and societies). Our Graduate Attributes consist of four themes: **academic expertise, professional skills, personal effectiveness, and social and ethical responsibility.** You will have opportunities to engage actively with the range of attributes throughout your time at Keele: through your academic studies, through self-assessing your own strengths, weaknesses, and development needs, and by setting personal development goals. You will have opportunities to discuss your progress in developing graduate attributes with, for example, Academic Mentors, to prepare for your future career and lives beyond Keele.

## 5. 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:

- **Digital material:** Traditional 'lectures' are often redesigned for online consumption, giving you more flexibility to decide how, when and where to study. This can include provision of short videos, directed reading, key learning outcomes and Forms that allow you to ask questions anonymously.
- **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 develop 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 microbiology and immunology. The programme will also develop skills in experimental design through enquiry-based learning and will ensure you develop both independent and team-based skills.
- **Case-based learning (CBL) tutorials.** Students are expected to play a full part and, often, to lead these discussions. In particular, case-based learning (CBL) is a student-centred style, based on case studies that help you contextualise content taught across others modules, and is incorporated into two core modules. These sessions will also develop skills such as leadership, communication and evidence based problem solving.
- **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.
- **MSci study at level 7.** This will further develop your research skills in the critical evaluation of scientific literature and an extended research project will give you the opportunity to design and conduct an in-depth research project in an area of Microbiology and/or Immunology, including formulating a complete research strategy and producing a grant proposal. Research skills in these areas will also be developed in a series of research seminars and journal club-style presentations/discussion in an Advanced Research Techniques module.

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 Academic Mentor or module lecturers on a one-to-one basis.

## 6. 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/ourpeople/.

We also invite speakers from the School of Pharmacy and Bioengineering, School of Medicine and the NHS 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 academic mentoring.

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.

## 7. What is the structure of the programme?

The academic year runs from September to June and is divided into two semesters. The number of weeks of teaching will vary from course to course, but you can generally expect to attend scheduled teaching sessions between the end of September and mid- December, and from mid-January to the end of April. Our degree courses are organised into modules. Each module is usually a self- contained unit of study and each is usually assessed separately with the award of credits on the basis of 1 credit = 10 hours of student effort. An outline of the structure of the programme is provided in the tables below.

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

- Compulsory modules - a module that you are required to study on this course;
- Optional modules - these allow you some limited choice of what to study from a list of modules.

At Level 4, we have consolidated all of your modules into four, compulsory 30-credit modules. This will provide a solid foundation to your degree, regardless of your academic background. We assume no prior knowledge and will make sure that Level 4 gives you the skills needed to succeed at Levels 5 and 6.

Levels 5 and 6 include optional module choices allowing you to more flexibility to tailor your degree as you progress through it.

**Global Challenge Pathways**

This programme includes the option for you to take a Global Challenge Pathway. These modules offer you an exciting opportunity to work with students and staff from different disciplines to explore topical global issues such as power and conflict, health inequalities, climate change, generative AI, social justice, global citizenship, and enterprise from different perspectives.

Global Challenge Pathways can be taken as one 15-credit module at Levels 5 and 6. For more information about our Global Challenge Pathways please visit:
https://www.keele.ac.uk/study/undergraduate/globalchallengepathways/

**Modern Languages or Certificate in TESOL**

Alternatively, you could choose to study modules with the University Language Centre. The Language Centre offers three pathways; The Language Specialist, The Language Taster, and The Trinity Certificate in Teaching English to Speakers of Other Language (TESOL). Language Centre modules are available separately for students at Level 4. At Levels 5 and 6 they are included within the Global Challenge Pathways.

If you choose the Language Specialist pathway, you will automatically be enrolled on a Semester 2 Modern Language module as a continuation of your language of choice as a faculty funded 'additional' module. Undertaking a Modern Languages module in Semester 2 is compulsory if you wish to continue to the Language Specialist Global Challenge Pathway the following academic year.

For more information about Language Centre option modules available to you please visit the following

webpages.

For new (Level 4) students please visit: https://www.keele.ac.uk/study/languagecentre/

For current (Level 5 and Level 6) students please visit: https://www.keele.ac.uk/students/academiclife/global-challenge-pathways/

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For further information on the content of modules currently offered, please visit: https://www.keele.ac.uk/recordsandexams/modulecatalogue/

A summary of the credit requirements per year is as follows.

| Year | Compulsory | Optional | |
|---|---|---|---|
| | | Min | Max |
| Level 4 | 120 | 0 | 0 |
| Level 5 | 105 | 15 | 15 |
| Level 6 | 90 | 30 | 30 |
| Level 7 | 120 | 0 | 0 |

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## Module Lists

### *Level 4*

| Compulsory modules | Module Code | Credits | Period |
|---|---|---|---|
| Molecules for Life | LSC-10097 | 30 | Semester 1 |
| Human Physiology and Anatomy | LSC-10101 | 30 | Semester 1-2 |
| Practical and Academic Skills in Bioscience | LSC-10103 | 0 | Semester 1-2 |
| Microbes: the immune system and the environment | LSC-10109 | 30 | Semester 1-2 |
| Molecular Cell Biology | LSC-10066 | 30 | Semester 2 |

#### Level 4 Module Rules

LSC-10103 *Practical and Academic Skills in Bioscience* is a compulsory zero-credit module. All laboratory 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 will also develop wider academic skills and includes additional academic support and development material to enhance your overall student experience and develop key employability skills. The module will be passed via attendance to a minimum threshold of 70% of core sessions and successful completion of practical skills assessment (OSPE).

### *Level 5*

| Compulsory modules | Module Code | Credits | Period |
|---|---|---|---|
| Molecular, Cellular and Structural Immunology | LSC-20015 | 15 | Semester 1 |
| Microbes, Viruses and Parasites | LSC-20073 | 15 | Semester 1 |
| Applications of Molecular Biology | LSC-20131 | 15 | Semester 1 |
| Practical and Professional Skills in Bioscience | LSC-20127 | 0 | Semester 1-2 |
| Research and Analytical Skills | LSC-20056 | 15 | Semester 2 |
| Cell Signalling | LSC-20085 | 15 | Semester 2 |
| Defence and Disease | LSC-20111 | 30 | Semester 2 |

| Optional modules | Module Code | Credits | Period |
|---|---|---|---|
| Human Genetics | LSC-20050 | 15 | Semester 1 |
| Flexible Work Placement (Level 5) | NAT-20011 | 15 | Semester 1-2 |

### Level 5 Module Rules

LSC-20127 *Practical and Professional Skills in Bioscience* is a compulsory zero-credit module. All laboratory 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 will also develop advanced academic skills in literature searching and analysis and includes additional career development workshops, enhancing your overall student experience and developing key employability skills.. The module will be passed via attendance to a minimum threshold of 70% of core sessions and successful completion of practical skills assessment (OSPE).

Please note: You cannot take both Flexible Work Placement (Level 5) and Flexible Work Placement (Level 6)

## *Level 6*

| Compulsory modules | Module Code | Credits | Period |
|---|---|---|---|
| Human Parasitology | LSC-30036 | 15 | Semester 1 |
| Professional Development | LSC-30090 | 0 | Semester 1-2 |
| Research Project | LSC-30102 | 30 | Semester 1-2 |
| Employability and Communication Skills in Bioscience | LSC-30106 | 15 | Semester 1-2 |
| Case Studies in Microbiology and Immunology | LSC-30078 | 15 | Semester 2 |
| VIrology | LSC-30108 | 15 | Semester 2 |

| Optional modules | Module Code | Credits | Period |
|---|---|---|---|
| Tropical Biology Field Course | LSC-30066 | 15 | Semester 1 |
| Omics Technologies | LSC-30092 | 15 | Semester 1 |
| Structural Immunology | LSC-30110 | 15 | Semester 1 |
| Flexible Work Placement (Level 6) | NAT-30008 | 15 | Semester 1-2 |
| Professional Experience in Education | NAT-30012 | 15 | Semester 1-2 |
| Cancer Biology | LSC-30061 | 15 | Semester 2 |
| Epidemiology | LSC-30084 | 15 | Semester 2 |

### Level 6 Module Rules

Please note: You cannot take both Flexible Work Placement (Level 5) and Flexible Work Placement (Level 6). You also cannot take both Flexible Work Placement (Level 6) and Professional Experience in Education.

### *Level 7*

| Compulsory modules | Module Code | Credits | Period |
|---|---|---|---|
| Literature Review and Grant Proposal | LSC-40065 | 30 | Semester 1 |
| Advanced Research Topics in Microbiology and Immunology | LSC-40073 | 30 | Semester 1 |
| MSci Extended Research Project | LSC-40063 | 60 | Semester 1-2 |

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## 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*

| Subject Knowledge and Understanding | |
|---|---|
| **Learning Outcome** | **Module in which this is delivered** |
| Core biological topics that underpin the study of microbiology and immunology including: anatomy, molecular biology; molecular genetics; biochemistry; macromolecular structure and function; enzymes, catalysis and metabolism; cell biology; cell signalling; membranes and transport; human physiology and pathology | Developed across all compulsory modules |
| Structure, physiology and biochemistry of bacteria, viruses, fungi and parasites, their identification and classification, interactions with their host and environment in global ecosystems | Microbes: the immune system and the environment - LSC-10109<br>Practical and Academic Skills in Bioscience - LSC-10103<br>Molecular Cell Biology - LSC-10066 |
| Molecular basis of genetics and gene expression, including the structure, arrangement, expression, and regulation of genes, in application to the diversity of microorganisms and viruses, and the generation and selection of diversity in the immune system | Microbes: the immune system and the environment - LSC-10109<br>Molecular Cell Biology - LSC-10066<br>Practical and Academic Skills in Bioscience - LSC-10103 |
| The development, function and disorders of the innate and adaptive immune system, the structural basis for pathogen recognition and key effector functions, in context to infectious and inflammatory disease | Human Physiology and Anatomy - LSC-10101<br>Microbes: the immune system and the environment - LSC-10109 |
| The development and application of existing, novel and emerging diagnostics and therapeutics in the prevention and/or treatment of infectious disease, disorders of the immune system and other conditions | Microbes: the immune system and the environment - LSC-10109<br>Practical and Academic Skills in Bioscience - LSC-10103 |
| Experimental methods for the investigation of relevant areas of microbiology, immunology and molecular biology, including the scientific method, hypothesis-driven investigation and the critical nature of evidence and scientific debate | Practical and Academic Skills in Bioscience - LSC-10103<br>Plus relevant modules with assessments based on practical sessions delivered in LSC-10103 |
| Current developments in microbiology and immunology, including areas of ethical or public concern | Microbes: the immune system and the environment - LSC-10109<br>Molecular Cell Biology - LSC-10066 |

| Subject Specific Skills | |
|---|---|
| **Learning Outcome** | **Module in which this is delivered** |
| 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 | All modules |
| Attain competence in a range of laboratory techniques and employ a variety of methods (including computational studies related to bioinformatics and macromolecular databases) in investigating, acquiring, recording and analysing information relevant to microbiology and immunology | Most modules, but particularly the practical component in LSC-10103 |
| Design, conduct, analyse, report and evaluate biological experiments, acknowledging an awareness of the validity, accuracy, calibration, precision and reproducibility of results | Molecular Cell Biology - LSC-10066<br>Molecules for Life - LSC-10097<br>Practical and Academic Skills in Bioscience - LSC-10103<br>Human Physiology and Anatomy - LSC-10101 |
| Work safely and responsibly in the laboratory with awareness of standard procedures such as risk assessment, COSHHand good laboratory practice (GLP) | Practical and Academic Skills in Bioscience - LSC-10103 |
| Recognise philosophical and ethical issues relevant to the subject | Molecular Cell Biology - LSC-10066<br>Microbes: the immune system and the environment - LSC-10109<br>Practical and Academic Skills in Bioscience - LSC-10103 |
| Apply scientific method, planning, and analytical skills to carry out a research project | Practical and Academic Skills in Bioscience - LSC-10103 |
| Apply biological understanding to familiar and unfamiliar problems | All modules |

| Key or Transferable Skills (graduate attributes) | |
|---|---|
| **Learning Outcome** | **Module in which this is delivered** |
| Develop and sustain effective approaches to learning and study, including time management, flexibility, creativity and intellectual integrity | All modules |
| Acquire, analyse, synthesise, summarise and present information from a range of sources | All modules |
| Prepare, process, interpret and present data, using appropriate qualitative and quantitative techniques, statistical programmes, spreadsheets and programs for presenting data visually | All modules, particularly content developed in LSC-10103 and associated assessments in LSC-10097, LSC-10066 and LSC-10101 |
| Use the internet and other electronic sources effectively and critically as a means of communication and a source of information | All modules |
| Cite and reference work in an appropriate manner, ensuring academic integrity | All modules |
| Communicate effectively to a variety of audiences by written, spoken and graphical means using appropriate techniques and scientific language | All modules |
| Develop skills necessary for self-managed and lifelong learning, including working independently, organisational, enterprise and knowledge transfer skills | All modules |
| 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 | All modules, particularly the practical component of LSC-10101 and LSC-10103 |
| Motivate yourself and sustain that motivation over an extended period of time | All modules |

## *Level 5*

| Subject Knowledge and Understanding | |
|---|---|
| **Learning Outcome** | **Module in which this is delivered** |
| Core biological topics that underpin the study of microbiology and immunology including: anatomy, molecular biology; molecular genetics; biochemistry; macromolecular structure and function; enzymes, catalysis and metabolism; cell biology; cell signalling; membranes and transport; human physiology and pathology | All core modules |
| Structure, physiology and biochemistry of bacteria, viruses, fungi and parasites, their identification and classification, interactions with their host and environment in global ecosystems | Molecular, Cellular and Structural Immunology - LSC-20015<br>Applications of Molecular Biology - LSC-20131<br>Microbes, Viruses and Parasites - LSC-20073<br>Defence and Disease - LSC-20111 |
| Molecular basis of genetics and gene expression, including the structure, arrangement, expression, and regulation of genes, in application to the diversity of microorganisms and viruses, and the generation and selection of diversity in the immune system | Molecular, Cellular and Structural Immunology - LSC-20015<br>Human Genetics - LSC-20050<br>Applications of Molecular Biology - LSC-20131<br>Defence and Disease - LSC-20111 |
| The development, function and disorders of the innate and adaptive immune system, the structural basis for pathogen recognition and key effector functions, in context to infectious and inflammatory disease | Microbes, Viruses and Parasites - LSC-20073<br>Defence and Disease - LSC-20111<br>Molecular, Cellular and Structural Immunology - LSC-20015 |
| The development and application of existing, novel and emerging diagnostics and therapeutics in the prevention and/or treatment of infectious disease, disorders of the immune system and other conditions | Defence and Disease - LSC-20111<br>Microbes, Viruses and Parasites - LSC-20073 |
| Experimental methods for the investigation of relevant areas of microbiology, immunology and molecular biology, including the scientific method, hypothesis-driven investigation and the critical nature of evidence and scientific debate | Defence and Disease - LSC-20111<br>Practical and Professional Skills in Bioscience - LSC-20127<br>Plus other modules with assessment developed from practical classes delivered in LSC-20127 |
| Current developments in microbiology and immunology, including areas of ethical or public concern | Defence and Disease - LSC-20111<br>Microbes, Viruses and Parasites - LSC-20073<br>Molecular, Cellular and Structural Immunology - LSC-20015<br>Applications of Molecular Biology - LSC-20131 |

| Subject Specific Skills | |
|---|---|
| **Learning Outcome** | **Module in which this is delivered** |
| 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 | All modules |
| Attain competence in a range of laboratory techniques and employ a variety of methods (including computational studies related to bioinformatics and macromolecular databases) in investigating, acquiring, recording and analysing information relevant to microbiology and immunology | Defence and Disease - LSC-20111<br>Practical and Professional Skills in Bioscience - LSC-20127<br>Research and Analytical Skills - LSC-20056<br>Molecular, Cellular and Structural Immunology - LSC-20015 |
| Design, conduct, analyse, report and evaluate biological experiments, acknowledging an awareness of the validity, accuracy, calibration, precision and reproducibility of results | Practical and Professional Skills in Bioscience - LSC-20127<br>Defence and Disease - LSC-20111<br>Research and Analytical Skills - LSC-20056<br>Molecular, Cellular and Structural Immunology - LSC-20015 |
| Work safely and responsibly in the laboratory with awareness of standard procedures such as risk assessment, COSHH and good laboratory practice (GLP) | Practical and Professional Skills in Bioscience - LSC-20127 |
| Recognise philosophical and ethical issues relevant to the subject | All modules |
| Apply scientific method, planning, and analytical skills to carry out a research project | Practical and Professional Skills in Bioscience - LSC-20127<br>Research and Analytical Skills - LSC-20056<br>Defence and Disease - LSC-20111 |
| Apply biological understanding to familiar and unfamiliar problems | All modules |

| Key or Transferable Skills (graduate attributes) | |
|---|---|
| **Learning Outcome** | **Module in which this is delivered** |
| Develop and sustain effective approaches to learning and study, including time management, flexibility, creativity and intellectual integrity | All modules |
| Acquire, analyse, synthesise, summarise and present information from a range of sources | All modules |
| Prepare, process, interpret and present data, using appropriate qualitative and quantitative techniques, statistical programmes, spreadsheets and programs for presenting data visually | Research and Analytical Skills - LSC-20056<br>Practical and Professional Skills in Bioscience - LSC-20127<br>Defence and Disease - LSC-20111<br>Molecular, Cellular and Structural Immunology - LSC-20015 |
| Use the internet and other electronic sources effectively and critically as a means of communication and a source of information | All modules |
| Cite and reference work in an appropriate manner, ensuring academic integrity | All modules |
| Communicate effectively to a variety of audiences by written, spoken and graphical means using appropriate techniques and scientific language | All modules |
| Develop skills necessary for self-managed and lifelong learning, including working independently, organisational, enterprise and knowledge transfer skills | All modules |
| 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 | Practical and Professional Skills in Bioscience - LSC-20127<br>All modules, particularly LSC-20127 |
| Motivate yourself and sustain that motivation over an extended period of time | All modules |

## *Level 6*

| Subject Knowledge and Understanding | |
|---|---|
| **Learning Outcome** | **Module in which this is delivered** |
| Core biological topics that underpin the study of microbiology and immunology including: anatomy, molecular biology; molecular genetics; biochemistry; macromolecular structure and function; enzymes, catalysis and metabolism; cell biology; cell signalling; membranes and transport; human physiology and pathology | Human Parasitology - LSC-30036<br>Omics Technologies - LSC-30092<br>Structural Immunology - LSC-30110<br>Research Project - LSC-30102<br>Cancer Biology - LSC-30061 |
| Structure, physiology and biochemistry of bacteria, viruses, fungi and parasites, their identification and classification, interactions with their host and environment in global ecosystems | VIrology - LSC-30108<br>Case Studies in Microbiology and Immunology - LSC-30078<br>Structural Immunology - LSC-30110<br>Omics Technologies - LSC-30092<br>Human Parasitology - LSC-30036 |
| Molecular basis of genetics and gene expression, including the structure, arrangement, expression, and regulation of genes, in application to the diversity of microorganisms and viruses, and the generation and selection of diversity in the immune system | VIrology - LSC-30108<br>Case Studies in Microbiology and Immunology - LSC-30078<br>Research Project - LSC-30102<br>Omics Technologies - LSC-30092<br>Human Parasitology - LSC-30036 |
| The development, function and disorders of the innate and adaptive immune system, the structural basis for pathogen recognition and key effector functions, in context to infectious and inflammatory disease | Case Studies in Microbiology and Immunology - LSC-30078<br>VIrology - LSC-30108<br>Structural Immunology - LSC-30110<br>Human Parasitology - LSC-30036 |
| The development and application of existing, novel and emerging diagnostics and therapeutics in the prevention and/or treatment of infectious disease, disorders of the immune system and other conditions | VIrology - LSC-30108<br>Research Project - LSC-30102<br>Structural Immunology - LSC-30110<br>Omics Technologies - LSC-30092<br>Human Parasitology - LSC-30036<br>Case Studies in Microbiology and Immunology - LSC-30078 |
| Experimental methods for the investigation of relevant areas of microbiology, immunology and molecular biology, including the scientific method, hypothesis-driven investigation and the critical nature of evidence and scientific debate | Research Project - LSC-30102<br>VIrology - LSC-30108<br>Omics Technologies - LSC-30092<br>Case Studies in Microbiology and Immunology - LSC-30078 |
| Current developments in microbiology and immunology, including areas of ethical or public concern | VIrology - LSC-30108<br>Case Studies in Microbiology and Immunology - LSC-30078<br>Human Parasitology - LSC-30036<br>Structural Immunology - LSC-30110 |

| Subject Specific Skills | |
|---|---|
| **Learning Outcome** | **Module in which this is delivered** |
| 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 | All modules, particularly LSC-30102 and Employability and Communication Skills in Bioscience - LSC-30106 |
| Attain competence in a range of laboratory techniques and employ a variety of methods (including computational studies related to bioinformatics and macromolecular databases) in investigating, acquiring, recording and analysing information relevant to microbiology and immunology | Research Project - LSC-30102<br>Omics Technologies - LSC-30092 |
| Design, conduct, analyse, report and evaluate biological experiments, acknowledging an awareness of the validity, accuracy, calibration, precision and reproducibility of results | Research Project - LSC-30102 |
| Work safely and responsibly in the laboratory with awareness of standard procedures such as risk assessment, COSHH and good laboratory practice (GLP) | Research Project - LSC-30102 |
| Recognise philosophical and ethical issues relevant to the subject | All modules, particularly LSC-30102 and LSC-30078 |
| Apply scientific method, planning, and analytical skills to carry out a research project | Research Project - LSC-30102 |
| Apply biological understanding to familiar and unfamiliar problems | All modules |

| Key or Transferable Skills (graduate attributes) | |
|---|---|
| **Learning Outcome** | **Module in which this is delivered** |
| Develop and sustain effective approaches to learning and study, including time management, flexibility, creativity and intellectual integrity | All modules |
| Acquire, analyse, synthesise, summarise and present information from a range of sources | All modules |
| Prepare, process, interpret and present data, using appropriate qualitative and quantitative techniques, statistical programmes, spreadsheets and programs for presenting data visually | All modules, particularly Research Project - LSC-30102 and Employability and Communication Skills in Bioscience - LSC-30106 |
| Use the internet and other electronic sources effectively and critically as a means of communication and a source of information | All modules |
| Cite and reference work in an appropriate manner, ensuring academic integrity | All modules |
| Communicate effectively to a variety of audiences by written, spoken and graphical means using appropriate techniques and scientific language | All modules |
| Develop skills necessary for self-managed and lifelong learning, including working independently, organisational, enterprise and knowledge transfer skills | All modules |
| 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 elements of group work/discussion/debate in particular LSC-30078 and LSC-30045/38 |
| Motivate yourself and sustain that motivation over an extended period of time | All modules |

## *Level 7*

| Subject Knowledge and Understanding | |
|---|---|
| **Learning Outcome** | **Module in which this is delivered** |
| The principles and applications of cutting-edge research methodologies and techniques in the study of Microbiology, Immunology and wider Biosciences to an advanced level | Literature Review and Grant Proposal - LSC-40065<br>Advanced Research Topics in Microbiology and Immunology - LSC-40073<br>MSci Extended Research Project - LSC-40063 |
| Explain and justify the context of the extended research project in relation to on-going research activity in the field of study and the wider biosciences | MSci Extended Research Project - LSC-40063<br>Literature Review and Grant Proposal - LSC-40065 |

| Subject Specific Skills | |
|---|---|
| **Learning Outcome** | **Module in which this is delivered** |
| Develop an understanding of the processes involved in research dissemination and the acquisition of research funding | Advanced Research Topics in Microbiology and Immunology - LSC-40073<br>Literature Review and Grant Proposal - LSC-40065<br>MSci Extended Research Project - LSC-40063 |
| Critically evaluate current literature and complex methodologies to an advanced level in relevant areas of contemporary biochemistry | Advanced Research Topics in Microbiology and Immunology - LSC-40073<br>Literature Review and Grant Proposal - LSC-40065<br>MSci Extended Research Project - LSC-40063 |

| Key or Transferable Skills (graduate attributes) | |
|---|---|
| **Learning Outcome** | **Module in which this is delivered** |
| Develop greater autonomy in the planning and implementation of tasks associated with their research project and taking responsibility for their workload | MSci Extended Research Project - LSC-40063<br>Literature Review and Grant Proposal - LSC-40065 |

## 8. Final and intermediate awards

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

| | | |
|---|---|---|
| **Master's Degree**<br><br>**Master in Microbiology and Immunology (MSci)** | 480 credits | You will require at least 120 credits at levels 4, 5, 6 and 7<br><br>You must accumulate at least 360 credits in your main subject (out of 480 credits overall) to graduate with a named single honours degree in this subject. |
| **Honours Degree**<br><br>**BSc (Hons) Microbiology and Immunology** | 360 credits | You will require at least 120 credits at levels 4, 5 and 6<br><br>You must accumulate at least 270 credits in your main subject (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 this subject |
| **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 four-year version of the MSci 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 four-year version of the MSci programme.

## 9. 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:

- **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/phylogeny.
- **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 and MSci extended 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
- **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 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.

## 10. 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)** | 32.8% | 67.2% | 0% |
| **Year 2 (Level 5)** | 34.8% | 65.2% | 0% |
| **Year 3 (Level 6)** | 9% | 91% | 0% |
| **Year 4 (Level 7)** | 5% | 95% | 0% |

## 11. Accreditation

Accreditation will be sought through the Royal Society of Biology (RSB) before graduation of the first Programme cohort.

## 12. 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'.

## 13. 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/

**English for Academic Purposes**

Please note: All new international students entering the university will sit a diagnostic language assessment. Using this assessment, the Language Centre may allocate you to an English language module which will become compulsory. This will replace any GCP modules. *NB:* students can take an EAP module only with the approval of the English Language Programme Director and are not able to take any other Language modules in the same academic year.

English Language Modules at Level 4:

- Business - ENL-90003 Academic English for Business Students (Part 1); ENL-90004 Academic English for Business Students (2)
- Science - ENL-90013 Academic English for Science Students
- General - ENL-90006 English for Academic Purposes 2; ENL-90001 English for Academic Purposes 3; ENL-90002 English for Academic Purposes 4

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: https://www.keele.ac.uk/qa/programmesandmodules/recognitionofpriorlearning/

## 14. How are students supported on the programme?

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

- The School of Life Sciences operates an open-door policy. This means that you can contact any of our staff via email to request a meeting or discus any problem that you may be experiencing.
- In addition to the open-door policy, you can also contact the following people across Life Sciences for help and support:
- Programme Director or Director of Education for programme-, discipline- or School-related issues Module Manager for module-related issues

Lead Demonstrators provide extensive support across the laboratory programme and supporting workshops
- Post Graduate Research Student Demonstrators for help during laboratory sessions
  Academic Mentor for academic help and guidance Student Experience and Support Officers for more personal or pastoral help
- Early Resolution Officer to help advocate for you, for example, if you would like to raise a complaint Student Voice are a group of students from your programme that can advocate for you to the School add details
- Student Services also offer a comprehensive range of specialist services that help you at any time from enrolment to graduation. The following link will provide more information: https://www.keele.ac.uk/students/studentservices/

## 15. Learning Resources

Workshops and tutorials are delivered in modern teaching rooms across the University, including up-to-date PC suites for data analysis and bioinformatics workshops.

Practical sessions are held in dedicated teaching laboratories within the School of Life Sciences, over recent years these have been completely refitted, providing modern and well-equipped facilities supporting delivery of a diverse practical programmes (including the David Attenborough laboratories, opened in person by Sir David in 2019). Some sessions are also delivered in our new state-of-the-art Central Science Laboratories, which also provides extensive PC suite capacity for supporting workshops and student self-study.

The learning resources available to you on the Programme include:

- An extensive collection of books and journals held in the University Library on campus, or the health library situated at the University Hospital of North Staffordshire.
- Access to a comprehensive range of ebooks, journals and published papers all available online
- The Keele Learning Environment (KLE) which provides easy access to a wide range of learning resources including lecture materials and other guidance/supporting resources, and Microsoft Teams for further content development and to facilitate live and interactive discussions.
- Additional academic skills resources, workshops and drop-in sessions available through the Keele Institute for Innovation and Teaching Excellence.

## 16. Other Learning Opportunities

**Study abroad (semester)**

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

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

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

Whilst students are studying abroad any Student Finance eligibility will continue, where applicable students may be eligible for specific travel or disability grants. Students studying in Erasmus+ destinations may be eligible for grants as part of this programme. Students studying outside of this programme may be eligible for income dependent bursaries at Keele. Students travel on a comprehensive Keele University insurance plan, for which there are currently no additional charges. Some governments and/or universities require additional compulsory health coverage plans; costs for this will be advised during the application process.

**Study Abroad (International Year)**

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

**Work Placement Year**

Students have the opportunity to apply directly for the 4-year 'with Work Placement Year' degree programme or to transfer onto the 4-year degree 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 their year-long placement. Eligibility rules are included in the

Annex.

Students wishing to take the work placement year should meet with the Programme Director to obtain their signature to confirm agreement before they will be allowed to commence their placement.

International students who require a Tier 4 visa must check with the Immigration Compliance Team prior to commencing any form of placement.

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

## 17. Additional Costs

| Activity | Estimated Cost |
|---|---|
| Field course-Optional, e.g. USM Malaysia, Tropical Biology Field Course | £1,200 |
| Other additional costs:<br><br>Replacement lab coat if allocated one is lost | £10 |
| **Total estimated additional costs** | **£1,210** |

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.

## 18. 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 Revalidation 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 Postgraduate Taught Experience Survey (PTES), 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 on the programme is considered and acted on at regular meetings of the Student Staff Voice Committee.

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

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

Information about current external examiner(s) can be found here:
http://www.keele.ac.uk/qa/externalexaminers/currentexternalexaminers/

## 19. Annex - International Year

**MSci Microbiology and Immunology with International Year**

**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 standard 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 information below only applies to those students taking *Microbiology and Immunology with International Year*.

**International Year Programme Aims**

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

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

**Entry Requirements for the International Year**

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

The criteria to be applied are:

- Academic Performance (an average of 55% 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 55% across all Level 5 modules. Students with up to 15 credits of re-assessment who meet the 55% requirement may progress to the International Year. 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 academic mentor, 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 Academic Mentor. 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 for *Microbiology and Immunology*, students who graduate with *Microbiology and Immunology 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 Microbiology and Immunology.
5. Demonstrate the use of critical thinking skills, augmented by creativity and curiosity, in discussing the application of their International Year studies to Microbiology and Immunology.

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.

## 20. Annex - Work Placement Year

### MSci Microbiology and Immunology with Work Placement Year

**Work Placement Year summary**

At level 4 or 5 you can apply to transfer onto our Work Placement Year pathway.

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 information below only applies to those students taking *Microbiology and Immunology with Work Placement Year*.

**Work Placement Year Programme Aims**

In addition to the programme aims for *Microbiology and Immunology*, we also aim to:

1. 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**

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, (* or equivalent, work placement), will be automatically transferred onto the 3- year degree programme.

* We recommend where possible students undertake a placement of between 9 - 12 months on a full-time basis to maximize academic and personal growth. However, the Faculty of Natural Sciences Work / Professional Placement Year mandates a minimum of 24 weeks in duration, ideally on a full-time basis, but no less than 21 hours per week. This enables those undertaking an unpaid placement to work on a part-time basis alongside their placement.

The criteria to be applied are:

- A good University attendance record and be in 'good academic standing'.
- Academic Performance (an average of 50% across all modules in Semester 1 at Level 5 is normally required. Places on the Work Placement Year are then conditional on achieving an average mark of 50% across all Level 5 modules. Students with up to 15 credits of re-assessment who meet the 50% requirement may progress to the Work Placement Year. 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(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 Academic Mentor, 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**

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 a whistleblower. This means 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 for *Microbiology and Immunology*, students who graduate with *Microbiology and Immunology with Placement Year* 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 (NAT-30010).

**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 zero-credit module NAT-30010 *Work Placement Year*
- 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.

# 21. Annex - Programme-specific regulations

## Programme Regulations: MSci Microbiology and Immunology

| | |
|---|---|
| **Final Award and Award Titles** | MSci Microbiology and Immunology<br>MSci Microbiology and Immunology with International Year<br>MSci Microbiology and Immunology with Work Placement Year |
| **Intermediate Award(s)** | BSc (Hons) Microbiology and Immunology<br>Diploma in Higher Education<br>Certificate in Higher Education |
| **Last modified** | June 2022 |
| **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 will be unable to take part in 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: Work Placements, Exchange Periods and Study Abroad**

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

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[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:** 08 July 2025

### *What's Changed*

Compulsory module change: LSC-20107 replaced with LSC-20127.

## Previous documents

| Version No | Year | Owner | Date Approved | Summary of and rationale for changes |
|---|---|---|---|---|
| 1 | 2025/26 | JENNIFER MORAN | 28 March 2025 | |
| 1 | 2024/25 | JENNIFER MORAN | 14 June 2024 | |
| 1 | 2023/24 | DAVID WATSON | 08 February 2023 | |