

Programme Specification: Undergraduate

For students starting in Academic Year 2023/24

1. Course Summary

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| Names of programme and award title(s) | BSc (Hons) Neuroscience BSc (Hons) Neuroscience with International Year (see Annex for details) BSc (Hons) Neuroscience with Work Placement Year (see Annex for details) BSc (Hons) Studies in Neuroscience BSc (Hons) Studies in Neuroscience with International Year BSc (Hons) Studies in Neuroscience with Work Placement Year |
| Award type | Combined Honours |
| Mode of study | Full-time |
| Framework of Higher Education Qualification (FHEQ) level of final award | Level 6 |
| Normal length of the programme | 3 years; 4 years with either 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) | For students who specialise in Neuroscience at Level 6, or combine with Biochemistry, the degree is accredited by the Royal Society of Biology (excluding "Studies in" routes). For further details see the section on Accreditation. |
| Regulator | Office for Students (OfS) |
| Tuition Fees | <p>UK students:</p> <p>Fee for 2023/24 is £9,250*</p> <p>International students:</p> <p>Fee for 2023/24 is £18,800**</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 Student Terms & Conditions for full details. Further information on fees can be found at <http://www.keele.ac.uk/studentfunding/tuitionfees/>*

2. What is a Combined Honours programme?

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

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

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

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

3. Overview of the Programme

Neuroscience is the study of the nervous system and how it enables us to sense and move through our environment. The Neuroscience programme at Keele is designed to equip you with the multidisciplinary skills and knowledge employed by Neuroscientists researching these phenomena. Our overarching aim is to provide you with a strong grounding in the key principles of neuroanatomy, neurophysiology, neuropharmacology, cognitive neuroscience and neuropathology.

In the first year, you will study a broad coverage of cell and molecular biology, biochemistry, genetics, human physiology and be introduced to the anatomy and physiology of the nervous system. In the second year, you will explore key concepts in neuroscience including how the brain develops, the mechanisms underlying learning and memory, how drugs affect the nervous system, the anatomy of the human nervous system, and how electrical activity in the brain works to control function. In the final year, you will explore how the brain governs behaviour, the mechanisms underlying neuropathology, how our sensory systems work, and understand how the brain can regenerate and repair itself.

During the programme you will receive research training in experimental design, practical techniques and data analysis. This will culminate in the opportunity to undertake a final year research project (laboratory or computer based) under expert guidance of our Neuroscience teaching staff. Between Years 2 and 3 of the course, you can also opt to spend (i) a year abroad studying or (ii) a placement year working in industry or a partner research institute.

4. Aims of the programme

The broad aims of the programme are to:

- provide you with knowledge, understanding and skills relevant to neuroscience;
- produce skilled and motivated graduates who are suitably prepared for further study or for employment within or outside their field;
- cultivate interest in neuroscience, within a caring and intellectually stimulating environment;
- promote the development of a range of employability skills to enable you to undertake relevant postgraduate study.
- promote the development of independent research skills to enable you to undertake relevant postgraduate study.

5. What you will learn

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

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

Subject knowledge and understanding

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

- cellular and gross anatomical features of the, developing and adult, peripheral and central nervous system
- neuronal function, from a single cell to simple neuronal networks
- the ionic principles underlying neuronal activity
- the biochemical principles of cellular and systemic physiological systems
- pharmacological principles of neuronal function, and the interaction with pharmaceutical agents
- the basic experimental skills appropriate to the discipline of neuroscience
- the approaches to acquiring, interpreting, analysing data from a variety of sources, including the use of statistics
- neuronal mechanisms of cognitive function, and the relationship to the same phenomena at the behavioural level
- cellular mechanisms underlying pathology of the nervous system
- the contribution of research to the development of neuroscience knowledge
- the use of anatomical and pharmacological terminology in neuroscience
- the relevance of neuroscience to medical problems and improving the quality of life

Subject specific skills

Successful students will be able to:

- use a range of techniques for the acquisition and analysis of information relevant to the subject
- use a range of laboratory techniques to ensure competence in experimental skills.
- record and analyse data in a manner that ensure validity, accuracy, calibration, precision, and reliability
- formulate a hypothesis to design, conduct, analyse, report and evaluate experiments.
- recognise philosophical and ethical issues relevant to the subject, and appreciate the need for ethical standards and professional codes of conduct.
- work safely and responsibly in the laboratory, with awareness of standard procedures

Intellectual skills

Successful students will be able to:

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

Key or transferable skills (including employability skills)

Successful students will be able to:

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

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

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

6. How is the programme taught?

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

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

- **Laboratory practicals.** Take place in one of our labs. These give you first-hand experience in a range of scientific techniques and have been designed to ensure you develop both independent and team-based skills.
- **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.
- **Live, campus-based seminars.** Delivered by experts in the field seminars are ordinarily recorded on the day so you can focus better on the discussion during the live event.
- **Live, 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 and discuss content with other students and your tutors.
- **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.
- **Final year research project.** 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

University life is not just about the content of your degree. It is also an opportunity to network, to speak to people working in fields that excite you. Here in Life Sciences, you will meet a diverse range of staff that you can see by using the following link: (<https://www.keele.ac.uk/lifesci/people/>).

We will also invite speakers from the School of Pharmacy, Medicine and local NHS Trusts.

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.

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.

Some modules are compulsory and you are required to study them to complete this course. Some are optional, giving you some choice over what you study.

Language modules: You are able to take up to 60 credits across your degree programme as Faculty Funded additional Modern Language modules in order to graduate with the Enhanced Degree Title. [Please see [link](#) for more information on Enhanced degree titles.]

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 please visit:

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

| Year | Compulsory | Optional | | Electives | |
|---------|------------|----------|-----|-----------|-----|
| | | Min | Max | Min | Max |
| Level 4 | 60 | 0 | 0 | 0 | 0 |
| Level 5 | 30 | 30 | 30 | 0 | 0 |
| Level 6 | 0 | 45 | 60 | 0 | 15 |

In year 3 there is the option to choose to specialise in one of your subjects, taking a minimum of 90 credits in this subject rather than taking modules from both subjects.

If you continue with a combined honours programme at level 6 you must take a minimum of 15 credits as an ISP. If you are combining with Biochemistry you must still select a 30 credit ISP module as a requirement for accreditation, split between the two subjects (i.e. you will still be required to choose at least 30 credits from the remaining non-project, Neuroscience modules).

Module Lists

Level 4

| Compulsory modules | Module Code | Credits | Period |
|------------------------------|-------------|---------|--------------|
| Introduction to Neuroscience | LSC-10047 | 30 | Semester 1-2 |
| Physiology and Anatomy | LSC-10074 | 30 | Semester 1-2 |
| Core Practical Skills | LSC-10087 | 0 | Semester 1-2 |

Core Practical Skills (LSC-10087)

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

Students who fail this module will transfer to Studies in Neuroscience. This route is not accredited by the RSB.

Level 5

| Compulsory modules | Module Code | Credits | Period |
|--------------------------------|-------------|---------|--------------|
| Neuroscience Research Methods | LSC-20078 | 30 | Semester 1-2 |
| Practical Skills in Bioscience | LSC-20107 | 0 | Semester 1-2 |

| Optional modules | Module Code | Credits | Period |
|--------------------------------|-------------|---------|------------|
| Life Sciences Study Abroad III | LSC-20065 | 15 | Semester 1 |
| Life Sciences Study Abroad IV | LSC-20066 | 15 | Semester 1 |
| Neurone to Brain | LSC-20075 | 15 | Semester 1 |
| Neurodevelopment | LSC-20077 | 15 | Semester 1 |
| Neuroanatomy | LSC-20079 | 15 | Semester 1 |
| Research and Analytical Skills | LSC-20056 | 15 | Semester 2 |
| Neuropharmacology | LSC-20061 | 15 | Semester 2 |
| Learning & Memory | LSC-20076 | 15 | Semester 2 |

Level 5 Module Rules

- LSC-20065, LSC-20066 and LSC-20056: Study Abroad students only. Students can choose to study abroad in semester 1 instead of taking LSC-20078. They do both LSC-20065/66 in semester 1 and in semester 2 (at Keele) they do LSC-20056 plus an additional (semester 2) 15 credit option module (total = 60 credits).
- Students not doing Study Abroad choose 15 option credits in each semester in addition to LSC-20078 (total = 60 credits).

Practical Skills in Bioscience (LSC-20107)

LSC-20107 is a core, zero-credit module. All lab-work across this Level of study will be coordinated through this module and assessed within other credit-bearing modules across the year where appropriate. This module also provides helpful academic support and development material that provide added value to enhance your overall student experience.

Students who fail this module will transfer to Studies in Neuroscience. This route is not accredited by the RSB.

Level 6

| Optional modules | Module Code | Credits | Period |
|---|-------------|---------|--------------|
| Behavioural Neuroscience | LSC-30052 | 15 | Semester 1 |
| Brain Disease | LSC-30063 | 15 | Semester 1 |
| Applied Life Sciences Placement - ISP | LSC-30019 | 15 | Semester 1-2 |
| Double Applied Life Sciences Placement - ISP | LSC-30038 | 30 | Semester 1-2 |
| Life Sciences Double Experimental Project (with research skills assessment) | LSC-30045 | 30 | Semester 1-2 |
| Life Sciences Single Experimental Project (with research skills assessment) - ISP | LSC-30048 | 15 | Semester 1-2 |
| Life Sciences Dissertation | LSC-30050 | 15 | Semester 1-2 |
| Regeneration and Repair in the Nervous System | LSC-30039 | 15 | Semester 2 |
| Current Research Topics in Neuroscience | LSC-30042 | 15 | Semester 2 |
| Special Senses | LSC-30053 | 15 | Semester 2 |

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

| Compulsory modules | Module Code | Credits | Period |
|---|--------------------|----------------|---------------|
| Behavioural Neuroscience | LSC-30052 | 15 | Semester 1 |
| Brain Disease | LSC-30063 | 15 | Semester 1 |
| Regeneration and Repair in the Nervous System | LSC-30039 | 15 | Semester 2 |
| Current Research Topics in Neuroscience | LSC-30042 | 15 | Semester 2 |

| Optional modules | Module Code | Credits | Period |
|---|--------------------|----------------|---------------|
| Advances in Medicine | LSC-30028 | 15 | Semester 1 |
| Tropical Biology Field Course | LSC-30066 | 15 | Semester 1 |
| Applied Regenerative Medicine | LSC-30068 | 15 | Semester 1 |
| Double Applied Life Sciences Placement - ISP | LSC-30038 | 30 | Semester 1-2 |
| Life Sciences Double Experimental Project (with research skills assessment) | LSC-30045 | 30 | Semester 1-2 |
| Clinical Pathology | LSC-30009 | 15 | Semester 2 |
| Special Senses | LSC-30053 | 15 | Semester 2 |

Level 6 Module Rules

1. LSC-30038/LSC-30045: students taking Biochemistry & Neuroscience must choose one of these modules. The remaining 30 credits for Neuroscience is made up of either two option modules in the relevant above table or one optional module and an approved elective.
2. LSC-30048/LSC-30050/LSC-30019: all other combined honours students must choose one of these modules. The remaining 45 credits for Neuroscience is made up of either three option modules in the relevant above table or two optional modules and an approved elective.

Students specialising in Neuroscience in their final year:

- All students take LSC-30045 (or LSC-30038 if returning from placement) and 60 credits of compulsory modules. The remaining 30 credits is made up of either two option modules in the above table or one optional module in the above table and either 15 credits in their minor subject or an approved elective.

Placement modules (LSC-30019 and LSC-30038) are taken only by students who have been on placement.

The Tropical Biology Field Course occurs during the summer vacation prior to commencing level 6, module LSC-30066 then forms the write-up part of the field course in semester 1 of level 6 (3rd year).

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 mainly achieved in the compulsory modules that all students are required to take. Some of these outcomes may also be achieved or reinforced in option modules together with other outcomes not stated here. In Year 3 (Level 6) the stated outcomes are achieved by taking a module listed within that Learning Outcome.

| Subject Knowledge and Understanding | |
|--|---|
| Learning Outcome | Module in which this is delivered |
| U1 cellular and gross anatomical features of the, developing and adult, peripheral and central nervous system. | Introduction to Neuroscience - LSC-10047 Physiology and Anatomy - LSC-10074 |
| U2 neuronal function, from a single cell to simple neuronal networks. | Introduction to Neuroscience - LSC-10047 Physiology and Anatomy - LSC-10074 |
| U3 the ionic principles underlying neuronal activity. | Introduction to Neuroscience - LSC-10047 Physiology and Anatomy - LSC-10074 |
| U4 the biochemical principles of cellular and systemic physiological systems. | Introduction to Neuroscience - LSC-10047 Physiology and Anatomy - LSC-10074 |
| U5 pharmacological principles of neuronal function, and the interaction with pharmaceutical agents. | Introduction to Neuroscience - LSC-10047 Physiology and Anatomy - LSC-10074 |
| U6 the basic experimental skills appropriate to the discipline of neuroscience. | Core Practical Skills - LSC-10087 Physiology and Anatomy - LSC-10074 Introduction to Neuroscience - LSC-10047 |
| U7 the approaches to acquiring, interpreting, analysing data from a variety of sources, including the use of statistics. | Core Practical Skills - LSC-10087 Physiology and Anatomy - LSC-10074 Introduction to Neuroscience - LSC-10047 |
| U8 neuronal mechanisms of cognitive function, and the relationship to the same phenomena at the behavioural level. | Introduction to Neuroscience - LSC-10047 |
| U9 cellular mechanisms underlying pathology of the nervous system. | Introduction to Neuroscience - LSC-10047 Physiology and Anatomy - LSC-10074 |
| U10 the contribution of research to the development of neuroscience knowledge. | Physiology and Anatomy - LSC-10074 Introduction to Neuroscience - LSC-10047 Core Practical Skills - LSC-10087 |

| Subject Specific Skills | |
|---|---|
| Learning Outcome | Module in which this is delivered |
| S1 use a range of techniques for the acquisition and analysis of information relevant to the subject | Physiology and Anatomy - LSC-10074 Introduction to Neuroscience - LSC-10047 Core Practical Skills - LSC-10087 |
| S2 use a range of laboratory techniques to ensure competence in experimental skills. | Introduction to Neuroscience - LSC-10047 Physiology and Anatomy - LSC-10074 Core Practical Skills - LSC-10087 |
| S3 record and analyse data in a manner that ensure validity, accuracy, calibration, precision, and reliability | Physiology and Anatomy - LSC-10074 Introduction to Neuroscience - LSC-10047 Core Practical Skills - LSC-10087 |
| S4 formulate a hypothesis to design, conduct, analyse, report and evaluate experiments. | Introduction to Neuroscience - LSC-10047 Physiology and Anatomy - LSC-10074 Core Practical Skills - LSC-10087 |
| S5 recognise philosophical and ethical issues relevant to the subject, and appreciate the need for ethical standards and professional codes of conduct. | Introduction to Neuroscience - LSC-10047 Physiology and Anatomy - LSC-10074 |
| S6 work safely and responsibly in the laboratory, with awareness of standard procedures | Introduction to Neuroscience - LSC-10047 Physiology and Anatomy - LSC-10074 Core Practical Skills - LSC-10087 |

| Intellectual skills | |
|---|---|
| Learning Outcome | Module in which this is delivered |
| I1 assess the merits of contrasting theories, paradigms, concepts or principles | Physiology and Anatomy - LSC-10074 Introduction to Neuroscience - LSC-10047 |
| I2 think independently, set tasks and solve problems by a variety of methods | Introduction to Neuroscience - LSC-10047 Physiology and Anatomy - LSC-10074 |
| I3 make reasoned decisions and develop reasoned arguments | Introduction to Neuroscience - LSC-10047 Physiology and Anatomy - LSC-10074 |
| I4 obtain and interpret several lines of subject-specific evidence to formulate and test hypotheses | Physiology and Anatomy - LSC-10074 Introduction to Neuroscience - LSC-10047 Core Practical Skills - LSC-10087 |
| I5 make critical interpretations, evaluations and judgements of data and text | Physiology and Anatomy - LSC-10074 Introduction to Neuroscience - LSC-10047 |
| I6 analyse, synthesise and summarise information critically, including published research or reports | Introduction to Neuroscience - LSC-10047 Physiology and Anatomy - LSC-10074 |
| I7 apply scientific understanding to familiar and unfamiliar problems, and emphasise the interdisciplinary nature of science and the validity of different points of view | Introduction to Neuroscience - LSC-10047 Physiology and Anatomy - LSC-10074 |
| I8 take responsibility for their own learning and reflect upon that learning | Introduction to Neuroscience - LSC-10047 Physiology and Anatomy - LSC-10074 |

| Key or Transferable Skills (graduate attributes) | |
|--|---|
| Learning Outcome | Module in which this is delivered |
| E1. develop an adaptable, flexible, sustainable and effective approach to study and work, including time management, creativity and intellectual integrity | Introduction to Neuroscience - LSC-10047 Physiology and Anatomy - LSC-10074 |
| E2. acquire, analyse, synthesise, summarise and present information and ideas from a wide range of sources: textual, numerical, verbal, graphical | Physiology and Anatomy - LSC-10074 Introduction to Neuroscience - LSC-10047 |
| E3. prepare, process, interpret and present data using appropriate qualitative and quantitative techniques, statistical programmes, spreadsheets and programs for presenting data visually | Physiology and Anatomy - LSC-10074 Core Practical Skills - LSC-10087 Introduction to Neuroscience - LSC-10047 |
| E4. use the internet and other electronic sources critically as a means of communication and a source of information | Physiology and Anatomy - LSC-10074 Introduction to Neuroscience - LSC-10047 |
| E5. cite and reference work in an appropriate manner, avoiding issues with plagiarism | Introduction to Neuroscience - LSC-10047 Physiology and Anatomy - LSC-10074 |
| E6. communicate effectively to a variety of audiences by written, spoken and graphical means using appropriate techniques and scientific language | Introduction to Neuroscience - LSC-10047 Physiology and Anatomy - LSC-10074 |
| E7. develop skills necessary for self-managed and lifelong learning, including working independently, organisational, enterprise and knowledge transfer skills | Introduction to Neuroscience - LSC-10047 Physiology and Anatomy - LSC-10074 |
| E8. work with others to achieve an objective in a respectful manner that is accepting of the viewpoints and opinions of others and evaluates the roles and development of team members | Physiology and Anatomy - LSC-10074 Core Practical Skills - LSC-10087 Introduction to Neuroscience - LSC-10047 |
| E9. motivate themselves and sustain that motivation over an extended period of time | Physiology and Anatomy - LSC-10074 Introduction to Neuroscience - LSC-10047 |
| E10. identify and work towards targets for personal, academic and career development | Introduction to Neuroscience - LSC-10047 Physiology and Anatomy - LSC-10074 |

Level 5

| Subject Knowledge and Understanding | |
|--|---|
| Learning Outcome | Module in which this is delivered |
| U1 cellular and gross anatomical features of the, developing and adult, peripheral and central nervous system. | Neurodevelopment - LSC-20077 Neuroanatomy - LSC-20079 |
| U2 neuronal function, from a single cell to simple neuronal networks. | Neurone to Brain - LSC-20075 Neuropharmacology - LSC-20061 Learning & Memory - LSC-20076 |
| U3 the ionic principles underlying neuronal activity. | Neuropharmacology - LSC-20061 Neurone to Brain - LSC-20075 |
| U4 the biochemical principles of cellular and systemic physiological systems. | Neurone to Brain - LSC-20075 Neuropharmacology - LSC-20061 |
| U5 pharmacological principles of neuronal function, and the interaction with pharmaceutical agents. | Neuropharmacology - LSC-20061 Neurone to Brain - LSC-20075 |
| U6 the basic experimental skills appropriate to the discipline of neuroscience. | Neurodevelopment - LSC-20077 Neuroscience Research Methods - LSC-20078 Practical Skills in Bioscience - LSC-20107 |
| U7 the approaches to acquiring, interpreting, analysing data from a variety of sources, including the use of statistics. | Practical Skills in Bioscience - LSC-20107 Neuroscience Research Methods - LSC-20078 |
| U8 neuronal mechanisms of cognitive function, and the relationship to the same phenomena at the behavioural level. | Learning & Memory - LSC-20076 |
| U9 cellular mechanisms underlying pathology of the nervous system. | Learning & Memory - LSC-20076 Neuropharmacology - LSC-20061 |
| U10 the contribution of research to the development of neuroscience knowledge. | Practical Skills in Bioscience - LSC-20107 Learning & Memory - LSC-20076 Neurone to Brain - LSC-20075 Neuroscience Research Methods - LSC-20078 Neuropharmacology - LSC-20061 |

| Subject Specific Skills | |
|---|---|
| Learning Outcome | Module in which this is delivered |
| S1 use a range of techniques for the acquisition and analysis of information relevant to the subject | Neuroscience Research Methods - LSC-20078 Practical Skills in Bioscience - LSC-20107 |
| S2 use a range of laboratory techniques to ensure competence in experimental skills. | Practical Skills in Bioscience - LSC-20107 Neuroscience Research Methods - LSC-20078 |
| S3 record and analyse data in a manner that ensure validity, accuracy, calibration, precision, and reliability | Neuroscience Research Methods - LSC-20078 Practical Skills in Bioscience - LSC-20107 |
| S4 formulate a hypothesis to design, conduct, analyse, report and evaluate experiments. | Practical Skills in Bioscience - LSC-20107 Neuroscience Research Methods - LSC-20078 |
| S5 recognise philosophical and ethical issues relevant to the subject, and appreciate the need for ethical standards and professional codes of conduct. | Neuroscience Research Methods - LSC-20078 |
| S6 work safely and responsibly in the laboratory, with awareness of standard procedures | Practical Skills in Bioscience - LSC-20107 Neuroscience Research Methods - LSC-20078 |

| Intellectual skills | |
|---|---|
| Learning Outcome | Module in which this is delivered |
| I1 assess the merits of contrasting theories, paradigms, concepts or principles | Learning & Memory - LSC-20076 Neuropharmacology - LSC-20061 Neuroscience Research Methods - LSC-20078 Neurone to Brain - LSC-20075 |
| I2 think independently, set tasks and solve problems by a variety of methods | Neurone to Brain - LSC-20075 Neuroscience Research Methods - LSC-20078 Neuropharmacology - LSC-20061 Learning & Memory - LSC-20076 |
| I3 make reasoned decisions and develop reasoned arguments | Learning & Memory - LSC-20076 Neuropharmacology - LSC-20061 Neuroscience Research Methods - LSC-20078 Neurone to Brain - LSC-20075 |
| I4 obtain and interpret several lines of subject-specific evidence to formulate and test hypotheses | Neurone to Brain - LSC-20075 Neuroscience Research Methods - LSC-20078 Practical Skills in Bioscience - LSC-20107 Neuropharmacology - LSC-20061 Learning & Memory - LSC-20076 |
| I5 make critical interpretations, evaluations and judgements of data and text | Neuroscience Research Methods - LSC-20078 Neurone to Brain - LSC-20075 Neuropharmacology - LSC-20061 Learning & Memory - LSC-20076 |
| I6 analyse, synthesise and summarise information critically, including published research or reports | Neuropharmacology - LSC-20061 Learning & Memory - LSC-20076 Neuroscience Research Methods - LSC-20078 Neurone to Brain - LSC-20075 |
| I7 apply scientific understanding to familiar and unfamiliar problems, and emphasise the interdisciplinary nature of science and the validity of different points of view | Neurone to Brain - LSC-20075 Neuroscience Research Methods - LSC-20078 Neuropharmacology - LSC-20061 Learning & Memory - LSC-20076 |
| I8 take responsibility for their own learning and reflect upon that learning | Neuroscience Research Methods - LSC-20078 Neuropharmacology - LSC-20061 Learning & Memory - LSC-20076 Neurone to Brain - LSC-20075 |

| Key or Transferable Skills (graduate attributes) | |
|--|---|
| Learning Outcome | Module in which this is delivered |
| E1. develop an adaptable, flexible, sustainable and effective approach to study and work, including time management, creativity and intellectual integrity | Neuropharmacology - LSC-20061 Neuroscience Research Methods - LSC-20078 Learning & Memory - LSC-20076 |
| E2. acquire, analyse, synthesise, summarise and present information and ideas from a wide range of sources: textual, numerical, verbal, graphical | Neuroscience Research Methods - LSC-20078 |
| E3. prepare, process, interpret and present data using appropriate qualitative and quantitative techniques, statistical programmes, spreadsheets and programs for presenting data visually | Neuroscience Research Methods - LSC-20078 Practical Skills in Bioscience - LSC-20107 |
| E4. use the internet and other electronic sources critically as a means of communication and a source of information | Neuroscience Research Methods - LSC-20078 Neuropharmacology - LSC-20061 Learning & Memory - LSC-20076 Neurone to Brain - LSC-20075 |
| E5. cite and reference work in an appropriate manner, avoiding issues with plagiarism | Neuroscience Research Methods - LSC-20078 |
| E6. communicate effectively to a variety of audiences by written, spoken and graphical means using appropriate techniques and scientific language | Neuroscience Research Methods - LSC-20078 |
| E7. develop skills necessary for self-managed and lifelong learning, including working independently, organisational, enterprise and knowledge transfer skills | Neurone to Brain - LSC-20075 Neuroscience Research Methods - LSC-20078 Neuropharmacology - LSC-20061 Learning & Memory - LSC-20076 |
| E8. work with others to achieve an objective in a respectful manner that is accepting of the viewpoints and opinions of others and evaluates the roles and development of team members | Neuroscience Research Methods - LSC-20078 Practical Skills in Bioscience - LSC-20107 |
| E9. motivate themselves and sustain that motivation over an extended period of time | Neurone to Brain - LSC-20075 Neuroscience Research Methods - LSC-20078 Neuropharmacology - LSC-20061 Learning & Memory - LSC-20076 |
| E10. identify and work towards targets for personal, academic and career development | Neuroscience Research Methods - LSC-20078 Neuropharmacology - LSC-20061 Learning & Memory - LSC-20076 Neurone to Brain - LSC-20075 |

Level 6

| Subject Knowledge and Understanding | |
|--|---|
| Learning Outcome | Module in which this is delivered |
| U1 cellular and gross anatomical features of the, developing and adult, peripheral and central nervous system. | Behavioural Neuroscience - LSC-30052 Brain Disease - LSC-30063 Special Senses - LSC-30053 Regeneration and Repair in the Nervous System - LSC-30039 |
| U2 neuronal function, from a single cell to simple neuronal networks. | All level 6 modules |
| U3 the ionic principles underlying neuronal activity. | Behavioural Neuroscience - LSC-30052 Brain Disease - LSC-30063 Special Senses - LSC-30053 |
| U4 the biochemical principles of cellular and systemic physiological systems. | Behavioural Neuroscience - LSC-30052 Brain Disease - LSC-30063 Special Senses - LSC-30053 |
| U5 pharmacological principles of neuronal function, and the interaction with pharmaceutical agents. | Behavioural Neuroscience - LSC-30052 Brain Disease - LSC-30063 Regeneration and Repair in the Nervous System - LSC-30039 Behavioural Neuroscience, Brain Disease, Regeneration and Repair |
| U6 the basic experimental skills appropriate to the discipline of neuroscience. | Applied Life Sciences Placement - ISP - LSC-30019 Double Applied Life Sciences Placement - ISP - LSC-30038 Life Sciences Double Experimental Project (with research skills assessment) - LSC-30045 Life Sciences Single Experimental Project (with research skills assessment) - ISP - LSC-30048 |
| U7 the approaches to acquiring, interpreting, analysing data from a variety of sources, including the use of statistics. | Applied Life Sciences Placement - ISP - LSC-30019 Double Applied Life Sciences Placement - ISP - LSC-30038 Life Sciences Double Experimental Project (with research skills assessment) - LSC-30045 Life Sciences Single Experimental Project (with research skills assessment) - ISP - LSC-30048 |
| U8 neuronal mechanisms of cognitive function, and the relationship to the same phenomena at the behavioural level. | Behavioural Neuroscience - LSC-30052 Brain Disease - LSC-30063 |
| U9 cellular mechanisms underlying pathology of the nervous system. | Behavioural Neuroscience - LSC-30052 Brain Disease - LSC-30063 Regeneration and Repair in the Nervous System - LSC-30039 |
| U10 the contribution of research to the development of neuroscience knowledge. | All level 6 modules |

| Subject Specific Skills | |
|---|--|
| Learning Outcome | Module in which this is delivered |
| S1 use a range of techniques for the acquisition and analysis of information relevant to the subject | Applied Life Sciences Placement - ISP - LSC-30019 Double Applied Life Sciences Placement - ISP - LSC-30038 Life Sciences Double Experimental Project (with research skills assessment) - LSC-30045 Life Sciences Single Experimental Project (with research skills assessment) - ISP - LSC-30048 |
| S2 use a range of laboratory techniques to ensure competence in experimental skills. | Life Sciences Double Experimental Project (with research skills assessment) - LSC-30045 Life Sciences Single Experimental Project (with research skills assessment) - ISP - LSC-30048 Double Applied Life Sciences Placement - ISP - LSC-30038 Applied Life Sciences Placement - ISP - LSC-30019 |
| S3 record and analyse data in a manner that ensure validity, accuracy, calibration, precision, and reliability | Applied Life Sciences Placement - ISP - LSC-30019 Double Applied Life Sciences Placement - ISP - LSC-30038 Life Sciences Double Experimental Project (with research skills assessment) - LSC-30045 Life Sciences Single Experimental Project (with research skills assessment) - ISP - LSC-30048 |
| S4 formulate a hypothesis to design, conduct, analyse, report and evaluate experiments. | Applied Life Sciences Placement - ISP - LSC-30019 Double Applied Life Sciences Placement - ISP - LSC-30038 Life Sciences Double Experimental Project (with research skills assessment) - LSC-30045 Life Sciences Single Experimental Project (with research skills assessment) - ISP - LSC-30048 |
| S5 recognise philosophical and ethical issues relevant to the subject, and appreciate the need for ethical standards and professional codes of conduct. | Applied Life Sciences Placement - ISP - LSC-30019 Double Applied Life Sciences Placement - ISP - LSC-30038 Life Sciences Double Experimental Project (with research skills assessment) - LSC-30045 Regeneration and Repair in the Nervous System - LSC-30039 Life Sciences Single Experimental Project (with research skills assessment) - ISP - LSC-30048 |
| S6 work safely and responsibly in the laboratory, with awareness of standard procedures | Applied Life Sciences Placement - ISP - LSC-30019 Double Applied Life Sciences Placement - ISP - LSC-30038 Life Sciences Double Experimental Project (with research skills assessment) - LSC-30045 Life Sciences Single Experimental Project (with research skills assessment) - ISP - LSC-30048 |

| Intellectual skills | |
|----------------------------|--|
| Learning Outcome | Module in which this is delivered |

| Intellectual skills | |
|---|---|
| Learning Outcome | Module in which this is delivered |
| I1 assess the merits of contrasting theories, paradigms, concepts or principles | Applied Life Sciences Placement - ISP - LSC-30019 Double Applied Life Sciences Placement - ISP - LSC-30038 Life Sciences Double Experimental Project (with research skills assessment) - LSC-30045 Life Sciences Dissertation - LSC-30050 Life Sciences Single Experimental Project (with research skills assessment) - ISP - LSC-30048 |
| I2 think independently, set tasks and solve problems by a variety of methods | Behavioural Neuroscience - LSC-30052 Brain Disease - LSC-30063 Applied Life Sciences Placement - ISP - LSC-30019 Regeneration and Repair in the Nervous System - LSC-30039 Life Sciences Double Experimental Project (with research skills assessment) - LSC-30045 Life Sciences Single Experimental Project (with research skills assessment) - ISP - LSC-30048 Double Applied Life Sciences Placement - ISP - LSC-30038 |
| I3 make reasoned decisions and develop reasoned arguments | Behavioural Neuroscience - LSC-30052 Special Senses - LSC-30053 Brain Disease - LSC-30063 Applied Life Sciences Placement - ISP - LSC-30019 Double Applied Life Sciences Placement - ISP - LSC-30038 Life Sciences Double Experimental Project (with research skills assessment) - LSC-30045 Life Sciences Single Experimental Project (with research skills assessment) - ISP - LSC-30048 Life Sciences Dissertation - LSC-30050 Regeneration and Repair in the Nervous System - LSC-30039 |
| I4 obtain and interpret several lines of subject-specific evidence to formulate and test hypotheses | Applied Life Sciences Placement - ISP - LSC-30019 Double Applied Life Sciences Placement - ISP - LSC-30038 Life Sciences Double Experimental Project (with research skills assessment) - LSC-30045 Life Sciences Dissertation - LSC-30050 Life Sciences Single Experimental Project (with research skills assessment) - ISP - LSC-30048 |
| I5 make critical interpretations, evaluations and judgements of data and text | Life Sciences Dissertation - LSC-30050 Double Applied Life Sciences Placement - ISP - LSC-30038 Life Sciences Double Experimental Project (with research skills assessment) - LSC-30045 Behavioural Neuroscience - LSC-30052 Brain Disease - LSC-30063 Life Sciences Single Experimental Project (with research skills assessment) - ISP - LSC-30048 Applied Life Sciences Placement - ISP - LSC-30019 |
| I6 analyse, synthesise and summarise information critically, including published research or reports | All level 6 modules |
| I7 apply scientific understanding to familiar and unfamiliar problems, and emphasise the interdisciplinary nature of science and the validity of different points of view | All level 6 modules |
| I8 take responsibility for their own learning and reflect upon that learning | All level 6 modules |

| Key or Transferable Skills (graduate attributes) | |
|--|---|
| Learning Outcome | Module in which this is delivered |
| E1. develop an adaptable, flexible, sustainable and effective approach to study and work, including time management, creativity and intellectual integrity | All level 6 modules |
| E2. acquire, analyse, synthesise, summarise and present information and ideas from a wide range of sources: textual, numerical, verbal, graphical | All level 6 modules |
| E3. prepare, process, interpret and present data using appropriate qualitative and quantitative techniques, statistical programmes, spreadsheets and programs for presenting data visually | Applied Life Sciences Placement - ISP - LSC-30019 Double Applied Life Sciences Placement - ISP - LSC-30038 Life Sciences Double Experimental Project (with research skills assessment) - LSC-30045 Life Sciences Dissertation - LSC-30050 Life Sciences Single Experimental Project (with research skills assessment) - ISP - LSC-30048 |
| E4. use the internet and other electronic sources critically as a means of communication and a source of information | All level 6 modules |
| E5. cite and reference work in an appropriate manner, avoiding issues with plagiarism | All level 6 modules |
| E6. communicate effectively to a variety of audiences by written, spoken and graphical means using appropriate techniques and scientific language | All level 6 modules |
| E7. develop skills necessary for self-managed and lifelong learning, including working independently, organisational, enterprise and knowledge transfer skills | All level 6 modules |
| E8. work with others to achieve an objective in a respectful manner that is accepting of the viewpoints and opinions of others and evaluates the roles and development of team members | All level 6 modules |
| E9. motivate themselves and sustain that motivation over an extended period of time | All level 6 modules |
| E10. identify and work towards targets for personal, academic and career development | All level 6 modules |

9. Final and intermediate awards

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

| | | |
|--|-------------|--|
| Honours Degree | 360 credits | <p>You will require at least 120 credits at levels 4, 5 and 6</p> <p>You must accumulate a minimum of 135 credits in each Principal Subject (270 credits in total), with at least 45 credits at each level of study (Levels 4, 5 and 6) in each of two Principal Subjects (90 credits per year). Your degree title will be 'subject X and subject Y'.</p> <p>If you choose to study one Principal subject in your final year of study a minimum of 90 credits in that subject is required. Your degree title will be 'subject X with subject Y'.</p> |
| Diploma in Higher Education | 240 credits | You will require at least 120 credits at level 4 or higher and at least 120 credits at level 5 or higher |
| Certificate in Higher Education | 120 credits | You will require at least 120 credits at level 4 or higher |

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

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

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

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

- **Provide evidence-based solutions to current scientific problems.** Most often this is assessed through a range of essays, portfolios and literature reviews.
- **Critically reflect on current issues.** Reflective writing is an increasingly important skill in the workforce, particularly to healthcare professions. It can help you to identify personal strengths and weaknesses so that you can learn from your experience and maximise your potential.
- **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.
- **Communicate effectively with a range of audiences.** These can include scientific posters, patient information leaflets, wikis, blogs or oral presentations.
- **Work professionally.** Your final year, independent research project will give you an opportunity to demonstrate a range of professional skills such as leadership, innovation, time keeping, communication and the ability to work safely and ethically.
- **Work effectively in a team.** Most often this is assessed through group presentations but can also include competencies such as working together in the lab.
- **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.

We aim to provide constructive feedback within 3 weeks of submission for all assessed work. This is often phrased in terms of strengths, weaknesses and ways to improve to help you focus on key areas that can improve the quality of your work in the future.

11. Contact Time and Expected Workload

This contact time measure is intended to provide you with an indication of the type of activity you are likely to undertake during this programme. The data is compiled based on module choices and learning patterns of

students on similar programmes in previous years. Every effort is made to ensure this data is a realistic representation of what you are likely to experience, but changes to programmes, teaching methods and assessment methods mean this data is representative and not specific.

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

Activity

| | Scheduled learning and teaching activities | Guided independent Study | Placements |
|-------------------------|---|---------------------------------|-------------------|
| Year 1 (Level 4) | 10% | 90% | 0% |
| Year 2 (Level 5) | 10% | 90% | 0% |
| Year 3 (Level 6) | 13% | 87% | 0% |

12. Accreditation

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

A pass mark must be obtained in both of our zero-credit, lab-based modules (one at Level 4 and the other Level 5) and the Life Sciences Double Experimental Project with research skills assessment (or, subject to agreement, Double Applied Life Sciences Placement) to attain an accredited degree. For students who do not fulfil the conditions of this regulation, the degree award will be '*Studies in Neuroscience*' and the degree will not be accredited by the Royal Society of Biology.

13. University Regulations

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

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

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

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.

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:

<http://www.keele.ac.uk/ga/accrreditationofpriorlearning/>

15. How are students supported on the programme?

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 discuss 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
- Demonstrators for help during labs
- Academic Mentors 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

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/studentsservices/>

16. Learning Resources

You will be taught in modern, dedicated teaching laboratories (some of which were opened by Sir David Attenborough himself!)

You will have access to an extensive collection of books and journals both at our library here on campus and the health library situated at the University Hospital of North Staffordshire.

You will also have access to a comprehensive range of ebooks, journals and published papers all available online.

We make extensive use of our virtual Keele Learning Environment (KLE) and Microsoft Teams to host a wide range of learning resources such as lectures and guidance materials and to facilitate live debates such as online discussions or Q&As.

17. Other Learning Opportunities

Study abroad (semester)

Students on the programme have the potential opportunity to spend the first 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 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.

Summer secondments/placements

Keele staff and staff from external Universities may be able to offer placements within their laboratories to gain hands-on experience of research work. These are usually 2-8 weeks over the summer vacation period. Students may also apply for Summer Vacation bursaries when available, e.g. <https://www.physoc.org/supporting-you/grants/summer-studentships/>.

Tropical Field Course

You could apply for our School tropical field that takes place in Malaysia. These are often more conservational in nature, but again provide fantastic international experience.

Operation Wallacea

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

18. Additional Costs

There will be additional costs for inter-library loans and potential overdue library fines, printing and graduation. Foreign Placements are likely to incur addition costs for flights, transport, inoculations and accommodation.

Other than for the purchase of some textbooks, the value and quantity of which varies considerably from student to student, 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 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 National Student Survey (NSS), and from regular surveys of the student experience conducted by the University, are subjected to careful analysis and a planned response at programme and School level.
- Feedback received from representatives of students in all three years of the programme is considered and acted on at regular meetings of the Student Staff Voice Committee.

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

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

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

20. The principles of programme design

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

- a. UK Quality Code for Higher Education, Quality Assurance Agency for Higher Education: <http://www.qaa.ac.uk/quality-code>
- b. QAA Subject Benchmark Statement: Biosciences (2019) <https://www.qaa.ac.uk/docs/qaa/subject-benchmark-statements/subject-benchmark-statement-biosciences.pdf>
- c. Keele University Regulations and Guidance for Students and Staff: <http://www.keele.ac.uk/regulations>
- d. RSB Handbook for Accreditation of Degrees: https://www.rsb.org.uk/images/RSB_Accreditation_Handbook.pdf

21. Annex - International Year

Neuroscience with International Year

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

| |
|---|
| <p>International Year Programme</p> <p>Students registered for this Combined Honours programme may either be admitted for or apply to transfer during their period of study at Level 5 to the Combined Honours programme in both their principal subjects, providing that they meet the progression criteria outlined in this document. Students accepted onto the International Year programme will have an extra year of study at an international partner institution after they have completed Year 2 (Level 5) at Keele.</p> <p>Students who successfully complete both the second year (Level 5) and the International Year will be permitted to progress to Level 6. Students who fail to satisfy the examiners in respect of the International Year will normally revert to the Combined Honours programme without the International Year and progress to Level 6 on that basis. The failure will be recorded on the student's final transcript.</p> <p>Study at Level 4, Level 5 and Level 6 will be as per the main body of this document. The additional detail contained in this annex will pertain solely to students registered for the International Year option.</p> |
| <p>International Year Programme Aims</p> <p>In addition to the programme aims specified in the main body of this document, the international year programme of study aims to provide students with:</p> <ol style="list-style-type: none">1. Personal development as a student and a researcher with an appreciation of the international dimension of their subject2. Experience of a different culture, academically, professionally and socially |
| <p>Entry Requirements for the International Year</p> <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.</p> <p>The criteria to be applied are:</p> <ul style="list-style-type: none">• 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. This will 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. <p>Students may not register for both an International Year and a Placement Year.</p> |
| <p>Student Support</p> |

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

- Phone or Skype conversations with Study Abroad tutors, in line with recommended Academic Mentoring 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 Neuroscience.
5. Demonstrate the use of critical thinking skills, augmented by creativity and curiosity, in discussing the application of their International Year studies to Neuroscience.

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

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

Course Regulations

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

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

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

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

Additional costs for the International Year

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

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

Students 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.

22. Annex - Work Placement Year

Neuroscience 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 Academic Mentor 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 after the placement has commenced. This may be followed up with a second visit, or telephone call, if the need arises.
- Regular (at least weekly) supervision sessions will take place with the placement supervisor (or his/her nominee) throughout the duration of the placement.

Learning Outcomes

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

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

Students will be expected to behave professionally in terms of:

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

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

Additional costs for the Work Placement Year

Tuition fees for students on the Work Placement Year will be charged at 20% of the annual tuition fees for that year of study, as set out in Section 1. The Work Placement Year can be included in your Student Finance allocation; to find out more about your personal eligibility see: www.gov.uk

Students will have to bear the costs of travelling to and from their placement provider, accommodation, food and personal costs. Depending on the placement provider additional costs may include parking permits, travel and transport, suitable clothing, DBS checks, and compulsory health checks.

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

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

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

23. Annex - Programme-specific regulations

Programme Regulations: Neuroscience (Combined Honours)

| | |
|-------------------------------------|--|
| Final Award and Award Titles | <p>BSc (Hons) Neuroscience</p> <p>BSc (Hons) Neuroscience with International Year</p> <p>BSc (Hons) Neuroscience with Work Placement Year</p> <p>BSc (Hons) Studies in Neuroscience</p> <p>BSc (Hons) Studies in Neuroscience with International Year</p> <p>BSc (Hons) Studies in Neuroscience with Work Placement Year</p> |
| Intermediate Award(s) | <p>Diploma in Higher Education</p> <p>Certificate in Higher Education</p> |
| Last modified | November 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:

No variations apply

C) ADDITIONAL REQUIREMENTS

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

Additional requirement 1: Royal Society of Biology Accreditation

If applicable, a pass mark must be obtained in both of our zero-credit, lab-based modules (one at Level 4 and the other Level 5) and the Life Sciences Double Experimental Project with research skills assessment (or, subject to agreement, Double Applied Life Sciences Placement) to attain an accredited degree. For students who do not fulfil the conditions of this regulation, the degree award will be '*Studies in Neuroscience*' and the degree will not be accredited by the Royal Society of Biology.

Additional requirement 2: Attendance

Attendance at tutorials, seminars, workshops and laboratory sessions on this programme is compulsory. Failure to attend a class without good cause will result in an informal warning. Failure to attend any subsequent classes without good cause will lead to the issuing of a formal University warning in accordance with Regulation 1A9 and could result in the requirement to withdraw from the university.

Additional requirement 3: Self-Certification

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

Additional requirement 4: Laboratory and tutorial classes

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

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

Additional requirement 5: 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.

Additional requirement 6: Study Abroad and Field Course

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

3.2 Students taking the final year module LSC-30066: Tropical Biology Field Course will undertake field work in Malaysia between level 5 and 6. Students must achieve the following criteria to be eligible to attend:

- **Academic Performance:** an average of 55% across all modules in Semester 1 at Level 5 is normally required. Places on the course are then conditional on achieving an average mark of 55% across all Level 5 modules. You will still be eligible to apply if you have up to 15 credits of re-assessment, but still meet the 55% requirement. Where no Semester 1 marks have been awarded, performance at Level 4 and ongoing Level 5 assessments are considered.
- **General Aptitude:** demonstrated through interview during Level 5, semester 2 and by recommendation of your academic mentor, year tutors and/or programme director.

At least one male and one female academic member of staff from the School of Life Sciences will accompany you on the field course to offer support.

There are additional costs associated with the tropical field course that change each year. These will be discussed at Level 5 before you need to decide to apply.

[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 February 2023

Previous documents

| Version No | Year | Owner | Date Approved | Summary of and rationale for changes |
|-------------------|-------------|-------------------|----------------------|---|
| 1 | 2022/23 | CHRISTOPHER ADAMS | 01 February 2022 | |
| 1 | 2021/22 | CHRISTOPHER ADAMS | 08 February 2021 | |
| 1 | 2020/21 | MICHAEL EVANS | 19 December 2019 | |
| 1 | 2019/20 | MICHAEL EVANS | 19 December 2019 | |