

Programme Specification: Undergraduate

For students starting in Academic Year 2017/2018

1. Course Summary

Names of programme(s) and award title(s)	BSc (Hons) Neuroscience BSc (Hons) Neuroscience with International Year (see Annex A for details)
Award type	Dual Honours/Major/Minor <i>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.</i>
Mode of study	Full time
Framework of Higher Education Qualification (FHEQ) level of final award	Level 6
Duration	3 years 4 years if taken with an Industrial Placement Year or the International Year option
Location of study	Keele University – main campus
Accreditation (if applicable)	The Major Route is accredited by the Royal Society of Biology. For further details see section 12.
Regulator	Higher Education Funding Council for England (HEFCE)
Tuition Fees	<p>UK/EU students: Fee for 2017/18 is £9,250*</p> <p>International students: Fee for 2017/18 is £14,150** <i>(if combined with a non-laboratory-based Principal Subject)</i> <i>or</i> £15,250** <i>(if combined with a laboratory-based Principal Subject)</i></p> <p>The fee for the international year abroad is calculated at 15% of the standard year fee</p> <p>The fee for the placement year is calculated at 20% of the standard year fee</p>

* 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/>

Additional Costs	Refer to section 18
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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.

2. What is a Dual Honours programme?

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

In a Dual Honours degree you must take at least 120 credits in each Principal Subject, accrued over all three levels of study, with at least 30 credits in Year 1 (Level 4) and at least 45 credits in each of Years 2 and 3 (Levels 5 and 6) in each of two Principal Subjects. For Neuroscience the requirement is 60 credits in each year of study. The remaining available credits can be filled with modules from these subjects or other subjects entirely.

What is a Major/Minor programme?

Major/Minor degrees are degrees that are taken in two different subjects, much like a Dual Honours degree, except that you will specialise in the Major subject. In a Major/Minor degree you will need at least 225 credits in your Major subject over your three years of study with at least two modules (30 credits) taken each year in your Major Subject, although some Principal Subjects will require you to take more than this and this will be stated in the relevant programme specification. For Neuroscience the requirement is 60 credits in Years 1 and 2 (Levels 4 and 5) and at least 105 credits in Year 3 (Level 6).

You will also need 90 credits in your Minor subject with a minimum of 30 credits (two modules) taken in Year 1 (Level 4) and 45 credits (three modules) taken in Year 2 (Level 5). Where Neuroscience is taken as a Minor subject the requirement is 60 credits in Years 1 and 2 (Levels 4 and 5) and up to 15 credits in Year 3 (Level 6).

The Programme normally lasts three years, but it can be extended to four years if a student undertakes a placement year between the second year and the final year.

The major route programme is accredited by the Royal Society of Biology.

3. Overview of the Programme

The Neuroscience programme at Keele provides students with a strong grounding in the key principles of neuroanatomy, neurophysiology, neuropharmacology, cognitive neuroscience and neuropathology. The first year of the programme provides students with a broad coverage of cell and molecular biology, biochemistry, genetics, human physiology and introduces the anatomy and physiology of the nervous system. In the second year, students 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 brain control function. In the final year, students will explore how the brain controls behaviour, the mechanisms underlying neuropathology, how our sensory systems work, explore cutting edge discoveries, and understand how the brain can regenerate and repair itself. During the programme students will receive training in a range of practical techniques, and have the opportunity to spend their final year research project in one of our research laboratories. In the second year of the programme students can opt to spend a semester abroad studying at one of our partner universities, or a year abroad studying or 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, for use in all areas where numeracy and an objective, scientific approach to problem-solving are valued.

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:

- U1 cellular and gross anatomical features of the, developing and adult, peripheral and central nervous system
- U2 neuronal function, from a single cell to simple neuronal networks
- U3 pharmacological principles of neuronal function, and the interaction with pharmaceutical agents
- U4 the basic experimental skills appropriate to the discipline of neuroscience
- U5 the approaches to acquiring, interpreting, analysing data from a variety of sources, including the use of statistics
- U6 neuronal mechanisms of cognitive function, and the relationship to the same phenomena at the behavioural level
- U7 cellular mechanisms underlying pathology of the nervous system
- U8 the contribution of research to the development of neuroscience knowledge
- U9 the use of anatomical and pharmacological terminology in neuroscience
- U10 the relevance of neuroscience to medical problems and improving the quality of life

Subject specific skills

Successful students will be able to:

- S1 use a range of techniques for the acquisition and analysis of information relevant to the subject
- S2 use a range of laboratory techniques to ensure competence in experimental skills
- S3 record and analyse data in a manner that ensure validity, accuracy, calibration, precision, and reliability
- S4 formulate a hypothesis to design, conduct, analyse, report and evaluate experiments
- S5 recognise philosophical and ethical issues relevant to the subject, and appreciate the need for ethical standards and professional codes of conduct
- S6 work safely and responsibly in the laboratory, with awareness of standard procedures

Intellectual skills

Successful students will be able to:

- I1 assess the merits of contrasting theories, paradigms, concepts or principles
- I2 think independently, set tasks and solve problems by a variety of methods
- I3 make reasoned decisions and develop reasoned arguments
- I4 obtain and interpret several lines of subject-specific evidence to formulate and test hypotheses
- I5 make critical interpretations, evaluations and judgements of data and text
- I6 analyse, synthesise and summarise information critically, including published research or reports

- 17 apply scientific understanding to familiar and unfamiliar problems, and emphasise the interdisciplinary nature of science and the validity of different points of view
- 18 take responsibility for their own learning and reflect upon that learning

Key or transferable skills (including employability skills)

Successful students will be able to:

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

In Dual Honours Neuroscience and in Neuroscience (Major) successful students will achieve all the Intended Learning Outcomes (ILOs). In the Neuroscience (Minor) route they will broadly achieve all the ILOs but with less level 6 input. Thus ILOs substantially addressed in the level 6 project (U3, S4, I5), which is not a part of the Neuroscience minor route, will be attained to a lesser extent in Neuroscience, but potentially to a greater extent in the other (major) subject.

Keele Graduate attributes

Engagement with this programme will enable you to develop your intellectual, personal and professional capabilities. At Keele, we call these our ten Graduate Attributes and they include independent thinking, synthesizing information, creative problem solving, communicating clearly, and appreciating the social, environmental and global implications of your studies and activities. Our educational programme and learning environment is designed to help you to become a well-rounded graduate who is capable of making a positive and valued contribution in a complex and rapidly changing world, whichever spheres of life you engage in after your studies are completed.

Further information about the Keele Graduate Attributes can be found here: <http://www.keele.ac.uk/journey/>

6. How is the Programme taught?

Learning and teaching methods used on the programme vary according to the subject matter and level of the module. They include the following:

- **Traditional lectures** where the lecturer provides students with a framework for reading and independent study. Some lecture classes may feature guest speakers from a clinical or research-based area
- **Interactive learning** in large classes where students have the opportunity to work together in smaller groups, interact with the lecturer and reflect on their own learning
- **Practicals** in laboratories are particularly important and involve the study of processes relevant to neuroscience and provide training in a wide range of research techniques

- **Tutorials and seminars** in small groups of students where key issues can be discussed in more depth. Students are expected to play a full part and, occasionally, to lead these discussions. Some tutorials and seminars consist largely of student presentations and some are based on scientific papers studied in advance
- **Independent study** based on directed reading from text books, research papers and research reviews
- **Web-based learning** using the University's virtual learning environment (KLE). The KLE is used to give students easy access to a wide range of resources and research tools, and as a platform for online discussions and quizzes
- For those who choose to take the **dissertation** module in Neuroscience in their final year, the opportunity to undertake a piece of independent study supervised and supported by a member of staff
- For those who choose to take the **experimental project** module in Neuroscience in their final year, the opportunity to undertake a piece of independent experimental research supervised and supported by a member of staff

Apart from these formal activities, students are also provided with regular opportunities to talk through particular areas of difficulty, and any special learning needs they may have, with their Personal Tutors or module lecturers on a one-to-one basis.

These learning and teaching methods enable students to achieve the learning outcomes of the programme in a variety of ways. For example:

- Lectures and independent study allow students to gain knowledge and understanding of neuroscience and its component subjects such as physiology and genetics.
- Seminars, tutorials and online discussions provide opportunities for students to ask questions about the subject, and to present their own ideas to members of staff and other students using an appropriate medium of communication.
- Interactive lectures, seminars, tutorials and web-based activities encourage students to reflect on their own learning and take responsibility for its development by addressing areas of difficulty, perhaps by discussing them with their fellow students or by getting additional help from a member of staff.
- Laboratory practicals allow students insight into the practical aspect of neuroscience and use a range of relevant scientific techniques.
- Undertaking an experimental project with the support of an experienced researcher allows students to formulate relevant research questions and devise, carry out and analyse experiments to answer them.

7. Teaching Staff

Our core teaching staff are mainly from the School of Life Sciences. Teaching staff from the School of Pharmacy, School of Medicine and the University Hospitals of North Midlands NHS Trust also contribute to the Programme. Most staff are active in research. Of the current academic staff in the School, a number have recognised or accredited teaching qualifications, and are Fellows of the Higher Education Academy (HEA).

The University will attempt to minimise changes to our core teaching teams, however, delivery of the programme depends on having a sufficient number of staff with the relevant expertise to ensure that the programme is taught to the appropriate academic standard.

Staff turnover, for example where key members of staff leave, fall ill or go on research leave, may result in changes to the programme's content. The University will endeavour to ensure that any impact on students is limited if such changes occur.

8. What is the Structure of the Programme?

The academic year runs from September to June and is divided into two semesters. The number of weeks of teaching will vary from course to course, but you can generally expect to attend scheduled teaching sessions between the end of September and mid-December, and from mid-January to the end of April.

Our degree courses are organised into modules. Each module is usually a self-contained unit of study and each is usually assessed separately with the award of credits on the basis of 1 credit = 10 hours of student effort. An outline of the structure of the programme is provided in the tables below.

There are four types of module delivered as part of this programme. They are:

- Compulsory core module – a module that you are required to study on this course;
- Optional core module – these allow you some limited choice of what to study from a list of modules;
- Programme approved elective module – subject-related modules that count towards the number of subject credits required by your degree;
- Free-standing elective module – a free choice of modules that count towards the overall credit requirement but not the number of subject-related credits.

Dual Honours

Students must take 60 credits of Neuroscience modules at Levels 4, 5 and 6. At level 6, students must select 15 credits of independent study modules (ISP). Dual Honours students combining Neuroscience with Biochemistry must take a 30-credit ISP (Independent Study Project), either a Double Applied Life Sciences Placement or a Life Sciences Double Experimental Project (with research skills assessment).

Minor Route Neuroscience

This is the same as Dual Honours Neuroscience at level 4 and 5. At level 6, students study either 120 credits (e.g. eight modules) in their other subject or 105 credits in their other subject and 15 credits in Neuroscience. The Neuroscience modules may not include any of the independent study modules (ISP) indicated.

Major Route Neuroscience

This is the same as Dual Honours Neuroscience at level 4 and 5. At level 6, students study either 120 credits in Neuroscience (and none in their other subject) or 105 credits in Neuroscience and 15 credits in their other subject. Within this framework, students first select their 30 credit ISP module then select their other modules to make a total of 120 credits for the year. Students who choose a Dissertation or non-experimental project must ensure that it has a research area or question that is distinct from their 30-credit ISP module.

Year 1 (Level 4)

Compulsory Core modules	Credits	Optional Core / Programme Approved Elective modules	Credits
Introduction to Neuroscience	30	Cell and Molecular Biology	15
		Neurophysiology	15
		Human Physiology and Pathology	15
		Genetics and Evolution	15

Year 2 (Level 5)

Compulsory Core modules	Credits	Optional Core / Programme Approved Elective modules	Credits
Neuroscience Research Methods	30	From Neurone to Brain	15
Research and Analytical Skills (<i>Study Abroad students only</i>)	15	Neurodevelopment	15
		Learning and Memory	15
		Neuropharmacology	15
		Life Sciences Study Abroad*	30

**Students who undertake one semester of Study Abroad (as opposed to the International Year option – see Annex A) may only undertake Study Abroad in semester 1 of Level 5.*

Year 3 (Level 6) Neuroscience & Biochemistry

Compulsory Core modules <i>NB: one of the following modules must be taken:</i>	Credits	Optional Core / Programme Approved Elective modules	Credits
Life Sciences Double Experimental Research Project ISP	30	Behavioural Neuroscience	15
		Neurobiological Basis of Brain Disease	15
		Special Senses	15
Double Applied Life Sciences Placement ISP	30	Regeneration and Repair in the Nervous System	15
		Current Topics in Neuroscience	15

Year 3 (Level 6) (Neuroscience & subject outside of Life Sciences)

Optional Core modules <i>NB: one of the following modules must be taken:</i>	Credits	Optional Core / Programme Approved Elective modules	Credits
		Behavioural Neuroscience	15
Life Sciences Single Experimental Project ISP	15	Neurobiological Basis of Brain Disease	15
Applied Life Sciences Placement ISP	15	Special Senses	15
<u>Life Sciences Dissertation ISP (LSC-30050)</u>	<u>15</u>	Regeneration and Repair in the Nervous System	15
<u>Life Sciences non-experimental project ISP (LSC-30047)</u>	<u>15</u>	Current Topics in Neuroscience	15

Year 3 (Level 6) Major route

Compulsory Core modules	Credits	Optional Core (Choose 15 credits)	Credits
Life Sciences Double Experimental Research Project ISP OR Double Applied Life Sciences Placement ISP	30 30	Life Sciences Non-Experimental Project ISP OR Life Sciences Dissertation ISP	15 15
Behavioural Neuroscience	15	Options (choose 15 credits)*	
Neurobiological Basis of Brain Disease	15	Special Senses	15
Regeneration and Repair in the Nervous System	15	Advances in Medicine LSC-30028	15
Current Topics in Neuroscience	15	Clinical Pathology LSC-30009	15
		Applied Regenerative Medicine LSC-30068	15

*Students may also choose a 15 credit module from their minor subject

For further information on the content of modules currently offered please visit:

www.keele.ac.uk/recordsandexams/az

Learning Outcomes

The table below sets out what students learn in the Programme, the modules in which that learning takes place, and the main ways in which students are assessed on their learning.

Subject Knowledge and Understanding		
Learning Outcome	Module in which this is delivered	Principal forms of assessment (of

<i>Successful students will be able to demonstrate knowledge & understanding of:</i>		the Level Outcome) used
U1. cellular and gross anatomical features of the, developing and adult, peripheral and central nervous system.	All modules	All assessments
U2. neuronal function, from a single cell to simple neuronal networks.	All modules	All assessments
U3. pharmacological principles of neuronal function, and the interaction with pharmaceutical agents.	All modules	All assessments
U4. the basic experimental skills appropriate to the discipline of neuroscience.	All modules	Multiple-choice class tests and examinations, lab reports, project reports, dissertations
U5. the approaches to acquiring, interpreting, analysing data from a variety of sources, including the use of statistics.	All modules	Multiple-choice class tests and examinations, lab reports, project reports, dissertations
U6. neuronal mechanisms of cognitive function, and the relationship to the same phenomena at the behavioural level.	All modules	All assessments
U7. cellular mechanisms underlying pathology of the nervous system.	All modules	All assessments
U8. the contribution of research to the development of neuroscience knowledge.	All modules	All assessments
U9. the use of anatomical and pharmacological terminology in neuroscience.	All modules	All assessments
U10. the relevance of neuroscience to medical problems and improving the quality of life.	All modules	All assessments

Subject Specific Skills		
Learning Outcome	Module in which this is delivered	Principal forms of assessment (of the Level Outcome) used
<i>Successful students will be able to:</i>		
S1. use a range of techniques for the acquisition and analysis of information relevant to the subject	All modules with practical sessions, particularly Research and Analytical Skills, Neuroscience Research Methods	Laboratory reports, laboratory performance, data analysis exercises, project reports, dissertations
S2. use a range of laboratory techniques to ensure competence in experimental skills.	All modules with practical sessions and particularly Experimental Project	Laboratory reports, laboratory performance, data analysis exercises, project reports,

		dissertations
S3. record and analyse data in a manner that ensure validity, accuracy, calibration, precision, and reliability	All modules	Essays, project reports, dissertations
S4. formulate a hypothesis to design, conduct, analyse, report and evaluate experiments.	All modules with practical sessions	Laboratory reports, laboratory performance, data analysis exercises, project reports, dissertations
S5. recognise philosophical and ethical issues relevant to the subject, and appreciate the need for ethical standards and professional codes of conduct.	Genetics and Evolution, Neuroscience Research, Research & Analytical Skills, level 6 ISPs	Dissertations, essays, multiple choice tests
S6. work safely and responsibly in the laboratory, with awareness of standard procedures	All modules with practical sessions	Laboratory reports, project reports

Intellectual Skills		
Learning Outcome	Module in which this is delivered	Principal forms of assessment (of the Level Outcome) used
<i>Successful students will be able to:</i>		
I1. assess the merits of contrasting theories, paradigms, concepts or principles	All modules, particularly those at level 6	Essays, reports, examinations, project reports, dissertations
I2. think independently, set tasks and solve problems by a variety of methods	All modules with a practical component	Laboratory reports, project reports, dissertations
I3. make reasoned decisions and develop reasoned arguments	All modules, particularly those at level 6	Essays, project reports, dissertations
I4. obtain and interpret several lines of subject- specific evidence to formulate and test hypotheses	Most modules at level 5 and all modules at level 6	Essays, data analysis exercises. project reports, dissertations
I5. make critical interpretations, evaluations and judgements of data and text	Most modules at level 5 and all modules at level 6	Essays, data analysis exercises, project reports, dissertations
I6. analyse, synthesise and summarise information critically, including published research or reports	Neuroscience Research Methods, Research and Analytical Skills, and all level 6 modules	Essays, project reports, dissertations
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 modules – especially those at level 6	Essays, project reports, dissertations
I8. take responsibility for their own learning and reflect upon that learning	All modules – especially those at level 6	Laboratory performance, Personal Development Planning

Key or Transferable Skills (including employability skills)		
Learning Outcome	Module in which this is delivered	Principal forms of assessment (of the Level Outcome) used
<i>Successful students will be able to:</i>		
E1. develop an adaptable, flexible, sustainable and effective approach to study and work, including time management, creativity and intellectual integrity	All modules	Essays, dissertations, experimental projects. laboratory performance
E2. acquire, analyse, synthesise, summarise and present information and ideas from a wide range of sources: textual, numerical, verbal, graphical	All modules, particularly ISPs	Essays, dissertations
E3. prepare, process, interpret and present data using appropriate qualitative and quantitative techniques, statistical programmes, spreadsheets and programs for presenting data visually	All modules with practical sessions, particularly Neuroscience Research Methods, Research and Analytical Skills, Experimental Project	Project reports, data analysis exercises, laboratory reports
E4. use the internet and other electronic sources critically as a means of communication and a source of information	All modules	Presentations, data analysis exercises, project reports
E5. cite and reference work in an appropriate manner, avoiding issues with plagiarism	All modules	Essays, reports, presentations, project reports, dissertations
E6. communicate effectively to a variety of audiences by written, spoken and graphical means using appropriate techniques and scientific language	All modules	Essays, reports, presentations, project reports, dissertations
E7. develop skills necessary for self-managed and lifelong learning, including working independently, organisational, enterprise and knowledge transfer skills	All modules particularly level 6 ISPs	Essays, dissertations, project reports
E8. work with others to achieve an objective in a respectful manner that is accepting of the viewpoints and opinions of others and evaluates the roles and development of team members	All modules	Laboratory performance, dissertation, experimental project
E9. motivate themselves and sustain that motivation over an extended period of time	All modules	Essays, reports, presentations, project reports, dissertations
E10. identify and work towards targets for personal, academic and	All modules	Essays, reports, presentations, project reports, dissertations

career development		
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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>The number of Neuroscience credits a student requires depends on whether Neuroscience is taken as a Dual, Major or Minor subject.</p> <p>Dual Honours: You will require a total of 360 credits in both Neuroscience and your other Principal subject, with a total 120 credits, including 60 credits in Neuroscience, in each year of study.</p> <p>Major Route: You will require at least 225 credits in Neuroscience and at least 90 credits in their other Minor subject over the course of the degree. Students taking Neuroscience as a Major subject must obtain at least 60 credits in Years 1 and 2 (Levels 4 and 5) and at least 105 credits in Year 3 (Level 6).</p> <p><i>NB:</i> the Major Route is accredited by the Royal Society of Biology*</p> <p>Minor Route: You will require at least 90 credits in Neuroscience and at least 225 credits in your other Major subject over the course of the degree. Students taking Neuroscience as a Minor subject must obtain at least 60 credits in Years 1 and 2 (Levels 4 and 5).</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

NB: Students who do not achieve a pass mark in the 30 credit ISP will not have the Accredited by the Royal Society of Biology in their degree title.

Neuroscience with International Year: in addition to the above students must pass a non-credit bearing module covering the international year in order to graduate with a named degree in Neuroscience with International Year. Students who do not complete, or fail the international year, will be transferred to the three-year Neuroscience programme.

10. How is the Programme assessed?

The wide variety of assessment methods used within Neuroscience 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 within Neuroscience:

- **Unseen examinations** in different formats test students' knowledge and understanding of neuroscience. Examinations may consist of essay, short answer and/or multiple choice questions

- **Essays**, including those based on case study material, also test the quality and application of subject knowledge. In addition they allow students to demonstrate their ability to carry out basic bibliographic research and to communicate their ideas effectively in writing in an appropriate scholarly style using the Harvard system of referencing. The portfolio (Current Research Topics in Neuroscience) is similar, but has an additional emphasis on concisely summarising current research papers and emphasising what is new and important about the research paper
- **Class tests** taken either conventionally or online via the Keele Learning Environment (KLE) assess students' subject knowledge and their ability to apply it in a more structured and focused way. These tests may for example focus on comprehension of a relevant research paper published in a science journal
- **Dissertations** are critical reviews of other scholars' work and test students' ability to identify and summarise the key points of a text and to evaluate the quality of arguments and the evidence used to support them. In the case of work based on empirical research, reviews also assess students' knowledge of research methodologies and their ability to make critical judgements about the appropriateness of different strategies for collecting and analysing data
- **Experimental projects** test students' knowledge of research methodologies and their ability to carry them out. They also enable students to demonstrate their ability to formulate research questions, design experiments, carry them out and analyse the results
- **Non-Experimental projects** test students' knowledge of research methodologies and their ability to carry them out. They are presented with some data which they analyse and report upon, in the context of current knowledge in that specific area
- **Laboratory reports** are formal summaries of work carried out in the laboratory, presenting analysed data and conclusions. They test a range of practical laboratory skills and the ability to collect analyse and present data
- **Oral presentations** assess students' subject knowledge and understanding. They also test their ability to work effectively as members of a team, to communicate what they know orally and visually, and to reflect on these processes as part of their own personal development
- **Case-based tutorials allow small group interactive learning**

Marks are awarded for summative assessments designed to assess your achievement of learning outcomes. You will also be assessed formatively to enable you to monitor your own progress and to assist staff in identifying and addressing any specific learning needs. Feedback, including guidance on how you can improve the quality of your work, is also provided on all summative assessments within three working weeks of submission, unless there are compelling circumstances that make this impossible, and more informally in the course of tutorial and seminar discussions.

11. Contact Time and Expected Workload

This contact time measure is intended to provide you with an indication of the type of activity you are likely to undertake during this programme. The data is compiled based on module choices and learning patterns of students on similar programmes in previous years. Every effort is made to ensure this data is a realistic representation of what you are likely to experience, but changes to programmes, teaching methods and assessment methods mean this data is representative and not specific.

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

Activity	Year 1 (Level 4)	Year 2 (Level 5)	Year 3 (Level 6)
Scheduled learning and teaching activities	28%	24%	17%
Guided independent Study	72%	76%	83%
Placements	0%	0%	0%

12. Accreditation

The Major Route is accredited by the Royal Society of Biology (RSB). This means that the degree awarded will have the title “BSc (Hons) Neuroscience with xxxx Accredited by the Royal Society of Biology.

The RSB declare that “Degree accreditation follows an independent and rigorous assessment of degree programmes which contain a solid academic foundation in biological knowledge and key skills, and prepare graduates to address the needs of employers.”

The accreditation criteria require evidence that graduates from accredited programmes meet defined sets of learning outcomes, including subject knowledge, technical ability and transferable skills. Degree accreditation by the Royal Society of Biology aims to: foster the development of key learning outcomes and recognise the excellence that exists in giving graduates the skills, knowledge and experience to develop as bioscientists, including their contribution to global needs”

Taking an accredited degree therefore means that employers will be assured that a graduate has the skills that they would expect of a professional biologist.

13. 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/>

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

The following course specific regulations should be noted:

- Wearing a laboratory coat is compulsory in all laboratories. Students will not be allowed to attend the laboratory class without a laboratory coat.
- 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.
- 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.

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

Subject	A-level	Subjects not included	International Baccalaureate	BTEC	Access to Higher Education Diploma	GCSE requirements
Neuroscience (Dual Honours)	ABC / BBB A level Applied Science, Biology, Chemistry, Human Biology, Maths, Sports Science or Statistics. A Pass in	General Studies and Critical Thinking	32 points to include a Higher Level Science subject at 6 or above.	DDM You must have taken sufficient Science units, please contact us for advice.	Obtain Access to Higher Education Diploma with 30 Level 3 credits at Distinction and 15 Level 3 credits at Merit. You must also have taken sufficient	Maths @ C (or 4) English Lang @ C (or 4)

	<p>Science Practical will be required if applicant is taking A level Biology, Chemistry or Physics (England)**</p> <p>** Science practical only required from applicants taking reformed A level Biology, Chemistry or Physics in England.</p>				<p>Science credits, please contact us for advice.</p>	
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Applicants who are not currently undertaking any formal study or who have been out of formal education for more than 3 years and are not qualified to A-level or BTEC standard may be offered entry to the University's Foundation Year Programme.

Applicants for whom English is not a first language must provide evidence of a recognised qualification in English language. The minimum score for entry to the Programme is Academic IELTS 6.0 or equivalent.

Please note: All non-native English speaking students are required to undertake a diagnostic English language assessment on arrival at Keele, to determine whether English language support may help them succeed with their studies. An English language module may be compulsory for some students during their first year at Keele.

Accreditation of Prior Learning (APL) 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/accreditationofpriorlearning/>

15. How are students supported on the programme?

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

- Module tutors are responsible for providing support for learning on the modules. They also give individual feedback on in-course assessments and more general feedback on examinations.
- Tutors and demonstrators provide help and advice to students in laboratory sessions.
- Every student is allocated to a personal tutor who is responsible for reviewing and advising on students' academic progress in Neuroscience and on their other Principal Programme.
- Personal tutors also act as a first point of contact for students on non-academic issues which may affect their learning and can refer students on to a range of specialist health, welfare and financial services coordinated by the University's Centre for Learning and Student Support.

All members of teaching staff on the Neuroscience Principal Programme are available to see students during office hours, if available, and by appointment.

16. Learning Resources

Neuroscience is taught in modern teaching rooms across the University, almost all of which are equipped with computers, internet access and electronic whiteboards or projection equipment. Rooms may be arranged either in traditional lecture format or more informally to allow students to work together in small groups.

Practical sessions are held in dedicated and up-to-date teaching laboratories within the School of Life Sciences.

The learning resources available to students on the Programme include:

- The extensive collection of books and journals relevant to undergraduate study held in the University Library. Much of this material is also accessible online to Keele students from anywhere in the world with a University username and password.

- A smaller collection of textbooks held in the Undergraduate Resource Room in the School of Life Sciences. The Resource Room is open at regular times during teaching periods and the resources are specifically related to the needs of students on Principal Programmes in the School of Life Sciences.
- The Keele Learning Environment (KLE) which provides easy access to a wide range of learning resources including lecture notes, electronic materials available in a repository maintained by the University Library and other resources – video, audio and text-based – accessible from external providers via the internet.

17. Other learning opportunities

Placement Year

Students have the option of spending a year between Level 5 and Level 6 on a placement year. Students may choose to spend the placement in the research laboratory or a partner university, or in industry.

Study abroad (semester)

Students on the Neuroscience 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 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 at Annex A.

Other opportunities

During their time at Keele, Neuroscience students also have the opportunity to hear from, and talk to, a range of guest speakers and presenters including researchers from around the world. Some of these activities are timetabled as part of taught modules, others are organised separately but are widely advertised and undergraduate students are always welcome to attend

18. Additional costs

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 additional costs for this undergraduate programme.

19. Quality management and enhancement

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

- The Learning and Teaching Committee of the School of Life Sciences is responsible for reviewing and monitoring quality management and enhancement procedures and activities across the School.
- Individual modules and the Neuroscience 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 and as part of the University's Curriculum Annual Review and Development (CARD) process.
- The programmes are run in accordance with the University's Quality Assurance procedures and are subject to periodic reviews under the Internal Quality Audit (IQA) process.

Student evaluation of, and feedback on, the quality of learning on every Neuroscience 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 the Curriculum Annual Review and Development (CARD) process.
- Findings related to the Neuroscience Programmes 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 Neuroscience Programme is considered and acted on at regular meetings of the Programmes Staff/Student Liaison 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 Neuroscience Programmes described in this document have 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/assuring-standards-and-quality/the-quality-code>
- b. QAA Subject Benchmark Statement: Biosciences (2007)
<http://www.qaa.ac.uk/en/Publications/Documents/Subject-benchmark-statement-Biosciences.pdf>
- c. Keele University Regulations and Guidance for Students and Staff: <http://www.keele.ac.uk/regulations>

21. Document Version History

Version history	Date	Notes
Date first created	October 2016	
Revision history		
Date approved		

Programme Specification

Annex A for Dual Honours Programmes

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

International Year Programme

Students registered for Dual Honours **Neuroscience** may either be admitted for or apply to transfer during their period of study at Level 5 to the Dual 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.

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 Dual 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.

Study at Level 4, Level 5 and Level 6 will be as per the main body of this programme specification. The additional detail contained in this annex will pertain solely to students registered for Dual Honours Neuroscience with International Year'.

International Year Programme Aims

In addition to the programme aims specified in the main body of the programme specification, 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 their 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 60% across all modules at Level 5 is normally required)
- General Aptitude (to be demonstrated by application for study abroad, interview during the 2nd semester of year 2 (Level 5), and by recommendation of the student's personal tutor, 1st and 2nd year tutors and programme director)

Student Support

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

- Phone or Skype conversations with Study Abroad tutors, in line with recommended Personal Tutoring meeting points.
- Support from the University's Global Education Team

Learning Outcomes

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

- a. Describe, discuss and reflect upon the cultural and international differences and similarities of different learning environments
- b. Discuss the benefits and challenges of global citizenship and internationalisation
- c. Explain how their perspective on their academic discipline has been influenced by locating it within an international setting.

In addition, students who complete 'Dual Honours Neuroscience with International Year' will be able to:

- i) Use independent research skills to identify relevant information resources on a range of subjects related, or complementary, to Neuroscience.
- ii) 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 Dual 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 Dual Honours Neuroscience with International Year' are subject to the course 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 areas.

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 Neuroscience module with significant overlap to 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.

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