

Programme Specification

MSc Neuroscience (2020-21)

This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if s/he takes full advantage of the learning opportunities that are provided.

Awarding Institution	University of Southampton
Teaching Institution	University of Southampton
Mode of Study	Full-time
Duration in years	1
Accreditation details	None
Final award	Master of Science (MSc)
Name of award	Neuroscience
Interim Exit awards	Postgraduate Diploma in Higher Education Postgraduate Certificate in Higher Education
FHEQ level of final award	Level 7
UCAS code	
Programme code	8161
QAA Subject Benchmark or other external reference	
Programme Lead	James Dillon

Programme Overview

Brief outline of the programme

The programme builds on the existing Integrated Neuroscience Masters with its research-focused neuroscience content that allows progressive specialisation in the field. The Masters in Neuroscience post-graduate degree will offer a balanced programme where students will gain the relevant skills and knowledge required for a career in Neuroscience.

Newly created modules in advanced human neuroanatomy, neuronal and glial physiology in health and disease will form the key pillars of the taught component of this program. This will be complimented by compulsory research focused, interactive experimental workshops exposing students to the extensive Neuroscience expertise in Southampton. Workshops will focus on neuro-drug discovery, model organisms in neurological disease, dementia research including iPSC-models and neuropathological studies, neural networks, behavioural neurosciences, cell and molecular neurobiology and interdisciplinary neuroscience. You will undertake an individual extended research-based project, in one of fourteen research labs currently conducting cutting-edge neuroscience research. Research spans normal physiological function (such as circadian biology, aging processes

and synaptic physiology) to neurodegenerative disease (such as dementia research, neuroinflammation, translational research). Additionally there will be a variety of optional modules on offer including a library-based dissertation, critiques on current research seminars, neuroimaging, critical thinking as well as other skills-based modules. You will also have the option to study allied subjects such as Psychology and Ethics in the context of Neuroscience. Teaching will be conducted in both traditional lecture-style groups as well as smaller interactive workshop based groups and practicals, led by both UoS research active neuroscientists, as well as external invited experts in the field. Throughout the programme, students will undertake independent reading both to supplement and consolidate the taught material and to broaden their knowledge and understanding of neuroscience. Through assessments, students will be taught to critically assess research papers, synthesize evidence based written scientific arguments and disseminate data through poster and oral presentations.

Your contact hours will vary depending on your module/option choices. Full information about contact hours is provided in individual module profiles.

Learning and teaching

Eight taught modules are taken, four in semester one and four in semester two. Of these, 5 are compulsory modules and 3 are optional modules that can be chosen from a pool of 10 neuroscience modules. Some of the modules comprise of lectured units normally consists of two lectures a week plus a practical component (the nature of which differs depending on the module). Some of the compulsory modules, have extended workshop formats supplemented by hands-on experimental elements involving interactions between small groups of students and academics. Additionally, some modules take the format of research seminars, dominated by the research project and guided study. The contribution of practicals and other components of in-course assessment to the final mark will vary from module to module. In semester 3, a lab-based research project, equivalent to 4 modules will be undertaken. This culminates in a manuscript-style written dissertation and oral/poster presentation at the annual Southampton Neuroscience Group conference at the end of the academic year.

Assessment

Examinations are held in the two weeks after each semester, in January and June

Special Features of the programme

N/A

Please note: As a research-led University, we undertake a continuous review of our programmes to ensure quality enhancement and to manage our resources. As a result, this programme may be revised during a student's period of registration; however, any revision will be balanced against the requirement that the student should receive the educational service expected. Please read our [Disclaimer](#) to see why, when and how changes may be made to a student's programme.

Programmes and major changes to programmes are approved through the University's [programme validation process](#) which is described in the University's [Quality handbook](#).

Educational Aims of the Programme

Neuroscience is the study of all aspects of the nervous system, from the molecular to behavioural level, and is addressed in the context of the physiology and pathology of the whole organism. Graduates in Neuroscience are needed to help address key challenges for society such as neurological and psychological conditions, as well as to improve fundamental understanding of brain function. Graduates are also well qualified to go on to a variety of areas of employment. In Southampton you will undertake a balanced programme where you will gain the relevant skills and knowledge required for a career in this subject area.

Programme Learning Outcomes

Learning Outcomes

- A1. demonstrate a comprehensive knowledge and systematic understanding of the principles of neuroanatomy and neurophysiology and its interactions with other systems in the body
- A2. appreciate how dysfunction and degeneration in the structure and function of the nervous system underpins neurological and neurodegenerative disease
- A3. demonstrate a knowledge of neuronal and glial function in physiological and pathological states
- A4. demonstrate knowledge of cutting edge experimental techniques and their use in Neuroscience research
- A5. critically analyse and evaluate published scientific articles and appreciate their contribution to current understanding in general and specific neuroscience research areas
- A6. synthesize and formulate scientific arguments and present them in recognized written scientific formats.
- A7. present scientific arguments and/or data orally in a logical and succinct manner to both scientific and lay audiences
- A8. a detailed knowledge and critical understanding of a key research area with Neuroscience gained through independent study
- A9. carry out, with supervision, an independent original scientific project in an area of Neuroscience research.
- A10. evaluate and present scientific data obtained demonstrating proficiency in use of statistical tests
- A11. become proficient in carrying out searches in literature databases and be able to use appropriate referencing software
- A12. appreciate the importance of scientific method, enquiry and ethical responsibility when conducting scientific research
- A13. demonstrate an ability to conduct self-directed and self-motivated independent study

Programme Structure

The programme structure table is below:

Information about pre and co-requisites is included in individual module profiles.

Part 1

Code	Module Title	ECTS	Type
BIOL6035	Cellular and Molecular Neuroscience 2019-20	7.5	Compulsory
BIOL6078	Structure and Function of the Nervous System	7.5	Compulsory
BIOL6080	Synaptic Function in Health and Disease	7.5	Compulsory
BIOL6084	Advanced Neuroscience	7.5	Compulsory

Part 1 Optional Modules

Select 3 modules from the following

Code	Module Title	ECTS	Type
BIOL6023	Cellular Signalling in Health and Disease 2019-20	7.5	Optional
BIOL6022	Molecular Pharmacology 2019-20	7.5	Optional
BIOL6045	Neurodegenerative Disease 2019-20	7.5	Optional
BIOL6036	Neuropharmacology of CNS Disorders 2019-20	7.5	Optional
BIOL6034	Systems Neuroscience 2019-20	7.5	Optional

Part 2

Code	Module Title	ECTS	Type
BIOL6092	MSc Neuroscience Research Project 2019-20	30	Compulsory

Progression Requirements

The programme follows the University's regulations for [Progression, Determination and Classification of Results : Undergraduate and Integrated Masters Programmes](#) and [Progression, Determination and Classification of Results: Postgraduate Master's Programmes](#) as set out in the University Calendar: <http://www.calendar.soton.ac.uk/sectionIV/sectIV-index.html>

Support for student learning

There are facilities and services to support your learning some of which are accessible to students across the University and some of which will be geared more particularly to students in your particular Faculty or discipline area.

The University provides:

- library resources, including e-books, on-line journals and databases, which are comprehensive and up-to-date; together with assistance from Library staff to enable you to make the best use of these resources
- high speed access to online electronic learning resources on the Internet from dedicated PC Workstations onsite and from your own devices; laptops, smartphones and tablet PCs via the Eduroam wireless network. There is a wide range of application software available from the Student Public Workstations.
- computer accounts which will connect you to a number of learning technologies for example, the Blackboard virtual learning environment (which facilitates online learning and access to specific learning resources)
- standard ICT tools such as Email, secure filestore and calendars.
- access to key information through the MySouthampton Student Mobile Portal which delivers timetables, Module information, Locations, Tutor details, Library account, bus timetables etc. while you are on the move.
- IT support through a comprehensive website, telephone and online ticketed support and a dedicated helpdesk in the Hartley Library.
- Enabling Services offering support services and resources via a triage model to access crisis management, mental health support and counselling. Support includes daily Drop In at Highfield campus at 13.00 – 15.00 (Monday, Wednesday and Friday out of term-time) or via on-line chat on weekdays from 14.00 – 16.00. Arrangements can also be made for meetings via Skype.
- assessment and support (including specialist IT support) facilities if you have a disability, long term health problem or Specific Learning Difficulty (e.g. dyslexia).
- the Student Services Centre (SSC) to assist you with a range of general enquiries including financial matters, accommodation, exams, graduation, student visas, ID cards
- Career and Employability services, advising on job search, applications, interviews, paid work, volunteering and internship opportunities and getting the most out of your extra-curricular activities alongside your degree programme when writing your CV
- Other support that includes health services (GPs), chaplaincy (for all faiths) and 'out of hours' support for students in Halls and in the local community, (18.00-08.00)
- A Centre for Language Study, providing assistance in the development of English language and study skills for non-native speakers.

The Students' Union provides

- an academic student representation system, consisting of Course Representatives, Academic Presidents, Faculty Officers and the Vice-President Education; SUSU provides training and support for all these representatives, whose role is to represent students' views to the University.
- opportunities for extracurricular activities and volunteering
- an Advice Centre offering free and confidential advice including support if you need to make an academic appeal
- Support for student peer-to-peer groups, such as Nightline.

We aim to provide a friendly and supportive environment for you to pursue your studies. You will have a personal academic tutor to offer general help, advice and encouragement on academic and pastoral matters throughout your undergraduate career.

Associated with your programme you will be able to access:

- An induction programme at the start of the course, which will provide orientation, information on modules, courses, library and computer facilities.
- Programme handbooks, module handbooks and material on the web.

- Library and academic skill packages.
- Well-equipped laboratories.
- Academic and pastoral support from members of staff, including your academic tutor which will include scheduled meetings at appropriate occasions during the academic year.
- Access to all administrative and academic material on the CBS, Programme and individual module web sites and/or Blackboard (<http://www.blackboard.soton.ac.uk>).
- Access to all academic staff through an appointment system and e-mail.
- Access to administrative staff in the Faculty Student Offices during the normal working day.
- Feedback on assessment.

Methods for evaluating the quality of teaching and learning

You will have the opportunity to have your say on the quality of the programme in the following ways:

- Completing student evaluation questionnaires for each module of the programme
- Acting as a student representative on various committees, e.g. Staff/Student Liaison Committees, Faculty Education Committee OR providing comments to your student representative to feed back on your behalf.
- Serving as a student representative on Faculty Scrutiny Groups for programme validation
- Taking part in programme validation meetings by joining a panel of student to meet with the Faculty Scrutiny Group

The ways in which the quality of your programme is checked, both inside and outside the University, are:

- Regular module and programme reports which are monitored by the School
- Programme validation, normally every five years.
- External examiners, who produce an annual report
- A national Research Excellence Framework (our research activity contributes directly to the quality of your learning experience)
- Institutional Review by the Quality Assurance Agency
- The Academic Unit of Biological Sciences has an Education Executive that monitors and evaluates all aspects of learning and teaching at undergraduate level. It considers the results of student feedback and takes appropriate action to remedy any shortcomings. The Director of Programmes acts on the results of peer observation of teaching and reports from our External Examiners who are selected from comparator universities.

Further details on the University's quality assurance processes are given in the [Quality Handbook](#).

Career Opportunities

There is potential for a variety of transferrable skills to be incorporated into the structure of course and careers/employability activities can easily be included. The inherent attendance to a national conference already affords networking and employability opportunities that can be further enhanced with focused workshops and careers talks within programme. Some work-packages that are to be offered (in advanced neurosciences, a compulsory module) are in work related areas such as drug design and discovery, biosciences communication and biosciences education.

External Examiner(s) for the programme

Students must not contact External Examiner(s) directly, and external examiners have been advised to refer any such communications back to the University. Students should raise any general queries about the assessment and examination process for the programme with their Course Representative, for consideration through Staff: Student Liaison Committee in the first instance, and Student representatives on Staff: Student Liaison Committees will have the opportunity to consider external examiners' reports as part of the University's quality

assurance process.

External examiners do not have a direct role in determining results for individual students, and students wishing to discuss their own performance in assessment should contact their Personal Academic Tutor in the first instance.

Please note: This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if s/he takes full advantage of the learning opportunities that are provided. More detailed information can be found in the programme handbook.

Appendix 1:

Students are responsible for meeting the cost of essential textbooks, and of producing such essays, assignments, laboratory reports and dissertations as are required to fulfil the academic requirements for each programme of study. In addition to this, students registered for this programme also have to pay for:

Additional Costs

Type	Details
Software Licenses	All software is provided
Clothing	One laboratory coat and a pair of safety spectacles are provided at the start of the programme to each student. If these are lost the student must replace them at their own expense. The Students Union Shop stock these items.
Parking costs (including on placements at hospitals)	There may be a requirement to undertake work at Southampton General Hospital (SGH), for example during a final year research project. Students may need to cover costs for transport to travel to SGH or for car parking.
Hardware	It is advisable that students provide their own laptop or personal computer, although shared facilities are available across the University campus.
Computer discs or USB drives	Students are expected to provide their own portable data storage device.
Stationery	You will be expected to provide your own day-to-day stationary items, e.g. pens, pencils, notebooks, etc. Any specialist stationery items will be specified under the Additional Costs tab of the relevant module profile.
Textbooks	<p>Where a module specifies core texts these should generally be available on the reserve list in the library. However due to demand, students may prefer to buy their own copies. These can be purchased from any source.</p> <p>Some modules suggest reading texts as optional background reading. The library may hold copies of such texts, or alternatively you may wish to purchase your own copies. Although not essential reading, you may benefit from the additional reading materials for the module.</p>
Laboratory Equipment and Materials	All materials required for laboratory work are provided. Where necessary, suitable specialist safety equipment will be provided.
Approved Calculators	Candidates may use calculators in the examination room only as specified by the University and as permitted by the rubric of individual examination papers.
Printing and Photocopying Costs	<p>Coursework such as essays; projects; dissertations may be submitted on line. In the majority of cases, though, students will be asked to provide a printed copy. The University printing costs are currently: A4 - 4p per side (black and white) or 18p per side (colour) A3 - 8p per side (black and white) or 35p per side (colour)</p> <p>Please Note: Paper sizes not recognised by the printing devices will prompt you to select the size and then charge a minimum of 50p per black and white copy and a maximum of £1 per colour copy.</p> <p>You can pay for your printing by using the money loaders or by using print copy payment service by going to www.printcoppayments.soton.ac.uk Please remember that we are unable to refund any credit that has not been used by the end of your course, so please consider this when topping up your printing/copy account</p> <p>The University Print Centre also offers a printing and copying service as well as a dissertation/binding service. Current printing and copying costs can be</p>

	found here. They also provide a large format printing service, e.g. Academic posters. Details of current costs can be found here.
Travel Costs for placements	<p>Students who choose to go on an industrial placement at the end of Part 2 can expect to cover costs for health and travel insurance, accommodation and living expenses; travel costs; visa costs.</p> <p>This will vary depending on which country you are travelling to.</p>

In some cases you'll be able to choose modules (which may have different costs associated with that module) which will change the overall cost of a programme to you. Details of such costs will be listed in the Module Profile. Please also ensure you read the section on additional costs in the University's Fees, Charges and Expenses Regulations in the University Calendar available at www.calendar.soton.ac.uk.