Programme Specification

A statement of the knowledge, understanding and skills that underpin a taught programme of study leading to an award from The University of Sheffield

1	**Programme Title**	Translational Neuroscience
2	**Programme Code**	MEDT14, MEDT15, MEDT42
3	**JACS Code (if applicable)**	B140
4	**Level of Study**	Postgraduate
5a	**Final Qualification**	Master of Science (MSc)
5b	**QAA FHEQ Level**	7
6a	**Intermediate Qualification(s)**	Postgraduate Diploma (PGDip), Postgraduate Certificate (PGCert)
6b	**QAA FHEQ Level**	7
7	**Teaching Institution (if not Sheffield)**	Not applicable
8	**Faculty**	Health
9	**School**	Medicine and Population Health
10	**Other schools involved in teaching the programme**	Biosciences
11	**Mode(s) of Attendance**	Full-time
12	**Duration of the Programme**	12 months
13	**Accrediting Professional or Statutory Body**	None
14	**Date of production/revision**	December 2016, Revised July 2017, Revised October 2022

15. Background to the programme and subject area

Translational Neuroscience applies findings from fundamental laboratory research relating to brain structure and function to development of new therapies for neurological diseases. These diseases are a huge economic burden to society and a cause of much suffering to patients and carers alike. Translational neuroscience is a new and rapidly advancing area of biomedical research with massive therapeutic and commercial potential. Our MSc programme offers theoretical and practical training in fundamental aspects of contemporary neuroscience encompassing molecular, cellular, anatomical and behavioural levels and draws on examples from model organism and patient-based studies.

The programme combines core teaching of the fundamental aspects of major neuropathological diseases, with significant emphasis on the development of practical laboratory skills. Additionally, students have the opportunity to undertake neuroanatomy dissection and to work with leading research groups during their research project. The research project and associated literature review, seminar programmes and taught modules provide a range of subject specific and transferable skills pertinent to a career in academia or in industry.

16. Programme aims

1. To enable students to develop independence of thought, intellectual curiosity and a critical approach to evidence, theories and concepts.

2. To provide stimulating and enjoyable teaching that is informed and invigorated by the research and scholarship of the staff.

3. To foster a commitment to continuing professional development and lifelong learning.

4. To develop an appreciation of ethical issues surrounding neuroscience and public awareness of these issues in a global society.

5. To train neuroscientists to be able to design, perform, interpret and critically analyse experiments that will help

elucidate pathobiological mechanisms of disease.

6. To prepare students for further postgraduate work and/or a professional career in translational neuroscience or other areas of biomedical research through transferable skills.

17. Programme learning outcomes

Knowledge and understanding: Candidates completing the programme will have:	
K1	An in-depth knowledge of key research areas and topics in translational neuroscience.
K2	An appreciation of the current and potential impact of neuroscience research on society, health and economic prosperity.
K3	In-depth knowledge of histological, molecular, cellular and imaging-based approaches that may be adopted to elucidate the pathobiology of brain disorders.
K4	Knowledge of how neurological diseases can be modelled and be critically aware of the limitations of these models.
K5	An understanding of ethical issues surrounding neuroscience, the relevance of public understanding of science and of the responsibilities of the researcher.
K6	A detailed critical knowledge in the retrieval, interpretation, referencing and presentation of scientific information to a range of audiences.
MSc only:	
K7	A critical understanding of hypothesis-driven research including experimental design, execution of experiments and analysis of outcomes.

Skills and other attributes: Students completing the programme will be able to:	
S1	Retrieve, critically analyse, synthesize and summarise published information.
S2	Develop ideas regarding the molecular and cellular mechanisms underlying neuropathological diseases through the critical evaluation of appropriate literature, concepts and principles.
S3	Demonstrate independent thought and judgement in relation to critical analysis of scientific literature and experimental data.
S4	Present information using appropriate media to peers in the scientific world and to the general public.
S5	Analyse and interpret scientific data in a critical, objective manner.
S6	Show understanding of the ethical implications of modelling central nervous system disorders at the individual and societal levels.
S7	Work in a safe, risk-free way, with consideration for others, taking due account of statutory requirements.
S8	Competently perform basic and advanced laboratory techniques in accordance with health and safety guidelines.
MSc only:	
S9	Propose new hypotheses relevant to neuroscience research.
S10	Demonstrate the ability to plan and execute scientific experiments using laboratory equipment and techniques commonly used in translational neuroscience.

18. Teaching, learning and assessment

Development of the learning outcomes is promoted through the following teaching and learning methods:

The Department of Neuroscience fosters a learning environment that provides many opportunities for individual and group activity. We see students as active agents in their own learning so that the primary responsibility for learning lies with the student, who must be organised and self-motivated to make the most of the programme in co-operation with tutors. Theoretical information will be provided through lectures and consolidated through seminars, practical laboratory-based training and interactive tutorials. Students are also expected to undertake

a significant amount of independent study using library and web-based resources. Each student independently, but with support, produces one critical review essay on an original title having done all background work necessary to write a comprehensive review. The student makes a presentation describing their research project. This is prepared with further guidance from the supervisor. Practical skills are developed through specialist laboratory training and through a research project which is carried out in a research laboratory under the supervision of an experienced member of staff. The student will write a thesis on the research project with guidance from the supervisor. Tutorials, seminars and individual meetings with staff provide opportunities for discussion and feedback. The programme team recognises that the skills of the autonomous, self-regulated learner need to be developed alongside the 'content' using the support of academic librarians and study skills specialists as appropriate.

The linkage between the main teaching, learning and assessment methods adopted for each outcome are tabulated below.

Learning outcome	Teaching					Assessment				
	Lectures	Practical classes	Problem Based Learning	Research Project	Tutorials	Oral presentation	Written exam	Open book coursework	Research dissertation (Masters only)	
K1	x	x	x	x	x	x	x	x	x	
K2	x	x	x	x		x	x	x	x	
K3	x	x	x	x	x	x	x	x	x	
K4	x		x	x	x			x	x	
K5	x	x	x	x	x			x	x	
K6	x			x		x	x	x	x	
K7	x		x	x	x	x		x	x	
S1	x			x	x	x	x	x	x	
S2	x	x	x	x	x	x	x	x	x	
S3				x	x	x		x	x	
S4			x	x	x	x	x	x	x	
S5	x	x	x	x	x	x	x	x	x	
S6	x	x		x	x	x		x	x	
S7		x		x	x			x	x	
S8		x		x					x	
S9		x		x					x	
S10		x		x				x	x	

Opportunities to demonstrate achievement of the learning outcomes are provided through the following assessment methods:

Summative examinations for the 15 credit modules consist of short-answer or essay questions, lab-based practical, oral presentation, online debate or a neuroanatomy extended spotter exam, depending upon the nature of the material covered by each module. Learning outcomes are carefully matched to the method of assessment (e.g. oral presentation skills are assessed by two independent markers of the presentation). The programme team also recognises that assessment is for learning as well as of learning and will permit students to submit draft work or to be assessed on their skill development formatively so that they can receive feedback on their developing performance.

Students will receive training in respect of the University's rules surrounding the use of plagiarism. Assignments are all screened with plagiarism software. Potential cases of plagiarism will be dealt with according to the University's rules. The research project (75 credits) is assessed from the written thesis and oral presentation.

19. Reference points

The learning outcomes have been developed to reflect the following points of reference:

- Framework for Higher Education Qualifications in England, Wales and Northern Ireland
- The Teaching and Learning Strategy of the University of Sheffield
- The Mission Statement of the University of Sheffield
- Feedback from lecturers, students and external examiners on other MSc courses, including the MSc in Clinical Neurology and a number of MSc programmes in the Department of Neuroscience.

20. Programme structure and regulations

All students complete four core modules:

- Ethics in Neuroscience
- Neuroanatomy
- Molecular Neuroscience
- Neurodegeneration

And three advanced modules:

- Neuroimaging & Neuropathology
- Nervous system disease
- Literature Review and Critical Analysis of Science

In the final semester students on the MSc programme undertake a 20 week research project (75 credits). A student who does not wish to progress to Masters will complete the Research Proposal module to obtain the 15 additional credits required to exit with a Postgraduate Diploma. Students who have successfully completed four 15 credit modules may exit with the Postgraduate Certificate.

Detailed information about the structure of programmes, regulations concerning assessment and progression and descriptions of individual modules are published in the University Calendar available on-line at http://www.sheffield.ac.uk/calendar/regs

21. Student development over the course of study

The programme is designed so that students progressively achieve more advanced levels of learning and practical laboratory skills. In semester 1, students take four modules designed to ensure that all students, irrespective of their background, have a thorough knowledge of the fundamentals of neuroscience and neuroanatomy, and basic laboratory skills including molecular pathology and gene expression techniques. In semester 2, students take three advanced modules designed to promote in-depth knowledge and understanding of the major neurological diseases alongside developing advanced histological skills, then progress to the project. The project lasts for 20 weeks and is supported by one-to-one supervision.

22. Criteria for admission to the programme

Detailed information regarding admission to programmes is available from the University's On-Line Prospectus at http://www.sheffield.ac.uk/courses/.

Candidates will normally have a good (upper second class or better) degree or equivalent in a relevant Science or Engineering subject. Candidates will also have an IELTS mean of 7.0 (with a minimum of 7.0 in listening and 6.0 in other components). The course is open to intercalating MBChB/MBBS students who have completed at least three years of undergraduate study and also represents a career development opportunity for overseas medical graduates seeking to undertake PhD study.

23. Additional information

Sheffield combines the advantages of a top quality University, an outstanding Student's Union, a large city and a pleasant location adjacent to the Peak District National Park.

Information on the wealth and breadth of Neuroscience research at the University of Sheffield can be found by browsing the following websites:

http://www.sheffield.ac.uk/neuroscience

https://sitran.org/

This specification represents a concise statement about the main features of the programme and should be considered alongside other sources of information provided by the teaching department(s) and the University. In addition to programme specific information, further information about studying at The University of Sheffield can be accessed via our Student Services web site at http://www.sheffield.ac.uk/ssid.