

Programme Information		
Programme Title	Programme Code	HECoS Code
Translational Neuroscience	A3TN	For Registry Use Only

Award	Length of Study	Mode of Study	Entry Point(s)	Total Credits	
				ECTS	CATS
MSc	1 Calendar Year (12 months)	Full-time	Annually in September	90	180

Ownership			
Awarding Institution	Imperial College London	Faculty	Faculty of Medicine
Teaching Institution	Imperial College London	Department	Brain Sciences
Associateship	Diploma of Imperial College (DIC)	Main Location(s) of Study	Hammersmith Hospital

External Reference	
Relevant <a href="#">QAA Benchmark Statement(s)</a> and/or other external reference points	N/A
<a href="#">FHEQ Level</a>	Level 7 - Master's
<a href="#">EHEA Level</a>	2nd Cycle

External Accreditor(s) (if applicable)			
External Accreditor 1:	N/A		
Accreditation received:	N/A	Accreditation renewal:	N/A

Collaborative Provision			
Collaborative partner	Collaboration type	Agreement effective date	Agreement expiry date
N/A	N/A	N/A	N/A

Specification Details	
Programme Lead	Dr Nir Grossman Dr Stefano Sandrone
Student cohorts covered by specification	2024-25 entry
Date of introduction of programme	October 2016
Date of programme specification/revision	August 2023

## Programme Overview

The WHO has listed neurological disorders as a global emergency with the numbers of people affected by such disorders predicted to markedly increase over the next 25 years as life expectancy globally increases. For the vast majority of neurological disorders there are no effective treatments. This course will be delivered by world leading expert clinicians and neuroscientists working across the spectrum in neuroscience. Uniquely, this programme will provide theoretical and practical training in the various methodologies utilised in translational research for the development of novel therapeutic approaches to assess, model and treat neurological conditions. Hence, this programme will provide excellent training, whether you wish to pursue an academic or industrial research career, in which you can play a role in developing better treatments or curing neurological disorders.

During the first term, you will complete three core modules which are foundational in nature. You will then choose three elective modules, which constitute two different streams:

- Psychiatry, Brain imaging and Machine Learning
- Neurodegeneration, Neuro-inflammation, Neuro-trauma and Neuro-regeneration

All modules have authentic forms of assessments and all the elective modules have a practical focus that is intended to lead directly into the subsequent 6-month research project phase of the programme. It may be possible for projects to be carried out partly or wholly at an external organisation and requests will be considered on a case by case basis.

## Learning Outcomes

The Modules composing the MSc Translational Neuroscience reflect the research strengths of the Department of Brain Sciences. In line with the Imperial Graduate attributes, at the end of this program you will be better able to:

- Synthesise and apply basic and advanced neuroscience concepts in relation to neuropathological conditions.
- Critically review and evaluate neuroscience literature.
- Communicate complex translational neuroscience concepts effectively to a variety of audiences.
- Work effectively at the individual level as well as in groups on different inter- and multidisciplinary aspects within the broader neuroscience field.
- Critically analyse, interpret, discuss and justify neuroscientific data.
- Design a novel research proposal to tackle real world neuroscience related problems.

Generate an original piece of research that shows an innovative and creative approach to a specific neuroscientific challenge.

The Imperial Graduate Attributes are a set of core competencies which we expect students to achieve through completion of any Imperial College London degree programme. The Graduate Attributes are available at: <https://www.imperial.ac.uk/about/education/our-graduates/>

## Entry Requirements

Academic Requirement	Normally a 2:1 Honours degree in biological sciences (or a comparable qualification recognised by the College).  For further information on entry requirements, please go to <a href="http://www.imperial.ac.uk/study/apply/postgraduate-taught/entry-requirements/accepted-qualifications/">www.imperial.ac.uk/study/apply/postgraduate-taught/entry-requirements/accepted-qualifications/</a>
Non-academic Requirements	None
English Language Requirement	<a href="#">Higher requirement</a> Please check for other <a href="#">Accepted English Qualifications</a>
Admissions Test/Interview	Applicants who do not meet the academic requirements above but who have substantial relevant clinical or relevant professional experience may be admitted following completion of a 'Special Qualifying Exam' (SQE).

The programme's competency standards documents can be found at:  
[www.imperial.ac.uk/study/pg/medicine/translational-neuroscience/](http://www.imperial.ac.uk/study/pg/medicine/translational-neuroscience/)

### Learning & Teaching Approach

In addition to the lecture format, and in line with the updated guidelines on *Inclusive learning and teaching*, delivery methods include the following:

- Practical/computational sessions (i.e. neuro-histology sessions around a multi-head microscope, on immunohistochemistry, examination of sections under the microscope; cadaveric and living anatomy sessions; practical computational workshops in the computing hub and hackathon space)
- Laboratory tours/demonstrations (i.e. demonstration of a brain dissection).
- Interviews with patients.
- Class tutorials and small group tutorials.
- Group discussions and group workshops.

Please note that details of the teaching methods might change depending on the intake year and that some of these delivery methods are stream-specific.

### Assessment Strategy

#### Assessment Methods

Assessment Methods include the following:

- Custom anatomy assessment App to test the functional neuroanatomical knowledge (Module 1).
- Virtual research project, a group exercise with research question, hypothesis, experimental procedures, hypothetical results, possible conclusions and alternatives and pitfalls (Module 2).
- Journal Club presentation (individual and group work, across different Modules): critiquing papers and assessing their strengths and limitations.
- Analysis and write up of go/no-go task data: the students have to complete the go/no-go task in order to understand what it is like, as a participant, to take part in a study. (Module 4).
- Interactive grant writing workshop to identify key challenges based on knowledge acquired, outline ideas for how to address challenge, provide a precis in lay language and provide a critical self-appraisal (risk contingencies) (Module 4).
- Literature review: a format to compare and contrast published reports and to summarise the state of current scientific understanding on a specific neuroscientific topic (Module 6).
- Hackathon (Module 3): to plan and implement 'big data' pipelines and apply computing skills and computational techniques for analysis of data from a variety of cognitive and neuroimaging sources.
- Practical Write Up (Modules 3 & 8).
- Code workbook for workshops (Module 5)
- Problem solving pipeline development examination (Module 5)
- Research grant concept: a single day session including group exercises, peer review, teacher review and elevator pitch with slides (Module 7).
- Editorial Review: students will be given a paper to be peer-reviewed, will have to write an editorial review and will be marked individually (Module 8).
- 'Design of a research question on Neuroplasticity and Regeneration' to assess critical insight and independent thinking by discussing the specific relevance, the key mechanisms and broad implications of the selected topic (Module 9).
- Live debate workshop: to identify and discuss major research questions, define testable questions, while favouring interactive, mature, challenging scientific conversation to test the knowledge and the capacity to prioritise, critically discuss and build new insights/ideas in a 'live' setting (Module 9).
- Flash presentation, Poster presentation, Dissertation, Viva (Module 10).

Please note that some of the aforementioned assessments are stream-specific.

Academic Feedback Policy
Imperial's Policy on Academic Feedback and guidance on issuing provisional marks to students is available at: <a href="http://www.imperial.ac.uk/about/governance/academic-governance/academic-policy/exams-and-assessment/">www.imperial.ac.uk/about/governance/academic-governance/academic-policy/exams-and-assessment/</a>

Re-sit Policy
Imperial's Policy on Re-sits is available at: <a href="http://www.imperial.ac.uk/about/governance/academic-governance/academic-policy/exams-and-assessment/">www.imperial.ac.uk/about/governance/academic-governance/academic-policy/exams-and-assessment/</a>

Mitigating Circumstances Policy
Imperial's Policy on Mitigating Circumstances is available at: <a href="http://www.imperial.ac.uk/about/governance/academic-governance/academic-policy/exams-and-assessment/">www.imperial.ac.uk/about/governance/academic-governance/academic-policy/exams-and-assessment/</a>

Additional Programme Costs		
This section should outline any additional costs relevant to this programme which are not included in students' tuition fees.		
Description	Mandatory/Optional	Approximate cost
Equipment (course materials and books)	Mandatory	Provided in the Library
Personal Protective Equipment	Mandatory	Provided

## Programme Structure<sup>1</sup>

### Year 1 – FHEQ Level 7

You will study all Core Modules and three Elective Modules (specific to your stream).

**Stream 1:** Addiction and Neuropharmacology in Psychiatry, Machine Learning for Translational Neuroscience, Brain imaging and High Temporal Resolution - you must complete modules 4, 5 and 6.

**Stream 2:** Neuroinflammation, Neurodegenerative Disorders and Brain Plasticity and Neuroregeneration - you must complete modules 6, 7 and 8.

Code	Module Title	Core/ Elective	Group*	Term	Credits
BRAI70004	Module 1: Functional Neuroanatomy	Core	N/A	Autumn	7.5
BRAI70005	Module 2: Cellular and Molecular Neuroscience	Core	N/A	Autumn	7.5
BRAI70009	Module 3: Computational Methods for Translational Neuroscience	Core	N/A	Autumn	7.5
BRAI70010	Module 4: Addiction and Neuropsychopharmacology in Psychiatry	Elective	N/A	Autumn	7.5
BRAI70013	Module 5: Machine Learning in Neuroscience	Elective	N/A	Spring	7.5
BRAI70008	Module 6: Brain Imaging and High Temporal Resolution Methods	Elective	N/A	Spring	7.5
BRAI70007	Module 7: Neuroinflammation	Elective	N/A	Autumn	7.5
BRAI70006	Module 8: Neurodegenerative Disorders	Elective	N/A	Spring	7.5
BRAI70011	Module 9: Brain Plasticity and Neuroregeneration	Elective	N/A	Spring	7.5
BRAI70012	Module 10: Laboratory-based Research Project	Core	N/A	Summer	45
Credit Total					90

\* 'Group' refers to module grouping (e.g. a group of electives from which one/two module(s) must be chosen).

<sup>1</sup> **Core** modules are those which serve a fundamental role within the curriculum, and for which achievement of the credits for that module is essential for the achievement of the target award. Core modules must therefore be taken and passed in order to achieve that named award. **Compulsory** modules are those which are designated as necessary to be taken as part of the programme syllabus. Compulsory modules can be compensated. **Elective** modules are those which are in the same subject area as the field of study and are offered to students in order to offer an element of choice in the curriculum and from which students are able to select. Elective modules can be compensated.

## Progression and Classification

### **Award of a Postgraduate Degree**

To qualify for the award of a postgraduate degree you must have:

1. accumulated credit to the value of no fewer than 90 credits at Level 7
2. and no more than 15 credits as a Compensated Pass;
3. met any specific requirements for an award as outlined in the approved programme specification for that award.

### **Classification of Postgraduate Taught Awards**

The university sets the class of Degree that may be awarded as follows:

1. Distinction: 70.00% or above.
2. Merit: 60.00% or above but less than 70.00%.
3. Pass: 50.00% or above but less than 60.00%.

For a Masters, your classification will be determined through the Programme Overall Weighted Average meeting the threshold for the relevant classification band.

Your degree algorithm provides an appropriate and reliable summary of your performance against the programme learning outcomes. It reflects the design, delivery, and structure of your programme without unduly over-emphasising particular aspects.

## Programme Specific Regulations

N/A

## Supporting Information

The Programme Handbook is available from the department.

The Module Handbook is available from the department.

Imperial's entry requirements for postgraduate programmes can be found at:

[www.imperial.ac.uk/study/apply/postgraduate-taught/entry-requirements/accepted-qualifications/](http://www.imperial.ac.uk/study/apply/postgraduate-taught/entry-requirements/accepted-qualifications/)

Imperial's Quality & Enhancement Framework is available at:

[www.imperial.ac.uk/registry/proceduresandregulations/qualityassurance](http://www.imperial.ac.uk/registry/proceduresandregulations/qualityassurance)

Imperial's Academic and Examination Regulations can be found at:

[www.imperial.ac.uk/about/governance/academic-governance/regulations](http://www.imperial.ac.uk/about/governance/academic-governance/regulations)

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[www.imperial.ac.uk/admin-services/secretariat/college-governance/charters/](http://www.imperial.ac.uk/admin-services/secretariat/college-governance/charters/)

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[www.officeforstudents.org.uk/advice-and-guidance/the-register/](http://www.officeforstudents.org.uk/advice-and-guidance/the-register/)

**This document provides a definitive record of the main features of the programme and the learning outcomes that a typical student may reasonably be expected to achieve and demonstrate if they take full advantage of the learning opportunities provided. This programme specification is primarily intended as a reference point for prospective and current students, academic and support staff involved in delivering the programme and enabling student development and achievement, for its assessment by internal and external examiners, and in subsequent monitoring and review.**