MSc Translational Neuroscience

Department of Medicine
Faculty of Medicine

Course Handbook
2016-2017
The Graduate School

Welcome from Professor Sue Gibson, Director of the Graduate School

The Graduate School has several roles but our main functions are to provide a broad, effective and innovative range of professional skills development courses and to facilitate interdisciplinary interactions by providing opportunity for students to meet at academic and social events. Whether you wish to pursue a career in academia, industry or something else, professional skills development training will improve your personal impact and will help you to become a productive and successful researcher.

Professional skills courses for Master’s students are called “Masterclasses” and they cover a range of themes, for example, presentation skills, academic writing and leadership skills (http://www3.imperial.ac.uk/graduateschool/currentstudents/professionalskillsmasters/masterclassprogramme).

All Masterclasses are free of charge to Imperial Master’s students and I would encourage you to take as many as you can to supplement your academic training. The Graduate School works closely with the Graduate Students’ Union (GSU) and is keen to respond to student needs so if there is an area of skills training, or an activity that you would like us to offer, but which is not currently provided, please do get in touch (graduate.school@imperial.ac.uk).

The Graduate School also runs a number of exciting social events throughout the year which are an opportunity to broaden your knowledge as well as to meet other students and have fun. Particular highlights include the Ig Nobel Awards Tour Show, the Chemistry Show and the 3 minute thesis competition. You should regularly check the Graduate School’s website and e-Newsletters to keep up to date with all the events and training courses available to you.

Finally, I hope that you enjoy your studies here at Imperial, and I wish you well.

Sue Gibson
Hello and welcome to Imperial College. I am Liucheng, the President of the Graduate Students’ Union for the 2015/16 academic year.

The Graduate Students' Union (GSU) is the representative body within the Imperial College Union for the postgraduate community across all Imperial campuses. The GSU works alongside the Imperial College Union President to ensure that the requirements of postgraduate students are catered for. The GSU also ensures that postgraduates' social and recreational needs are met and holds a number of events during the year.

Postgraduate students at Imperial are at the forefront of the research done and the experience they have as a student should be the best. Therefore, at the GSU we ensure that this happens. The work we do focuses on the academic, welfare and social needs of postgraduates.

As a Masters student you are automatically a member of the GSU. If you have any questions or would like to find out more please do not hesitate in getting in touch with me at: gsu.president@imperial.ac.uk, or visiting our website: https://union.ic.ac.uk/gsu.
Welcome from Professor David Dexter, MSc Course Director

Further to the welcome messages from Sue Gibson’s and the GSU President’s, I would like to extend a very warm welcome to you all attending this year’s Imperial College London MSc in Translational Neuroscience Course. I hope you enjoy your next 12 months with us.

The notes in this Course Handbook are to guide and assist you in your work during the next 12 months. They are not intended to be a comprehensive account of course requirements, but to cover topics which are frequently the subject of student’s questions. This Course Handbook contains the general information you will need to follow the MSc course. More detailed information about individual aspects of the course will be given out throughout the course.

Please keep this booklet to hand throughout the year so that you can use it as a source of easy reference for course dates and course requirements.

If you have any questions do not hesitate to contact myself (d.dexter@imperial.ac.uk) of Dr Pat Cover (p.cover@imperial.ac.uk), or any of the course tutors.

Best wishes

David

Professor David T Dexter
Professor of Neuropharmacology & Deputy Head Division of Brain Sciences
Burlington Danes Building
Hammersmith Hospital Campus, Imperial College London
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Disclaimer
It should be noted that, although every effort has been made to ensure that the information in this document is correct at the time of printing, information is subject to change. You will be informed of any changes that affect the curriculum or your progress through the course.
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1. INTRODUCTION

1.1 Imperial College London, Faculty of Medicine

The Imperial College Faculty of Medicine is an internationally renowned centre for clinical teaching and research. The Dean of the Faculty of Medicine is Professor Gavin Screaton and the head of the Department of Medicine is Professor Martin Wilkins. The Faculty is mainly based in four campuses: South Kensington (Alexander Fleming building), Charing Cross Hospital, Hammersmith Hospital and St Mary's Hospital. The hospitals on these sites come under the umbrella of the Academic Health Science Centre, a partnership between Imperial College London and Imperial College Healthcare NHS Trust, and are thus well placed to move from basic research to clinical trials within the one organisation.

The MSc in Translational Neuroscience course is based at the Hammersmith Hospital campus. Students will also be able to use all the facilities at the main Imperial College campus at South Kensington, Charing Cross and St Mary's campuses. Research laboratory facilities for research project work are available across campuses within the Division of Brain Sciences.

1.2 Introduction to the Division of Brain Sciences

The Division of Brain Sciences, headed by Professor Paul Matthews, is sub-divided into laboratory and clinical departments, located at the Hammersmith Hospital Campus (HH), the Charing Cross Campus (CX, the major clinical neuroscience provider in West London), and St Mary’s Campus (SM).

The Division has excellent research facilities at the Hammersmith Hospital, the embedded Multiple Sclerosis Society and Parkinson’s UK Tissue Banks, the new Wellcome Trust McMichael Clinical Research Facility, clinical and preclinical MRI and PET and the co-localised Imanova imaging centre. There is a broad spectrum of research, “from the bench to the bedside”, with a particular emphasis on the application of modern scientific techniques to questions relevant to understanding the pathogenesis of disease and developing new approaches to treatment. Research at all levels is very disease orientated. It is successful at attracting funding from the Medical Research Council, the Biotechnology and Biological Sciences Research Council, the Wellcome Trust, the European Union and many other research charities.

The Research Centres of the Division are:

- Neuroinflammation and Neurodegeneration
Cellular and molecular neuroscience targeting inflammatory and neurodegenerative disorders is based mainly in the Wolfson Neuroscience Laboratories on floor 4 of the Burlington Danes building. The bulk of Clinical Neuroscience is at the Charing Cross campus while Neuroimaging groups are primarily based in Hammersmith Hospital, and on floor 3 of the Burlington Danes building (Computational, Cognitive and Clinical Neuroscience Laboratory, C3NL) at the Hammersmith campus. The main areas of clinical neuroscience research currently undertaken are mechanisms of recovery from stroke and brain injury, neuroprotection in multiple sclerosis, the genetics of epilepsy, relieving neuropathic pain and autonomic dysfunction, treatment of movement and balance disorders, neuromuscular disorders, diagnosis and treatment of dementia and cognitive disorders, severe mental disorders, neuroimaging and imaging analysis.

Each Centre has monthly seminars as well as regular journal clubs and ad-hoc seminars. Each laboratory also holds regular informal meetings at which current research progress is discussed, these activities provide an important training programme for postgraduate students who are working towards a higher degree (PhD, MD(Res), MRes and MSc). In addition, the Division organises a “bench to bedside” seminar series to highlight the translational nature of much of the work undertaken within the Division.

1.3 Graduate School
As soon as you begin your postgraduate studies at Imperial College you automatically become a member of the Graduate School. Membership means you become part of a wider community, broadening and enriching your academic experience.
http://www3.imperial.ac.uk/graduateschool

1. MSC TRANSLATIONAL NEUROSCIENCE
http://www.imperial.ac.uk/medicine/study/postgraduate/masters-programmes/msc-translational-neuroscience/
2.1 Aims of the course & Programme Structure

The World Health Organisation (WHO) recently listed neurological and psychiatric disorders as a global emergency with the numbers of people affected by such disorders predicted to marked increase over the next 25 years as life expectancy globally increases. For the vast majority of neurological and psychiatric disorders, there are no effective treatments. This programme is designed to provide high-quality training to tomorrow's neuroscientists who will play a vital role in not only understanding what causes such Neurological and psychiatric disorders but also developing better treatments or cures.

The programme consists of two sections: a taught component containing six modules (4 core modules and 2 optional modules), and a research component, with the taught and research components carrying equal weighting for your final grade (50:50). A schematic timeline for the course structure detailing the core modules, optional modules, revision/exam sessions and research project is given below (fig.1). The taught component of the programme will be delivered by academics/clinicians at the forefront of research and clinical practice and will equip students with an excellent foundation in Neuroscience, particularly in how the different cellular components in the central nervous system physiologically work together to control brain function and how this malfunctions in a variety of neurological and psychiatric disorders.

![Fig 1 – Timeline of the structure of the MSc Translational Neuroscience course (Dates are approximate)](image)
Uniquely, this programme will provide theoretical and practical training to students in the various methodologies utilised in translational research for the development of novel therapeutic approaches to treat neurological and psychiatric conditions.

2.2 Introductory Module

This one-week program, held in the first week of term, will act as an introduction to the course. Students will be given the opportunity to acquire basic skills in information technology (IT), literature evaluation and presentation skills required for the course. In addition, students will be introduced to basic principles of experimental design. There will also be sessions covering the principles of statistical evaluation (planned to take place after the introductory week). An overview of the current research in the Division will set the scene for research projects that may be available. Housekeeping issues of the college will also be dealt with during this week.

2.3 Taught component – Core Modules

The taught core modules consist of four 2.5 week modules. The first two weeks comprise of lectures, practical classes, group workshops and tutorials etc. whilst the remainder of the time is set aside for consolidation of what you have learnt during the module and for completion of assignments. This is followed at the end of each Module by 2.5 days for private study where you can consolidate the facts that you have learnt during the Module.

Module 1: Functional Neuroanatomy – Students will investigate the basic structure and function of the central, peripheral and autonomic nervous systems and how these systems interact in normal physiological function and the consequences of their impairment in Neurological conditions.

Module 2: Cellular and Molecular Neuroscience – Students will learn which cells make up the nervous system; how they interact during brain and spinal cord development and the neuronal networks they form in the developed brain. This module also covers mechanisms of neuronal damage and the potential for neuroregeneration.

Module 3: Neurodegenerative disorders – Students will then build on the knowledge gained in Module 1 & 2 to then investigate the clinical and pathological features of the principle neurodegenerative disorders and how they are clinically treated. This module will also cover how drugs for CNS use are designed, tested utilising in vitro and in vivo models and their translation in clinical trials.

Module 4: Neuroinflammation, Stroke and CNS trauma – Students will then build on the knowledge gained in Module 1 & 2 to then investigate the clinical,
immunological/pathological features and clinical treatment of neurological conditions where neuroinflammation plays a key role e.g. Multiple Sclerosis etc. and in stroke and CNS trauma. This module will also cover how *in vitro* and *in vivo* models are used in translational research to develop novel therapies for such disorders, plus how clinical trials are run.

**Taught components – Optional Streams**

Students can select one of the two optional streams, each of which contains two further taught modules.

**Stream 1**

**Module 5: Brain Imaging** - Students will learn the fundamental physical principles underlying various brain imaging techniques and will learn how to identify brain anatomical structures. They will acquire theoretical and practical experience with common analysis approaches and software packages used for the analysis of MRI and PET images. Students will also investigate the role of neuroimaging in the clinical diagnosis of neurodegenerative disorders and psychiatric diseases, and their role as biomarkers in disease progression and in drug development.

**Module 6: Computational Neuroscience** – Students will learn the theory and develop the practical skills to apply a wide variety of computational analytical techniques to complex data sets obtained from a wide variety of sources e.g. fMRI, EEG/MEG, cognitive task data, genotypes and endophenotypes etc.

**OR**

**Stream 2**

**Module 7: Brain Plasticity and Neuro-regeneration** - Students will investigate the fundamental molecular, cellular and system biology aspects of the principles of brain plasticity and neuro-regeneration. Students will then cover state of the art concepts of regenerative bioengineering and biomaterials, how they can be tested as potential treatments in neuro-regeneration models and ultimately translated into clinical trials.

**Module 8: Addiction and Neuropsychopharmacology in Psychiatry** - Students will investigate the clinical features of key psychiatric disorders, including addictions, and how such disorders are clinically treated. Students will then explore the neurobiological and neuropsychopharmacological basis for psychiatric disorders. Students will gain a good understanding of what experimental approaches are available to characterize such disorders including neuroimaging (PET, MR), ‘first-into-man’ and clinical trials.

**2.4 The Research Project**

The research component will allow students to explore in greater depth a particular neurological or psychiatric disorder and apply cutting-edge research techniques to help
determine the causes and help in the development of novel therapies for such disorders. The research project is intended to provide an intense period of training and experience in hypothesis-driven academic laboratory research. Hence, this programme will provide excellent training for students, whether they wish to pursue an academic or industrial research career, in which they can play a vital role in better understanding the causes of Neurological disorders or developing better treatments or cures.

### Timetable 2016-17

#### Overview and key dates

<table>
<thead>
<tr>
<th>Event</th>
<th>Activity</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introductory Module</td>
<td>Registration and introductions</td>
<td>03/10/16 – 10/10/16</td>
</tr>
<tr>
<td>Core Modules start</td>
<td></td>
<td>10/10/16</td>
</tr>
<tr>
<td>Module 1</td>
<td>Functional Neuroanatomy</td>
<td>10/10/16 – 26/10/16</td>
</tr>
<tr>
<td>Module 2</td>
<td>Cellular &amp; Molecular Neuroscience</td>
<td>27/10/16 – 11/11/16</td>
</tr>
<tr>
<td>Module 3</td>
<td>Neurodegenerative disorders</td>
<td>14/11/16 – 30/11/16</td>
</tr>
<tr>
<td>Module 4</td>
<td>Neuroinflammation, stroke and CNS trauma</td>
<td>01/12/16 – 16/12/16</td>
</tr>
<tr>
<td>Christmas closure</td>
<td></td>
<td>17/12/16 – 06/01/17</td>
</tr>
<tr>
<td>Optional modules start</td>
<td></td>
<td>09/01/17 – 13/01/17</td>
</tr>
<tr>
<td>Stream 1 – Module 5</td>
<td>Brain Imaging</td>
<td>16/01/17</td>
</tr>
<tr>
<td>Stream 1 – Module 6</td>
<td>Cognitive &amp; Computational Neuroscience</td>
<td>16/01/17 – 01/02/17</td>
</tr>
<tr>
<td>Stream 2 – Module 7</td>
<td>Neuroregeneration</td>
<td>02/02/17 – 17/02/17</td>
</tr>
<tr>
<td>Stream 2 – Module 8</td>
<td>Addiction &amp; Neuropsychopharmacology in Psychiatry</td>
<td>16/01/17 – 01/02/17</td>
</tr>
<tr>
<td>Revision week and Exam 1</td>
<td></td>
<td>02/02/17 – 17/02/17</td>
</tr>
<tr>
<td>Optional modules start</td>
<td></td>
<td>20/02/17 – 25/02/17</td>
</tr>
<tr>
<td>Module 9</td>
<td>Laboratory based research project</td>
<td>27/02/17 – 25/08/17</td>
</tr>
<tr>
<td>Module 9 oral presentation</td>
<td>To be confirmed</td>
<td>11/09/17 – 15/09/17</td>
</tr>
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</table>
## 2.6 Details of introductory module

<table>
<thead>
<tr>
<th>Time</th>
<th>Content</th>
<th>Activity</th>
<th>Lecturer</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Monday 3rd Oct Week 1</strong></td>
<td><strong>Course Introductory week</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>09:30-10:30</td>
<td>Introduction</td>
<td>Lecture</td>
<td>David Dexter</td>
</tr>
<tr>
<td>10:30-11:00</td>
<td>Coffee</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:00-12:00</td>
<td>Neuroscience Research at Imperial (Combine with Exp Neuro MRes)</td>
<td>Lecture</td>
<td>Richard Reynolds</td>
</tr>
<tr>
<td>12:00-12:45</td>
<td>Health &amp; Safety – Practical and statutory requirements (Combine with Exp Neuro MRes)</td>
<td>Lecture</td>
<td>S Singh</td>
</tr>
<tr>
<td>13:30-15:00</td>
<td>Class Photograph &amp; Security Registration</td>
<td></td>
<td>David Dexter</td>
</tr>
<tr>
<td>16:15</td>
<td>Postgraduate Students Provost’s welcome Event</td>
<td>Great Hall Sherfield Building, South Kensington</td>
<td></td>
</tr>
<tr>
<td><strong>Tuesday 4th Oct</strong></td>
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</tr>
<tr>
<td></td>
<td>Fresher’s Fair</td>
<td>South Kensington</td>
<td></td>
</tr>
<tr>
<td><strong>Wednesday 5th Oct</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>09:30-10:30</td>
<td>Introduction to the MSc in Translational Neuroscience</td>
<td>Lecture</td>
<td>David Dexter</td>
</tr>
<tr>
<td>11:00-12:00</td>
<td>Introduction to MSc Research projects</td>
<td>Lecture</td>
<td>David Dexter</td>
</tr>
<tr>
<td>pm</td>
<td>Sports trials</td>
<td>South Kensington</td>
<td></td>
</tr>
<tr>
<td><strong>Thursday 6th Oct</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>09:30-10:30</td>
<td>Careers advice (Combine with Exp Neuro MRes)</td>
<td>Lecture</td>
<td>Rachel Power</td>
</tr>
<tr>
<td>11:00-13:00</td>
<td>Meeting your Personal Tutor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14:00-16:30</td>
<td>Introduction to library facilities</td>
<td>Library, HH Commonwealth building</td>
<td>Michael Gainsford</td>
</tr>
<tr>
<td>16:30-</td>
<td>Meet the Tutors Social</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Friday 7th Oct</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10:00-11:00</td>
<td>Experimental design and literature evaluation (Combine with Exp Neuro MRes)</td>
<td>Lecture</td>
<td>David Sharp</td>
</tr>
<tr>
<td>11:30-12:00</td>
<td>Professional skills programme</td>
<td>Lecture</td>
<td>Graduate School</td>
</tr>
<tr>
<td>13:00-14:30</td>
<td>Presentation skills</td>
<td></td>
<td>David Dexter</td>
</tr>
<tr>
<td>15:00-17:00</td>
<td>IT workshop</td>
<td>Computer lab, CWB, 3rd floor</td>
<td>Mike Barrett</td>
</tr>
</tbody>
</table>
2.7 Reading

Students are encouraged to read widely, using textbooks and, importantly, journals (for reviews and original articles). The library stocks a wide range of books and journals. Tuition in the correct use of the library facilities is given by library staff (a formal session is arranged for week 1) and students are expected to be able to perform literature searches. Two main textbooks, which cover the basics of Neuroscience, are recommended. There are a number of library copies of these textbooks.


Students should be aware that Neuroscience is a rapidly changing field; hence much of the most up-to-date information can only be obtained from journals. The journals *Trends in Neurosciences, Current Opinion in Neurobiology* and *Annual Review of Neuroscience* provide good review articles. References to original experimental articles can be found in these reviews and from literature searches.

Imperial Study Guide / Imperial Study Guide for Master’s Students: 
http://www3.imperial.ac.uk/students/studyguide

2.8 Professional Development for Master’s students

In addition to the Transferable Skills training available in the program’s introductory module and elsewhere e.g. presentation skills, team working, problem solving, some Transferable Skills Training is also available through the Graduate School: 
http://www3.imperial.ac.uk/graduateschool/currentstudents/professionalskillsmasters

The Graduate school also runs a series of MasterClasses at the South Kensington, Hammersmith and St Mary’s campuses. These are normally in the form of 90 minute lectures held over lunchtime. Topics include preparing and writing a literature review, stress management, academic writing, interviewing skills and developing your career through networking.
For program specifications and competence standards see also:

http://www.imperial.ac.uk/medicine/study/postgraduate/masters-programmes/msc-translational-neuroscience/

2.9 Staff and their responsibilities

The MSc in Translational Neuroscience is principally based on the Hammersmith Hospital campus of Imperial College. The course is managed by an organising committee which meets regularly. The members of the organising committee are given below and it is hoped that a student representative can attend the regular committee meetings.

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
<th>Contacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course organiser</td>
<td>Dr Pat Cover</td>
<td>020 3311 7275 <a href="mailto:p.cover@imperial.ac.uk">p.cover@imperial.ac.uk</a></td>
</tr>
<tr>
<td>Course Director</td>
<td>Prof David T. Dexter</td>
<td>020 7594 6665 <a href="mailto:d.dexter@imperial.ac.uk">d.dexter@imperial.ac.uk</a></td>
</tr>
<tr>
<td>Module 1 leader</td>
<td>Prof Steve Gentleman</td>
<td>020 7594 6673 <a href="mailto:s.gentleman@imperial.ac.uk">s.gentleman@imperial.ac.uk</a></td>
</tr>
<tr>
<td>Module 2 leader</td>
<td>Dr Kambiz N. Alavian</td>
<td>020 7594 7006 <a href="mailto:k.alavian@imperial.ac.uk">k.alavian@imperial.ac.uk</a></td>
</tr>
<tr>
<td>Module 3 leader</td>
<td>Prof David T. Dexter</td>
<td>020 7594 6665 <a href="mailto:d.dexter@imperial.ac.uk">d.dexter@imperial.ac.uk</a></td>
</tr>
<tr>
<td>Module 4 leader</td>
<td>Dr Paolo A. Muraro</td>
<td>020 7594 6670 <a href="mailto:p.muraro@imperial.ac.uk">p.muraro@imperial.ac.uk</a></td>
</tr>
<tr>
<td>Module 5 leader</td>
<td>Prof Paola Piccini</td>
<td>020 3313 3773 <a href="mailto:paola.piccini@imperial.ac.uk">paola.piccini@imperial.ac.uk</a></td>
</tr>
<tr>
<td>Module 6 leaders</td>
<td>Dr Tony Goldstone</td>
<td>020 7594 5989 <a href="mailto:tony.goldstone@imperial.ac.uk">tony.goldstone@imperial.ac.uk</a></td>
</tr>
<tr>
<td></td>
<td>Prof Paola Piccini</td>
<td>020 3313 3773 <a href="mailto:paola.piccini@imperial.ac.uk">paola.piccini@imperial.ac.uk</a></td>
</tr>
<tr>
<td>Module 7 leader</td>
<td>Prof Simone Di Giovanni</td>
<td>020 7594 3178 <a href="mailto:s.di-giovanni@imperial.ac.uk">s.di-giovanni@imperial.ac.uk</a></td>
</tr>
<tr>
<td>Module 8 leaders</td>
<td>Prof Anne Lingford-Hughes</td>
<td>020 7594 8682 <a href="mailto:anne.lingford-hughes@imperial.ac.uk">anne.lingford-hughes@imperial.ac.uk</a></td>
</tr>
<tr>
<td></td>
<td>Dr Nienke Pannekoek</td>
<td>020 7594 6648 <a href="mailto:j.pannekoek@imperial.ac.uk">j.pannekoek@imperial.ac.uk</a></td>
</tr>
</tbody>
</table>

2. REQUIREMENT FOR COURSE COMPLETION

3.1 Attendance

The course is a full time, 12 month course commencing in October. You are expected to attend all timetabled sessions (i.e. lectures, laboratory practical’s, workshops, tutorials etc.).

To satisfy College and Government regulations, a register will be taken at the beginning of each timetabled sessions. Non-attendance will be noted and where appropriate, acted on by the Course Organiser.

There is a short break over the Christmas and New Year period. In addition, students are encouraged to take a short holiday (typically 1-2 weeks) during the project. Holidays at Easter and in the summer are taken in consultation with your project supervisor. College
closes for set days over the Easter period, and you will require written permission and completion of a lone-working form, to enable you to attend College on these campus closure days.

It is essential that you attend all timetabled sessions of the course. Absences do occur for personal and other reasons and in these cases you are **obliged to inform the Course Organiser** if difficulties arise which necessitate your **absence for more than three days**. In cases of illness, a doctor’s letter must be given to the Course Organiser if absences extend for more than three days. **Failure to attend course components (lectures, practical’s, tutorials, research project) can result in a request from the Board of Examiners for you to re-take part of the course**, this being justified on the grounds that the examinations cannot adequately cover all aspects of the course of training provided. There is no substitute for attendance. **As important as attendance, is arriving on time for lectures and practical’s**. Lecturers will not wait for you and will not appreciate being interrupted during teaching by someone arriving late.

As previously stated, a register will be taken at the start of all timetabled sessions. Non-attendance will be noted and where appropriate, acted on by the Course Organiser.

### 3.2 Feedback Methods

Formal feedback is provided to you or obtained by us, at various stages of the course.

**Feedback to you**

You will receive feedback on your progress in several ways. Your tutor should be able to inform you of your general progress. In addition, there are in-course assessments (ICA's) for each of the taught Modules and feedback will be provided on your performance in each ICA. Additionally, there student led presentation/workshops in most taught Modules and the tutors will feedback informally on your standard during those sessions. Additionally, during these sessions your peers may be asked to provide you with assessment of you performance during these tasks. During the project you will obtain advice on your progress from your supervisor. The project presentation in Module 9 (part of the way through your laboratory based project) will also give you an opportunity to see how you are performing in relation to your peer group.

**Feedback to us**

We take comments and criticisms of the course very seriously. In particular we are keen to receive constructive criticism as to where you think the course could be improved for future
students. The formal avenues for suggestions are through the course committee. We collect feedback through Blackboard and a feedback session is run by the module leaders at the end of each taught Module of the course. A final feedback session/exit questionnaire is held after the project submission. Finally you should contact your tutor with any suggestions or comments that you have.

3.3 Examinations

Written
There are two sets of written examination sessions, one after the 4 core modules and the second after the optional stream modules prior to the start of Module 9 the research laboratory project.

Core Modules:
Each of the core modules will have a separate written examination paper, consisting of the same format - 1.5 hours in duration consisting of two short questions (15 minutes each) and one essay question (1 hour). Written examinations for Module 1 and 2 will be sat sequentially in the same session to form Paper 1 and likewise Modules 3 and 4 will be sat sequentially in the same session to form Paper 2. All of the formal teaching for the Modules 1-4 will conclude by the end of the autumn term, prior to the Christmas break. In addition to the Christmas break, there is a dedicated revision week in the first week of the Spring term during the latter part of which written Papers 1 and 2 will be set.

Optional Modules – Stream 1 or 2
Likewise at the end of the optional modules in either stream 1 or 2 there are written exam papers for both optional modules.

Stream 1: Paper 3 combines the single examinations for Module 5 (1.5 hours in duration consisting of two short questions (15 minutes each) and one essay question (1 hour)) and for Module 6 (1 hour in duration, consisting of 2 short questions (30 minutes each)). The written paper for Module 6 is shorter since there is a greater waiting for the in-course assessment.

Stream 2: Paper 3 combines the single examinations for Module 7 and 8 (both 1.5 hours in duration consisting of two short questions (15 minutes each) and one essay question (1 hour)).
Students, whose performance in the written examinations is unsatisfactory, may be required to withdraw from the course. All written examinations are marked by two internal examiners, and are moderated by the External Examiners of the course.

3.4 In-course Assessment Module 1 - 8
Each Module has an in-course assessment component which counts towards the final mark for that Module. The in-course assessments are of a number of different formats e.g. essays,
poster presentations, practical write-up etc. For all taught modules, apart from Module 6, the in-course assessment contributes 30% and the written examination 70% of the final mark for that particular module. For Module 6 the in-course assessments and written examination are equally weighted (50%) towards the final marks for that Module since the ICA component is larger, consisting of 5 practical write-ups.

3.5 Module 9 – Laboratory based project/Research Thesis

In September, students are examined on their research projects. This is on the basis of their written report (thesis) and an oral presentation with questions, which focuses on the research project and thesis. The oral examinations are conducted by internal and external examiners. The thesis and the oral presentation are weighted at 85% and 15% of the final mark and they comprise Element 2 (50%) of the course.

The project work will be written up in thesis form (see Thesis Guidelines later in this handbook) and submitted to two independent examiners for assessment. The mark awarded will be based on the quality of the thesis, the student’s comprehension of the work (assessed in the oral presentation) and taking into account the report submitted by their supervisor on their general performance in the laboratory and related areas (e.g. literature awareness). The project thesis must be submitted by 12.00 Monday 31st August 2016. Late submissions will receive the mark of zero. (Revised policy for “Penalties for Late Submission of Assessed Work” approved by the Senate at its meeting on 27 February 2013 effective form October 2013).

Note: Early submissions are accepted.

The oral presentations will take place in the last two weeks of September (date to be confirmed), the same two examiners that read the thesis will be present at the oral presentations. Students are not informed of the identity of their examiners in advance of the day of the oral presentation. The examination lasts for 20 mins and explores the detail of the research thesis and surrounding literature.

The student will be expected to have demonstrated a competent grasp of the subject and submitted a satisfactory thesis. Here satisfactory does not refer to size but to quality. Attention must be given to presentation - some students have not been awarded their MSc because of careless presentation, e.g. poor spelling, inadequate use of grammar, poorly drawn figures, captions or tables, etc. Your ability to behave as a professional is being assessed; unprofessional work will not be accepted as suitable for the MSc. At thesis submission, you will be asked to sign a form stating that the thesis is your own work and that you understand the consequences of plagiarising other peoples work. The direct and
unacknowledged repetition of your own work which has already been submitted for assessment can constitute self-plagiarism. You should therefore consult your tutor or supervisor if you are in doubt about what is permissible.

Your attention is drawn to the guidelines for writing the thesis included in this booklet (Page 25) and the College’s policy on plagiarism which is summarised below.

3.6 Weighting for each course unit.
The combined 6 taught Modules and laboratory research based project carry equal weighting at 50% each. Each of the 6 taught modules are equally weighted at 8.3%. 

\[
\begin{array}{|c|c|c|}
\hline
\text{Programme Component} & \text{ECTS} & \% \text{ Weighting} \\
\hline
\text{Functional Neuroanatomy} & 7.5 & 8.3\% \\
\text{Cellular and Molecular Neuroscience} & 7.5 & 8.3\% \\
\text{Neurodegenerative Disorders} & 7.5 & 8.3\% \\
\text{Neuroinflammation, Stroke & CNS trauma} & 7.5 & 8.3\% \\
\text{EITHER: Brain Imaging} & 7.5 & 8.3\% \\
\text{AND: Computational Neuroscience} & 7.5 & 8.3\% \\
\text{OR: Brain Plasticity and Neuroregeneration} & 7.5 & 8.3\% \\
\text{AND: Addiction and Neuropharmacology in psychiatry} & 7.5 & 8.3\% \\
\text{Laboratory based research project} & 45 & 50\% \\
\hline
\text{Total} & 90 & 100\% \\
\hline
\end{array}
\]

3.7 Exemptions
Both Imperial College London and the Division of Brain Sciences academic staff are sympathetic to genuine difficulties which some students encounter during their course, and can often help, in many ways - but this can only be done if you report the difficulty when it occurs. It is absolutely essential to keep in contact with your Personal tutor and the Course Organiser.

Failure of Examinations
A candidate who does not pass all of the examinations for the course at the first attempt can retake the examination(s) on one occasion only. Such a student would be expected to retake the examination(s) the following year. Only in exceptional circumstances will the College permit a candidate to defer the retake until the year after that (i.e. two years after the first attempt). Students who have to retake exams must complete another examination entry form and will be required to pay an examination entry fee depending upon how many parts of the examination are being retaken. The Board of Examiners, which meets in September after the oral presentations, informs students which parts of the examination have to be retaken. Please note that a candidate re-entering any part of the examination will normally only be credited with a bare pass mark if successful. (https://workspace.imperial.ac.uk/registry/Public/Procedures%20and%20Regulations/Regulations/Academic%20Regulations%202011-12/Taught%20Masters,%20PG%20Diplomas%20and%20PG%20Certificates.pdf)

Candidates should be aware that course content (both lectures and practical’s), is updated every year, as such, candidates should consult the following year’s timetable to ensure they are aware of all the examinable components of the course.

**Absence from Examination**

All examinations are a course requirement, and must be taken. A candidate who is registered for the exams but is not able to take one or more of them because of illness or because of some other serious matter (e.g. the death of a close relative) should notify the Course Organiser and the Registry immediately. The candidate must bring a medical certificate or other statement, confirming the circumstances of the absence, to the Registry immediately. The Registry will send this to the Academic Registrar who must receive it within seven days of the last exam. Failure to do so other than on grounds of illness or the death of a near relative can result in the student being failed in the examinations as a whole, and therefore required to re-sit all components in the following year. In these circumstances the candidate would normally be allowed to take the parts of the examination which were missed when the examination is next held (i.e. the following year), and this would be counted as his/her first attempt.

Students are reminded that if they are ill at the time of an examination a medical certificate must be supplied within 7 days, and that any examinations missed on account of illness cannot necessarily be taken until the following year.

**Withdrawal from Examinations**
A candidate who unexpectedly finds that he/she is unable to sit the examinations after having completed the course, must inform the Course Organiser and the Registry immediately. The candidate must also inform the Academic Registrar in writing of his/her withdrawal from the exams. The Academic Registrar must be informed at least seven days before the first examination otherwise the University will count this as his/her first attempt even though he/she did not take the exam. Any such deferral must be approved by the appropriate College Committee, and that approval is only agreed in exceptional circumstances.

**Cheating Offences**
The College takes cheating very seriously. Plagiarism (as described below) and Examination Offences are both considered cheating. The College policy and procedures concerning cheating offences, can be found at:
http://www3.imperial.ac.uk/registry/exams/examoffences

"Examination offences include, but are not restricted to:

a. Introduction into the examination room of any materials other than those permitted for the examination;
b. Removal of any examination script, any part of an examination script or blank examination stationery from the examination room except by a person with designated authority to do so;
c. Any attempt to confer with or gain access to the script of any other student during the period of the examination; or to collaborate in or gain access to the assessed coursework of any other student, unless authorised to do so;
d. Any attempt to tamper with examination scripts or coursework after they have been handed in by students;
e. Any unauthorised study and/or unsupervised absence of a student from the examination room during the period of the examination;
f. Impersonation or attempted impersonation of a student, including aiding and abetting someone to do so; both the student who is impersonated and the impersonator are liable to be punished.
g. Incidences of plagiarism, which is defined as the presentation of another person’s thoughts or words or work (including figures, diagrams, formulae and computer programs) as though they were a student’s own. Plagiarism offences, which may be minor or major in nature, shall be treated according to the procedure described in the Plagiarism section above.
h. Contract cheating including the purchase of essays and other material from other sources.
i. Other conducts likely to give an unfair advantage to the student"
The procedures for investigating cheating and deciding on the appropriate outcome and any appeals, are described on the College website:
http://www3.imperial.ac.uk/registry/exams/examoffences

In the case that an allegation is proven, a record will be entered onto the student’s file and the following actions may be taken:

In the case of a minor plagiarism offence, the case may be referred to the course’s Board of Examiners for them to decide on appropriate penalty.

Penalties for major offences vary depending on the circumstances and degree of offence but can result in expulsion from the College. A list of the possible outcomes and penalties is given in the Cheating Offences Policy and Procedures guidelines, which can be found on the College’s Exam offences webpage:
http://www3.imperial.ac.uk/registry/exams/examoffences

3.8 Plagiarism

College Statement to Students:
You are reminded that all work submitted as part of the requirements for any examination of Imperial College London must be expressed in your own words and incorporate you own ideas and judgements. The following extracts have been taken from the Imperial College London on-line “Examination and Assessment: Academic Integrity” advice leaflet found on the Cheating Offences Policy & Procedures webpage:
http://www3.imperial.ac.uk/registry/exams/examoffences

This advice leaflet is worth reading as it gives; clear information about what the College considers plagiarism; tips on how to avoid plagiarism and; further sources of study help.

“You are reminded that all work submitted as part of the requirements for any examination and assessment (including coursework) must be expressed in your own words and incorporate your own ideas and judgements.

Plagiarism, which is the presentation of another person's thoughts, words or images and diagrams as though they were your own and which is a form of cheating, must be avoided, with particular care in coursework, essays, reports and projects written in your own time and also in open and closed book written examinations. You are encouraged to read and criticise the work of others as much as possible, and you are expected to incorporate this into your thinking and in your coursework and assessments. But you must be sure to acknowledge and identify your sources. Direct quotations from the published or unpublished work of
others, whether from the internet or from any other source, must always be clearly identified as such by the use of quotation marks, whether in coursework or in an open or closed book examination. A full reference to their source must be provided in the proper form. Remember that a series of short quotations from several different sources, if not clearly identified as such, constitutes plagiarism just as much as a single unacknowledged long quotation from a single source. Equally, if you summarise another person's ideas or judgements, figures, diagrams or software, you must refer to that person in your text, and include the work referred to in your bibliography. Departments are able to give advice about the appropriate use and correct acknowledgement of other sources in your own work.

“The use of the work of another student, past or present, also constitutes plagiarism. Where work is used without the consent of that student, this will normally be regarded as a major offence of plagiarism. Giving your work to another student to use (other than in a group assessment) may also constitute an offence.”

Plagiarism is a form of cheating and is taken extremely seriously by the College. Any suspected cases will be reported directly to the College and if proven, disciplinary action may be taken which may lead to the student being asked to withdraw from the College. Cases of suspected plagiarism will be dealt with under the College's Examination Offences Policy. see: http://www3.imperial.ac.uk/registry/exams/examoffences

Compulsory plagiarism course
From the academic year 2014-2015, all Master's students will be required to complete an online plagiarism awareness course. All students on the MSc Translational Neuroscience must have completed their online plagiarism course before the end of the second taught module (Module 2).

Master's students who progress to a doctorate at the College will not be expected to take the doctoral version of the course but will be reminded about the course 6 months prior to submission of their thesis.

Access to the course: All students can self-enrol onto the appropriate course, by logging in to Blackboard in the usual way and following these instructions: https://workspace.imperial.ac.uk/graduateschool/Public/Plagiarism%20Awareness/Guide%20to%20Self%20Enrol%20on%20the%20Plagiarism%20Awareness%20course.pdf

Some anti-plagiarism tips
• Never cut and paste passages directly from internet sources into your thesis.
• Compare your writing with the original source and ensure it is sufficiently different.
• Be organised - start your writing well in advance, thus giving you enough time to write your own interpretation of a publication.
• Be sure any notes you make are in your own words so that you do not unwittingly plagiarise when you write up your notes as part of your thesis.
• Follow referencing conventions closely, acknowledging direct quotes and give a full list of the sources you have used at the end of your thesis.
• Add references into your writing as you go along - don’t write everything and then go back and add references at the end because it is easy to miss some.

For the College Library’s advice and help regarding Plagiarism, see: http://www3.imperial.ac.uk/library/subjectsandsupport/plagiarism/pgtaught

Detecting plagiarism:
As part of the Colleges anti-plagiarism policy, we will be using the TurnitinUK Plagiarism Detection Service (website and more information available from http://www3.imperial.ac.uk/ict/services/teachingandresearchservices/elearning/plagiarism) to screen the electronic version of your theses. These will be screened against the extensive body of literature/publications within the Turnitin programme, as well as against previous MSc theses from the MSc Translational Neuroscience course.

Please note: Students should not submit their thesis to the Turnitin website themselves.

3.9 Marking of Written Examination Question and Course Work
The following scheme is provided to all assessors for the marking of each component of the examinations.

>90% Outstanding essay, well-structured with good argument and containing extra material that you would not expect the run of the mill candidate to know. The student has impressed you with their knowledge and understanding of the area. Distinction.

70-80% Very good essay, either well-structured with good argument or containing extra material that you would not expect the run of the mill student to know. The student both knows and understands the subject. Distinction.

60-70% Good essay, containing all the salient facts and reasonably well organised. The student knows the subject well, but maybe is unable to demonstrate high levels of understanding. Merit.
50-60% Adequate essay, containing essential facts. Or it might contain all the salient facts but betray a basic lack of understanding by a lack of organisation. The candidate knows the subject adequately, but not to any detail. Pass.

40-50% Bad essay, either missing out essential points or getting them wrong. Disorganised argument. The candidate basically does not know the subject well enough (or has not left themselves enough time to demonstrate their knowledge). Fail.

30-40% Very bad essay. The student has got one or two things correct, and has some rudimentary knowledge of the topic. Fail.

20-30% Student has failed to grasp the topic, but has got a couple of facts correct. Alternatively the student has some rudimentary knowledge, but has made gross errors of fact or understanding. Fail.

10-20% The student has got a couple of facts correct, but has also included many gross errors. Fail.

0-10% The student shows little or minute amounts of knowledge. Fail.

Basis on which your MSc will be awarded

Following the Module 9 oral presentations in September, recommendation of candidates for the award of the degree of MSc in Translational Neuroscience will be based on the following considerations:-

**Distinction**
A student must:

- Achieve a mark of at least 50% in each module
- Achieve an aggregate mark of at least 70% in the three programme components as follows:
  - a) The four core modules
  - b) the two elective modules
  - c) the module ‘Laboratory-based Research Project’
- A student who achieves an aggregate mark of 70% in two of the programme components above and achieves an aggregate mark of 60% in the remaining component may be awarded a distinction at the discretion of the exam board.

**Merit**
A student must:

- Achieve a mark of at least 50% in each module
- Achieve an aggregate mark of at least 60% in the three programme components as follows:
  - a) The four core modules
b) the two elective modules

c) the module ‘Laboratory-based Research Project’

- A student who achieves an aggregate mark of 60% in two of the programme components above and achieves an aggregate mark of 50% in the remaining component may be awarded a distinction at the discretion of the exam board.

**Pass**

A student must:

- Achieve a mark of at least 50% in each module
- Achieve an aggregate mark of at least 50% in the three programme components as follows:
  a) The four core modules
  b) the two elective modules
  c) the module ‘Laboratory-based Research Project’

**Note:** To be successful in the MSc in Translational Neuroscience course will require determination and hard work. Regular study and paper reading are only some of the key factors. Please do not assume that your sole attendance to lectures will be sufficient to guarantee a pass.

### 4. THE RESEARCH PROJECT

In December you will be provided with a list of research projects that have been offered by potential supervisors. Please read through all projects on offer, and for those that interest you read up some of the references provided by the potential supervisor. For projects which particularly interest you we encourage you to go and discuss what the project entails with your potential supervisor. Once you have visited and discussed the project with the supervisor (and ideally lab members), submit to the Course Administrator, in order of preference, your top 5 project choices. The deadline for returning the form is the 31st of December.

Allocation of projects and supervisors is normally arranged during early January, taking into account wherever possible the academic interests of individual students and supervisor preferences. Research projects are designed to form part of major ongoing research themes in the host laboratory, thereby giving students experience of top quality competitive research. Projects are available in the laboratories of the Division of Brain Sciences and other Neuroscience units across the College. Where there is more than one student interested in a particular project, marks from the prior ICA’s will be taken into account when deciding which student is awarded the project.

**Working in the Laboratory**
Working in a laboratory is a very different activity from attending lectures and practical classes. Research is hard work, obsessive, has ‘highs’ and ‘lows’ but if you are prepared to put in the commitment it can be very rewarding - so, work hard and enjoy yourself!

It is expected that you work in the lab, Monday to Friday, between 9am and 5pm. For safety and security reasons you must not work alone in the lab (until a “lone worker” assessment has been carried out and approved by your supervisor and a copy set to the Course Administrator). Work outside of the above hours requires written permission from your supervisor and safety approval.

**Note:** Please be aware that your project might require flexibility in terms of hours spent in the lab depending on the project you will be working on. You should be prepared to comply with all requirements. Therefore, different students might have different experiences when it comes to their time spent in the lab during their project.

**Finance**
Research reagents are very expensive, so please be very careful and do not waste them. All your reagents will be ordered via your supervisor or designated person, with whom you can discuss your requirements fully. If you find that a reagent has been finished or is about to run out, you must inform them. Please remember that new reagents may take several days, and in some cases several weeks, to arrive. Hence, it is essential to plan ahead.

**Research Requires Commitment and Organisation**
There is no official timetable so you will need to organise your time efficiently. Experiments can be variable in length, and may contain quite long gaps (e.g. antibody incubation periods for immunohistochemistry); do not waste these “gaps”, use them to read scientific literature, collate previous data, plan future experiments, discuss with other members in the lab or start to write your thesis.

**Research can be Unpredictable**
The protocol for an experiment should be fully discussed with your supervisor, or an experienced member of the laboratory recommended by your supervisor, before you start. This avoids unnecessary errors, which can waste a lot of time and reagents. However, an experiment is designed to investigate the unknown, and therefore cannot always be guaranteed to be successful. It is not the equivalent of doing a class practical where the teaching staff have tried everything thoroughly beforehand. You must therefore be prepared for some disappointments as well as successes.
Research Requires a Mixture of Intellectual and Practical Input

Research cannot all be done in the library, nor can it all be done at the laboratory bench. You need a balance of both activities. The more you read the more you will understand the background and significance of your research. This will help you to do better, more creative experiments and to put your data in the context of the published literature.

Research Literature

The basic source of research information is the scientific journal. However, it is often best to read a good review article of your chosen area first. At the start of your project your supervisor should give you a selection of review and original articles to read. You should read these and also use them as a source of further reading.

In addition, you should make full use of the excellent facilities in the Wellcome Library. Check new issues for interesting articles. Learn how to use PubMed to do a computer literature search in your subject area and learn how to use the “EndNote” reference programme for compilation of your own reference library.

Experiments should be planned in Advance

Before you do an experiment you should think it out carefully in advance, planning all the appropriate controls as well as your experimental system. Discuss experimental design with your supervisor before you start the experiment. This can avoid mistakes and so save valuable time and reagents. Where possible, use the same batch of reagents (e.g. antibodies) for all your experiments, to ensure reproducible results.

Who to Ask for Advice and Help?

There are several people in the laboratory to who you can go to ask either academic or technical questions. However, if you do not understand or are confused by the answer (2 different people may give you 2 slightly different solutions to the problem), you should discuss the matter with your supervisor.

How is the Practical Work Organised?

Once you begin working on your own research project, you are responsible for all aspects of your work. This means that you should learn to make up your own reagents (e.g. buffers) and should clean up your area of the laboratory when you have finished. This is crucial for the successful, integrated functioning of a research laboratory. Do not be surprised if you are given communal laboratory chores to carry out.
**Safety**

Do follow all safety guidelines for your laboratory and Division. These will be explained by your supervisor and in an induction by the safety officer. You should ensure that appropriate COSHH forms for your work are completed. All COSHH forms should be signed at the start of your research project.

**Ethical, Genetic and Animal Permission**

All work using human material must be covered by appropriate ethical approval. All work on animals needs Home Office approval. All genetic modification must be approved by an appropriate committee. If your work involves these procedures please discuss this with your supervisor. The Course Organiser will have asked for proof that all appropriate paper-work was in place when the project proposal was submitted.

**4.1 Student Presentation**

Each MSc student is expected to give a short (15 min) presentation on their research using Microsoft PowerPoint or poster at approximately the 3.5 month time point into their project. You will be notified of this time point at the beginning of your project. The presentation days are intended to be informal and will consist of your fellow MSc students, your supervisor and colleagues in the laboratory in which you are working, and at least two of the main teaching staff involved in the MSc.

The purpose of these presentations is to provide an informal forum in which to discuss your work and future experiments to be performed. Do not worry about feeling nervous - everyone does, and adrenaline helps you to give a clear and focused presentation! Remember, the audience is there to help you; however hard you (and your supervisor) have thought about the project, it is always of benefit to discuss your work with a larger group - there will always be someone who comes up with a useful idea/criticism. Again, this is a vital part of research. You must be prepared to discuss your work with others and to consider their comments carefully.

Failure to attend the presentations will jeopardise your position on the course. You will not be allowed to submit your thesis unless you have delivered your presentation.

**4.2 Thesis Preparation Guidelines**

**WARNING:** Writing your thesis always takes much longer than you think it will, so you should start well in advance of the submission date (31st August). Printing and binding will
also take much more time than you expect. We advise you to test print pages with diagrams and figures as you go along – do not wait until the submission date because often diagrams and figures do not print as you expect them to and you need to fiddle with them to get them right. You need to prepare at least 4 bound copies: You will need to **submit three paper copies** by the submission deadline but, you should **prepare at least four copies** before your oral presentation so that you can give a copy to your supervisor(s). One of the copies, that you submit, will be returned to your supervisor(s) after the oral presentation. Please remember, **printing and binding will take several hours** and only properly bound theses will be accepted.

Remember: The thesis should be written in your own words (see notes on plagiarism).

**Structure**
The thesis should be approximately 30 - 50 pages long. The word count must be stated at the bottom of the abstract page. The word count must not exceed 15,000 (full details below). The word count does not include the title page, acknowledgements, figure legends and references. The page limit does not include figures or references. The thesis should be divided into the following sections:

- Title Page
- Acknowledgements
- Table of Contents
- Abbreviations
- Abstract (**maximum 1 page**)
- Introduction (**8 pages maximum**). This does not include Figures/Tables or legends.
- Materials and Methods (**approximately 8 pages**).
- Results (**15 pages maximum**). This does not include Figures/Tables or legends.
- Discussion (**15 pages maximum**)
- References

The thesis must:

- Be typed in 12pt Times New Roman
- Be on A4 paper
- Be printed double-sided
- Be typed with 1.5 line spacing
- Have suitable margins to permit binding: As a suggestion; top and bottom margins 0.75 inch, and inside and outside margins 1 inch, (to allow binding). Page numbering can easily be set in the bottom margin area 0.5 inch from the edge of the paper.
Each major section (Introduction, Material and Methods etc.) should start at the top of a new page. Do not waste unnecessary space, or pad your thesis with “Blank pages”. Text, for each section, should begin on the page containing the section title, i.e. do not have separate pages for the section titles “Introduction”, “Materials and Methods”, etc. Paragraphs should be made clearly visible either

The title page should contain the following information and be set out as shown below:

    Thesis Title
    Student’s full name

“A thesis submitted in partial fulfilment of the requirements for the degree of MSc. in Translational Neuroscience”

    Imperial College London
    September 2016
    Supervisor (‘s’) name(s)

Acknowledgments
Remember to thank your supervisor and any other lab workers who assisted/advised you. You should also acknowledge any funding agency that provided you with financial support during your studies.

Table of Contents
The Table of Contents can be single spaced but should be in no less than 12 pt text. Avoid wasting space in your Table of Contents but ensure it is clear to read. We highly recommend using Microsoft Word for writing your thesis as it has features that allow you to quickly and easily generate a Table of Contents that can automatically track changes and update page numbers.

Abbreviations
You should list on a separate page all the abbreviations that you have used in your thesis. Many of these are standard, e.g.

FITC - Fluorescein isothiocyanate
PD – Parkinson’s disease
PBS - phosphate buffered saline

These should be listed in alphabetical order of the abbreviation.
Try not to invent too many abbreviations of your own, as it can make it hard work for your examiner to read. In addition, the first time that you use an abbreviation in the main text, you must define it, e.g. “Antibodies were diluted in phosphate buffered saline (PBS)” The next time you can simply use the abbreviation, e.g. “Sections were rinsed three times in PBS”

You must be consistent. Once you have defined an abbreviation, always use the same abbreviation and do not revert to the original words.

**Abstract**
This should give a brief summary of the purpose of your study, the techniques that you chose to use, the major findings and a discussion of the technical aspects and academic significance of these results. At the end of the abstract please state the word count of your thesis e.g. Word count: __________. Remember, the word count must not exceed 15,000 words.

**Introduction**
This should provide the background literature to the area in which you did your research, together with a discussion of the specific work, published and unpublished, that led to your own research project. A final paragraph should introduce the specific topic of your research work. The introduction should not exceed 8 pages of text (figures and tables excluded).

**Materials and Methods**
This section should describe the reagents, cells etc. that you used and the methods that you carried out. Sufficient detail should be given such that someone could read the protocol and then repeat the experiment themselves.
Commercial reagents should have their source (i.e. the company, town and country) in brackets after they are mentioned for the first time, but not on subsequent occasions, e.g. “Monoclonal antibody LP34 (Dakopatts, Denmark) was used to detect epithelium. Epithelial cells in the thymic medulla labelled more strongly with LP34 than those in the cortex”. However, the country should only be given the first time a company is mentioned. On subsequent occasions the name of the company is sufficient, e.g. “Monoclonal antibody T2 (Dakopatts)”.

**Results**
Obviously the exact way in which you present your data will depend upon the nature of your data. However, the following general rules apply to all studies. Your data should be concisely
described in the text. Details should be presented as Figures (e.g. graphs, flow cytometric pictures and gel photographs) and Tables. Figures and Tables should each be numbered (e.g. Fig. 1, Fig. 2 etc., Table 1, Table 2 etc.) and should be referred to in the appropriate position in the text.

It is also a good idea to present your data in 2 ways - as basic raw data in a Table or photographs, and collated/analysed, e.g. graphs, histograms etc. In this way your examiner can judge both the raw data and your analysis of it.

For numerical data, you should apply statistical analysis where appropriate and state the statistical test that you have used.

Results section; a figure legend should briefly describe the methodology used to generate the results (including any statistical analyses performed on the data) but should not describe or discuss the results obtained. The text (not the Figure legends) in the Results section should describe the results and, if required to explain the next set of experiments carried out, a short discussion of the results. The main discussion should be reserved for the Discussion section – see below.

**Discussion**

There are two aspects to a discussion:

- Technical
- Academic

For the technical part you should discuss the advantages and disadvantages of the techniques that you used. You should also discuss the problems (there are always some!) that you encountered, why you think these arose and how you tried to solve them.

For the academic part you should summarise the major findings of your research data, and then discuss your interpretation of these data and what you feel is their significance in the context of work that has been published in the literature. It is important to be critical in your discussion of both your data and the literature. Critical does NOT mean negative, but rather point out both positive and negative aspects of the work.

Finally, you should discuss future work that could be done to answer the unanswered questions that remain at the end of your work, and the direction in which you think this research might lead.
References

When you write your thesis you will need to cite previously published work. Wherever possible every statement should be backed up by a suitable reference; this may be an original article, a review or possibly a book. In general it is not a good idea to cite text books. You can also cite web sites though you should indicate the date on which the site was accessed. There are computer programmes, such as EndNote, that can aid you in inserting your references and reference list (bibliography). You will have an introduction from the Library, to these referencing software packages, during the taught part of the course however, more help can be obtained from the library, later in the year, if you need it. Whichever software package you choose to use, please ensure you use the correct settings to give you the formatting described below – make sure you set this up as soon as you start writing your thesis, you do not want to be trying to do this when you are in a panic on the day of submission. Remember, the library can help you with this – as can other people in your lab.

In the text: A reference should be quoted in brackets at the end of the relevant sentence, by giving author(s) and date; where there are 3 or more authors, only the first author followed by "et al." is given, e.g.:

• One author paper:

Iron accumulation in dopaminergic nigrostriatal neurons (Dexter, 1989).

• Two author paper:

Epigenetic factors in Parkinson’s disease (Smith and Jones, 2001).

• Three author paper:

Role of CaV1.3 channels in the development of Parkinson’s (Hurley et al., 2002). [NB “ et al.” is the abbreviated form of the Latin et alia meaning “and others”. Et al. (and all other Latin phrases such as in vivo, in vitro) should be written in italics e.g. et al.]

Where the same author has published 2 papers in the same year they should be called a. and b., according to the alphabetical order of the second author, e.g.:

Jones, et al., 2000a (for Jones, Bishop and Smith, 2000)

At the end of the thesis: All the references quoted should be collected together at the end of the thesis, in a reference list, arranged in alphabetical order. Here, all the details (including all authors, full title, volume number and first and last page numbers) should be given as follows:

When you want to refer to a chapter in a book:


Do not quote a reference that you have not read; reading the abstract is not sufficient. Do not put a reference in the Reference list of your thesis unless you have quoted it in the main text. Refer to the earlier warnings regarding plagiarism.

**Backing up data**

It is easiest for you to back up your data onto your College Home Directory (‘H’ drive) (the safest place to keep your data because College backs this up every night).

**Remember BACK UP BACK UP BACK UP!** Always keep at least two back-ups, as well as the copy you are working on, in case of corruption on your computer and first back-up – it happens! Paranoia is essential!

The advantages to you of typing your own thesis are considerable since you can prepare your thesis at any time that is convenient to you (day or night), and you can make your own changes. If your typing is slow, you must allow sufficient time to complete the thesis before the submission date. The alternative is to pay for a professional typist to type your thesis. However, this is expensive and frequently takes much longer as typists are busy and may not be free exactly when you want them to be. It is also difficult to get last minute changes/errors corrected. If you choose to use a typist you should add at least an additional 1 to 2 weeks to the preparation time of your thesis.

**Binding your Thesis**

The preferred format is clear (acetate) front cover with a dark coloured card backing. The type of binding (plastic spiral, wiro, heat sealed) is your choice but plastic spiral and wiro binding tend to be more robust than heat sealed binding.

You can bind your thesis yourself using the plastic spiral punch binder in the Wellcome Library at the Hammersmith Campus (**N.B.** The library sells the covers, card backing and spirals but tend to run out at thesis binding time – therefore buy these items in advance if you choose to bind in the library). Libraries on other Imperial College London campuses also
have binding machines, as do a few select Departments and Divisions. Find out locations and availability of binding machines well in advance of the submission date (See below for a list of some local binders). Alternatively you can pay for it to be done at local shops. A few suggestions of places students have used in the past are given overleaf (all are also printers as well as binders). Prices vary widely from place to place so please check in advance. As a rough guide £1.00-£5.00 per thesis is reasonable, this cost does not include printing.

Please note that the cost of the preparation of a thesis (including paper and printing) is carried by the student - not the Division or laboratory (i.e. you should not print on College printers without permission from your supervisor).

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• Prontaprint (www.prontaprint.co.uk/services.asp)
114 Chiswick high Road www.chiswick.prontaprint.com
135 Nottinghill Gate www.nottinghillgate.prontaprint.com
• ColorMax
12 the Broadway Ealing www.colormax.uk.com
• Blissetts Bookbinders
Roslin Road Acton www.blissetts.com
• Office Depot

South Kensington Campus mailto: imperial.college@officedepot.co.uk

Detecting Plagiarism

As previously mentioned, as part of the Colleges anti-plagiarism policy, we will be using the TurnitinUK Plagiarism Detection Service to screen all MSc Translational Neuroscience Theses submitted in September. These will be screened against the extensive body of literature/publications within the Turnitin programme, as well as against previous MSc theses from the MSc course. Please remember: Students MUST NOT screen their theses, using Turnitin, themselves.

When you submit your thesis you will be required to sign a form confirming that the text and content of your thesis is your own, is original and has not been plagiarised.

This signature will also confirm successful thesis submission by the required date.

Thesis Submission

31st August 2016 - Submit three hard copies and two electronic copies (as described below) of your thesis to the Course Organiser or Course Administrator. Both the paper copies and e-version are required for submission to be complete.
IT IS ESSENTIAL THAT YOUR THESIS IS SUBMITTED BY 12 noon. Theses submitted after the 12 noon deadline will receive a mark of zero.

Please submit your e-version in both PDF and word format as one Microsoft Word file (not several sections in individual files) AND one AdobePDF file. The complete electronic version should be saved in the following format:
Name, initials, year, MSc TransNeuro
e.g. DexterDT2016MScTransNeuro

5. IMPERIAL CAMPUSES

Imperial College London comprises 8 campuses, 6 within London and 2 extending out to Silwood (Ascot) and Wye (Kent). The principal campuses you will visit during your studies will be Hammersmith (Modules 1-8, exams and tutorials) and South Kensington (seminars and Graduate School events). Research projects are often offered at the Hammersmith, South Kensington, St. Mary’s, Chelsea and Westminster and Charing Cross campuses but other campuses may also offer projects.

Imperial West

The College will complete the purchase of 11.5 acres from Aviva in August 2013. Combined with the land which Imperial bought from the BBC since 2009, the College’s total landholding for its new campus known as Imperial West will increase to 22.75 acres; Imperial West is situated just to the north of the A40 on Wood Lane The site is 500 metres from the Hammersmith Campus and the nearest Tube station, White City, is also just 500 metres away. To view a map showing the location, visit:
http://www3.imperial.ac.uk/newsandeventspggrp/imperialcollege/newssummary/news_19-6-2013-9-54-26

Work on the 606-bed postgraduate accommodation development has now finished and opened at the start of the 2012/13 academic year.
Potential future developments on the site include retail units, a community centre, GP Surgery, incubator space, new commercial office blocks, new academic and administrative accommodation. Progress can be followed at:
http://www3.imperial.ac.uk/newcampus

5.1 Campus Maps
The following pages provide maps of the key Imperial College London campuses you will visit and a [www.streetmap.co.uk](http://www.streetmap.co.uk) locator for the Hammersmith campus.
Map of the South Kensington campus
Building key

1. Beit Quadangle
   Beit Hall, Imperial College Union

2. Imperial College Union

3. Ethos Sports Centre
   Sport Imperial

4. Prince's Gardens, North Side
   No.8: Early Years Education Centre
   No.10: Chaplaincy
   No.11: UK Energy Research Centre
   No.15: Centre for Environmental Policy

5. Weeks Hall

6. Blackett Laboratory
   Physics, Institute of Shock Physics

7. Roderic Hill Building
   Aeronautics, Biology, Centre for Process Systems Engineering, Chemical Engineering, Composites Centre

8. Bone Building
   Aeronautics, Chemical Engineering

9. Royal School of Mines
   Earth Science and Engineering, Materials

10. Aston Webb
    Earth Science and Engineering

11. Bessemer Building
    Centre for Blast Injury Studies, Bioengineering, Imperial Incubator, Institute of Biomedical Engineering, Institute for Systems and Synthetic Biology

12. Goldsmiths Building
    Bioengineering, Materials

13. Huxley Building
    Computing, Institute of Shock Physics, Mathematics, Physics

14. ACE Extension
    Aeronautics, Chemical Engineering

15. William Penney Laboratory
    London e-Science Centre

16. Electrical Engineering Building
    Electrical and Electronic Engineering, Energy Futures Lab

17. Business School
    Centre for Quantitative Finance, Innovation Studies Centre, Entrepreneurship Centre, Centre for Health Management

18. 53 Prince's Gate
    Business School

19. Eastside
    Gabor Hall, Linstead Hall, Wilkinson Hall, Eastside bar and restaurant, Essentials convenience shop

20. Sheffield Building
    Level 1: Catering, Centre for Health Policy, Queen's Tower Rooms, Security Reception
    Level 2: Bank (Santander), Fuel Stop, Great Hall, Junior Common Room, Newsagent, Optician, QT snack bar, Senior Common Room, Union Shop
    Level 3: Academic Visitors' Accommodation, Centre for Academic English, Centre for Co-Curricular Studies, Conference Office, Equality and Diversity Unit, Finance, Graduate Schools, HR Pensions, Human Resources, International Student Support, Outreach, Centre for Continuing Professional Development, Registry, Sport Imperial, Student Accommodation Centre, Student Hub

   Level 4: Archives, Continuing Professional Development Unit, ICT, ICT Helpdesk, Occupational Health Service, Safety Department

   Level 5: Blyth Music and Arts Centre, Careers Service, Communications and Public Affairs, Development, Educational Development Unit, Estates (Projects, Facilities, Finance, Property Management) Read and Pippard Lecture Theatres, Seminar and Learning Centre (SALC)

21. Grantham Institute – Climate Change and the Environment

22. Faculty Building
    Academic Health Science Centre (AHSC), Central Secretariat, Climate-KIC, Communications and Public Affairs, Corporate Partnerships, Faculties of Engineering, Medicine and Natural Sciences Administration, Finance, Human Resources, Institute for Security Science and Technology, Institute of Global Health Innovation, Planning, President's Office, Research Services

23. 58 Prince's Gate
    Ballroom, Billiard Room, Boardroom, College Room, Garden Room, Imperial Consultants (ICON), Oak Room, Programme Management Office, Enterprise Division

24. 170 Queen's Gate
    Council Room, Dining Room and Solar, President's Residence

25. Central Library
    Library Archives and Special Collections

26. Queen's Tower

27. Skempton Building
    Civil and Environmental Engineering, Centre for Environmental Control and Waste Management, Centre for Transport Studies, Wohl Reach Out Lab

28. City and Guilds Building
    ICT, Mechanical Engineering, Vibration University Technology Centre

29. Southside
    Falmouth Keogh Hall, Selkirk Hall, Tizard Hall, Health Centre, Dentist

30. Sir Ernst Chain Building – Wolsson Laboratories
    Biology, Cell and Molecular Biology, Centre for Bioinformatics, Electron Microscopy Centre, Glycobiology Training, Molecular Biosciences, Research and Infrastructure Centre, Centre for Structural Biology

31. Flowers Building
    Cell and Molecular Biology, Centre for Integrative Systems Biology and Bioinformatics, Chemistry, Electron Microscopy Centre, MRC. Centre for Molecular Bacteriology and Infection

32. Chemistry Building
    Chemistry

33. Sir Alexander Fleming Building
    Medicine, Biology, Biomedical Sciences, Cell and Molecular Biology, Molecular Biosciences

34. Chemistry RCS1
    Biochemistry, Biology, Centre for Photomolecular Sciences, Chemistry

35. 52 Prince's Gate
    Imperial Innovations

36. Alumni Visitor Centre
    College Cafe
5.2 Facilities at the Hammersmith Campus

The majority of teaching for the MSc in Translational Neuroscience will be based on the 14 acre site of Hammersmith Hospital campus. The Hammersmith campus has excellent teaching facilities for postgraduate students with lecture theatres, seminar rooms, laboratories, computer rooms and a small gym. Sixteen MSc courses, eleven BSc courses and nine Diploma courses are currently taught on the site. Postgraduate (PG) students can also benefit from a new PG Common Room on the 3rd floor of the Commonwealth Building.

The Wolfson Education Centre, which provides social interaction areas and a modern education centre, will be the location for some of the course lectures and seminars. The Dean of Campus is Professor Jon Friedland. Facilities are also available for selected postgraduates to undertake research either in medical subjects or scientific subjects applied to medicine in preparation for the Ph.D. degrees of Imperial College London. Research and clinical attachments not leading to degrees but offering experience in specialist fields are available throughout Imperial College London.

The new building opposite the CWB is the Imperial Centre for Translational & experimental Medicine (ICTEM) a £99 million development, funded partly by the Wellcome Trust and MRC, will house the largest cardiovascular research facility in Europe; include a new Wellcome Trust Clinical research facility, MRC Clinical Sciences Centre and a new imaging unit, in addition to the headquarters for the BHF Centre of Research Excellence at Imperial College London.

Teaching Areas

The majority of teaching for the MSc modules takes place in the CWB – the teaching laboratories are located on the newly refurbished 3rd floor and the seminar rooms in the CWB sub basement, the CWB 3rd floor and in the WEC. Computer facilities are also available in the Library.

Library

Accessing scholarly information will be an essential part of completing your MSc. course at Imperial College London. To this end, the Imperial College Library, which consists of the Central Library in South Kensington and five distinct medical campus libraries across London, delivers a wide range of services to support students’ research needs. The Library provides access to a vast range of online journals, reference materials, print and electronic books (including recommended textbooks), and subject-specific databases such as PubMed.
and the Cochrane Library. The Library staffs are an excellent source of guidance on academic best practice and furthermore, can offer training and advice to help augment your search techniques, keep abreast of the latest research activities in your field, and manage references using up-to-date software packages. For more information on the Library, please consult the main library website at http://www3.imperial.ac.uk/library or the Medicine @ Imperial College London Library blog at http://imperialmed.wordpress.com/
The Hammersmith campus has a library, the Wellcome Library, refurbished in the summer of 2007, with a good collection of 870 current medical and scientific journals and a substantial collection of books for reference and provides extensive computer facilities including on-line literature searching. In addition to the Library there are study areas on the Ground Floor. The study areas Imperial College London and the Faculty of Medicine 49 and Library have different opening hours - see below for further information. It also provides access to a considerable number of electronic journals held by Imperial College London.
http://www3.imperial.ac.uk/library/find/ejournals

Library Location and Opening Times
There are six medical libraries within Imperial College London, plus the library of the Kennedy Institute of Rheumatology, which is associated with the College. Opening times may vary; the website http://www3.imperial.ac.uk/library has the latest details. Check to confirm a library is open before traveling to use it. See the website for travel guides and maps of campus locations. The opening times for the principal libraries that you are likely use are detailed below:

Hammersmith Campus Library.
Commonwealth Building, Hammersmith Hospital, Du Cane Road W12 0NN.
Telephone: +44 (0)20 8383 3246
Email: library@imperial.ac.uk
URL: http://www3.imperial.ac.uk/library/usethelibrary/hammersmith

Opening Hours:
Library 1st floor
Monday – Friday 09:00-21:00
Saturday – Closed
Sunday – Closed
During the above hours access to the library and study rooms is via the library main entrance, 1st floor CWB.

Study rooms (ground floor)
Monday – Friday 21:00 - midnight
Saturday – 09:00-21:00
Sunday – 09:00-21:00
During the above hours access to the study rooms is via the ground floor entrance near the
Catering
Students may use the Ex Libris café situated on the first floor of the Commonwealth Building (08.30 – 16.00 weekdays only; hot food served 12.00 – 14.00), the restaurant on the ground floor of the Wolfson Education Centre (10.00 – 16.00 weekdays only; hot food served 12.00 – 14.00) or the Just Eat restaurant (07.00 - 14.30 weekdays, 08.00 – 14.00 weekends) situated approximately half way along the North Corridor of the Hospital. There is also a small cafe area, Corbett’s (07.30 – 18.30 weekdays only), situated in the Outpatients Department of the Hospital and some vending machines, that vend hot meals, in the same area.

Shops
In the main entrance of the Hospital you will find; a convenience store which sells newspapers, postage stamps and stationary, toiletries, snacks, drinks and confectionery; a National Westminster Bank PLC cash-point; a florist and a number of public pay phones. Directly next to the Hospital on the right hand side (as you face the hospital), is a CostCutters Supermarket.

Stamped mail may be posted in the appropriate post box on the ground floor of the Commonwealth Building or in the front entrance of the hospital (to the left of the reception desk). The nearest external post box is located in Artillery Lane (to the left of the Hospital as you look at it).

Sports Facilities
We are justifiably proud of our sporting tradition here at Imperial. With access to excellent indoor and outdoor sports facilities and services on and off campus, Imperial students have
ample opportunity to participate in a wide range of sport and physical activity. www3.imperial.ac.uk/sports

We actively encourage students of all sporting abilities to take part in physical activity, not only for the health benefits but also because sport can greatly enhance your time here at Imperial. We are also committed to promoting sporting excellence for our elite performers and have a strong scholarship programme to support this.

Working in close partnership with the Student Union means that together we can ensure a high standard of student club sports. The Union has a wide range of sports clubs for students of varying abilities to join, many of which compete at a high level in BUSA (British Universities Sports Association) leagues. With many other leagues and sports events throughout the year, Imperial really does deliver sport for all.

**Locations of Sports Facilities**

- **Ethos**, South Kensington Campus +44 (0)20 7594 6660
  Ethos, the College's flagship sports centre, offers students free use of the 25-metre swimming pool and 75-station fitness gym. There are excellent rates for use of the climbing wall, sports hall, exercise studio, three squash courts, sauna/steam room and spa, sports injury unit, and café.

- **Impetus Gym**, Hammersmith Campus +44 (0)20 8383 3255
  There is a small gym located in the sub-basement of the Commonwealth Building (free to use for students). Shower facilities are also provided. The small gym in the Commonwealth Building has the latest cardiovascular and resistance equipment, and offers inductions, fitness programmes and personal training.

**Faith**

Hammersmith Hospitals NHS Trust provides a Chaplaincy service representing the major world faiths. The service provides pastoral and spiritual support for patients, relatives, friends and staff. The Chaplaincy department is located on the Ground Floor of Hammersmith Hospital. Here you will find the Christian Chapel and also a Muslim Prayer Room. You can contact our chaplains direct by calling, 0208 383 4574 or by email chaplain@hhnt.nhs.uk

**6. SUPPORT FOR STUDENTS**

We want you to enjoy your experience at Imperial College London and to get the most out of your time with us. There are numerous avenues available to you to receive help and support during your studies. This section describes these support services.
Information for Students with Disabilities, Specific Learning Difficulties or Long-term Health Issues

At Imperial College London we recognise that studying at university can be a challenge, especially if you have a disability. We are keen that you have every opportunity to fulfil your potential and graduate with the degree you deserve. It is therefore important that you let us know about any disability, specific learning difficulty or health problem as soon as possible so that we can give expert advice and support to enable you to do this.

Some people never think of themselves as having a disability, but students who have experienced any of the issues listed below have found that a little extra help and support has made all the difference to their study experience.

- Specific learning difficulties (such as dyslexia, dyspraxia, AD[H]D)
- Autistic spectrum disorder (such as Asperger’s)
- Deafness or hearing difficulties
- Long term mental health difficulties (such as chronic anxiety, bipolar disorder, depression)
- Medical conditions (such as epilepsy, arthritis, diabetes, Crohn’s disease)
- Physical disabilities or mobility impairments
- Visual difficulties

Where to find help:

Your Disability Liaison Officer (DLO) Dr Michael McGarvey (m.mcgarvey@imperial.ac.uk, Variety Wing Floor D, Room 3, St Mary's Campus, Norfolk Place, London W2 1PG, Tel: 020 7594 9035) is your first point of contact within your department and is there to help you with arranging any support within the department that you need. The DLO is also the person who will apply for Special Examination arrangements on your behalf. You need to contact him without delay if you think that you may need extra time or other adjustments for your examinations. [http://www3.imperial.ac.uk/registry/exams/specialexamarrangements](http://www3.imperial.ac.uk/registry/exams/specialexamarrangements)

Draft Disability Liaison Officer Roles and Responsibilities (academic)

The College has established a comprehensive network of Disability Liaison Officer’s (DLO Network; email ‘DLO’ in Outlook) in both academic and support Departments. These liaison officers are a named point of contact for students and staff on behalf of students within their own area of expertise. The Disability Liaison Officers within each academic Department work with the Disability Advisory Service to co-ordinate support for students in the learning and teaching environment.

It is recommended that all Disability Liaison Officer’s should have a general knowledge of:
- the definition of disability from the perspective of the social model of disability;
- relevant departmental procedures, as well as information about course requirements;
- confidentiality and of the correct procedures for handling information regarding an individual’s disability;
- the procedures for requesting Special Examination Arrangements;
- the range of reasonable adjustments for learning and teaching that may be required within their department;
- the Disability Advisory Service and Disability Liaison Officer’s in other academic and support departments who could advise and assist in implementing adjustments;
- the support and resources are available within the College as a whole and detailed understanding of the individual departmental procedures.

**Student Support Role**
- To act as first port of contact within the department for students with Specific Learning Difficulties.
- Provide advice and support to disabled students on departmental policies and procedures.
- Ensure all other departmental staff are informed of the reasonable adjustments required for each student.
- Liaise with the Disability Advisory Service for advice where the reasonable adjustments are not clear, difficult to implement or which cannot be made.
- Apply on behalf of students for Special Examination Arrangements and ensure that eligible students receive the appropriate arrangements when taking exams or tests organised by the Department.
- To ensure that students who disclose a disability to any member of staff within the Department are referred to the Disability Advisory Service for further support.
- Support the College Disability Advisers in the administration of the Disabled Students Allowance from individual Research Councils (Disability Liaison Officer’s with responsibility for Postgraduate students)
- Together with the Disability Advisory Service make arrangements for notetaker support where required; arranging access to the Department for notetakers and other personal assistance for disabled students.

**Wider role**
- Act as a central point of contact for the Department with the Disability Advisory Service and other Disability Liaison Officers in the support Departments.
- Keep departmental staff, in particular those involved with admissions, briefed on developments for disabled students at the College in general and the Department in particular.
- Together with the Disability Advisory Service, provide advice to staff on making reasonable adjustments for applicants with disabilities.
- Provide information advice and support to colleagues in the Department on supporting students with specific needs in conjunction with the Disability Advisory Service and other Disability Liaison Officer’s in the College.
- To ensure disability is on the agenda for all induction and admissions procedures within the Department and the College’s disclosure statement is actively promoted as well as being in departmental handbooks for undergraduate, postgraduate taught and postgraduate research students.
- Promote the College’s statement on recording lectures and ensure that it is in all departmental handbooks.
- Take the lead in ensuring the Department’s learning and teaching resources are fully accessible and are held electronically for ease of modification so that they can be produced in Braille or other formats required by disabled students.
- Ensure disability is included in the departmental strategic planning and policy agenda.
- Undertake professional development to enhance understanding of needs of disabled students.
- Draft a brief statement on provision for disabled students within their Department to be published on the Disability Advisory Service webpage and inform the Disability Advisory Service of changes as they occur.
- To attend the DLO Network Members Meeting once a term – bringing departmental comments and concerns to the consultation arena and disseminating policy and practice back to the Member’s academic department.
- Circulate information regarding developments in legislation and policy making relevant to disability support within their Department.

The Disability Advisory Service is always available to Disability Liaison Officer’s for both practical and moral support in regard to an individual student or on more general College issues.

A list of liaison officers is available at:
http://www3.imperial.ac.uk/disabilityadvisoryservice/whoarewe/liaisonofficers
Disability Advisory Service:
http://www3.imperial.ac.uk/disabilityadvisoryservice/whoarewex/departmentaldisabilityofficers

The Disability Advisory Service works with individual students no matter what their disability to ensure that they have the support they need. We can also help if you think that you may have an unrecognised study problem such as dyslexia. Our service is both confidential (information about you is only passed on to other people in the university with your agreement) and individual in that any support is tailored to what you need.

Some of the sorts of things we can help with are:

- Being an advocate on your behalf with others in the College such as your departmental liaison officer senior tutor or exams officer, the accommodation office or the estates department
- Checking that your evidence of disability is appropriate and up-to-date
- Arranging a diagnostic assessment for specific learning difficulties
- Help with applying to the College for the cost of an assessment
- Help with your application for the Disabled Students Allowance (DSA) see below
- Helping students not eligible for the Disabled Students Allowance in obtaining support from other sources
- Help with arranging extra Library support
- Supporting applications for continuing accommodation for your second or later years

Disabled Students Allowance:
http://www3.imperial.ac.uk/disabilityadvisoryservice/supportatimperial/funding

Students who are home for fees and who have a disability can apply for a grant called the Disabled Students Allowance which can pay any extra costs that are a direct result of disability. This fund is not means-tested and is also a grant not a loan so any home student with a disability can apply and will not be expected to pay it back. Remember students with unseen disabilities such as mental health difficulties, dyslexic type difficulties or long term health problems are also eligible for this fund.
How to get Help & Information

If you have an academic question, you should contact your tutor in the first instance; they will be able to direct you appropriately if they cannot themselves answer your question. If you have a question about the course, you should contact Prof Julian Dyson or Mrs Veronica De Araujo. If possible please make initial contact by email, as they may be able to answer your query more efficiently that way. If you have a non-academic question, you should contact the course administrator. If you have a question about registration administration/finance, contact the Postgraduate Registry. Internal extension: 445 48089 or external 020 7594 8089. Mail to: medicine.pg.admissions@imperial.ac.uk

We hope that you do not have any problems during your time with us. However if you do, there are several additional places you can turn to:

- **Studying.** You will find that the course of lectures, related coursework and laboratory practical classes is intensive. Students can become worried when they fall behind with their work and such problems, when they arise, should be discussed with your tutor or other members of staff to avoid anxiety. Problems of one sort or another often arise and you will find the members of staff experienced in dealing with them. If at any stage you have problems that interfere with your course of study PLEASE inform your tutor, Dr Sophie Ruschmann, Mrs Veronica De Araujo or Dr Mick Jones. We may be able to help but, we can only do so if we know that there is a problem. The following people are available to help with your studies – please ask if you are struggling - Personal tutor, Chief Tutor, Course Organiser and Course Administrator.

- **International students.** Additional support is available, through the international office, to help international students with the specific issues that can come up when studying abroad. [http://www3.imperial.ac.uk/international](http://www3.imperial.ac.uk/international)

- **Finance.** Living in London is notoriously expensive – the cost of accommodation is high and everyday items cost more than outside of the city. Imperial College has a website with some advice about finances: [http://www3.imperial.ac.uk/studentfinance](http://www3.imperial.ac.uk/studentfinance)

  And more help and advice can be acquired from the student advisor Nigel Cooke who works at the information and advice centre: [https://www.imperialcollegeunion.org/welfare-and-advice](https://www.imperialcollegeunion.org/welfare-and-advice) Nigel can give advice on a number of things including housing, consumer rights (e.g. disputes with landlords), complaints and personal safety.

If you have financial problems, please also contact the Registry who may be able to advise on funds that are available to help students in need. The College has a number of groups
and advisory services to help with various issues e.g. finance, health and language. For more information see the welfare and advice webpages: http://www3.imperial.ac.uk/students/welfareandadvice

• **Health.** It is very important that you register with a doctor as soon as you have moved into your accommodation; don’t wait until you become ill. A list of local doctors and dental practitioners is available from the School Registry. Further lists may also be obtained from your local main Post Offices and Libraries. If you have health problems, you should either make an appointment with your local GP, the College Health Centre (www.imperialcollegehealthcentre.co.uk) or the Occupational Health Service at South Kensington (020 7594 9401, occhealth@imperial.ac.uk).

• **Accommodation.** The College has an accommodation team to help you with all aspects of finding and dealing with accommodation. Visit the website for more information: http://www3.imperial.ac.uk/accommodation/prospectivestudents/prospectivepostgraduatetudents

• **Careers.** The College has a careers advisory team, more information about their services can be found on their website: http://www3.imperial.ac.uk/careers

• **Counselling** services are also freely available to students: The Student Counselling Service offers confidential short term counselling to all Imperial College London registered students. The counsellors are experienced and professionally trained and the service is free of charge. A counselor seeks to help you focus on and understand more clearly, any personal, emotional, or academic problems that are concerning you. If appropriate, they can suggest other people who might be helpful to you. To make an appointment at the Hammersmith campus contact the Service's Co-ordinator, Maggie Backhouse (020 7594 9637, counselling@imperial.ac.uk) and ask to make an appointment at Hammersmith. The counsellor’s room is located in room 2S7 in the Commonwealth building. Appointments can also be booked at the South Kensington campus by contacting Maggie. For more information, visit the Student Counselling Service’s website at: www.imperial.ac.uk/counselling. In addition, the Imperial College Union's advice office employs a professional member of staff to advise students. The service is free, and provides independent, impartial and absolutely confidential advice. The Union Adviser, Nigel Cooke, is able to advise on practically any matter, including: - student loans - benefit entitlement
- legal matters - employment law
- immigration rights - consumer rights
- council tax - landlord & tenant issues (housing rights)
- financial advice (includes debt & related issues)

https://www.imperialcollegeunion.org/welfare-and-advice

The Union Adviser stresses that all consultations with students are confidential, and that
details of any consultation will not be divulged to any third party without a student's express
permission. You can make appointment with him yourself by telephone (020 7594 8067) or
by email: advice@imperial.ac.uk. The Imperial College Union's Advice Office is located on
the first floor of the Union Building in Beit Quad which is situated in Prince Consort Road,
London, SW7 2BB. If you have any difficulty in making an appointment or experience any
other problems with the service, please contact the Registry.

Students may also want to contact an anonymous counselling service such as London
Nightline: listening@nightline.org.uk

• College Tutors. The College Tutors deal with student welfare, discipline and wardening
matters. They report to the Director of Student Affairs Professor Denis Wright. Students who
have serious concerns that they feel have not been adequately addressed by the Course
Organiser, should contact a College Tutor. Dr Mick Jones (m.d.jones@imperial.ac.uk
Tel: 020 8383 8577), Dept. of Medicine, is the College Tutor with particular responsibility for
the undergraduate and postgraduate students at the Hammersmith campus. Dr Jones is a
Reader in Molecular Virology and the joint head of the MRC Clinical Science Centre
Genomics Laboratory. He is course director of the MSc in Molecular Medicine and is the
Divisional Director of Postgraduate Studies for Taught Courses, as well as Theme Leader of
Cellular and Molecular Sciences for the Graduate Entry Programme for Medicine. Dr Jones
is one of three College Tutors who can be contacted as follows:

Mrs Margaret Cunningham: m.cunningham@imperial.ac.uk tel: 0207594 8277
Dr Mick Jones: m.d.jones@imperial.ac.uk tel: 020 8383 1643
Dr Simon Archer: s.archer@imperial.ac.uk tel: 020 7594 5368
See also: http://www3.imperial.ac.uk/students/collegetutors

• Faith. The College shares faith facilities, at the Hammersmith campus, with the
Hammersmith hospital. More information can be gained through the Chaplaincy centre
7. HOW TO MAKE A COMPLAINT

If a student wishes to make a complaint then it may be dealt with by the Course Organiser talking to the student; the problem may be easily solved or be due to a breakdown in communication. If it is serious then it must be passed immediately to Chief Tutor (Dr Mick Jones). He may need to take advice from the appropriate College or Departmental authorities in dealing with any complaint. These include Dean Surtees for examination problems and Nigel Wheatley for Registry issues. According to the College there are four stages in the Procedure for Dealing with Complaints by Students which are:

Stage 1: The Complaint should be raised in the first instance with the individual responsible.
Stage 2: The Complaint is referred to the relevant responsible authority; this is determined by the subject of the complaint*
Stage 3: The Complaint is referred to the academic registrar who will investigate the complaint and propose a resolution in consultation with the responsible authority.
Stage 4: A report is prepared by the Academic Registrar that is referred to the Pro Rector (Educational Quality), who will reach a conclusion on the complaint and determine a course of action.

* Academic matters: the Head of Department or Head of Medical Division. Students’ Union matters: the President of Imperial College Union. College-managed Residential Accommodation: the Head of Residences. Catering: the Head of Catering. All other administrative matters: the College Secretary.

It is important that a contemporaneous record be kept of all conversations and communications (phone, in person, email or letter) concerning the student. Such information may be useful when considering whether allowance needs to be made for poor performance in an examination. It is also useful so that there is a paper trail if a complaint is referred to higher authorities in the College. A template for recording all such student contacts is included as Appendix 4.

8. HEALTH AND SAFETY

8.1 GENERAL SAFETY

Imperial College Campuses operate as a smoke-free environment. No smoking is permitted anywhere on the premises. For smokers based on the Hammersmith campus, the nearest location for smoking a cigarette is on Du Cane Road, or during the summer in the Wormwood Scrubs park to the rear of the hospital.
Students must read the safety instructions provided in this booklet. You should remember the following points:

- You will be issued with lab coats and must wear one at all times in certain areas of the laboratory as directed. Remove your lab coat before leaving the laboratory and do not wear it in offices, teaching rooms, common rooms, or any of the hospital dining areas.

- Gloves must be worn when handling potentially hazardous chemicals or radioactive isotopes, and when handling tissue but must be removed when leaving the laboratory.

- All students must observe the fundamental rules of laboratory hygiene i.e.: do not eat, drink or smoke whilst in the laboratory, and wash your hands before leaving the laboratory.

- Disposable scalpel blades, razor blades and syringe needles should never be left lying around; always dispose of them in the sharps bin provided, even if they are clean. If you find that a bin is nearly full, seal it and replace it with a new one.

- Broken glass should be put in the glass bucket only, not in the waste paper bins or fire buckets. Waste paper should not be placed in glass buckets or fire buckets.

- Make sure that you familiarise yourself with the fire instructions for all of the areas in which you will be working and studying, and that you are aware of any other safety and security procedures in these areas.

**8.2 LABORATORY SAFETY**

The following pages contain instructions for the maintenance of safety and security in the teaching laboratories, 3rd floor CWB, Imperial College London. The Campus Health & Safety Manager is Mr Sukwinder Singh (sukwinder.singh@imperial.ac.uk, 020 3313 2218). Please read the following carefully, your safety and that of others may depend on it. Many of these safety instructions are also important for the project. However before starting your project you must undergo an induction session with your local safety officer.

It is recommended that students keep these instructions with them during all practical sessions.

**General Safety Measures**

All students should be seen by Occupational Health and should take advantage of their free immunisation service. It is your responsibility to ensure that you are adequately protected against possible sources of infection.

**Protective Clothing**

You will be issued with lab coats and you should wear one at all times in the laboratories especially if you are handling hazardous substances. Remove your lab coat before leaving any of these areas and do not wear it in offices, the tea-room, or any of the hospital dining areas.

You are responsible for ensuring that your coats are washed by giving them to the teaching demonstrator, who will make arrangements for collecting dirty coats. Do not wear soiled coats. When not in use, lab coats should be stored on the backs of your laboratory chairs, not in offices or lockers. The hooks provided in the main laboratory are to hang any personal overcoats and bags. Do not allow coats and bags to clutter the surfaces or floors of the laboratory this is hazardous.
Gloves must be worn whenever handling potentially hazardous chemicals or radioactive isotopes. Wear gloves also for handling tissue.

Hygiene
Please observe all the fundamental rules of laboratory hygiene i.e. do not eat or drink in any laboratory, wash your hands before leaving the laboratory, etc.

Accidents
Ensure that you know what to do in event of an accident. If there is a spillage of hazardous chemicals or radioactive isotope, ensure your own safety and that of others. If in doubt, evacuate the area immediately and seek help from a senior member of the Division. Report the accident to the safety officer, practical demonstrator, group leader, or another responsible person as soon as possible. For your own protection, if you are injured (even a minor injury) or splash hazardous substances into your eyes you should fill in an accident form, and visit Occupational Health or Accident and Emergency if necessary. Your attention is drawn to notices about sharps injuries. The Division of Brain Sciences Safety Officers (Colin Rantle) can be contacted at Hammersmith 0207 594 7034. The Campus Health & Safety Manager is Mr Sukwinder Singh (sukwinder.singh@imperial.ac.uk, 020 3313 2218)

If you are working outside normal hours, you are at greater risk. You can only work out of hours in a laboratory, once fully trained and once a lone working form has been completed (Available from your Section Safety Officer). You must be sure that you know what to do if there is an accident, because help may not be available from other staff. Try not to work alone, especially if you are using hazardous substances. If in doubt, inform someone who is available on the telephone that you will be working out of hours, and let them know when you leave. If an accident occurs, summon help if anyone is available. If you are injured, go to Accident and Emergency. Do not work alone until you and your supervisor are confident that you fully understand the techniques that you are doing.

Flammable Liquids
Many of the reagents used in the laboratory, such as ethanol and acetone, are flammable. Flammable liquids should be stored in metal cabinets and never be placed on shelves, especially above head height.

Chemicals
Many of the chemicals in routine use are known to be dangerous.

There are different types of chemicals:

1. Carcinogens or suspected carcinogens (e.g. diaminobenzidine (DAB))
2. Harmful vapour (e.g. glutaraldehyde, xylene)
3. Toxic (e.g. PMSF, acrylamide, silver nitrate, phenol)
4. Radioactive (see separate protocol)
5. Caustic (e.g. NaOH, HCl, H2O2)
6. Volatile/inflammable liquids (e.g. diethyl ether, acetone)

When using chemicals like these always be extremely careful. Wear lab coat, gloves and other protective clothing if appropriate. Use a fume cupboard if necessary. All the chemicals used in the laboratory must be stored and handled under appropriate conditions. Ensure that you understand what these conditions are.

After using chemicals always remember to wash your hands.
Volatile substances with harmful vapours and ether should always be used in a fume cupboard.

Always remember to clear away any debris from your work, putting waste in the correct disposal system (see general waste policy of laboratory). Do not leave spilled chemicals around scale pans or balances. Clean in an appropriate manner. Empty chemical jars should be washed thoroughly before being disposed of in the glass buckets. Return all chemical containers to the appropriate cupboard, freezer, etc. Do not store hazardous chemicals on shelves above head height and ensure that storage areas are not overloaded.

For diaminobenzidine (DAB), handle the powder only in a fume cupboard. When in solution, DAB may be used on a bench but gloves must be worn. After using DAB, decontaminate the solution and anything that has touched it with bleach. The solution-bleach mixture may be poured down a sink and washed away with plenty of water.

Any reagents that you prepare/obtain should be clearly labelled with reagent name, date and your name. Unlabelled reagents will be disposed of. If solvents, solutions or chemicals are placed into a fresh container or a bottle previously used for something else, ensure that the container is clearly labelled. If the container already has a label, stating the original contents, this must be removed completely or covered entirely by the new label. It is dangerous to store chemicals in unlabelled or incorrectly labelled containers.

All glassware left for washing should be rinsed thoroughly beforehand.

**Liquid Nitrogen**

Liquid nitrogen can cause severe burns because of its low temperature. Always wear protective cryo-gloves and goggles/mask. Avoid spills and splashes. Always work with a partner when using liquid nitrogen; your partner can call for help if an accident occurs.

**Instruments**

Disposable scalpel blades, razor blades and syringe needles should never be left lying around; always dispose of them in the sharps bins provided, even if they are clean. If you find a bin that is nearly full, seal it and replace with a new one. Full sharps bins should be placed by the clinical waste bins.

Broken glass should be put in the red glass bin only, not the waste-paper bins.

Cryostat knives are extremely sharp and should be handled with care. Never carry a knife around without placing it in a protective box. Take care when cleaning or wrapping knives and keep your fingers away from the edge.

UV Light: When using UV light shield your eyes with appropriate goggles/safety shield. If you need to keep the light on for long periods prevent excessive exposure of the skin by wearing appropriate clothing and a full face mask.

**8.3 FIRE**

Attached are instructions to be followed in the event of a fire. It is compulsory that you read and understand everything. Please note that all Sections have designated personnel who are trained Fire Wardens. In the event of a fire alarm, they will control the evacuation. Please listen to their instructions and always do as they ask. They will be identifiable by the red Fire Warden jackets they wear during an evacuation.

**General Fire Safety Measures**
Walk around the laboratories and office areas of the teaching areas and familiarise yourself with the positions of the emergency exits (at either end of the corridor), fire extinguishers and break glass alarms. Everyone should know where these are.

There have been 3 major fires on site since 2000. Arson is on the increase in London and we are all at risk.

The main causes of fires are:
Electrical
Smoking
Malicious i.e. arson

To help prevent these:
Take care with electrical equipment. Only allow competent people to service electrical devices. Turn off equipment when not in use. If a piece of electronic equipment catches fire, turn it off (if safe to do so) to remove the current.

Imperial College London and the hospital operates a "No Smoking" policy throughout its premises, and its grounds. You are not allowed to smoke anywhere on campus. Do not smoke anywhere in this building including the stairways or near fire exits.
Look out for intruders and report anyone suspicious to Security.

Keep rubbish to a minimum. Don't accumulate large piles of cardboard boxes next to the lifts or in the corridor; squash them or tear them up and place in bins whenever possible. If a large amount of bulky waste accumulates, phone for a porter to remove it, or take it down to the rubbish collection points yourself.

**Fire Alarm and Evacuation Procedure**
The Commonwealth Building has a smoke detection system in all corridors and in some rooms. In addition, there is a break glass system for manual activation of the alarm and a tannoy system for emergency communications.

(i) The building has a two-stage alarm system:
(a) The alert signal - intermittent bells, short duration.
(b) The evacuation signal - continuous bells, long duration.

(a) The alert signal means that either a smoke detector or a break glass alarm has been activated.

Check your immediate area for signs of fire.
Close all windows.
Be prepared to leave if necessary.
The alert signal will only operate Monday to Friday (excluding holidays) 9.00am - 5.00pm. At all other times if the alarm is activated it will be a continuous evacuation signal.

(b) The evacuation signal means that you must leave the building immediately, via your nearest Fire Exit (the stairs at either end of the corridor).

**Do:**
- If possible, make your equipment safe, e.g. by turning off the power and Bunsen burners.
- Make safe any experiment you are doing. If using anaesthetised animals, you must make a decision whether to kill them if they can't be left.
- Close the door of your room as you leave.
- Follow all instructions given over the tannoy or by your Floor Fire Officer.
DO NOT:
• Stop for personal belongings  
• Run  
• Use lifts (All lifts are programmed to go to the ground floor upon sounding of the fire alarm)  
• Re-enter the building until you are told it is safe to do so (by ICL safety officer, security or fire fighters)

The nearest fire assembly area is on the far side of the Wolfson Education Centre.  

**NB:** The fire alarm system is tested from time to time. Staff will be informed over the tannoy or by email before testing commences.

**Raising the Alarm**
(i) During Normal Working Hours
If you discover or accidentally start a fire, carry out the following:
(a) Leave the room/area immediately evacuating other persons as necessary, close the door behind you to contain the fire.
(b) Raise the alarm by breaking the glass at your nearest break glass alarm point. To do this, use a sharp object such as scissors or a marker pen. Do not remove a shoe and use that-you may cut your feet! The alert signal will immediately sound.
(c) Dial 3333 on the nearest telephone or direct others to do so, and inform the switchboard of the floor level and room number of the fire. **Make sure they have the correct message before you hang up.**
(d) Inform the Section/Divisional fire officer, if easily available, but do not waste time looking for them. The fire officer in Immunology is Jeni Harper
(e) Tell others to leave the building. If necessary, shout “Fire!”
(f) If you feel competent to do so, go back and fight

**DO NOT PUT YOURSELF AT RISK**
(ii) Outside Normal Working Hours
Procedure as above but once the break glass alarm point is activated the evacuation signal will sound therefore evacuate immediately.

**Fighting a Fire**
Each Section has designated personnel who are trained to act as Fire Wardens. Only these people are trained to tackle a fire, therefore upon finding a fire do not attempt to fight it yourself: Raise the alarm, as described above, then evacuate the building.

**8.4 SECURITY**
**Personal Security**
As with many areas across London, it is often not ideal to walk around the local environment of the hospital alone at night, we would encourage you to go in pairs if staying late in the library or laboratory, or ensure someone knows what time you are leaving and will be expected home. As a further precaution, do not walk around at night visibly speaking on your mobile along Du Cane Road; students and staff have been mugged and had their mobiles stolen in the past. If you are alone, do not use the pathway behind the prison to East Acton tube station after dark.

**At the Hammersmith Campus**
Wear your security card at all times. Do not allow anyone else access with your security card. When you work late, or at weekends, Check before you leave that:
1. All apparatus is turned off or safe  
2. All internal doors are shut (this considerably reduces the spread of fire). **N.B.** It is against College rules to prop-open fire doors.  
3. All lights are switched off
Unfortunately thefts do occur in the Commonwealth building and there is a lot of valuable equipment in the laboratory. Make sure you lock personal valuables away in lockers, or keep them with you.

Please be careful about all the above points. Security is your responsibility. If you are working after 6.00 p.m. or at weekends and there is no one else in the laboratory, lock yourself in.

**Important telephone numbers to note:-**
Police 999 (External)
Operator 0
Security 34969 or bleep 9222 (dial 456 and follow the instructions given).
9. USEFUL LINKS
College/Department of Medicine

• Health and safety information (OH requirements, vaccinations, use of equipment, training etc): http://www3.imperial.ac.uk/facilitiesmanagement/healthandsafety

• Imperial Study Guide / Imperial Study Guide for Master’s Students: 
http://www3.imperial.ac.uk/students/studyguide

• Link to the Policy on employment during studies: 
https://workspace.imperial.ac.uk/registry/Public/Procedures%20and%20Regulations/Policies
%20and%20

Assessment
• Link to Academic and Examination regulations: 
http://www3.imperial.ac.uk/registry/proceduresandregulations/regulations

• Link to religious obligations in assessments: 
https://workspace.imperial.ac.uk/registry/Public/Exams/Exams%20and%20religious%20obligations.pdf

Procedures
• The College’s Regulations for Students: 
http://www3.imperial.ac.uk/registry/proceduresandregulations

• Mitigation / extenuating circumstances policy and procedures: 
http://www3.imperial.ac.uk/registry/proceduresandregulations/policiesandprocedures/examinationassessment

• Complaints and Appeals procedures: 
http://www3.imperial.ac.uk/registry/proceduresandregulations/policiesandprocedures/complaintsappeals

• Academic integrity: 
https://workspace.imperial.ac.uk/registry/Public/Procedures%20and%20Regulations/Policies
%20and%20Procedures/Examination%20and%20Assessment%20Academic%20Integrity
pdf

• Cheating offences policy and procedures: 
http://www3.imperial.ac.uk/registry/proceduresandregulations/policiesandprocedures/disciplinary

Welfare and Support
• Personal Tutor system, links to Roles and Responsibilities of Personal Tutors: 
http://www3.imperial.ac.uk/registry/proceduresandregulations/qualityassurance/goodpractice

• PDRP / iplan: 
http://www3.imperial.ac.uk/careers/staff/staff/pdp

• Information for students with disabilities, including the Disability Advisory Service: 
http://www3.imperial.ac.uk/disabilityadvisoryservice
• Other welfare and pastoral care/support resources both Departmental and College-wide (e.g. College Tutors, Director of Student Affairs, Counselling Service, Health Centre, NHS Dentist, Student Hub, Chaplaincy, support for International Students inc. ELSP):

http://www3.imperial.ac.uk/humanities/englishlanguagesupport
http://www3.imperial.ac.uk/students/welfareandadvice
http://www3.imperial.ac.uk/students/international

• Information about the Library:
http://www3.imperial.ac.uk/library

• ICU:
http://www.imperialcollegeunion.org/

• For Master’s courses - GSA:
https://www.imperialcollegeunion.org/faculty-unions/gsaweb/index,457,ICS.html

• Student representation – how to become a student representative:
https://www.imperialcollegeunion.org/representation

• Details of departmental/College Committees, including Staff-Student Committees. (The College’s Staff-Student Committee Good Practice Guidelines are available at:
http://www3.imperial.ac.uk/registry/proceduresandregulations/qualityassurance/goodpractice

• Other support services (e.g. Registry, Careers Advisory Service):
http://www3.imperial.ac.uk/registry
http://www3.imperial.ac.uk/careers

**Additional Information for Master’s Courses**

• Information about the Graduate School:
http://www3.imperial.ac.uk/graduateschools

• Transferable Skills Training:
http://www3.imperial.ac.uk/graduateschool/transferableskillsprogramme
Appendix 1: Programme Specification

MSc in Translational Neuroscience

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 s/he takes full advantage of the learning opportunities provided. This programme specification is primarily intended as a reference point for 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.

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Description of Programme Contents

The WHO recently listed Neurological disorders as a global emergency with the numbers of people affected by such disorders predicted to marked 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 course will provide theoretical and practical training to students in the various methodologies utilised in translational research for the development of novel therapeutic approaches to treat neurological conditions. Hence, this course will provide excellent training for students, whether they wish to pursue an academic or industrial research career, in which they can play a vital role in developing better treatments or curing Neurological disorders.

Learning Outcomes

Core Module 1 Functional Neuroanatomy: At the end of this module students will be in a better position to:-
TN1.1 Describe the functional anatomy of the central, peripheral, autonomic and somatic nervous system.
TN1.2 Discuss how this anatomy relates to function and interaction between these systems.
TN1.3 Critically analyse how structure and function relate to key pathophysiology and disease.

Core Module 2 Cellular & Molecular Neuroscience: Building on the knowledge gained in Module 1, Functional Neuroanatomy, students will at the end of this module will be better able to:-
TN2.1 Describe the principle cell types within the brain and spinal cord, their function and how they interact in the nervous system.
TN2.2 Discuss how such cells contribute to the development of the brain and spinal cord and how this can be affected in developmental disorders.
TN2.3 Critical analyse how key neuronal pathways in the developed brain and spinal cord control physiological function.
TN2.4 Synthesise an evidence-based argument showing how plasticity in such neuronal pathways can be affected by neurodegenerative mechanisms and the brains potential to repair itself.
TN2.5 Critically evaluate methodologies used and understand how they can be applied in neurobiology research to investigate cellular physiological function and dysfunction in disease.

Core Module 3 Neurodegenerative disorders: Building on the Functional Neuroanatomy knowledge gained in Module 1, and the Cellular & Molecular knowledge gained in Module 2, students will at the end of this module will be better able to:-
TN3.1 Describe the basic clinical features of the main CNS Neurodegenerative Disorders and how they are medically treated.
TN3.2 Discuss which neuronal pathways are involved in development of such Neurodegenerative Disorders.
TN3.3 Discuss how brain imaging techniques can confirm neuronal pathway dysfunction and assist in the diagnosis of Neurodegenerative Disorders.
TN3.4 Critically analyse the neurodegenerative mechanisms which can result in neuronal pathway dysfunction and how this can be influenced by physiological factors e.g. genetics etc. and the environment.
TN3.5 Critically evaluate the in vitro and in vivo models used to investigate mechanisms of neurodegeneration and their use in the development of novel therapeutic approaches.
TN3.6 Critically evaluate which physiological and pharmacological factors influence the design of
novel therapies and understand how their effectiveness is tested in clinical trials.

**Core Module 4 Neuroinflammation, Stroke & CNS trauma:** Building on the Functional Neuroanatomy knowledge gained in Module 1, and the Cellular & Molecular knowledge gained in Module 2, students will at the end of this module will be better able to:-

TN4.1 Describe the basic clinical features of multiple sclerosis (MS), stroke and CNS traumatic injury.
TN4.2 Discuss their key pathological features and evaluate how brain imaging can assist in the diagnosis and treatment of such Neurological disorders.
TN4.3 Critically analyse the cellular mechanisms that trigger the pathological features of MS, Stroke and CNS trauma and how this can be influenced by physiological factors e.g. genetics etc. and the environment.
TN4.4 Critically analyse how our understanding of the cellular mechanisms of MS, Stroke and CNS trauma has influence their treatment.
TN4.5 Critically evaluate the in vitro and in vivo models used to investigate the cellular mechanisms of MS, Stroke and CNS trauma and their use in the development of novel therapeutic approaches.
TN4.6 Critically evaluate how the “Good Clinical Practice” (GCP) framework influences translational research into MS, Stroke and CNS trauma.

**Elective Module 5 Brain Imaging:** Building on the Functional Neuroanatomy knowledge gained in Module 1, the Cellular & Molecular knowledge gained in Module 2, and the introduction to brain imaging in Neurological Disorders gained in Modules 3 & 4 students will at the end of this module will be better able to:-

TN5.1 Describe the basic physics/mechanics of Magnetic Resonance Imaging (MRI), Positron Emission Tomography (PET) and Single Photon Emission Computed Tomography (SPECT) imaging.
TN5.2 Discuss how Magnetic Resonance Imaging (MRI), Positron Emission Tomography (PET) and Single Photon Emission Computed Tomography (SPECT) images relate to functional anatomy of the brain.
TN5.3 Critically analyse how Magnetic Resonance Imaging (MRI), Positron Emission Tomography (PET) and Single Photon Emission Computed Tomography (SPECT) brain imaging can detect changes in brain function associated with common neurological and psychiatric conditions.
TN5.4 Critically evaluate how imaging techniques can assist in the diagnosis and understanding of the common neurodegenerative disorders.
TN5.5 Critically evaluate how neuroimaging can play a major role in translational research, particularly in the field of the drug development.

**Elective Module 6 Computational Neuroscience:** Building on the Functional Neuroanatomy knowledge gained in Module 1, the Cellular & Molecular knowledge gained in Module 2, the foundation in Neurological Disorders gained in Modules 3 & 4, plus knowledge of image analysis data generated in Module 5, students will at the end of this module will be better able to:-

TN6.1 Describe the range of computational techniques used in cognitive neuroscience research.
TN6.2 Discuss how computational techniques can be used to analyse data from a variety of cognitive and neuroimaging sources and understand its limitations.
TN6.3 Critically evaluate how data sets from a variety of cognitive neuroscience and neuroimaging sources are practically analysed.
TN6.4 Create “data pipelines” by optimally combining several analytical computational techniques for the analysis of complex data sets.

**Elective Module 7 Brain plasticity & Neuroregeneration:** Building on the Functional Neuroanatomy knowledge gained in Module 1, and the Cellular & Molecular knowledge gained in Module 2, students will at the end of this module will be better able to:-

TN7.1 Describe the clinical features of the main neurological conditions relevant to neuroregeneration.
TN7.2 Discuss the key pathological features of relevant neurological disorders.
TN7.3 Critically analyse the basic molecular and cellular principles governing neuronal plasticity and neuroregeneration potential in neurological disorders.
TN7.4 Critically evaluate what in vitro & in vivo models are available for the translational development of novel drug therapies for neuroregeneration.

TN7.5 Critically evaluate bioengineering and biomaterials that may assist to enhance nervous system regeneration.

TN7.6 Synthesise an evidence based argument supporting the use of cellular/stem cell therapies in neurological conditions and its neuroanatomical and behavioural outcomes.

**Elective Module 8 Addiction and Neuropsychopharmacology in Psychiatry:** Building on the Functional Neuroanatomy knowledge gained in Module 1, and the Cellular & Molecular knowledge gained in Module 2, students will at the end of this module will be better able to:-

TN8.1 Describe the key clinical feature of the main psychiatric disorders.

TN8.2 Discuss which neurotransmitters systems and cellular processes are involved in the key psychiatric disorders; and how treatment may affect these.

TN8.3 Discuss the principle “substances of abuse”, the clinical features they induce and treatments available for such patients - psychosocial and pharmacological.

TN8.3 Critical evaluate the range of neuroimaging techniques used to characterize brain function in health and in addiction/psychiatric disorders.

TN8.5 Critical evaluate experimental medicine approaches from first-into-man to early clinical trials.

**Core Module 9 Laboratory based research project:** The core (modules 1-4) and elective modules (modules 5 & 6 or 7 & 8) within the first part of this course reflects the research strengths of the Division of Brain Sciences, from which the laboratory based research projects will be offered. Hence, the knowledge gained in the taught modules will provide the students with an excellent foundation for them to develop key skills within this practical based module. At the end of this module students will be better able to:-

TN9.1 Understand the background to their research project.

TN9.2 Apply evidence-based arguments to generate a hypothesis upon which the project is based.

TN9.3 Evaluate the current methodologies available and subsequently design an appropriate set of experiments to test the hypothesis.

TN9.4 Apply experimental protocols to generate robust scientific data.

TN9.5 Critically evaluate and interpret the scientific data generated; identify potential experimental issues and perform efficient troubleshooting.

TN9.6 Critically evaluate scientific publications.

TN9.7 Create a written report demonstrating originality; giving the reader the background to the project, a clear hypothesis and the appropriate experimental design to test the hypothesis, a critical evaluation of the experimental data generated and a discussion of its implications in light of current knowledge.

TN9.8 Create and perform a clear and concise oral presentation on the project and answer questions relating to the project.

The Imperial Graduate Attributes are a set of core competencies which we expect students to achieve through completion of any Imperial College degree programme. The Graduate Attributes are available at: [www.imperial.ac.uk/students/academic-support/graduate-attributes](http://www.imperial.ac.uk/students/academic-support/graduate-attributes)

**Entry Requirements**

<p>| Academic Requirement | Normally a minimum of a 2:1 UK Honours degree in an appropriate biological science subject (e.g. biology, biochemistry, biomedical sciences, neuroscience, medicine, dentistry or veterinary science) or equivalent which should ideally have some Neuroscience component. |</p>
<table>
<thead>
<tr>
<th>Additional Requirements</th>
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<tr>
<td>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)</td>
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<td>Home/EU/international students will be invited to attend a post-application interview</td>
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<tr>
<td>English Language Requirement</td>
<td>Standard Requirements: IELTS 7 with a minimum of 6.5 in each element or equivalent</td>
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<tr>
<td>The programme’s competency standards documents can be found at: <a href="http://www.imperial.ac.uk/medicine/study/postgraduate/masters-programmes/msc-translational-neuroscience/">http://www.imperial.ac.uk/medicine/study/postgraduate/masters-programmes/msc-translational-neuroscience/</a></td>
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<tr>
<td><strong>Learning &amp; Teaching Strategy</strong></td>
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</tbody>
</table>
| **Scheduled Learning & Teaching Methods** | • Lectures & keynote lectures,  
• Class tutorials,  
• Small group tutorials,  
• Group work sessions,  
• Peer based teaching  
• Journal Club,  
• Seminar series,  
• Discussion sessions with patients & Carers affected by Neurological disorders,  
• Supportive web-based material,  
• Laboratory teaching,  
• Computer-based practical workshops, |
| **E-learning & Blended Learning Methods** | • formative assessment via Blackboard  
• Web-based material e.g. research/review articles, case studies etc. |
| **Project and Placement Learning Methods** | • Laboratory based research project |
| **Assessment Strategy** | |
| **Assessment Methods** | • Written exams (short and long answers)  
• Essays  
• Poster presentations  
• Practical reports/write-ups  
• Written design of research projects  
• Dissertation  
• Oral presentations |
| **Academic Feedback Policy** | Students can expect to receive feedback within two weeks. There are a number of case studies, group workshops, journal clubs throughout the course, which are not directly assessed, but will allow students to receive feedback from group leaders and their peers. |
Re-sit Policy

Students will be permitted to re-enter a failed examination or resubmit a piece of failed coursework on a single occasion. Examination re-sits will only be available at the next available sitting (i.e. the following academic year). Re-sits will be capped at the pass mark.

Mitigating Circumstances Policy

The College’s Policy on Mitigating Circumstances is available at: www.imperial.ac.uk/registry/exams

Programme Structure

<table>
<thead>
<tr>
<th></th>
<th>Full-time</th>
<th>Pre-sessional</th>
<th>Term One</th>
<th>Term Two</th>
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Assessment Dates & Deadlines

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<td>Written Examinations</td>
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<td>Coursework Assessments</td>
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<td>Project Deadlines</td>
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<td>Practical Assessments</td>
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Assessment Structure

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<tr>
<th>Programme Component</th>
<th>ECTS</th>
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<tr>
<td>Functional Neuroanatomy</td>
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<tr>
<td>Cellular and Molecular Neuroscience</td>
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<tr>
<td>Neurodegenerative Disorders</td>
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<td>8.3r%</td>
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<tr>
<td>Neuroinflammation, Stroke &amp; CNS trauma</td>
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<tr>
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<td><strong>AND:</strong> Computational Neuroscience</td>
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<tr>
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<td><strong>Distinction</strong></td>
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<tr>
<td>- Achieve a mark of at least 50% in each module</td>
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<td>- Achieve an aggregate mark of at least 70% in the three programme components as follows:</td>
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<tr>
<td>d) The four core modules</td>
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<tr>
<td>e) the two elective modules</td>
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<tr>
<td>f) the module ‘Laboratory-based Research Project’</td>
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