



UNIVERSITY OF
OXFORD

Course Handbook

MSc in Neuroscience 2019-20

Version 1.5



September 2019

This handbook applies to students starting the course in Michaelmas term 2019. The information in this handbook may be different for students starting in other years.

Welcome to Oxford and the MSc in Neuroscience

We would like to offer you all a warm welcome to the MSc in Neuroscience. Our MSc in Neuroscience is one of the most established in the University of Oxford having started in 1995. The course is a one-year, full-time, taught course leading to an MSc awarded by the University of Oxford, equipping our students with the scientific knowledge and cutting edge technical skills to become the scholars, teachers and researchers for the next generation both in the UK and globally. We attract students of the highest calibre from many countries and cultures who share a passion for neuroscience and, as such, we had over 400 applications for the MSc course this year. During the next year, you will be introduced to the exciting and important discipline of neuroscience by scientists who are leading world-class research in the field. You will have the opportunity to listen to distinguished national and international speakers in your course, at departmental seminars and at the student-led Cortex Club

This MSc may form the first year of training of students expected to continue onto a DPhil degree in Neuroscience from the University of Oxford. It can also provide an MSc degree for individuals who wish to continue in academic research in neuroscience at other Universities, or to start a career in other professions that require knowledge of neuroscience. Many of our former students have continued academic studies towards a PhD/DPhil, applied to study medicine or returned to finalise their clinical training in Neurology, Neurosurgery, Psychiatry and Clinical Psychology. Our alumni are now in established positions in academia (full professorships) and in professional careers such as management consultancy, scientific policy, science communication and teaching. We have a Facebook alumni group with over 250 friends.

The MSc comprises two 3 month research projects and a wealth of taught courses throughout the year. In addition to the lectures, the course will comprise demonstration and practical sessions, sessions on critical review of scientific papers in Journal Club and opportunities to develop oral and poster presentation skills. The taught content of the course is reviewed and updated annually to include new information. Teaching and learning activities in the MSc have been designed to deliver a special learning experience. You will benefit from small group teaching and also from close working relationships with your academic and research project supervisors. It will be intensive, but we very much hope that you will also find it rewarding.

The purpose of the handbook is to fully inform you of the key information required for both successful study on the MSc in neuroscience but also to outline the provision of facilities and supervision available, and other guidance available in the wider University.



Andy King (Course Director) and Debbie Clarke (Course lecturer)

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Exam Regulations

The Examination Regulations relating to this course are available at (<http://goo.gl/xzMKUg>). If there is a conflict between information in this handbook and the Examination Regulations then you should follow the Examination Regulations. If you have any concerns please contact Dr Deborah Clarke

The information in this handbook is accurate as at September 2019, however it may be necessary for changes to be made in certain circumstances, as explained at the University of Oxford postgraduate webpage (www.graduate.ox.ac.uk/coursechanges). If such changes are made, the department will publish a new version of this handbook together with a list of the changes and students will be informed.

The University has a wide range of policies and regulations that apply to students. These are easily accessible through the A-Z of University regulations, codes of conduct and policies available on the Oxford Students website www.ox.ac.uk/students/academic/regulations/a-z

Course Aims

- To expose students to a broad range of topics within neuroscience and add both breadth and strength to the traditional '3-year PhD' training model.
- To provide formal training in the theory and practical technology of neuroscience from the most basic molecular mechanisms through to clinical neurobiological issues.
- To offer research projects in a very wide range of well-established laboratories.
- To offer a flexible response to evolving research areas and methods.
- To bring students from a variety of scientific backgrounds into the field of neuroscience.

This would both improve the graduate training for students who have graduated in the life sciences who are typically exposed only to narrow sectors of neuroscience, and also provide a conversion programme for those wishing to move into neuroscience from a non-biological background (e.g. in physics or computation). The bulk of the training should be completed before students settle down to their own major doctoral research project: it should contribute not only to their selection of research tools but also to their evaluation of research goals.

To meet this need Oxford developed two courses in neuroscience: a one year MSc course and a four year Wellcome Trust doctoral training programme in neuroscience, in which the first year is based around the MSc course, but followed by a 3 year doctoral research project.

Oxford has a very large and thriving neuroscience community, with interests ranging from molecular medicine through to cognitive science. The concentration of resources, the demonstrated willingness of staff members to participate, and the range of research and teaching expertise available puts us in very strong position to provide both these training schemes.

We provide formal training in the theory and practical technology of neuroscience from the most basic molecular mechanisms right up to clinical neuroscience issues, coupled with research projects in a very wide range of well-established laboratories. The courses add both breadth and strength to the hitherto traditional 'single lab' research routine. This gives students a better technical and conceptual grasp of neuroscience than their predecessors, exposes them to a wide range of laboratory techniques, and provides training in basic organisational and research skills. This experience will give students the knowledge, and, we hope, the courage to explore new techniques to solve their research problems, instead of simply using whatever skills they have acquired to date.

This philosophy underpins a flexible response to research needs, which is vital if graduates are to deploy their scientific skills most effectively in new basic or applied research projects once their training is complete. Finally, we anticipate that the combination of better research training with a range of transferable skills not hitherto taught in graduate courses will make for graduates who are more attractive to employers.

Neuroscience

MSc Course Programme Outcomes

A. Students will develop a knowledge and understanding of:

1. Structure and Function of the Brain, Neuroanatomy, Neuronal Cell and Molecular Biology, Synapses and Transduction, Systems Neuroscience, Cognitive and Behavioural Neuroscience, Neuroscientific Methods, Data Analysis.

Related teaching/learning methods and strategies This is based on an eight-week introductory course of lectures and practical classes in the first term. Reading is assigned and there is an opportunity to practise writing essays, providing formative assessment.

Assessment One written three-hour paper (Qualifying Examination) is taken at the end of the first term, with one opportunity to resit early during the following term in the case of failure. Each student is assigned an academic advisor from among the Organising Committee to whom they can turn for advice and help. For further information please refer to the Oxford Students' website for examination entry and alternative examination arrangements (www.ox.ac.uk/students/academic/exams)

2. Advanced topics in Neuroscience

Related teaching/learning methods and strategies In the second and third terms, students select from advanced lecture modules, which may also have associated practical requirements. Students select four modules from this group, at least one module within each major branch of the subject (cognitive (A), systems (B) and cellular & molecular neuroscience (C)). Students also choose from a wide range of research projects to be undertaken in the remainder of the year. Two placements in laboratories working in different areas will be completed by the end of the year, studying research topics approved by the Organising Committee.

Assessment Each module is assessed in the form of an extended essay (3,000 words) on a topic chosen by the student and approved by the module organizer or as a practical portfolio. Written feedback is provided on each essay. A compulsory journal club at which students make presentations based on recent publications in a relevant area of research is also associated with each module. The research projects each require a formal dissertation (not more than 10,000 words) and a public presentation of the research material. Written and oral feedback is provided.

B. Skills and other attributes

Students will have the opportunity to develop the following skills during the course.

I. Intellectual skills

- A. Ability to evaluate and synthesize complex research material.
- B. Experience of initiating and completing research projects with self-appraisal of the outcome.
- C. Ability to present verbally and in written form the results of their research projects.

D. Knowledge of current activity in the field of neuroscience (in its broadest sense).

Teaching/learning methods and strategies

Expectations of study The MSc is an intensive course and requires full-time study for the whole calendar year. Students are expected to attend all classes at the scheduled times and are expected to spend face to face time in labs and in private study during term and in the vacations. Students should speak in confidence to the Course lecturer, Dr Debbie Clarke, if they are struggling with any aspect of the course requirements.

A. Students are required to produce four extended essays (or 3 essays and a practical portfolio) and two research dissertations during the course. They are supported in these activities by advice on the scope and format of the essays, by research supervision during the project that leads to the dissertation, and by the programme of advanced lectures that forms the core teaching of the course.

B. Students are expected to select two research projects from a list of available options, to take responsibility under supervision for designing and setting up the research study, to conduct the experimental component of the research independently, and to prepare the written account of the project independently with feedback from their supervisors.

C. Students are required to present the first research project in poster format, normally at the annual Oxford Neuroscience Symposium and to give a formal talk with slides on their second research project. See also B.

D. Students are required to attend all lectures for the entire Introductory Course and for the four advanced modules that they have selected. Breadth is ensured by selecting modules that include at least one from each of the major fields (cognitive, systems and cellular/molecular neuroscience) and by requiring each student to discuss their choice of modules to the Organizing Committee before the advanced section of the course begins.

II. Practical skills

Experience of laboratory-based research requiring a wide variety of technical skills, including experimental design, understanding the use and operation of laboratory equipment, and data analysis. General understanding and application of computational and statistical methods. Research presentation and time management skills.

Teaching/learning methods and strategies Where relevant, practical laboratory classes, associated with lectures, are given in the introductory modules.

Assessment The practical classes are not formally assessed but students receive formative assessment of these practical skills from their project supervisors during the extended research placements.

III. Transferable skills

Presentation skills for communication. Ability to write scientifically at an advanced level. Personal skills in integrating into the host research group and in some cases in meeting and dealing with human experimental subjects.

Teaching/learning methods and strategies Students are required to take a professional development programme, including courses in communication and presentation skills, commercial exploitation of science, time management, and the relationship between academic and industrial research. Dr Clarke is responsible for organising these sessions. In addition, a wide range of information and training materials are available to help you develop your academic skills – including time management, research and library skills, referencing, revision skills and academic writing through the Oxford Students website <http://www.ox.ac.uk/students/academic/guidance/skills>

The goal is to ensure that neuroscientists trained in Oxford can match the best trained anywhere, with an integrated understanding and a practical grasp of neuroscience that lets them ask questions and tackle problems which transcend the traditional disciplines from which neuroscience has evolved, and from which the students generally come.

Getting to know people at Oxford and finding your way around

Your first point of contact if you have any questions or problems is the MSc Course Lecturer, Dr Debbie Clarke (deborah.clarke@psy.ox.ac.uk). Her office is 30.04

You should make yourself familiar with the Department of Physiology, Anatomy and Genetics itself. Eventually, it will also be useful for you to meet other students in the Department, such as graduate students working on their doctorates and students on other MSc courses. If there is a particular member of staff that you would like to talk to, ask the MSc Course Lecturer to make the contact for you.

Facilities

Due to the closure of the Tinbergen Building, the course has moved to the Department of Physiology, Anatomy and Genetics (DPAG). You will have office provision here (Room 30.09) with a number of desktop PCs and printing facilities and all lectures will take place in this department. This office provision is most important: we are very conscious that people on interdisciplinary courses are prone to suffer from a lack of identity, as compared to students who work within a designated department. The shared office space gives students the kind of cohesion that would normally be provided by a department, even though the course is completely interdepartmental; we expect the students to identify with the course itself, rather than over-identifying with any particular department. This effect should be enhanced during the critical introductory term, during which students attend classes together as a cohort.

You will be issued with a key for the office. You need to pay a £15 deposit at the online store (<https://www.oxforduniversitystores.co.uk/product-catalogue/physiology-anatomy-genetics/physiology-anatomy-genetics/dpag-visitor-departmental-access-card>).

Access to the building

The building is open throughout the year, Monday to Friday, with the exception of closures at Christmas (approximately 10 days) and Easter (approximately 4 days) and Bank Holidays.

Entry to the building is from 0800 hours to 1700 hours via the main entrance. Entry outside these hours is permitted by entry via a swipe card system and password. You will need to register your card to obtain this access.

Entry to the building by persons not on authorised business is only allowed by permission from the Head of Department or Administrators. University or Departmental ID cards should be shown at the Front Desk.

Colleges

Every student in Oxford has to be a member of a College, as well as being attached to the Department. So you will have to find your way around in your college as well as in the Department. In your first week here, your College will be holding its own introductory meetings and other social occasions. Colleges add to the complexity of Oxford life, but they are also of great benefit to graduate students. Your College will provide many social and academic activities and opportunities for you. Colleges also produce their own handbooks for your information.

Timetable

The **provisional** timetable for Michaelmas Term 2019 is available at the back of this handbook and a copy is available on the course's intranet (Canvas) site. Please be aware that this is subject to change and the final version will be published on the course intranet site (<https://canvas.ox.ac.uk>). Please check this online timetable **frequently** for updates. You can download a schedule onto your mobile phone using the iCal function. Timetables for Hilary and Trinity Terms will be put on the website before the start of each term along with other information regarding the course.

Recording of Lectures

Please make sure you are aware of the University policy on recording of lectures.

(http://www.admin.ox.ac.uk/media/global/wwwadminoxacuk/localsites/educationcommittee/documents/policyguidance/Policy_on_the_recording_of_lectures_and_other_formal_teaching_sessions_by_students.pdf)

It is a requirement for the award of the degree that students attend ALL lectures unless absence has been previously authorised by the Course Lecturer. Registers of attendance may be taken.

Animal Handling Dates

Tuesday 1st and Wednesday 2nd October – PIL A/B Lectures*
Thursday 3rd– Fri 4th October - PIL A/B Practicals
11th October - Exam PIL A/B

Tuesday 19th November – PIL C Lectures
Wednesday 20th November– Thurs 21st November– PIL C Practicals
Monday 25th November – PIL C Exam

*Compulsory elements; all others are optional.

Term Dates

25th September 2019 to 11th December 2019
20th January 2020* to 15th April 2020
27th April 2020 to 10th September 2020 (students may leave Oxford after submission of Dissertation 2 on 12th August but **MUST** return to Oxford for the *viva voce* examinations on September 9th and 10th)

* Project supervisors will require you to start your lab work **before** this date (around 6th January 2020.)

Important dates

Qualifying exam: Wednesday 11th December 2019
Poster presentation at Oxford Neuroscience day: Wednesday March 25th 2020
Submission dissertation 1: Wednesday April 15th 2020
Oral presentation on dissertation 2: Wednesday 30th and Thursday 31st July 2020
Submission of dissertation 2: Wednesday 12th August 2020
Viva voce exams: Wednesday 9th and Thursday 10th September 2020

Useful Information

Computer Facilities within the Department

All portable equipment must be safety tested so please get your equipment tested **before you plug it in**. Please see the staff in the IT Department who will arrange this for you. The Department will not insure personally owned computers or lap-tops which graduates are using since the University's policies extend only to University-owned items and have an excess which makes it inappropriate to insure individual personally owned PCs. You will need to arrange your own insurance for these items.

All questions relating to computer hardware and software should be referred to the IT Support Team. A separate guide covering Computer Facilities at Oxford can be obtained from IT Support or from the following website: <http://www.ox.ac.uk/it/index.html>

The Departmental Resources Committee has agreed that it will not charge graduate students for either a one-off connection or a recurrent charge to allow a graduate student to connect and use his/her computer with the data network in the Department. Obtaining the necessary hardware and software to allow the link to the computer is the graduate student's responsibility. All graduate student PCs that are used on the network are to be brought to the IT Support Team for registration and configuration. This might entail the installation of client authentication software. All computers must be registered with IT support. Most laptops are now connected via OWL, the University wireless network.

Information Management Services Unit (IMSU)

IMSU provides local IT support for the Medical Sciences Division including the Department of Experimental Psychology. All IT enquiries should be directed to their staff in the first instance at help@imsu.ox.ac.uk

Oxford University Computing Service (OUCS) – now known as IT Services

Oxford IT Services provides a wide range of services, focusing on those that are best provided on a centralized basis (the core networks, expensive peripherals, IT training, mail and other information servers), together with general IT services for those students whose needs are not met within their department or college. The overall strategy for the development of IT in the University is vested in the IT Committee, on which the graduate student body has a representative.

For further information see: <http://www.it.ox.ac.uk/>

Laser Printing Allowances

The Department provides an allowance of 1,000 sheets of printing: these are intended 'to provide a medium for gathering and presenting data and information for your research'. Printing will be charged at a cost above 1,000 sheets of 5 pence per copy. Photocopying is best done at your College.

Binding of Research Projects (Dissertations)

Binding facilities will be available in the Department. However, you may choose to have your dissertation bound at one of the local shops, at your own cost.

Mail

The Department will cover the cost of your work-related mail, which will be sent second class except in special cases. You must ensure that your supervisor's initials are on each envelope. Departmental mail will normally be sent second class and first class mail will only be sent by tenured members of staff or with the authorization of the Departmental Administrator.

Incoming mail is sorted and left in the appropriate MSc in Neuroscience pigeon hole on ground level

Mail is cleared daily between 2:30 and 3.00 pm.

Disability Information

If you require further information, the relevant forms are kept in the MSc Office. If you have any of the following disabilities or medical conditions, please ask Dr Deborah J Clarke for a form to complete:

Dyslexia, dyspraxia or any other Specific Learning Difficulty (SpLD)
Visual impairment
Hearing impairment
Mobility difficulties
Mental health difficulties
Asperger's syndrome or an autistic spectrum disorder
Other (please specify on the form)

Notes of Guidance for new students in Medical Sciences Division

Please see the following website for **important** information regarding academic matters for new graduate students:

https://weblearn.ox.ac.uk/portal/hierarchy/medsci/department/grad_school/page/home

Representatives on student committees

Representatives of the MSc in Neuroscience are asked to sit on the departmental and divisional Graduate Joint Consultative Committees (GJCC). A poll will be carried out early in Michaelmas term to vote for these.

Other Sources of Information

This handbook can be viewed in electronic format on the MSc in Neuroscience Canvas site: www.canvas.ox.ac.uk. The Oxford Students Union Website also has useful information (<http://ousu.org/your-union/>)

Neuroscience

The information in the handbook refers to the degree of taught course Master of Science in Neuroscience (MSc in Neuroscience).

FHEQ Level 7; UK credits: 180

Introductory Modules

The introductory course consists of five modules, each comprising five or six lectures. There is also a series of practical classes and demonstrations. The Organising Committee can exempt students from modules where they have already covered the material; such students will be required to take alternative taught courses or project work approved by the Organising Committee. However, all students are required to take a qualifying exam on the introductory material at the end of the first term.

1: Introduction to the brain

Organiser: Dr D J Clarke

- Introduction to Neuroscience; History of Neuroscience in Oxford
- Animal models
- Recording from the brain in vitro
- Single unit recording in vivo
- Optical imaging
- In vivo techniques for monitoring neurochemical changes in the brain
- Neuroanatomical techniques
- Brain imaging (PET and fMRI)
- Electrophysiological recordings (ERP/MEG/EEG)
- Interference methods (lesions and TMS)
- Computational Neuroscience
- Calcium Imaging

2: Neuroanatomy

Organiser: Dr D J Clarke

- Overview of blood supply and development of major brain structures
- Brain stem and cranial nerves
- Cerebellum and basal ganglia
- Spinal cord and ascending and descending pathways
- Thalamus and cortex
- Olfactory and limbic systems

3: Neuronal cell and molecular biology

Organiser: Prof J Taylor

- Neurons
- Glial cells

CNS development
Introduction to Molecular Neuroscience
Molecular neuroscience I: Genes, genomes and cells
Molecular neuroscience II: Experimental approaches

4: Synapses and transduction

Organiser: Dr E Mann

Presynaptic transmission
Synaptic Transmission 1 and 2
Resting and Action Potentials
Receptors and Ion channels
Mechanisms of sensory transduction

5: Overview of systems neuroscience

Organiser: Prof Holly Bridge

Sensory Systems;
1. Sensory Systems 1: Multimodal processing and plasticity
2. Sensory Systems 2: Visual processing
3. Sensory Systems 3: Auditory processing
Motor systems;
1. Motor Systems; cortical control and function
2. Motor Systems: sub-cortical control and function
Decision and action selection

Advanced Modules

The advanced courses are distributed over the spring and summer terms and comprise lectures, seminars, practical classes and demonstrations to cover three main branches of neuroscience: molecular/cellular, systems, and cognitive. Each module is the responsibility of a specified member of staff, but within each module the teaching will be carried out by identified staff members who are expert in the particular subtopics. Students will select **FOUR** modules from this group, at least one module within each branch of the subject. The teaching in the advanced modules has recently undergone a major review. The Journal Club is a compulsory fifth module (assessed on a pass/fail basis)

Lecture Series A

A1 and A2: Cognitive Neuroscience (Hilary Term)

This area is subdivided into 6 “themes”. Students choose 3 “themes” to equal one module (A1) or all 6 “themes” for both (A1 and A2). The proposed “themes” and organisers are listed below:

Prof Nick Yeung – Executive control and attention
Prof Masud Husain – Working memory and visual cognition
Dr Mark Walton – Motivation and reward
Prof David Bannerman – Learning and memory
tbc– Social cognition
Prof Matthew Rushworth – Decision making

A3: Neuroscience and Clinical Mental health (Trinity Term)

Organisers: Professor C Harmer and Dr P Burnet

- Anxiety
- Depression
- Schizophrenia
- Psychosis
- Computational Psychiatry
- Gut-brain axis
- Post traumatic Stress Disorders

Lecture Series B

B1: Motor systems (Hilary Term)

Organisers: Dr A Sharott and Prof C Stagg

- Cerebellum
- Sensorimotor transformations: posterior parietal cortex
- Eye Movement
- Basal Ganglia Anatomy and Physiology
- Motor disorders
- Functional Imaging of Motor Systems and Motor recovery
- Motor Psychophysics and Motor Learning
- Deep Brain Surgery for Movement Disorders

B2: Computational neuroscience (Hilary Term)

Organisers: Dr B Willmore and Prof T Behrens

- Pattern association memory
- Models of choice
- Reinforcement learning
- Using neural models with single cell and imaging data
- Invariant visual object recognition
- Competitive networks
- Neuronal networks for motor function
- Function of neuronal networks in the hippocampus in memory

B3: Sensory systems (Trinity Term)

Organiser: Professor A King and Prof H Bridge

- Retinal transduction
- Cochlear transduction
- Hearing complex sounds
- Spatial hearing
- Barrel cortex
- Measurements on single cells and on observers
- Investigating receptive fields with simple stimuli
- The neuronal response to 'natural' stimuli
- Integrating information across the senses
- Cortical reorganisation and perceptual learning

Lecture Series C

C1: CNS development and plasticity (Hilary Term)

Organisers: Prof C Akerman and Prof Z Molnár

- Cell fate
- Stem cells
- Patterning the CNS
- Axon growth and cell migration
- Development of thalamus and cortex
- Making maps I
- Making maps II
- Plasticity

C2: Molecular neuroscience (Trinity Term)

Organisers: Dr P Oliver and tbc

- ALS
- Alzheimers Disease
- Parkinsons Disease
- Triplet repeat diseases
- Inflammation and glia
- Stem cell approaches
- RNA approaches
- Assay development and application
- Mouse models
- iPSCs as model systems
- Genomic variation
- Big dataset

C3: Genes, circuits and behaviour (Trinity Term)

Organisers: Dr V Vyazovskiy and tbc

- Genetics to behaviour
- Neural circuits of behaviour
- Assigning function to neurons
- Mathematical models of circuits and behaviour
- Hippocampal circuitry and memory formation
- Amydala and fear

Journal Club:

Organiser: Dr D Clarke

This is a compulsory module. Students will all present one paper during the year. It will be assessed on a Pass/Fail basis and counts as one of the 5 advanced modules.

Professional Development and Transferable Skills

In addition to its specialised scientific core, the MSc course includes a Professional Development and Careers component, covering the communication and management skills required to develop a successful scientific career. There will also be a session on future careers by former MSc Neuroscience students and a session with the University Careers Service; information is also available from <http://www.careers.ox.ac.uk>

Experimental Design and Statistics

The first term includes a series of lectures on data analysis methods. There is no formal examination in statistics and experimental design, but competence in word processing, computer-based data handling and graphical presentation and statistical analysis are assessed in submitted work as part of the examination procedure.

Computing Courses

The Oxford University Computing Centre offers a wide range of courses for all levels of experience. As different students have different backgrounds in computing, each student should devise their own programme of computing courses.

Other skills training

The Medical Sciences Division offers a large and diverse range of courses, ranging from communication skills training to specific research methods.
(<https://www.medsci.ox.ac.uk/study/skillstraining/coursecatalogue/allcourses>)

Research Laboratory Rotations

Students complete two laboratory placements during their first year. They visit research labs in their first term and select their first and provisional second project towards the end of the first term in consultation with the Organising Committee (the second project should then be confirmed early in the second term). The projects cover a very wide range of topics ranging from molecular to cognitive studies. The list of available projects varies from year to year; typically, experimental approaches include molecular methods, *in vitro* and *in vivo* measurements (e.g. morphological analyses, electrophysiological recordings or calcium imaging), optogenetics, fMRI, EEG, MEG and behavioural testing in animals and in humans, including studies in patients. In addition, purely computational projects are usually available.

Further Reading

Attwell & Rawlins (1996) *Trends in Neuroscience*, 19, 47-48

Rawlins *et al* (2000) *Trends in Neuroscience*, 23, 280-283

Examination and Assessment

Examination Conventions

Examination conventions are the formal record of the specific assessment standards for the course or courses to which they apply. They set out how your examined work will be marked and how the resulting marks will be used to arrive at a final result and classification of your award. They include information on: marking scales, marking and classification criteria, scaling of marks, progression, resits, use of viva voce examinations, penalties for late submission, and penalties for over-length work. (for full conventions please refer to the WebLearn site for the course; https://weblearn.ox.ac.uk/portal/hierarchy/medsci/p_g/msc_neuros)

The assessment of the course is subject to the regulations set by the Division and approved by the central Educational Policy and Standards Committee (EPSC), which are published in the *Examination Regulations*. Any changes to these regulations must have the approval of the Division and of the central EPSC.

The marking conventions (marking scheme, weighting, combining of marks) are also subject to approval by the Division. They are communicated to students via the handbook, and any changes made during the year as a result of review are communicated separately.

The Division approves the nomination of examiners, proposed by the Organizing Committee. The choice of examiners is subject to approval by the Pro-Vice Chancellor (Education) and Proctors on behalf of the University.

Boards of examiners, under their elected Chairs, are responsible for the setting of all papers and for marking scripts. Assessors may be appointed to assist where necessary.

An external examiner is appointed for the end-of-year examinations. The external examiner prepares a report each year, in which s/he is asked to comment on overall standards, as well as on the examination process itself.

Examiners' reports (internal and external) are considered in the first instance by the Organizing Committee. The Divisional EPSC then sees the reports together with the response of the committee. The Divisional EPSC may make its own recommendations, which are then communicated to the Organizing Committee. Changes may be introduced to the course or assessment procedure for the following year. The reports and responses are also monitored by the central EPSC.

Guidelines for extended essays and research project dissertations

Assessment of MSc Course

- **Qualifying Examination**

All students are required to pass the qualifying exam on the introductory material at the end of the first term. This is a 3 hour written paper taken on the Wednesday of 9th week of Michaelmas term – 11th December 2019. Candidates will be expected to complete 4 written answers based on the topics covered in Michaelmas term. All questions must be passed to pass the Examination overall. The paper will consist of 4 sections and candidates must answer one question from each section. Candidates will be expected to show a b. road, general knowledge of neuroscience. For details about Oxford examinations please see <http://www.ox.ac.uk/students/academic/exams>

Information on (a) the standards of conduct expected in examinations and (b) what to do if you would like examiners to be aware of any factors that may have affected your performance before or during an examination (such as illness, accident or bereavement) are available on the Oxford Students website (www.ox.ac.uk/students/academic/exams/guidance)

- **Extended Essays**

Students will write a 3,000 word essay on a topic relevant to each of their specialist modules, or submit a practical portfolio if required by that module. Academic staff should **not** be approached to read essays and provide comments prior to submission. Essays will be submitted online at https://weblearn.ox.ac.uk/portal/site/:medsci:p_g:m_sc_neuros:online_sub

- **Dissertations**

Students will write a 10,000 word research report on each of their two research projects. They will also be required to give an oral and poster presentation. Supervisors of projects should be asked to read and comment on the dissertation prior to submission.

Feedback: students will be given written feedback comments on **all** written work except Dissertation 2 *but not the grades*. Feedback may take several weeks to be returned because all work is double marked.

- **Viva voce**

Examination of the MSc in Neuroscience is by a viva voce (oral) examination at the end of the course. All students must attend in person. This is an integral part of the examination process and failure to attend a viva without permission will result in the candidate failing the MSc as a whole. The dates when candidates will be called for a viva are given on page 6 of this Handbook. All candidates must ensure that they are available in Oxford on these dates and the Proctors will not accept sports or other non-academic commitments (or academic commitments at other institutions) as valid reasons for approving changes to a student's examination arrangements in Oxford.

Formal requirements

In Michaelmas term candidates should write a timed practice essay from a list supplied from previous examination questions. The essay should be submitted to Dr Clarke who will then forward it to be marked by appropriate members of the Organising Committee. Feedback on the essay will be provided to the candidate via Dr Clarke.

Submission of work

Each candidate for the MSc in Neuroscience is required to submit **online** (https://weblearn.ox.ac.uk/portal/site/:medsci:p_g:m_sc_neuros:online_sub) either an extended essay or a practical write-up, as specified by the module organiser, for each of the 4 advanced modules that they study, together with a synopsis of the Journal Club they present, and **three hard copies** of a dissertation in each of the two areas chosen as research projects. Each dissertation should be printed on numbered pages and securely bound.

Satisfactory performance will be required in **all** these components for the award of MSc to be made and, in the case of the Wellcome Trust 4-year Programme, for transfer to the doctoral research project.

Submission Deadlines

Submit:	To:	Deadline:
Essay title	Module organiser for approval	As published in the <i>Gazette</i> (<i>Approval deadline</i>)
Completed essay	Examination Schools (or online)	As published in the <i>Gazette</i> (<i>Submission deadline</i>)
First project dissertation	Examination Schools	Noon, Wednesday 15 th April 2020
Second project dissertation	Examination Schools	Noon, Wednesday 12 th August 2020

Submissions to the Examination Schools should be addressed to: The Chairman of Examiners, MSc in Neuroscience, c/o Clerk of the Schools, Examination Schools, High Street, Oxford, OX1 4BG.

Each bound submission must be accompanied by a separate signed sheet (copy on page 22 of this handbook) stating that it is the candidate's own work. However, the essays and dissertations themselves should not contain the candidate's name, only their candidate number, to enable them to be assessed anonymously.

Deadlines for handing in written work are to be taken seriously. Learning to plan for and meet deadlines is regarded as part of the content of the course. The Examiners may reduce the mark awarded for work submitted late. Requests for extensions should be made via your College secretary or College advisor to the Proctors. Permission for late submission has to be granted by the Proctors and would usually only happen for serious reasons beyond the candidate's control, for example, illness, validated by a doctor's note, or serious technical problems, such as apparatus malfunction, backed by a letter from the supervisor. Even so, the Proctors do not necessarily accede to such requests. Last minute requests are viewed particularly unsympathetically; you should not expect your College to pass on to the Proctors any requests that originate within a week of the deadline, except for medical conditions supported by a doctor's note.

Penalties for late submission

There are penalties for late submission according to the following sliding scales:

- Up to 24 hours late: Proctors' fee (at their discretion) + 5% deducted from the grade of the individual piece of work.
- 25-48 hours late: 10% deducted from the grade of the individual piece of work.
- 49-72 hours late: 20% deducted from the grade of the individual piece of work.
- Over 72 hours (3 days) late: fail. (Re-submission will be classed as a resit and the mark capped at 50%)

These scales are subject to the Proctors' overriding discretion as laid down in Part 16.8(3) of the Regulations for the Conduct of University Examinations. For further information, see pp. 46-47 of the 2009 Regulations and on the University website to understand fully how cases of late submission are dealt with.

Extended essays

Each essay should be no more than 3,000 words, exclusive of figures and figure legends, tables, bibliography and any necessary appendices, and should include a word count on the title page. It should be a well-researched scholarly presentation on a general or specific aspect of a subject area covered by the module to which it relates. The essays should be the student's own synthesis of the primary literature and demonstrate evidence of critical thinking, e.g. by evaluating methods used, why different studies disagree, etc; excessive dependence on secondary sources in essays will result in being marked down. You should not seek academic help in writing these essays.

Each student **must choose a topic relevant to the particular module**. Topics that are not related to the lecture content of the module will be rejected by the Module Organisers.

Essays that significantly exceed the guidelines for length and/or deviate significantly from the approved title will be penalised, according to the following scale.

≤ 5% over word limit (or deviation from approved title)	5 marks will be deducted from the candidate's final agreed mark for the assessment, on the University's 100-point marking scale.
>5% and ≤ 10% over word limit	10 marks will be deducted from the candidate's final agreed mark for the assessment, on the University's 100-point marking scale.
>10% and ≤ 20% over word limit	20 marks will be deducted from the candidate's final agreed mark for the assessment, on the University's 100-point marking scale.
> 20% over word limit	the candidate will be awarded zero marks (a fail) for the assessment concerned.

If you are in doubt as to the essay style, format or content for any particular specialist modules, you are strongly advised to ask the module organiser for advice in good time before writing the essay. Failure to attend lectures in that module (as evidenced by a register) will also be penalised. A simple guide for writing essays (written originally for undergraduate essays at Oxford) can be found on page 23 of this handbook.

Research project dissertations

The Research Projects are a central part of the course and each will culminate in a dissertation about your study, which you have to complete and submit for examination on the two dates given. At the beginning of Michaelmas Term, you will have access to possible projects on Weblearn suggested by individual members of staff. You can select any of these or you can make your own proposal. The projects will be introduced as a short lecture presentation giving examples of past projects and guidelines as to choosing projects. You should contact previous students who have undertaken placements in that lab for advice and ensure you speak to the supervisors in depth before making your final choice of project.

Towards the end of Michaelmas term, you will meet individually with the MSc Course Director and Course Lecturer to discuss your choice of projects. The main purpose of the meeting is to identify and

avoid any clashes between students wanting to do the same project and to avoid repetition of previous research experience as part of undergraduate courses or postgraduate paid employment.

The aim of the MSc in Neuroscience is to ensure breadth of knowledge and this applies particularly to the research projects. Thus, students are **strongly encouraged** to select projects in disparate fields.

Each dissertation should be not more than 10,000 words in length, exclusive of figures and figure legends, tables, bibliography and any necessary appendices, and should include a word count on the title page. **Dissertations that exceed this length may be marked down as a consequence.** In principle, the dissertation should be prepared as though for publication, with a layout in the style of, for example, a *Journal of Neuroscience* article. **There should be separate, headed sections for the abstract, introduction, methods, results, discussion and bibliography.** The MSc centre contains copies of all dissertations previously submitted.

If there is some reason for wishing to use a different format, permission should be sought from the Organising Committee, giving reasons, at least three weeks before the deadline, to give time for the request to be considered and leave time for you to complete the write-up. The request should be supported by the project supervisor.

General points on format and style

The dissertation should be prepared in conformity with scientific reporting conventions, in general using the third person and passive past tense (e.g. 'The aim of the experiment was to determine....', rather than 'I want to determine....').

Abstract This is the likely to be the first thing that anyone reads. Therefore it should be carefully thought out and in miniature follow the structure of the whole dissertation; it should explain why you did it, i.e. introduce the topic and set out what question is being addressed, what methods you followed, what you found, and what it means. Word limit: not to exceed 250 words.

Introduction This should make clear the aims of the experimental research and not simply give a review of the literature and then leave the reader to deduce why this particular approach was chosen or why the work was worth doing in the first place. Word limit: not to exceed 1,000 words.

Methods Don't overuse acronyms without specifying what they mean or having done so only once at the beginning. It is useful to repeat what they mean from time to time, for example, in each new main section. Explain things clearly; don't assume too much knowledge on the part of the reader. No word limit.

Results A description of the findings, accompanied by figures and/or tables. There should always be a sample of original, analysed data, so that the reader can judge its quality. Figures can be incorporated into the text or given on separate pages that are included at suitable positions in the text. The legends should be written so that they are self-sufficient, if possible, so the reader doesn't have to dredge through pages of text to find what the units or conditions are. It's also useful to briefly say what you think the figure shows. No word limit.

Discussion This should start with a brief summary of the main findings; the main point of the discussion is to state what you think the results mean, and to put them in the context of previous work. You should highlight any shortcomings in the results and what you think the next steps should be. Word limit: not to exceed 2,000 words.

References Should be alphabetic and in the style of the *Journal of Neuroscience*.

Please make sure you retain an electronic copy of dissertations that may be sent to the MSc Course Lecturer (deborah.clarke@psy.ox.ac.uk) if requested. If required, please quote the module title as subject or reference of the e-mail.

Marking scheme MSc in Neuroscience

The essays and project dissertations are marked anonymously using candidate numbers, using the following marking system:

Grades

80%-100%	High Distinction
70%-79%	Distinction
65%-69%	Merit
60%-64%	Good
50%-59%	Pass
45%-49%	Marginal Fail
0%-44%	Clear Fail

The Examiners are aware that the time available for laboratory work is limited, so any lack of 'success' in achieving the original aims of the project should not in itself be penalised. In particular, no candidate should be blamed for unforeseen difficulties or for a supervisor's over-ambitious plans. If experiments are disappointing in what they achieve, it is important that they should be written up accurately without claiming more than is justified. Regardless of 'success' or 'failure' with experimental work, sensible suggestions should be made for appropriate further work. Supervisors will be asked to report to the examiners on any special difficulties associated with the project.

Please note that all marks are subject to confirmation by the Examiners during the compulsory viva voce examination at the end of the course.

80%-100% (High Distinction)

Exceptional work showing exemplary command of current intellectual debates within the topic and making a creative contribution to them. For projects, this may be a study devised by the student. Originality will be obvious at all levels of planning, analysis and interpretation. The dissertation will be clearly written and show exceptional depth of understanding.

70%-79% (Distinction)

An essay or project graded above 70 is of Distinction standard and should be excellent work showing comprehensive knowledge and understanding, and also original and creative analysis, argument and synthesis. For projects, it is not expected that the idea for the project should have been devised by the candidate, but there should be signs of originality, either in developing the project, or in analysing or interpreting the results obtained from it. The dissertation should be clearly presented and show a depth of understanding of the field. The introduction should present clearly the rationale for the scientific study and the discussion should provide a reasoned, integrative account of the scientific results.

65%-69% (MERIT)

Very good knowledge and understanding together with some elements of original and creative analysis, argument and synthesis. An essay or project of this standard should also have been carefully conducted and analyzed. However, there is less of a requirement for originality. The introduction and discussion should show a good understanding of the field and contain some evaluation of the experimental material, even if that evaluation is not original. There should be no major error in the conduct or analysis of the experimental data. Essays should be well constructed and include analysis of the experimental data based upon clear understanding of the primary literature.

60%-64% (Good)

Very good knowledge and understanding of subject matter. An essay or project of this standard should show some evidence of careful attempts to conduct and analyze the material. Some inadequacies may be apparent in presentation or analysis but the conclusions should be sound. For essays, there may be over-reliance on review articles and lack of accurate synthesis of primary sources.

50%-59% (Pass)

Some knowledge and understanding of the key features of the subject. For dissertation projects, the write up may be inadequate in one of the following areas: an inadequate presentation of the purpose of the study, an inadequate description of the methods, inadequately labelled traces or diagrams, an inappropriate analysis, errors in the analysis, or a discussion that fails to interpret the results correctly. These problems will be taken as evidence of weakness in basic scientific skills, but they should not be so serious that they call into question the major conclusions from the experiment. For an essay, lack of analysis and evidence of wider reading of primary literature would be signs of a weaker piece of work.

45%-49% (Marginal Fail)

Incomplete or inadequate knowledge or misinterpretation of some of the subject matter. An essay or project of below 50% standard will be a relatively poor one but should show some evidence of attempts to conduct and analyze the project, but may be inadequate in one or two of the following areas: an inadequate presentation of the purpose of the study, an inadequate description of the methods, inadequately labelled traces or diagrams, an inappropriate analysis, errors in the analysis, or a discussion that fails to interpret the results correctly. These problems are likely to be serious enough that they affect one of the major conclusions from the experiment.

0%-44% (Clear Fail)

Very poor knowledge of much of the subject matter. There will be evidence of carelessness in conducting and analyzing the project. For essays, a lack of reference to data obtained from primary literature and failure to show signs of understanding of the major issues within the chosen topic would be grounds for awarding this mark. Work of this grade is not necessarily a failure, but is one which indicates that the Examiners will focus on these deficiencies during the viva voce exam. A mark which is not redeemed during the viva voce examination will be marked as a fail and require re-writing and re-examination.

Distinction and Merit

To achieve an overall Distinction for the MSc in Neuroscience following the viva voce examination, students should display an excellent breadth of knowledge as shown by a final mark of at least 70%. The final mark is weighted such that the 4 essays contribute 40% of the final mark and the 2 dissertations together account for 60%. To achieve a Merit, the final mark must fall between 65 and 69%. The course committee and examiners feel that this split best reflects the amount of work involved for students. Candidates must pass all elements of the course.(see

Examination Conventions

The full Examination Conventions for this Course can be found on the MSc in Neuroscience WebLearn site (https://weblearn.ox.ac.uk/portal/hierarchy/medsci/p_g/msc_neuros)

Composition of the Board of Examiners

The Board of Examiners for the academic year **2019-20** is:

Chairman: Prof David Dupret

Examiner 1: Dr Laurence Hunt

Examiner 2: Prof Richard Wade-Martins

Examiner 3: Dr Kerry Walker

External Examiner: Professor Andrew Jackson, University of Newcastle,

Academic integrity: good practice in citation and the avoidance of plagiarism

Plagiarism is presenting someone else's work or ideas as your own, with or without their consent, by incorporating it into your work without full acknowledgement. All published and unpublished material, whether in manuscript, printed or electronic form, is covered under this definition. Plagiarism may be intentional or reckless, or unintentional. Under the regulations for examinations, intentional or reckless plagiarism is a disciplinary offence.

The code of conduct mentions plagiarism and in this context, it is important for all taught course and research students within the division's subject areas to be aware of and to follow good practice in the use of sources and making appropriate reference. You will need to exercise judgement in determining when reference is required and when material may be taken to be so much a part of the 'general knowledge' of your subject that formal citation would not be expected. The basis on which such judgements are made is likely to vary slightly between subject areas, as may also the style and format of making references, and your supervisor, or course organizer where appropriate, will be in the best position to advise you on such matters; in addition, these may be covered, along with other aspects of academic writing, in your induction training. We recommend reading the guidance at <http://www.ox.ac.uk/students/academic/guidance/skills>.

By following the citation principles and practices in place in your subject area, you will develop a rigorous approach to academic referencing and avoid inadvertent plagiarism. Cases of apparently deliberate plagiarism, while happily infrequent in the University, are taken extremely seriously and where examiners suspect that this has occurred, they bring the matter to the attention of the Proctors. Your attention is drawn to the Proctors' and Assessors' Memorandum, Section 9.5, 'Conduct in Examinations' and in particular to sections 4 and 5 and the concluding paragraph of the section:

No candidate shall present for an examination as his or her own work any part or the substance of any part of another person's work.

In any written work (whether thesis, dissertation, essay, coursework or written examinations) passages quoted or closely paraphrased from another person's work must be identified as quotations or paraphrases and the source of the quoted or paraphrased material must be clearly acknowledged.

The University employs a series of sophisticated software applications, including Turnitin, to detect plagiarism in submitted examination work, both in terms of copying and collusion. It regularly monitors on-line essay banks, essay-writing services and other potential sources of material. It reserves the right to check samples of submitted essays for plagiarism. Although the University strongly encourages the use of electronic resources by students in their academic work, any attempt to draw on third-party material without proper attribution may attract severe disciplinary sanctions. We have been approached to take part in a pilot project using online submissions. You will be informed about this in more detail if it goes ahead.

To ensure that you are familiar with what constitutes plagiarism, please complete the online courses Avoiding Plagiarism 1 and Avoiding Plagiarism 2 available on the skills training area of Weblearn. <https://weblearn.ox.ac.uk/portal/hierarchy/skills/generic>

Please confirm completion of the course by e-mail to Dr Clarke.

MSc in Neuroscience Organising Committee 2019/20

Professor Colin Akerman	Pharmacology	
Professor Tim Behrens	Clinical Neurosciences	
Professor David Bennett	Clinical Neurosciences	
Professor Rafal Bogacz	Clinical Neurosciences	
Professor Simon Butt	DPAG	
Professor Holly Bridge	Clinical Neurosciences	
Dr Deborah Clarke	Experimental Psychology	Course Lecturer
Professor Stephen Goodwin	DPAG	
Professor Catherine Harmer	Psychiatry	
Professor Andrew King	DPAG	Course Director
Professor Zoltán Molnár	DPAG	
Dr Jill O'Reilly	Experimental Psychology	
Professor Matthew Rushworth	Experimental Psychology	
Dr Andrew Sharott	MRC Brain Network Dynamics Unit, Pharmacology	
Professor Charlotte Stagg	Clinical Neurosciences	
Professor Elizabeth Tunbridge	Psychiatry	
Professor Richard Wade-Martins	DPAG	

TAUGHT MASTERS in NEUROSCIENCE

Submitted Dissertation Declaration

Name (in capitals):

Candidate number:

College (in capitals):

Term:

Title of dissertation (in capitals):

Word count: _____

Please tick to confirm the following:

I am aware of the University's disciplinary regulations concerning conduct in examinations and, in particular, of the regulations on plagiarism.

The dissertation/essay I am submitting is entirely my own work except where otherwise indicated.

It has not been submitted, either wholly or substantially, for another Honour School or degree of this University, or for a degree at any other institution.

I have clearly signalled the presence of quoted or paraphrased material and referenced all sources.

I have acknowledged appropriately any assistance I have received in addition to that provided by my [supervisor/adviser].

I have not sought assistance from any professional agency.

I agree to retain an electronic version of the work and to make it available to the Chair of Examiners, **as instructed**.

USE OF TURNITIN *Please tick to confirm the following:*

I certify that I have read the Notice for Candidates 'Use of Turnitin' and agree to my work being screened and held on the system, as described in the notes.

I confirm that the hardcopy I am submitting is identical in content to the electronic version that I submitted for screening.

Due to commercial sensitivity (or other such reason) my essay should not be submitted to Turnitin. I have applied in writing to the Proctors for approval of this request.

Candidate's signature:

Date:

The art of writing good essays

The purpose of writing essays is not to regurgitate pages of papers or textbooks; but to make you digest and think about what you've read. You are trying to show that you have read widely on the subject and that you can think clearly, critically and usefully about it. Remember that these skills are not just important at Oxford. Throughout your professional life you will be required to write reports and summaries and presentations. There is no "Oxford" essay!

Knowledge and skills

1. Have you really understood the topic? The chosen title will not be a simple stimulus to regurgitate a specific lecture or textbook chapter, but will be an attempt to challenge you to put your knowledge together in a new way. The first challenge, therefore is to deconstruct the question. What current controversy or interest in the area is it addressing? What "spin" or "angle" has been put on the topic? Is it inviting you to integrate two or more areas of the topic? Is there a specific proposition which you are being invited to address. You must convince us that you have understood these things, and that you have an authoritative, knowledgeable and lively grasp of the subject.
2. Do you know the basics? There will almost certainly be a standard body of facts, experimental approaches and arguments that you need to know. You might call this the "paradigm" of the field or the "bread and butter" of the essay. Make sure that you do set this out clearly and succinctly. No amount of original flair and insight will compensate for fundamental holes.
3. You must be aware of the current questions that have excited interest in the field. Research, sometimes in different fields, continuously throws up new evidence that puts old ideas in doubt. You need to be able to show that you have been keeping up with things enough to be able to summarize the current areas of doubt and controversy.
4. Can you analyse the data critically? Where there's controversy, this might be for a number of reasons (e.g. below). Have you spotted the experimental or logical errors? It is often useful to have an 'Aunt Sally' – a weak paper whose weaknesses you know, which you can set up to knock down in comparison to others that get it right.
 - a. Two groups report doing exactly the same experiment but get different results (rare. More usually one of the others)
 - b. Two experiments are ostensibly the same but when you look at the way they do it, they are using materials or methods that are different in a crucial respect that might plausibly account for the differences.
 - c. One group has failed to put in the appropriate controls for specificity, quantification, etc. and is therefore over-interpreting things
 - d. The two groups are doing quite different experiments, the results of both of which could, with a dispassionate eye, be seen to be consistent with the interpretation of one or other group (or a different and simpler interpretation)
 - e. The differences between the two groups is a semantic one. That is, they use different terms which colour things differently but are not in fact, disagreeing on any real point of substance. They're just so used to disagreeing that they have got into the habit!

- f. The data are good, they're just not interpreted in a statistically, mathematically or otherwise rigorous enough fashion.
5. Can you synthesize complexity? The issues raised in your analysis are likely to be complex. Can you bring them together, summarize and organize them well?
 6. Can you present a clear case? You must convince the reader by the logical progression of your argument that your analysis and interpretation are sound? You must also try to convey the excitement of the subject.

Essay structure

How can you make sure that your essay conveys the impression that you have the authoritative knowledge and skills outlined above?

1. Make a clear essay plan before you begin writing it. This will make sure you have assembled all the arguments and pieces of evidence in your mind and then chosen the order in which to present them. It will save you from forgetting to mention things you wanted to say in the fervour of writing your purple prose. It will make sure that you think about the question and are tailoring your essay to respond specifically to it.
2. Decide upon the main pieces of experimental or epidemiological evidence you are going to present. You will need to back up each of your main arguments with evidence, and so make sure you can do so. In an exam, you may or may not be able to remember names and dates but the important thing is to be sure that you know what the experiment was and what it showed. You should build up a little bank of pieces of evidence during your studies.
3. Write a good and concise introduction to the essay. This is crucial because it makes the reader's task so much easier if he/she knows the form of your upcoming argument. He/she will also tend to tire and lose concentration, so he/she will be much more influenced by what he/she first reads (and to a lesser extent by the final few words) than by the bulk of the essay. Your introduction, therefore is a chance for you to show that you have all the knowledge and skills we are looking for and the rest of the essay will simply confirm it. To write this section requires that you have produced a clear plan, so these two elements reinforce each other.
4. By this point, you should have the reader in a high state of anticipation, just hanging on the full exposition you have alluded to. Make sure you don't throw this away by rambling from then on. Make sure that the rest of your essay follows the logic of the introduction and describes the models, examples, experiments in the logical order you have advertised. Above all don't be vague or over general. Avoid phrases like 'Research has shown that ... or Some workers found that...' Be specific; say 'Both Bloggs & Sods found that...' Make liberal use of headings and linking sentences to make sure that the reader is in no doubt about the point s/he has got to in the argument (even if s/he has nodded off for a moment). Make sure to bring in the evidence you planned to use. Use clear and simple diagrams where they help to explain a complex relationship between variables, interactions in anatomical space or time or other things that are hard to represent clearly in words.
5. Remember tricks of style. Don't miss out subject, verb or object. Don't use lists of nouns as adjectives 'the vision motion threshold experiment' should be 'the experiment analysing the sensitivity of subjects to visual motion'. Don't use the same noun over and over again in the same or adjacent sentences. Be sparing and accurate with the use of the (definite article) and a (indefinite article).
6. Bring the essay to a close neatly but don't write a long and fatuous closing paragraph ("thus it can be seen that...") unless you really do have a number of threads left to tie together. If you do, again be specific.

Responsibilities of the student

1. The student must accept his or her obligation to act as a responsible member of the University's academic community.
2. The student should take ultimate responsibility for his or her work programme and endeavour to develop an appropriate working pattern, including an agreed and professional relationship with the supervisor(s). The student should discuss with the supervisor the type of guidance and comment which he or she finds most helpful, and agree a schedule of meetings.
3. The student should make appropriate use of the teaching and learning facilities available within the University, as well as facilities for career guidance and development.
4. It is the student's responsibility to seek out and follow the regulations relevant to his or her course, and seek clarification from the Course Directors and Course Lecturer
5. The student should not hesitate to take the initiative in raising problems or difficulties, however elementary they may seem. He or she should ensure that any problems regarding the course are drawn to the attention of the Course Lecturer so that appropriate guidance may be offered.
6. The student should seek to maintain progress in accordance with the plan of work agreed with the supervisor, including in particular the presentation of the required written material in sufficient time for comment and discussion.
7. The student should recognise that a supervisor may have many competing demands on his or her time. The student should hand in work in good time to the supervisor and give adequate notice of unscheduled meetings. The need for adequate notice also applies to requests for references from the supervisor.
8. The student should be aware that the provision of constructive criticism is central to a satisfactory academic progress, and should always seek a full assessment of the strengths and weaknesses of his or her work.
9. If the student feels that there are good grounds for contemplating a change of supervision arrangements, this should first be discussed with the supervisor or, if this seems difficult, with the Course Lecturer.
10. Where problems arise, it is essential that a student gives full weight to any guidance and corrective action proposed by the supervisor.

Mentors and Academic Advisors 2019-20

Surname	Firstname	College	Mentor (previous student)	Academic advisor
Blennerhassett	Thomas HT	Pembroke	David Oliver	Colin Akerman
Bochtler	Katharina S	St Edmund Hall	Sarah Armstrong	Colin Akerman
Cambalova	Patricia	Exeter	Adam Harris	David Bennett
Chen	(Renren) Heidy	St John's	Bjorn Vahsen	David Bennett
Diviney	Tara	St John's	Gemma Gothard	Simon Butt
Echeverria Altuna	Irene	GTC	Merima Sabanovic	Simon Butt
Ehlers	(Julian) Hendrik	University	Sarah Armstrong	Holly Bridge
Graceffo	Eugenio	LMH	Basile Confavreux	Holly Bridge
Hadj-Youssef	Shadi	Wadham	Alexios Vourvoukelis	Catherine Harmer
He	Yiran	Lincoln	Helen Collins	Catherine Harmer
Holton	Eleanor R	New	David McCaffary	Zoltán Molnár
Hunt	Jasper E	Lincoln	Helen Collins	Zoltán Molnár
Ibarra Aizpurua	Naroa	LMH	Bjorn Vahsen	Jill O'Reilly
Laffere	Aeron	New	Adam Harris	Jill O'Reilly
Payamon	Masuma	LMH	Gemma Gothard	Matthew Rushworth
Sigutova	Veronika	Corpus Christi	Merima Sabanovic	Matthew Rushworth
Syeda	Atika	Keble	Alexios Vourvoukelis	Andrew Sharott
Taylor	(Christian) Luke	Keble	Bronwyn Gavine	Andrew Sharott
Van Stekelenburg	Tess M	St Catherines	David Oliver	Charlotte Stagg
Wang	(Chengyang) Alex	Christ Church	Basile Confavreux	Charlotte Stagg
Wiedemann	Anna	University	Bronwyn Gavine	Elizabeth Tunbridge
Zulfiqar	Amna	Magdalen	David McCaffary	Elizabeth Tunbridge

In addition, Andy King, Course Director and Debbie Clarke, Course Lecturer, are willing to read practice essays and to answer any questions you may have regarding the course. Please note that it is your responsibility to contact your academic advisor at the beginning of the year. In addition to your individual mentor, the whole group of previous students above can be seen as a pool of mentors, any of which approached for help with essay writing and scientific discussion.

UNIVERSITY OF OXFORD

Complaints and academic appeals

For further details please see www.ox.ac.uk/students/academic/complaints

1. The University, the Medical Sciences Division and the Department of Neuroscience all hope that provision made for students at all stages of their programme of study will make the need for complaints (about that provision) or appeals (against the outcomes of any form of assessment) infrequent.
2. However, all those concerned believe that it is important for students to be clear about how to raise a concern or make a complaint, and how to appeal against the outcome of assessment. The following guidance attempts to provide such information.
3. Nothing in this guidance precludes an informal discussion with the person immediately responsible for the issue that you wish to complain about (and who may not be one of the individuals identified below). This is often the simplest way to achieve a satisfactory resolution.
4. Many sources of advice are available within colleges, within faculties/departments and from bodies like OUSU or the Counselling Service, which have extensive experience in advising students. You may wish to take advice from one of these sources before pursuing your complaint.
5. General areas of concern about provision affecting students as a whole should, of course, continue to be raised through Joint Consultative Committees or via student representation on the department's committees.

Complaints

3.1 If your concern or complaint relates to teaching or other provision made *by the faculty/department*, then you should raise it initially with the Course Lecturer, Dr Deborah Clarke, then with the Course Director, Professor Andy King, as appropriate. Within the faculty/department the officer concerned will attempt to resolve your concern/complaint informally.

3.2 If you are dissatisfied with the outcome, then you may take your concern further by making a formal complaint to the University Proctors. A complaint may cover aspects of teaching and learning (e.g. teaching facilities, supervision arrangements, etc.), and non-academic issues (e.g. support services, library services, university accommodation, university clubs and societies, etc.). A complaint to the Proctors should be made only if attempts at informal resolution have been unsuccessful. The procedures adopted by the Proctors for the consideration of complaints and appeals are described in the Proctors and Assessor's Memorandum [<http://www.admin.ox.ac.uk/proctors/pam/>] and the relevant Council regulations [<http://www.admin.ox.ac.uk/statutes/regulations/>]

[4. If your concern or complaint relates to teaching or other provision *made by your college*, then you should raise it either with your tutor or with one of the college officers, Senior Tutor, Tutor for Graduates (as appropriate). Your college will also be able to explain how to take your complaint further if you are dissatisfied with the outcome of its consideration.]

Academic appeals

5. An appeal is defined as a formal questioning of a decision on an academic matter made by the responsible academic body.
6. For undergraduate or taught graduate courses, a concern which might lead to an appeal should be raised with your college authorities and the individual responsible for overseeing your work, Dr Deborah Clarke. **It must not be raised directly with examiners or assessors.** If it is not possible to clear up your concern in this way, you may put your concern in writing and submit it to the Proctors via the Senior Tutor of your college. As noted above, the procedures adopted by the Proctors in relation to complaints and appeals are on the web [<http://www.admin.ox.ac.uk/statutes/regulations/>].
7. For the examination of research degrees, or in relation to transfer or confirmation of status, your concern should be raised initially with the Director of Graduate Studies. Where a concern is not satisfactorily settled by that means, then you, your supervisor, or your college authority may put your appeal directly to the Proctors.

8. Please remember in connection with all the cases in paragraphs 5 - 7 that:
 - (a) The Proctors are not empowered to challenge the academic judgement of examiners or academic bodies.
 - (b) The Proctors can consider whether the procedures for reaching an academic decision were properly followed; i.e. whether there was a significant procedural administrative error; whether there is evidence of bias or inadequate assessment; whether the examiners failed to take into account special factors affecting a candidate's performance.
 - (c) On no account should you contact your examiners or assessors directly.
9. The Proctors will indicate what further action you can take if you are dissatisfied with the outcome of a complaint or appeal considered by them.

Notice for Candidates

Use of Turnitin

1. Candidates will be required to certify in writing that they have read this notice and that they agree to their work being screened and used as described here.
2. Candidates will be given instructions by their examiners about how to submit their work. Students may be required to use *Turnitin* to screen their work themselves, in which case, they will be told how to submit a print-out of the *Turnitin* report to the examiners.
3. All candidates submitting hard-copy of their work will be asked to sign a declaration that the electronic material that they have screened or that they are providing for screening is identical in content with the hard-copy. Checks will be made of such declarations and dishonesty will be treated as an attempt to cheat in the examination. Online submissions will sign an electronic declaration.
4. The [Administrative Regulations](#) concerning the handing in of examination material will apply equally to the submission of electronic copy. In particular, candidates will be responsible for submitting their electronic copy as required by the examiners, and, having made any submission, they may not withdraw it or substitute it with a revised version without the consent of the Proctors.
5. Students will be responsible for retaining an electronic copy of their submitted work until the examination is concluded.
6. Work submitted for screening by *Turnitin* software is submitted to an American company *iParadigm*. Copyright of the work is not reassigned by such submission: copyright remains wholly with the original owner.
7. The submitted material is retained in confidence on *iParadigm*'s servers and will be used as part of the reference set against which subsequent submissions to the system are screened. This offers protection to candidates against other people subsequently copying their work (the file on *iParadigm*'s server is encrypted and cannot itself be used as source for plagiarism). Any third party outside Oxford University submitting material that matches a student's work is told only the extent of the match and Oxford's contact details. If approached, Oxford University will attempt to contact its student about the matter. The contents of a student's original work will not be revealed to a third party outside Oxford without express permission from the student concerned.
8. Material submitted to *Turnitin* will be identified by the student's candidate number: personal details such as candidates' names will not be used.
9. At any time after completion of the examination, any candidate wishing to have his or her material removed from the system should apply to the relevant Faculty Office. Arrangements will be made in such cases to delete the submitted material. It is hoped that, to maximise the usefulness of screening, such requests for deletion will be kept to a minimum.
10. In some cases, commercial sensitivity (or other such reason) might mean that a candidate's work cannot, or should not, be transmitted over the internet for screening by *Turnitin*. In such cases, the candidate should apply in writing to the Proctors with the support of his or her supervisor (in the case of a research degree) or of his or her College (in the case of any taught course) for dispensation from electronic screening. The examiners will be notified of any such cases so that they can use other tests for plagiarism at their discretion

MSc in Neuroscience

Induction Programme Timetable

Monday 30th September 2019

- 10.00 am Meeting in the Sherrington Room, DPAG with coffee and tours of DPAG
Welcome by Dr D J Clarke, MSc in Neuroscience Course Lecturer.
- 10.30 am *Cortex Club introduction and tours around department*
- 11.30 am Continuation of MSc in Neuroscience Induction meeting in the Sherrington Room with Dr Deborah Clarke and Professor Andrew King.
- 1.00 pm Lunch in the Sherrington Room.

MSc in Neuroscience: Michaelmas Term 2019

					-2 week		
Wed	25th	Sept	6:00pm onwards		Welcome drinks		The Turf Tavern, Oxford
Thurs	26th	Sept	9:00am-5:00pm		Autumn School in Neuroscience	See separate timetable	Sherrington Large lecture Theatre
Fri	27th	Sept	9:00am-5:00pm		Autumn School in neuroscience	See separate timetable	Sherrington Large lecture Theatre

					-1 week		
Mon	30th	Sept	10:00-14:00		MSc Neuroscience Induction	Dr D Clarke	Sherrington Small Lecture theatre
Tues	1st	Oct	09:00 ALL day		Animal management and Handling. PIL-A/B lectures: COMPULSORY	Dr M Berdoy	

Weds	2nd	Oct	09:00 ALL day		Animal management and Handling. PIL-A/B lectures (COMPULSORY)	Dr M Berdoy	
Thur	3rd	Oct	09:00-17:00		Animal management and Handling. PIL-B practicals	Dr M Berdoy	
Fri	4th	Oct	ALL DAY		Animal management and Handling. PIL-B practicals	Dr M Berdoy	
Mon	7th	Oct	09:00	1	Neuroscience: History at Oxford	Prof Z Molnár	Sherrington Small Lecture theatre
			10:15	2.1	Introduction to neuroanatomy	Dr D Clarke	Sherrington Small Lecture theatre
			14:00		MatLab bootcamp	Dr J O'Reilly	Sherrington Small Lecture theatre
Tue	8th	Oct	09:00				
			10:15	3.1	Neurons	Prof J Taylor	Sherrington Room
			11:30	2.2	Brain stem and cranial nerves	Dr D Clarke	Sherrington Room
			14:00-15.00		Health and safety Lecture (COMPULSORY)	Jonathan Barker	Sherrington Small Lecture theatre
Wed	9th	Oct			All day free for College Inductions		
Thu	10th	Oct			Morning free for College Inductions		

			14:00		MatLab bootcamp	Dr J O'Reilly	Sherrington Small Lecture theatre
			16.30-18.00		Medical Sciences Graduate School Welcome event		Tingewick Hall, JR Hospital
Fri	11th	Oct	09:00				
			10:15	3.2	Glia	Prof J Taylor	Sherrington Small Lecture theatre
			11:30	4.1	Resting and Action potentials	Prof E Mann	Sherrington Small Lecture theatre
			14:00		PIL A/B exam		Exam Schools
					1st week		
Mon	14th	Oct	09:00	2.3	Cerebellum and Basal Ganglia	Dr D Clarke	Sherrington Small Lecture theatre
			10:15	4.2	Receptors and Ion Channels	Prof E Mann	Sherrington Small Lecture theatre
			11:30	1	Electrophysiology in vivo and in vitro	Dr T Ellender	Sherrington Small Lecture theatre
			16:00-17:30	Library Induction		Karine Barker	RSL
Tue	15th	Oct	09:00	5.2	Sensory Systems 1	Dr Kerry Walker	Sherrington Small Lecture theatre
			10:15	3.3	CNS Development	Prof J Taylor	Sherrington Small Lecture theatre
			11:30	4.4	Synaptic transmission 1; presynaptic events	Prof S Cragg	Sherrington Small Lecture theatre
Wed	16th	Oct	09:00	1	Neuroanatomical techniques	Dr N Doig	Sherrington Small Lecture theatre
			10:15	4.5	Synaptic transmission 2	Prof T Sharp	Sherrington Small Lecture theatre
			11:00				
			14:00-16:00	2 (Practical class)	Brain and spinal cord	Dr D. Clarke	MSTC Classroom 2

Thu	17th	Oct	09:00	2.4	Ascending and descending pathways	Dr J Taylor	Sherrington Room
			10:15	2.5	Thalamus and cortex	Prof Z Molnar	Sherrington Room
			11:30	1	LTP	Prof N Emptage	Sherrington Room
			14:00-16:00		Statistical Analysis for Neuroscientists 1	Dr J O'Reilly	Sherrington Small Lecture theatre
Fri	18th	Oct	10:15	4.3	Sensory receptors and transduction	Prof A King	Sherrington Small Lecture theatre
			11:30				
			13:00-17:00	1 (Practical: Groups)	Patch-clamping to study action potentials and synaptic currents in neurons	Profs E Mann and T Ellender	
					2nd week		
Mon	21st	Oct	09:00	5.1	Sensory Systems 2: Visual processing	Prof Holly Bridge	Sherrington Small Lecture theatre
			10:15	4.5	Synaptic transmission 3	Prof T Sharp	Sherrington Small Lecture theatre
			14:00-15:00		Presentation of projects	Dr D Clarke	Sherrington Small Lecture theatre
Tue	22nd	Oct	09:00	5.4	Decision and action selection 1	Prof M Rushworth	Sherrington Small Lecture theatre
			10:15	2.6	Limbic system	Dr D Clarke	Sherrington Small Lecture theatre
Wed	23rd	Oct					
			14:00-16:00	2 (Practical class)	Internal structure of the brain	Dr D. Clarke	MSTC classroom 2

Thu	24th	Oct	09:00	1	DTI	Prof H Johansen-Berg	Sherrington Small Lecture theatre
			10:15	1	EEG/MEG	Prof M Woolrich	Sherrington Small Lecture theatre
			11:30	5.5	Decision and action selection 2	Dr M Walton	Sherrington Small Lecture theatre
			14:00-16:00		Statistical Analysis for Neuroscientists 2	Dr J O'Reilly	Sherrington Small Lecture theatre
Fri	25th	Oct	10:15	1	fMRI	Dr J O'Reilly	Sherrington Small Lecture theatre
			11:30	1	Optical microscopy	Prof N Emptage	Sherrington Small Lecture theatre
			13:45-15:45	1 (practical)	FMRI demonstration	Dr J O'Reilly et al	FMRIB
					3rd week		
Mon	28th	Oct	10:15	5.3	Sensory Systems 3: Multimodal processing and plasticity	Dr K Walker	Sherrington Small Lecture theatre
			11:30				
Tue	29th	Oct	09:00				
			10:15				
Wed	30th	Oct	09:00-13:00	1 (Lecture and demonstrations)	In vivo Calcium imaging	Johannes Dahmen	Sherrington Small Lecture theatre

Thu	31st	Oct	9:00-1:00pm		Careers	56 Banbury Road	
			14:00-16:00		Statistical Analysis for Neuroscientists 3	Dr J O'Reilly	Sherrington Small Lecture theatre
Fri	1st	Nov	09:00	1	Introduction to computational neuroscience	Dr B Willmore	Sherrington Small Lecture theatre
			18:30-20:00		Welcome Drinks; introduction to project PIs and previous students		Merton College
					4th week		
Mon	4th	Nov	10:15	5.5	Motor Systems 1;	Prof C Stagg	Sherrington Small Lecture theatre
			11:30	1	TMS	Dr J O'Shea	Sherrington Small Lecture theatre
Tue	5th	Nov	09:00-13:00	1	Animal models in neuroscience	Prof D Bannerman, Prof S Goodwin, Dr F Nodal	Sherrington Room
Wed	6th	Nov	09:00	3.5	Molecular neuroscience I: Genes, genomes and cells	Prof P Oliver	Sherrington Small Lecture theatre
			10:15	5.6	Motor Systems 2: Sub-cortical areas	Dr A Sharott	Sherrington Small Lecture theatre
Thu	7th	Nov	09:00	3.6	Molecular Neuroscience II: Experimental approaches	Prof P Oliver	Sherrington Small Lecture theatre
			14:00-16:00		Statistical Analysis for Neuroscientists 4	Dr J O'Reilly	Sherrington Small Lecture theatre

Fri	8th	Nov					
					5th week		
Mon	11th	Nov	10:15	1	Optogenetics	Prof G Miesenboeck	Sherrington Small Lecture theatre
Tue	12th	Nov					
Wed	13th	Nov					BSB
Thu	14th	Nov					
			14:00-16:00		Statistical Analysis for Neuroscientists 5	Dr J O'Reilly	Sherrington Small Lecture theatre
Fri	15th	Nov					
					6th week		
Mon	18th	Nov					
Tue	19th	Nov	9:30-17:00		PIL-C lectures	Dr M Berdoy	
Wed	20th	Nov	All day		PIL-C practicals	Dr M Berdoy	BSB
Thu	21st	Nov					
			14:00-16:00		Statistical Analysis for Neuroscientists 6	Dr J O'Reilly	Sherrington Small Lecture theatre
Fri	22nd	Nov	All day		PIL-C practicals (if needed)	Dr M Berdoy	

					7th week		
Mon	25th	Nov	14:00		Animal Management and Handling Exam (PIL-C) (sub fusc need NOT be worn)		Exam Schools
Tue	26th	Nov					
Wed	27th	Nov					
			11:00				
Thu	28th	Nov	14:00-16:00		Statistical Analysis for Neuroscientists 7	Dr J O'Reilly	
Fri	29th	Nov					
					8th week		
Mon	2nd	Dec	14:00		Resit animal handling exam (if needed)		BSB
Tue	23rd	Dec					
Wed	4th	Dec	11:00				
Thu	5th	Dec	14:00 onwards		Individual meetings with Organising Committee to	Dr D Clarke and Prof A King	Office

					discuss projects and advanced options choices		
Fri	6th	Dec					
					9th week		
Mon	9th	Dec					
Tue	10th	Dec					
Wed	11th	Dec	09:30-12:30		<i>Qualifying Exam</i> (N.B. subfusc IS required)		Exam Schools