

**Institute of
Psychiatry**
at The Maudsley

KING'S
College
LONDON

University of London

MSc Neuroscience Programme Handbook 2008 - 2009

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Programme Details

Programme Title: Neuroscience

Category of Award: Master of Science

Awards: Master of Science in Neuroscience with Distinction
Master of Science in Neuroscience with Merit
Master of Science in Neuroscience

Mode of Attendance: Full-time
Part-time

Duration: One year: full-time
Two years: part-time

Term Dates: 25th September 2006 – 4th September 2007 (full-time)
6th October 2006 – September 2008 (part-time)

Department: Neuroscience

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Introduction

Mental and neurological illness represents a major socio-economic cost to society. Many of the available treatments are only partially effective leaving patients still unproductive, particularly those with schizophrenia, stroke and dementia, while for patients with other illnesses, such as depression, epilepsy and Parkinson's disease, there is still a need for more effective therapies. Improved treatment will only come through further research which integrates molecular, cellular and clinical aspects of disease, and it is increasingly realised that interdisciplinary approaches are necessary to understand the complex processes which underlie behaviour, both normal and pathological. An in-depth understanding of the range of disciplines important in neuroscience by team members will make for more productive interdisciplinary teams. This is the teaching philosophy adopted in the MSc Neuroscience programme, which is underpinned by the diverse research expertise within the Institute of Psychiatry.

About the Institute of Psychiatry

The Institute of Psychiatry is a postgraduate institute of the University of London and, since August 1997, a school of King's College London. Opened in 1923, it is the only postgraduate institution in the United Kingdom devoted to the study and practice of psychiatry and related disciplines. It shares the same site as the Maudsley Hospital which is part of the South London and Maudsley NHS Trust (the largest mental health trust in England).

The origins of the Institute date back to 1896 when the eminent neurologist Dr Frederick Mott put forward proposals for the then novel concept of university level training courses in subjects related to psychiatry. However, it was not until 1914 that Mott's idea began to bear fruit when the London County Council agreed to establish a hospital in Denmark Hill with the assistance of a generous donation from Dr Henry Maudsley after whom it is named. Within ten years, the associated Maudsley Hospital Medical School had come to be officially recognised by the University of London and the new school retained this title until 1948 when it became a founder member of the newly formed British Postgraduate Medical Federation and changed its name to the Institute of Psychiatry. Later in the same year, the Maudsley Hospital was amalgamated with the Bethlem Royal Hospital to form a joint teaching hospital.

In 1967 the Institute moved from the Maudsley Hospital into a new main building on adjoining land. In 1972 a Neurology Building was completed; in 1974 the East Wing was added to the main building with a further extension being added to it in 1998. In 1975 the Child Psychiatry building was provided within the Maudsley Hospital; in 1989 the South Wing was substantially redeveloped to provide new laboratories for the Department of Neuroscience; in 1990 the Addiction Sciences Building was opened; and in 1997 the West Wing was extended and the Academic Neuroscience Building was completed. In 2001 the Henry Wellcome Building and the David Goldberg Centre were opened. The most recent building to be opened was the MRC Social, Genetic and Developmental building in 2002.

The Institute's greatest strength is the interdisciplinary nature of both its research strategy and its educational activities providing unique opportunities for students. In the 2001 Research Assessment Exercise the highest possible rating of 6* was awarded to the Institute in recognition of the international quality of its research.

Specialised postgraduate are taught in relatively small student groups. Close contact occurs between staff and students throughout the programmes which enables students to become part of the dialogue of their chosen discipline. Teaching by staff with research and clinical expertise allows students to gain specialist knowledge in topics related to psychiatry, psychology, and basic and clinical neuroscience and thus to develop their careers as clinicians, therapists, researchers and educators.

The interdisciplinary nature of research at the Institute, and at the clinical interface, provides a broadly informed and interlinked knowledge base among teaching staff, which in turn provides students with a broad and interlinked education. This interdisciplinary focus provides strong opportunities to cross-inform study by working across related fields, assists students in understanding the relationship of their fields to the national and global picture of mental health, and allows them to make informed decisions about their personal direction and opportunities for their future.

Departments

The Institute comprises the following academic departments:

- ❑ Biostatistics and Computing
- ❑ Child and Adolescent Psychiatry
- ❑ Forensic Mental Health Science
- ❑ Health Services Research
- ❑ Neurology
- ❑ Neuroscience
- ❑ Psychological Medicine
- ❑ Psychology
- ❑ Social, Genetic and Developmental Psychiatry Research Centre

Interdisciplinary Research Groups

The Institute has the following interdisciplinary research groups and centres:

- ❑ Addictions Interdisciplinary Research Group
- ❑ Antisocial Behaviour Interdisciplinary Research Group
- ❑ Disorders of Childhood Interdisciplinary Research Group
- ❑ Emotional Disorders Interdisciplinary Research Group
- ❑ Health Services Research Interdisciplinary Research Group
- ❑ Neurodegenerative Diseases Interdisciplinary Research Group
- ❑ Psychology and Medicine Interdisciplinary Research Group
- ❑ Psychosis Interdisciplinary Research Group
- ❑ Social, Genetic and Developmental Psychiatry Research Centre

King's College London

In 2004, King's College London celebrates its 175th anniversary and will be marking the occasion with a year long series of events. Established in 1829, as one of the founding Colleges of the University of London, it has grown into one of the foremost multi-faculty research led universities in the United Kingdom.

King's enjoys a worldwide reputation for excellence in teaching and research founded on a distinguished history of academic innovation, discovery and scholarship. Some of the greatest achievements of the 19th and 20th centuries owe their origins to researchers working at King's:

Without Lord Lister's invention of antiseptic surgery, modern aseptic surgical techniques could not have evolved.

James Clerk Maxwell's discovered the nature of electro-magnetic waves.

John Daniell's constant-cell battery was the first reliable source of electricity.

The discovery of the structure of DNA, a large part due to the work of Rosalind Franklin and Maurice Wilkins, is the greatest scientific discovery of our times.

Sir Charles Wheatstone's development of wireless telegraphy and Sir Edward Appleton's discovery of the atmospheric layers which carry radio signals were the key to the development of modern telecommunications.

Florence Nightingale's vision for nursing and development of the first professional nurse training laid the foundations for the delivery of modern healthcare

In addition, King's people have made a vital contribution to many other areas of modern life from the development of higher education for all, human rights, international law, peace and reconciliation in Africa, contemporary music and literature.

The College currently has over 12,400 undergraduate students, together with 4,700 postgraduate and research students. There are approximately 2,000 overseas students from more than 97 countries at the College.

King's has five main campuses. The Strand Campus, overlooking the River Thames, midway between the Houses of Parliament and St Paul's, makes King's the most central of all London colleges. Virtually facing the Strand Campus, on the south side of the river, is the Waterloo Campus. St. Thomas' Campus by Westminster Bridge and the Guy's Campus, in historic Southwark at London Bridge are joined by the Thames Path. King's Denmark Hill campus, of which the Institute of Psychiatry is a part, is located in south London.

In August 1997, the Institute of Psychiatry became a school of King's and, a year later, the College completed its merger with the United Medical and Dental Schools of Guy's and St Thomas' Hospitals. The merger has created the largest medical and dental school in the United Kingdom and the new College offers the widest range of research specialisms in the fields of medicine, dentistry and the healthcare and health delivery professions of any university in the country.

Library

The Institute's Library is the largest in Europe dedicated to psychiatry and its related disciplines, with a stock of approximately 40,000 books and 200,000 volumes of periodicals.

In addition, approximately 400 current periodicals are regularly received, and the library has access to a wide range of electronic journals and on-line information services. Any items not held can usually be requested via a rapid inter-library lending service. Ample seating for readers is available on three floors of the modern Wolfson building. Facilities for on-line computer-based literature searches are provided, as are microfiche readers and photocopiers. Training is offered free to library members on the use of data-bases and electronic information sources.

A number of special collections are housed in the library, including items formerly belonging to key figures in the historical development of British Psychiatry. The manuscript collections and the Guttman-Maclay collection of psychopathological art are housed in the archives building of the Bethlem Royal Hospital.

All students are automatically entitled to membership of all the libraries of King's College, including the nearby King's College Hospital library, which holds general medical literature. Students are also able to join the University of London Library. This membership provides further access to a number of special collections, including the British Psychological Society Library and the library of the Royal Statistical Society. Access may be arranged, if required, to as many as sixty-two other specialised libraries within the University of London.

The library is normally open from 9am until 8pm on weekdays and until lunchtime on Saturdays, throughout the year, with a member of the Library staff present to assist the reader at all times.

Statistics & Computing

The Institute has a Department of Biostatistics and Computing and all students planning a research project are encouraged to seek the advice of its academic staff. The Department staff's duties include advising researchers on data processing, running a statistical consultancy service, offering courses in statistical techniques and software applications.

The Department provides separate advisory services for statistics and computing.

The Statistics section runs a consultancy helpdesk from Monday to Thursday from 2.00 - 3.30 where staff and students may come to seek assistance with any statistical problems. Should further consultation be needed an appointment will be made for a longer session.

The Computing section of the department also offers a helpdesk service, users can send their queries via email, or visit the section but appointments for more extended help may be required.

The Department offers statistics courses: elementary courses, which are open to all students and staff of the Institute without charge and more advanced, specialist short courses which are also occasionally available to people outside the Institute for a fee. Throughout the academic year, the Computing Section also runs courses in SPSS.

Further information about the staff and services of the department can be found on their website at www.biostatistics.iop.kcl.ac.uk

Programme aims

The programme provides post-basic specialist training in Neuroscience, with an emphasis on subjects relevant to psychiatry and neurology. It seeks to equip graduates from a wide range of basic sciences for the next stage of their career, which may be either further full-time study in a neuroscience-related academic research environment, or employment in an academic, clinical or pharmaceutical organisation, by providing:

1. multidisciplinary training in neuroscience topics ranging from the molecular to the behavioural, to students wishing to extend their specialised knowledge, and to those wishing to convert from their original degree discipline. The topics are informed by professional consensus and research, and are taught using a variety of teaching methods ranging from didactic instruction through to student-led seminar/tutorial work;
2. practical training in the skills necessary for a career in a research environment through formal instruction of a range of core methodologies and, through research projects, of more specialised skills;
3. transferable skills training in topics relevant to biomedical research. This is done through a variety of exercises and includes presentation of research data in both poster and scientific paper formats, and elementary bioinformatics;

For clinicians, the programme acts as a supplement to existing training.

Programme objectives

Successful students should be able to demonstrate:

- specialised knowledge and critical awareness of a broad range of neuroscience topics at the research forefront that are relevant to mental illness and neurology;
- the ability to conduct a supervised research project, and to present their findings.

The level of achievement that is expected is appropriate for students wishing to undertake research work or further training in this specialist field.

Entry Requirements

The normal minimum entrance qualification for registration on a Masters degree is:

- i. a second class honours degree of a UK university or of the CNAAB, or an overseas qualification of an equivalent standard obtained after a programme of study extending over not less than three years in a university (or educational institution of university rank), in an appropriate subject; or

- ii. a registerable qualification appropriate to the programme to be followed awarded by a UK university in medicine or dentistry, or a qualification of an equivalent standard appropriate to the programme to be followed awarded by a university outside the UK; or
- iii. a professional or other qualification obtained by a formal examination and approved by the Institute.

All teaching at the Institute is conducted in English and it is therefore essential that students have a sufficient command of the language to follow their course.

Candidates for whom English is not their first language will be required to provide proof that they possess an adequate level of English competence. The minimum levels are either an IELTS score of 7.0 or a TOEFL score of 600 paper based or 250 computer based. Grade C or above in GCSE English, the Hong Kong Examination Authority Advanced Use of English or the Malaysian General Certificate of Education: English as a Foreign Language are also acceptable.

A candidate possessing alternative qualifications which do not conform with those normally prescribed for entry may be considered for registration if the candidate, by evidence of their background and experience or general education, scholarship or training satisfies the Institute as to their fitness to follow the programme and to profit by it.

Curriculum

Full-time

The full-time MSc programme runs for one year from the last week of September to the end of next September. The first part (end September – end January) is highly structured and consists of didactic lectures interspersed with tutorial and revision sessions and student presentations (see <http://neuroscience.iop.kcl.ac.uk/msc/sections.aspx> for the general timetable). The lectures are organised into 4 modules, delivered on Mon-Thurs. Each module is divided into 2-3 sections as indicated in the Syllabus (see below and <http://neuroscience.iop.kcl.ac.uk/msc/sections.aspx>). Transferable skills training is provided throughout the programme and students are expected to attend all lectures, the tutorial/revision sessions and student presentations.

The 4 written examinations are held on the 19th, 21st, 23rd and 26th March, after which each student begins a research project that lasts for up to 20 weeks. In order to provide maximum choice, the project is chosen, on-line, from a number of projects offered by academic staff either from the Institute or elsewhere (e.g. other schools within KCL and other colleges, e.g. UCL IC, etc). Four coursework essays are submitted, each of 2,500-3000 words, on the 12th February, 9th March, 30th April and 4th June.

After the written examination, students are required to finalise their laboratory projects, submit a short project thesis (approximately 7,500 words) and prepare and submit a poster of their project which is presented publicly early-September and marked by the Examiners. Students have to be available at this time for a possible *viva voce* by the Board of Examiners.

Full details are on the MSc website (<http://neuroscience.iop.kcl.ac.uk/msc/>)

Part-time

The part-time programme contains an identical teaching syllabus to the full-time programme and overall module structure but is conducted on a day-release basis and lasts for two years. Programme work comprising 4 essays of 2,500-3,000 words has to be completed by May of the second year, and the formal tutorials and revision sessions usually take place almost immediately following the conclusion of the teaching programme in the second year. Following completion of teaching in the second year, the part-time students follow the full-time programme timetable for tutorials, revision sessions and examinations. Students are expected to attend all lectures, the tutorial/revision sessions and student presentations.

After the written examination, students are required to finish their laboratory projects, submit a short project thesis (approximately 7,500 – 10,000 words) and prepare and submit a poster of their project which is presented

publicly early-September and marked by the Examiners. Students have to be available at this time for a possible *viva voce* by the Board of Examiners.

Syllabus

The lectures are divided into 4 modules, each consisting of 2-3 sections as set out below. The lectures in each section and the full timetable are available at <http://neuroscience.iop.kcl.ac.uk/msc/calendar/>

<u>Section</u>	<u>Topics</u>
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Introduction

These lectures will provide a general overview of the programme and will introduce fundamental concepts. Some of these may be very familiar, but an element of parallel teaching is involved to accommodate students from diverse backgrounds.

Module 1

1.1. *Cellular Organisation of the CNS*

Cytogenesis and cytology of brain cells; the blood brain barrier; Macroscopic histological and fine structural features in the CNS; Neuropathology of the dementias and movement disorders.

1.2. *Developmental Neurobiology*

Principles of neural development. The sequence in which the core events occur. Examples of the classes of molecules involved in these core processes and how they control and drive these processes. A description of how these core processes combine to develop a neural system such as the thalamocortical pathway

Module 2

2.1 *Degenerative and Demyelinating Diseases*

Molecular and cellular mechanisms of neuronal cell death, with particular reference to Alzheimer's, Parkinson's, motor neurone and prion diseases; amyloid precursor protein and its metabolism; presenilin biology; cytoskeleton and its involvement in neurodegeneration; free radical damage; clinical and pathological features of neurodegenerative diseases; genetics of neurodegenerative diseases.

2.2 *Systems Neuroscience*

Communication between neurones, neuronal plasticity and cellular and molecular mechanisms of learning and memory; Sensory systems; *Aplysia* and hippocampal physiology; Uses of neural networks.

2.3 *Behavioural Neuroscience*

Multidisciplinary approach to causes and mechanisms of drug dependence, dealing with both licit and illicit substances, and emphasizing the role of drug action in the central nervous system in the genesis of drug-seeking behaviour.

Module 3

3.1 *Neurogenetics*

Principles of genetics and molecular evolution; Behavioural genetics; Animal models, genes and human personality; Genetics of psychiatric disorders.

3.2 *Neuroimaging*

The theoretical basis and practical applications of structural and functional magnetic resonance imaging, and other functional imaging methods

3.3 *Clinical Neuroscience*

The clinical perspective on mental illness and the relation between the biology of the disease and the symptoms of the disorder.

Module 4

4.1

Neurotransmitters and Receptors

The electrical properties of neurons and discuss the establishment and maintenance of the resting membrane potential; the electrical events surrounding the synaptic potentials and the action potential; the role of synaptic potentials in neural integration. The roles of neurotransmitters and receptors in neurotransmission. The criteria for identifying a substance as a neurotransmitter substance; details of activity, receptor binding, and specific agonists and antagonists, for the following neurotransmitters/neuromodulators: acetylcholine, enkephalin, GABA/glycine, dopamine, 5-HT, noradrenaline, glutamate.

4.2

Cell Signalling

The differences between ionotropic and metabotropic receptors, tyrosine receptor kinases and steroid receptors; interactions between metabotropic receptors and the different types of G proteins and adenylate cyclase. Involvement of G proteins and adenylate cyclase in signal transduction and the role of transcription factors; calcium homeostasis

4.3

Neuroimmunology

Operation of the immune system in the brain. Viral diseases of the CNS. Autoimmunity and hypersensitivity within the nervous system. Multiple sclerosis. Research methods in neuro-immunology.

The Programme Committee reserves the right to alter the syllabus without notice if this is judged to improve the content of the programme.

Programme Committee

The responsibility for the overall programme, including syllabus and assessment criteria, is overseen by the Programme Committee. The membership of the Programme Committee is:

- Programme Leader
- Student Representative(s)
- Members of the MSc teaching staff
- Admissions Tutor
- Head of Department
- Institute Registrar (ex officio)
- Dean
- Institute Secretary (ex officio)

The terms of reference of the Programme Committee are:

1. To ensure that the programme is academically sound and compares favourably with other similar programmes.
2. To enhance and develop the curriculum in line with current trends in the subject.
3. To ensure the programme falls within the remit of the Institute's academic profile.
4. To guarantee that entry requirements, teaching methods, assessment procedures and provision of support are suitable for both the programme and students.
5. To ensure that assessment procedures are fair and consistent and that the award conferred is both appropriate to both programme and student performance.
6. To make sure adequate resources are made available to the programme.
7. To consider feedback from students on the programme.

8. To liaise with the Institute Teaching Committee and consider any business required by that committee.

In practice, responsibility for day-to-day shaping of the programme is devolved to the Programme Sub-Committee, which comprises:

- Programme Leader
- Deputy Programme Leader
- Admissions Tutor
- Internal Examiners
- Members of the MSc teaching staff

Examination Board Structure & Functions

There are three levels of examination boards. The College Board of Examiners is responsible for both undergraduate and postgraduate programmes throughout the College. At Institute level, there are two Boards of Examiners one of which is responsible for postgraduate programmes and the other for undergraduate programmes. Individual Programme Boards of Examiners are responsible for one or several related programmes.

The College Board of Examiners ensures that procedures and regulations in relation to examinations are properly carried out across the College. Its role is to co-ordinate, regulate and advise and to maintain consistent standards throughout the College.

In the Institute, the Taught Postgraduate Board of Examiners reports to the College Board and has the same responsibility but at Institute level. Its members are the Chairs of the Programme Boards. It is responsible for the approval and co-ordination of marking schemes. The Board meets a number of times a year to discuss and decide on matters relating to examinations. The Board approves the recommendations of the Programme Boards of Examiners with regard to all results including classifications of degrees awarded to each student. In this way, the Board ensures that comparable standards are applied across the various fields of study within the Institute.

An individual Programme Board comprises the internal examiners involved in the teaching and examining of the individual programmes, and the appointed intercollegiate and external examiners. The Boards consider and agree upon the content of examination papers, make recommendations on the appointment of Visiting Examiners, and the examination marks for individual students on their degree programmes. The Boards make recommendations to the Taught Postgraduate Board of Examiners on awards to individual students. Boards may also recommend that individual students be permitted to resit failed examinations.

External Examiners

There are two external examiner, one from outside the University of London and one, the intercollegiate examiner, from a college of the University of London other than King's College London.

The main functions of External Examiners are to ensure that the programmes offered at the College and the Institute, and the grades of degrees awarded are of a standard comparable with those at other universities in the UK, and that the examination system is fair and equitably run. They also act as adjudicators in individual cases. External Examiners are therefore experts (often Professors) in particular fields of study and are drawn from other higher education institutions in the UK. Their duties essentially are to:

- comment on and approve draft examination papers and advise upon other modes of assessment appropriate to the subject;
- sample examination answer scripts and other assessed material including coursework to ensure an appropriate standard of marking, and to act as adjudicators on borderline pass/fail cases;
- interview students as permitted by College and programme regulations;

- approve pass lists;
- report formally on the degree programme and its method of assessment so that the Programme Boards and the Taught Postgraduate Board of Examiners can modify their procedures if necessary.

Board of Examiners

Membership of the Board of Examiners is as follows:

- Chair
- Vice-Chair
- Internal Examiners
- External Examiner
- Intercollegiate Examiner
- Institute Registrar

The terms of reference of the Neuroscience Board of Examiners are:

1. To ensure that assessment procedures are fair and consistent and that the award conferred is appropriate to both programme and student performance
2. To ensure that marked components are clear and unambiguous and comprise a fair and appropriate reflection of the programme itself
3. To ensure comparability of standards with similar postgraduate programmes
4. To recommend final degree classification to the Institute of Psychiatry's Taught Postgraduate Board of Examiners.
5. To report recommendations of the external examiners to the Programme Committee.

Marking Structure

All examined work for all programmes is marked by at least two internal examiners. Before any marks are provisionally awarded, the essay or report (or other assessed item) is judged against a set of criteria to decide the appropriate grade. The final mark for each assessed item is scrutinised by the External Examiners and approved by the Programme Board.

The assessment is based on the following relative weightings:

4 x 2.5-hour	Written Examinations and	
4 x	Coursework essays	40%
Project :	Laboratory performance	25%
	Thesis	17.5%
	Poster presentation	<u>17.5%</u>
		<u>100%</u>

Assessment methods

The marking criteria against which all assessed work is marked are as follows.

ESSAYS

MSc Neuroscience

Student's Number:

Examiner :

Year :

Title :

Tick box to indicate grade :

	Distinction	Merit	Pass	Fail
Title understood and addressed				
Logical presentation				
Structure & organisation				
Factual Content				
Legibility and literacy				
Clarity of expression				
Conclusion(s)				
Reference				
Evidence of research and originality				

Criteria for marking Essays:

Overall	Equivalent (%)	Description
Distinction	70+%	Advanced and comprehensive essay. Logical, organised and systematic answer, covering all the major aspects of the topic. Evidence of independent study, originality and critical evaluation demonstrated by selection and presentation of relevant material. Excellent standard of presentation and analysis.
Merit	60-69%	Good knowledgeable, logical, organised and accurate answer covering most of the major aspects of the topic. Some evidence of independent study. Demonstrates a clear and accurate understanding. High standard of presentation and analysis.
Pass	50-59%	Accurate answer covering most of the major aspects of the topic, and some evidence of independent study or critical evaluation.
Fail	<50%	A weak, superficial dissertation. Incomplete coverage of the subject or with important omissions and mistakes. Poor standard of presentation and analysis.

General Comments: Please indicate how the work might be improved . Use the reverse of this sheet if necessary.

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PROJECT THESIS

MSc Neuroscience

Student's Number:

Examiner :

Year :

Title :

Mark (out of 100%)

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Tick box to indicate grade :

	Distinction	Merit	Pass	Fail
Appropriate research question				
Background information				
Logical presentation				
Evidence of research and originality				
Comprehension of research project				
Factual Content				
Legibility and literacy				
Clarity of expression				
Conclusion(s)				
References				

Criteria for marking Research Dissertation:

Overall	Equivalent (%)	Description
Distinction	70+%	Advanced and comprehensive dissertation. Design shows individuality. Robust methodology and systematic approach to the project. Comprehensive understanding of research tools employed. Evidence of independent study and critical evaluation demonstrated by placing research in context of existing literature. Excellent standard of presentation and analysis.
Merit	60-69%	Well written, logical, organised and accurate answer covering the design and methodology. Demonstration of a systematic approach to the project. Good understanding of research tools employed. Some evidence of independent study. Has developed a clear and accurate project. High standard of presentation and analysis.
Pass	50-59%	Accurate answer outlining a coherent research project covering the main aspects of design and methodology. Good understanding of research tools employed. Clearly presented project.
Fail	<50%	A weak, superficial protocol. Incomplete coverage of the subject or with important omissions and mistakes. Poor standard of presentation and analysis.

General Comments: Please indicate how the work might be improved . Use the reverse of this sheet if necessary.

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LABORATORY DAY-TO-DAY BOOK

MSc Neuroscience

Student's Number:

Examiner :

Year :

Title :

Mark (out of 100%)

Tick box to indicate grade :

	Distinction	Merit	Pass	Fail
Introduction				
Clear design & methodology				
Reference to Statistical analysis				
Subjects and setting				
Evidence of research originality				
Approved research tool				
Clarity of expression				
Evidence of Ethical approval				
Innovation				
Appropriate pilot study				
References				

Criteria for marking Research Protocol:

This work should document how the research will be carried out

Overall	Equivalent (%)	Description
Distinction	70+%	Advanced and comprehensive proposal. Design shows individuality Robust design and methodology and systematic approach to the project. Comprehensive understanding of research tools employed. Evidence of independent study and critical evaluation demonstrated by placing proposed research in context of existing literature. Excellent standard of presentation and analysis.
Merit	60-69%	Good knowledgeable, logical, organised and accurate answer covering the design and methodology and systematic approach to the project. Good understanding of research tools employed. Some evidence of independent study. Has developed a clear and accurate proposal. High standard of presentation and analysis.
Pass	50-59%	Accurate answer outlining a coherent research project covering the main aspects of design and methodology.
Resubmission	<50%	A weak, superficial protocol. Incomplete coverage of the subject or with important omissions and mistakes. Poor standard of presentation and analysis.

General Comments: Please indicate how the work might be improved . Use the reverse of this sheet if necessary.

WRITTEN EXAMINATION

MSc Neuroscience

Student's Number:

Examiner :

Year:

Title:

Mark (out of 10.0)

Tick box to indicate grade :

	Distinction	Merit	Pass	Fail
Introduction				
Understanding of question				
Factual content				
Comprehensive account				
Comparison with relevant literature				
Logical presentation				
Reference				
Clarity of expression				
Conclusion/summary				
Overall presentation				

Criteria for marking:

Overall	Equivalent (%)	Description
Distinction	70% +	Advanced and comprehensive answer. Logical, organised and systematic answer, covering all the major aspects of the topic. Originality and critical evaluation demonstrated by selection and presentation of relevant material. Excellent standard of presentation and analysis.
Merit	60-69%	Comprehensive well written, logical, organised and accurate answer covering most of the major aspects of the topic. Demonstrates a clear and accurate understanding. High standard of presentation and analysis.
Pass	50-59%	Accurate answer covering most of the major aspects of the topic, and some evidence of independent study or critical evaluation.
Fail	<50%	A weak, superficial dissertation. Incomplete coverage of the subject or with important omissions and mistakes. Poor standard of presentation and analysis.

General Comments:

Assessment deadlines

12 February 2007 1st essay due
5 March 2007 2nd essay due
19 /21/23 and 26 March 2007 4-day written examination
30 April 2007 3rd essay due
4 June 2007 4th essay due
17 August 2007 Submission of thesis and laboratory book
3 September 2007 Poster presentation and examination
4 September 2007 vivas (as appropriate) and results announced (subject to ratification by KCL teaching committee)

Acceptance of late coursework

Material for assessment, including essays, reports and dissertations, must be submitted by the date specified in the relevant programme regulations. Material submitted late will normally be failed with a mark of zero unless prior agreement has been made with the Programme Leader, or where the candidate has suffered illness or other cause found acceptable to the Board of Examiners (as specified in Regulation 4 of the *Regulations for the Conduct of College Based Masters Degrees & College Based Postgraduate Diplomas and Certificates*).

Valid Reasons for Absence

A candidate who is prevented by illness or the death of a near relative or other cause judged sufficient by the Board of Examiners from completing at the normal time the examination or part of the examination may be examined in those elements in which the candidate was not able to be examined on the next occasion when the examination is held.

Where a candidate has failed to complete the examination for the reasons specified above, they should make an application accompanied by a medical certificate, or other statement of the grounds on which the application is made, to the Chairman of the Board of Examiners within seven days of the last day of the written examination or for the submission of the essay/report/dissertation.

Category of Awards

In order to be eligible for the award of a Masters degree, candidates should normally be able to satisfy the following requirements:

Requirements for a pass

A 50% average mark overall; no mark of 39% or less in any element except where that element contributes less than 25% to the overall total; marks of 50% or better in at least 75% of the elements which make up the degree programme; and a mark of 50% in any dissertation element except where the element contributes less than 25% of the overall total.

Requirements for the award of a merit

A pass with merit shall be awarded where the average mark across all elements is between 60% and 69% and no element is failed at the first attempt; and a mark of 60% in any dissertation element except where the element contributes less than 25% of the overall total.

Requirements for the award of distinction

A pass with distinction shall be awarded where the average mark across all elements is 70% or higher and no element is failed at the first attempt; and a mark of 70% in any dissertation element except where the element contributes less than 25% of the overall total.

Reassessment

A candidate who fails an examination at the first attempt may, at the discretion of the Board of Examiners, be reassessed on the failed element on one further occasion. Such reassessment will be at the next following examination, or at the discretion of the Examination Board on another date.

Representations concerning decisions of Boards of Examiners

Decisions of Board of Examiners cannot be challenged on academic grounds, that is to say, solely because a candidate's view about their performance in any given examination or assessment differs from that of the Board of Examiners.

The criteria which must be satisfied before a Board of Examiners will agree to reconsider or review a decision which it has made are very precise. If a candidate's representations do not meet the criteria equally precisely, a Board cannot be required to reconsider or review the decision in question. A review by a Board of Examiners does not necessarily mean that the Board will change the decision which is being reviewed. The Board may decide to confirm its original decision;

Except as provided below, no decision of a properly convened and constituted Board of Examiners, acting in accordance with these and any other relevant College Regulations, may be modified. There is no procedure for the reconsideration of decisions of Boards of Examiners based upon academic judgement.

A Board of Examiners may, at its discretion, reconsider a decision in the following circumstances:

- where a candidate requests such reconsideration and provides adequate evidence which is acceptable to the Board of Examiners that their examination was adversely affected by illness or other factors which they were unable, or for valid reasons unwilling, to divulge before the Board of Examiners reached its decision;
- where there is clear evidence produced by the candidate or any other person of administrative error or that the examination was not conducted in accordance with the Instructions/Regulations.

Any representation which a student may make in connection with their examinations must be referred to the Institute Registrar, normally on a form provided for such use. Unless the Institute Registrar has cause to decide otherwise, such representations must be made within 14 days of the publication of the results of the relevant examinations.

Following the reconsideration of a decision by the relevant Board of Examiners, in accordance with these regulations the hearing of a formal appeal by the candidate against the outcome of the reconsideration may be allowed, at the discretion of the Institute Registrar, if sufficient evidence remains providing grounds for appeal. An appeal must be requested in writing and lodged with the Institute Registrar within fourteen days of the publication of the reconsidered decision of the Board of Examiners.

Examination Offences

The following shall be regarded as examination offences, although other types of offence or irregularity which are not prescribed here may also constitute an offence. The guidance given does not purport to be exhaustive, but is provided for the information of staff and students:

- prior disclosure of questions for an unseen examination;

- failure to observe the regulations or instructions for the examination;
- the introduction, handling or consulting of unauthorised material or aids during an examination;
- plagiarism;
- collusion or conferring with others during an examination;
- leaving an examination without permission or supervision and returning to the examination;
- impersonation of another candidate.

Plagiarism

Plagiarism is the taking of another person's thoughts, words, results, judgements, ideas, etc, and presenting them as your own.

Plagiarism is a form of cheating and a serious academic offence. All allegations of plagiarism will be investigated and may result in action being taken under the College's Misconduct Regulations. A substantiated charge of plagiarism may result in expulsion from the College.

Students are reminded that all work that they submit as part of the requirements for any examination or assessment of the College or of the University of London must be expressed in their own words and incorporate their own ideas and judgements. Direct quotations from the published or unpublished work of others, including that of other students, must always be identified as such by being placed inside quotation marks with a full reference to the source provided in the proper form. Paraphrasing - using other words to express another person's ideas or judgements - must also be acknowledged (in a footnote or bracket following the paraphrasing) and referenced.

It is possible for plagiarism to occur in examination scripts but students should take particular care in coursework, essays and reports, especially when using electronic sources or when working in a group. Students should also take care in the use of their own work. Credit can only be given once for a particular piece of assessed work. Submitting the same piece of work (or a significant part thereof) twice will be regarded as cheating.

Unacknowledged collaboration may result in a charge of plagiarism or in a charge of collusion. Students are advised to consult departmental guidance on the proper presentation of work and the most appropriate way to reference sources and should ensure that they have read and understood it. Students should be aware that academic staff have considerable expertise in identifying plagiarism and have access to electronic detection services to assist them.

Code of Conduct

Lectures are for the benefit of students. It is essential to have a quiet atmosphere to allow the lecturer to make an effective presentation and the students to concentrate on the lecture. Lecturers who are disturbed by disruptive or interfering behaviour have a right to ask offending students to leave.

You can contribute to the success of lectures by adhering to the following guidelines:

1. Arrive punctually so that the lecture can start on time. Late arrivals distract the lecturer and other students, and are discourteous and inconsiderate.
2. If the lecture is delayed because students are late valuable time is lost and this may result in the lecture running over time into the break. If you are more than five minutes late you should not enter the lecture unless you can do so without causing any disturbance.
3. Maintain a quiet atmosphere during the lecture by ensuring that your mobile phone, bleep or pager is switched off.
4. Do not talk while the lecturer is talking.
5. Concentrate on the material that is being presented;

6. If you have a question, you should attract the lecturer's attention by raising your hand.
7. You should not leave a lecture before it ends unless asked to or given the option by the lecturer.
8. You should complete evaluation forms or offer feedback as requested by the lecturer. Feedback should be constructive to help the lecturer improve the quality of teaching.

Student Feedback and Representation

Students have the opportunity to provide their views on the programme, the Institute and the facilities it provides at the Programme Committee and the Students' Forum through student representatives who are elected or selected by other students on the programme.

In addition to this, informal measures by which students can comment upon the operation of the programme are considered extremely valuable and are acted upon when ever practicable.

Questionnaires

Student feedback on the teaching and content of courses is obtained through questionnaire which you will be asked to complete anonymously. Analysis of the questionnaires by the Programme Leader will allow your views to be integrated into the future development of the programme.

Student feedback also forms a large part of the annual monitoring process. All programmes are required to produce a report on the operation of the programme each year. As part of this report, it is expected that a summary of the feedback received from students is included, the mechanisms used for assimilating and processing students' comments and also examples of how previous feedback from students has resulted in changes being made to the programme.

Programme Committee

The Programme Committee meet at least twice a year. It offers students the opportunity - through their student representatives – to discuss the programme and raise any issues with members of the programme team.

Students' Forum

The Students' Forum meets on a termly basis and provides students on taught programmes and those undertaking research degrees the opportunity to discuss educational and other matters of mutual interest with key administrative staff.

King's College London Students' Union

All students are automatically members of King's College London Students' Union (KCLSU).

KCLSU exists to represent the interests of all students at King's and provide a wide range of high quality recreational, social and welfare services at all campuses. In addition to this, it can provides confidential advice and support on a range of issues.

Registry

You can go the Registry for advice and information. It is situated in Room 2.20 in the main Institute building. It is open from 9am to 5pm Monday to Friday. The staff of the Registry are on hand to help you with any of your problems, and, if they cannot help directly, they can usually point you in the right direction for obtaining advice and assistance.

Personal Tutors

All students are appointed a Personal Tutor. The Personal Tutor will meet students individually at the beginning of the programme and once a term thereafter. Students are required to take the initiative in approaching their Personal Tutor if an issue arises outside of these times.

The role of the Personal Tutor is to provide independent advice on a range of issues and act as a point of contact for students experiencing problems not dealt with through the normal process of academic supervision. The Personal Tutor should ensure that students are aware of the facilities, resources and service offered by the Institute and the College in relation to health care, counselling and financial assistance. It is not the role of the Personal Tutor to provide academic support.

Welfare Advice

Personal Tutors are available to discuss a range of problems that students may encounter, alternatively students may wish to talk to someone from outside of the Institute.

The College operates a counselling service which aims to enable students to make the most of their opportunities by helping them cope with any problems or difficulties that may arise of a personal or emotional nature. For further information please contact the Institute Registry.

The College Welfare Advisers offer free, confidential advice and guidance on a range of practical issues, for both current and prospective students and staff.

The wide range of issues they deal with include: finance and money management, social security and disability benefits, housing rights, consumer law and immigration issues.

You can phone the Welfare Advisers on the numbers given below to book an appointment, or visit the office to pencil your name in the Adviser's timetable. Most booked appointments are for up to thirty minutes and take place in a confidential one-to-one setting. Where necessary, follow-up appointments can then be made.

For brief inquiries, clients may wish to simply drop in to the Welfare Office. Sessions last about ten minutes and are not pre-booked. You will therefore usually have to wait a short time until an Adviser is available.

Emails can be sent to welfare@kcl.ac.uk for initial inquiries or to request information. However, it must be noted that e-mails are not strictly confidential as other authorised members of the College can obtain access. For confidential or more complex matters it is therefore advisable to book an appointment to see an adviser.

Counsellors work within Student Services and the Medical Centres on the main campuses. Their aim is to enable you to make the most of the opportunities offered at the College by helping you to cope with any problems or difficulties which may arise of a personal or emotional nature. All of the help offered is strictly confidential.

A counsellor is available by appointment on Mondays at the Weston Education Centre which is across the road from the Institute. Appointments can be made by telephoning 020 784 2613.

Equal Opportunities

King's College London is committed to promoting and developing equality of opportunity in all areas of its work. In order to achieve this aim, the College seeks to:

- ensure that prospective and current students, job applicants and members of staff are treated solely on the basis of their merits, abilities and potential without any unjustified discrimination on grounds of age, sex, disability, family circumstances, race, colour, nationality, citizenship, ethnic origin, social and economic status, religious belief, sexual orientation, marital status or other irrelevant distinction;
- promote good relations between individuals from different groups; recognise and develop the diversity of skills and talent within both its current and potential staff and student body;
- foster a culture based on trust and mutual respect;
- undertake a programme of action to make equality policies effective;
- monitor progress towards achieving equality of opportunity on a regular basis;
- communicate to staff, students, associates and others the promotion of equal opportunities and College procedures to sustain it.

Equality & Diversity

The Equality and Diversity Department provides information and advice for staff and students on equality issues. The Department has a number of useful web pages providing up to date information such as the College's Race Equality Policy and disability-related information sheets. Visit www.kcl.ac.uk/equal_opps/index.html for more details.

The Department includes the Director of Equality and Diversity, the Disability Co-ordinator and the Disability Support Officer. To make an appointment for advice, information and/or specialist support or student assessment services contact Sarah Junor on 020 7848 3398 (tel/text) or 020 7848 3490 (fax) or email the Department at equality@kcl.ac.uk.

Students with disabilities

If you are a disabled student, or you are experiencing temporary or sudden onset of a disability, the Disability Support Team at King's can assist you in a number of ways. In addition, your Department may be able to provide the following: special seating, handouts or booklists in advance, rearranged time-tables, long book loans, extra time for examinations and extra support from staff.

If you are a home-domiciled postgraduate student, you may be eligible for the Disabled Students' Allowance. This is a financial package which helps to cover the extra costs of studying with a disability such as notetakers, assistive technology and extra photocopying costs. Contact the Disability Support Team for more information regarding eligibility and details on how to apply.

If you suspect that you may have dyslexia or learning difficulties, the Disability Support Team can provide advice and guidance. In the past, King's has funded Dyslexia Assessments for students through the Hardship fund.

More detailed information for students with disabilities can be found in the College's *Disability Handbook: An individual's guide*. This is available online at www.kcl.ac.uk/equal_opps/index.html or from Registry or the Equality and Diversity Department.

To make an appointment to see the Disability Support Officer or the Disability Co-ordinator contact Sarah Junor on 020 7848 3398 (tel/text) or email equality@kcl.ac.uk.

King's College Students' Union

King's College Students' Union offers Advice services to King's College students primarily through the Advice Unit and the VP Education & Representation.

The Advice Centre is an independent organisation run through the Students' Union. Free, independent, confidential & impartial advice, and information on a range of subjects is offered, including:

- Academic Queries (eg Academic Hearings, Disciplinary Hearings, How to Change Course/College, Problems with Courses/Lecturers, etc);
- Problems with Halls (eg tenancy agreements, rights to repair, deposits);
- Employment Issues (eg seeking work, employee's contracts, etc);
- Legal Advice (eg basic help and referrals, etc);
- Personal Queries (eg harassment, attack, children/childcare, marriage, divorce, etc).

The Advice Unit is staffed by the Academic Caseworker. It is based in the KCLSU Resource Centre on the first floor of the Strand Site. In addition, it offers advice over the telephone, as well as via email: advice@kclsu.org.

Grievance Procedures

In the event of an academic grievance, students should first speak to their Programme Leader or Personal or Academic Tutor.

It may be appropriate for a student's complaint, particularly if it is of a general rather than a personal nature, to be referred to one of the following:

- Programme Committee
- Students' Forum
- Teaching Committee

In the event of the student being unable to resolve the grievance to their satisfaction, the student should approach the Chair of the Teaching Committee.

If the grievance still remains unresolved to the satisfaction of the student then the student may submit a request for redress in writing to the Dean, who will make an initial response within fourteen working days. The correspondence between the Dean and the student will form part of the evidence that the student has exhausted all local mechanisms in respect of Section 5:5.2.1 of the College's *Grievance procedure for students*.

Students whose grievances arise from allegations of sexual or racial harassment from members of staff or other students should seek redress using the procedures set out in the College's Code of Practice on Sexual and Racial Harassment.

Health & Safety

The Institute has a Health and Safety policy which aims to ensure safe working conditions and practices and to assign managerial and functional responsibilities in order that accidents and other losses are prevented or reduced. The policy applies to all staff, students and visitors working at the Institute. Where the Institute shares the occupation or control of premises with another employer then the safety policy and detailed arrangement will be jointly co-ordinated to ensure the health and safety of all occupants. Where Institute staff or students undertake any work on premises under the control of another employer then the policy and arrangements of that employer will apply.

Students must register with a doctor and dentist in the area where they live. Overseas students and their dependants are entitled to free health care under the National Health Service providing that their programme of study is full time and lasts for more than six months.

Overseas students who are on programmes of study of less than six months are not entitled to free health care under the National Health Service. Students from European Economic Area countries should complete Form E111. Students from countries outside of the EEA which have no reciprocal arrangements with the United Kingdom should ensure that they take out medical insurance prior to leaving their home country.

English Language Centre

Subject to availability, part-time in-session courses are available free of charge to students who require English language support. The Centre also offers an Advanced English Language course for students wishing to sit the Cambridge Proficiency Examination.

In addition, the Centre offers workshops in communication and study skills for students whose first language is English and who have problems with essay writing, spelling etc.

For more details about English language courses contact the Centre on 020-7848 1600 or fax 020-7848 1601 or email: elc@kcl.ac.uk.

Careers

Given the specialist nature of the majority of programmes run at the Institute, you will often find that either the Programme Leader or a member of the programme team are best placed to offer you careers advice.

For those who want further advice, the College has a Careers Service which exists to help with careers guidance and job hunting. It does this by providing careers counselling and information on a wide range of careers and other postgraduate courses.

A vast range of information about careers, postgraduate courses, employers, vacation jobs, temporary employment, job vacancies and many other subjects is available in our information library at the Strand. Information officers are available to help you find the information you need. You can collect your copy of the weekly Job Opportunities Bulletin to keep you up to date with trends and other events in the University of London Careers Service from the Information Services Centre in the Franklin Wilkins Building.

The Strand Office is open 9.30am-5.00pm, Monday-Friday and the information libraries are available for use throughout this time. The Strand office runs Quick Query sessions, Monday-Thursday 11.00 - 17.00pm during term time (14.00-17.00 at other times). Here you can see a careers adviser for a 10-15 minute consultation without an appointment (out of term time please telephone beforehand). For details on sessions at other campuses please check the careers Web site or call the Strand Office. If a longer interview is required, this will be booked after an initial quick query consultation.

For further information please contact:

Careers Service
King's College London
Strand
London
WC2R 2LS

Tel: 020 7848 2616
Fax: 020 7848 2282
Email: careers@kcl.ac.uk
Web: <http://www.kcl.ac.uk/careers>

Recommended reading

Owing to the wide scope of the programme and the novelty of much of the material there are no official programme texts. Reading lists are given as a supplement to each lecture, and are generally derived from journal literature which is either available at the Institute of Psychiatry library (see below), or is available in reprint form from the Programme Office for students to reproduce if they wish. For those with little or no chemistry background, suitable chapters from A-level chemistry revision texts are very helpful, particularly chemical bonding and structure, pH, acids, bases and buffers, and organic chemistry. There are also, however, textbooks which students from different backgrounds can use to familiarise themselves with basic concepts which are used in the programme. They are not programme textbooks *per se*, but include:

Essential Cell Biology, 2nd edition (Garland Press, 2004) - B. Alberts, D. Bray, K. Hopkin, A. Johnson, J.Lewis, M. Raff, K. Roberts & P. Walter.

The Molecular Biology of the Cell (Garland Press, 1994) - B. Alberts, D. Bray, J.Lewis, M. Raff, K. Roberts & J.D. Watson.

Molecular Cell Biology (W. H. Freeman Company, 2003) H. Lodish, P. Matsudaira, A. Berk, S. L. Zipursky & M. P. Scott

The Biochemical Basis of Neuropharmacology, 8th edition (Oxford Univ. Press, 2002) J.R. Cooper, F.E. Bloom & R.H. Roth
Fundamental Neuroscience (Academic Press, 2002) - L.R. Squire, F.E. Bloom, S.K.McConnell, J.L Roberts, N.C. Spitzer & M.J. Zigmond
Principles of Neural Science, 4th edition (McGraw-Hill, 2000) E.R..Kandel, J. H. Schwartz & T. M. Jessell