



FACULTY OF MEDICINE & FACULTY OF SCIENCE
SCHOOL OF MEDICAL SCIENCES & SCHOOL OF PSYCHOLOGY

NEUROSCIENCE FUNDAMENTALS

NEUR2201

SESSION 2, 2013

*An introductory multi-disciplinary course in neuroscience delivered by
Anatomy, Health & Exercise Science, Physiology, Pharmacology, Psychology*

COURSE OUTLINE



WELCOME

Neuroscience Fundamentals is a multi-disciplinary course that brings together neuroscientists from across UNSW to deliver a course that is broad-reaching, up-to-date, and on a subject that is one of the last great frontiers of knowledge.

The course is structured into six fortnight long modules, each taught by members of at least two different neuroscientific disciplines. Each module includes a hands-on lab, and concludes with a tutorial and short quiz. This format allows us to tackle some “big questions” in neuroscience. We will do our best to ensure you find the course as exciting and fulfilling as we find the study of neuroscience.

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COURSE STAFF

Course Co-ordinator

Course Co-ordinator Dr Richard Vickery
room 303, third floor Wallace Wurth Building
(turn right out of the lifts, and pres the buzzer outside door 3Q5)
phone 9385 1676
e-mail Richard.Vickery@unsw.edu.au

Course Examiner Dr John Power
room 303, third floor Wallace Wurth building
phone 9385 2910
e-mail John.Power@unsw.edu.au

Consultations

Dr Vickery is responsible for all academic and administrative matters regarding the course. Students should feel free to approach him for any questions or problems concerning the course. It is best to arrange an appointment in advance by email. In Dr Vickery's absence, urgent enquiries can be directed to Dr Power.

Other information of an administrative nature may also be obtained from the Combined Schools Science Office, Ground Floor, BioSciences building.

Other Teaching Staff

Dr Pascal Carrive	p.carrive@unsw.edu.au	Anatomy
Dr Thomas Fath	t.fath@unsw.edu.au	Anatomy
Dr Bronwyn Graham	bgraham@psy.unsw.edu.au	Psychology
Dr Nicole Jones	n.jones@unsw.edu.au	Pharmacology
Dr Arun Krishnan	arun.krishnan@unsw.edu.au	Physiology/Neurology
Dr Cindy Lin	c.lin@unsw.edu.au	Health & Exercise
Dr Lu Liu	l.liu@unsw.edu.au	Pharmacology
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Prof. Margaret Morris	m.morris@unsw.edu.au	Pharmacology
Dr Jacqueline Rushby	j.rushby@unsw.edu.au	Psychology
Prof. Peter Schofield		NeuRA
Prof. Ernie Somerville		Neurology

COURSE INFORMATION

Course Structure and Teaching Strategies

Units of credit: This course is worth 6 units of credit.

Contact hours: This course structure is

- two lectures per week
- one 3 hour practical class per fortnight
- one 90 minute tutorial class per fortnight

Class Times and Locations:

The course runs on Tuesdays and Thursdays.

Lectures are one hour long, at 11am on Tuesday in Mathews Lecture Theatre C, and at 9 am on Thursday in Mathews Lecture Theatre D. The tutorials which run every second week are held in Mechanical Engineering Room 405. Practical classes run from 10am - 1pm on Thursdays; their location is generally in Wallace Wurth 120. There may be some week to week variation, as the labs are hosted by the different Departments involved in this course: check your timetable for details of each class' location.

Course schedule

The complete course timetable is included at the end of this course outline. Any updates to the timetable will be announced in lectures and on the NEUR2201 Blackboard website.

Blackboard (UNSW TELT)

This course will rely extensively on Blackboard for communication and resources. To access the course site, point your browser to: <http://lms-blackboard.telt.unsw.edu.au/> "Log on" to Blackboard using your z-pass, and then look for the course NEUR2201. You should have access to it if you are properly enrolled.

Via Blackboard you will be able to access lecture notes; these will be posted for all lectures, either before, or shortly after, each lecture. Students are strongly encouraged to attend the lectures in person, as these notes and the iLecture recordings are provided primarily to assist students with disabilities and do not represent an appropriate way to take the course.

Notes for the practical classes will be posted on Blackboard prior to the class. You should read these notes, print them, and bring them to the class.

Blackboard forums are also available for students to discuss the course with each other and with the lecturers and tutors. In particular, specific forums allow lecturers to answer questions about the lecture material. There is also a forum in which students can provide anonymous feedback while the course is being conducted: this allows us to respond to any problems in a timely manner.

Requirements for Practical Classes

Practicals involving the use of animal or human specimens are a privilege, and must be treated with respect and professionalism. Students are expected to adhere to NH&MRC guidelines for ethics in animal and human studies, available at the course Blackboard site, or via <http://nhmrc.gov.au/publications/synopses/ea16syn.htm> &

Students must take due care with biological and hazardous material and make sure all equipment is left clean and functional. Those unwilling to follow these basic laboratory rules will be marked absent. **Enclosed shoes are compulsory in all practical classes.** Punctual arrival is expected, and mobile phones must be switched off before entering the class. Practical classes that involve student participation may require the subject to sign a witnessed, informed consent form.

Attendance Requirements

Attendance at practical classes is compulsory, and may be recorded in the class roll on the day of the class. Satisfactory completion of the work set for each class is essential. Failure to attend practical classes and tutorials for other than documented medical or other serious reasons, or unsatisfactory performance, may result in an additional assessment or ineligibility to pass the course.

Medical Certificates

Students who miss practical classes, tutorial assessment, or other assessment deadlines due to illness or for other reasons, must submit a copy of medical certificates or other acceptable documentation via the Online Services in myUNSW. The application should be lodged no more than three days after an absence.

Official Communication by Email

All students in the course NEUR2201 are advised that e-mail is the official means by which UNSW will communicate with you. All e-mail messages will be sent to your official UNSW e-mail address (e.g. z1234567@student.unsw.edu.au) and, if you do not wish to use the University e-mail system, you must arrange for your official mail to be forwarded to your chosen address. The University recommends that you check your mail at least every other day. Facilities for checking e-mail are available in the School of Medical Sciences and in the University library. Further information and assistance is available from the Service Desk on 9385 1777.

Approach to Learning and Teaching

The philosophy underpinning this course and its Teaching and Learning Strategies is based on "Guidelines on Learning that Inform Teaching at UNSW". These guidelines may be viewed at: www.guidelinesonlearning.unsw.edu.au. The teaching of Neuroscience Fundamentals is based on the conception of neuroscience as a core field of knowledge to which many different disciplines contribute. The course is structured in 2-week modules covering topics that are both fundamental, but still active frontiers of investigation. Each topic will be taught by several members of faculty drawn from different disciplines. In this way the scope and range of approaches in tackling major issues in neuroscience will be made clear. Neuroscience is primarily an experimental discipline and so a proper appreciation of neuroscience requires an understanding of both what is known, and of the limitations imposed by our study tools.

Lectures will provide you with the concepts and theory essential for understanding neuroscience. The practical classes will assist you in the development of research and analytical skills. The practical classes will allow you to engage in more interactive learning than is possible in lectures. The tutorials will be a mix of case presentations, video material and informal discussion to help you explore the material in more depth.

Although the primary source of information for this course is the material delivered in lectures and

practical classes, effective learning can be enhanced through self-directed use of other resources such as textbooks. Your practical classes will be directly related to the lectures and it is essential to prepare for practical classes before attendance. It is up to you to ensure you perform well in each part of the course; preparing for classes; completing assignments; studying for exams and seeking assistance to clarify your understanding.

Aims of the Course

To gain an understanding of the modern neuroscience.

Specifically...

- Students will develop an understanding of the cross-disciplinary field of neuroscience by study of major neuroscience topics at a scale ranging from molecular through synaptic and cellular processes up to the level of whole animal including human behaviour.
- Students will develop an insight into the methods by which problems in neuroscience are investigated as well as the technical limitations behind many of the currently unresolved issues.

Student Learning Outcomes

UNSW Graduate Attributes:

1. the skills involved in scholarly enquiry
2. an in-depth engagement with the relevant disciplinary knowledge in its interdisciplinary context
3. the capacity for analytical and critical thinking and for creative problem-solving
4. the ability to engage in independent and reflective learning
5. information literacy - the skills to appropriately locate, evaluate and use relevant information
6. the capacity for enterprise, initiative and creativity
7. an appreciation of, and respect for, diversity
8. a capacity to contribute to, and work within, the international community
9. the skills required for collaborative and multidisciplinary work
10. an appreciation of, and a responsiveness to, change
11. a respect for ethical practice and social responsibility
12. the skills of effective communication.

This course focuses on attributes 1-4; while attributes 5, 6, 9 and 12 are also specifically addressed.

Specific Learning outcomes:

By the end of this course students are expected to have gained:

- a demonstrable knowledge of the scope of neuroscience, and detailed knowledge in some areas relating cellular properties to the response of whole organs and animals
- experience in applying basic biological and psychological principles to resolve questions related to brain and behaviour.
- experience and expertise in locating and appraising information related to neuroscience and succinctly presenting conclusions related to these enquiries.
- experience and expertise in critical enquiry by contributing to scientific discussion.
- by practical experience and critical review, an appreciation of the relationship between the experimental techniques that provide neuroscientific data, and the constraints on interpretation that the techniques impose.

ASSESSMENT

Assessment tasks

- End of fortnightly module quizzes **25%**
- On-line multiple choice assessments **5%**
- Group project **25%**
- Final exam **45%**

Each fortnight-long module has a short quiz at the end, run in the tutorial slot. These quizzes are 10 - 15 minutes duration. Online assessment is conducted through three sets of multiple choice questions (one per two modules). The group project is explained in more detail on pages 11-12 of this course outline. The final exam is 2 hours long, and consists of thirty multiple choice questions, and six short answer questions (one per topic) of which you are required to answer four. The fortnightly quizzes and online multiple choice assessment are very similar in format to the two types of question in the final exams.

Missed In-Course Assessment

If you unavoidably miss an assessment task you must inform the Course Co-ordinator immediately. You must supply adequate documentation (such as a medical certificate) via the Online Services in myUNSW to be considered for any supplementary assessment.

Missed Exams

If in any circumstances you unavoidably miss an examination, you must contact the Course Co-ordinator immediately. Normally, if you miss an exam (without medical reasons) you will be given an absent fail. If you arrive late for an exam no time extension will be granted. It is your responsibility to check timetables and ensure that you arrive with sufficient time.

If you miss any examinations for medical reasons you must lodge a medical certificate within **3 DAYS** to UNSW Student Central, refer to studentlifelearning.unsw.edu.au/studentcentral/ for further details. Your request for consideration will be assessed and a deferred exam may be granted. You cannot assume you will be granted supplementary assessment. The deferred exam may include a significant oral element.

Special Consideration

If you believe that your performance in a course, either during session or in an examination, has been adversely affected by sickness or for any other reason, you should notify UNSW Student Central via studentlifelearning.unsw.edu.au/studentcentral/ and ask for special consideration in the determination of your results. Such requests should be made as soon as practicable after the problem occurs. **Applications made more than three days after an examination in a course will only be considered in exceptional circumstances.** Please refer to myUNSW for further details regarding special consideration.

ACADEMIC HONESTY AND PLAGIARISM

Students should be aware of UNSW's policy on academic and student misconduct: <https://my.unsw.edu.au/student/academiclife/assessment/AcademicMisconduct.html>

Student assignments may be submitted to the Turnitin plagiarism detection engine. In addition students should be familiar with the following:

Plagiarism is the presentation of the thoughts or work of another as one's own. Examples include:*

- *direct duplication of the thoughts or work of another, including by copying work, or knowingly permitting it to be copied. This includes copying material, ideas or concepts from a book, article, report or other written document (whether published or unpublished), composition, artwork, design, drawing, circuitry, computer program or software, web site, Internet, other electronic resource, or another person's assignment without appropriate acknowledgement;*
- *paraphrasing another person's work with very minor changes keeping the meaning, form and/or progression of ideas of the original;*
- *piecing together sections of the work of others into a new whole;*
- *presenting an assessment item as independent work when it has been produced in whole or part in collusion with other people, for example, another student or a tutor; and,*
- *claiming credit for a proportion a work contributed to a group assessment item that is greater than that actually contributed.†*

Submitting an assessment item that has already been submitted for academic credit elsewhere may also be considered plagiarism. The inclusion of the thoughts or work of another with attribution appropriate to the academic discipline does not amount to plagiarism.

Students are reminded of their Rights and Responsibilities in respect of plagiarism, as set out in the University Undergraduate and Postgraduate Handbooks, and are encouraged to seek advice from academic staff whenever necessary to ensure they avoid plagiarism in all its forms. The Learning Centre website is the central University online resource for staff and student information on plagiarism and academic honesty. It can be located at: www.lc.unsw.edu.au/plagiarism

The Learning Centre also provides substantial educational written materials, workshops, and tutorials to aid students, for example, in:

- *correct referencing practices;*
 - *paraphrasing, summarising, essay writing, and time management;*
 - *appropriate use of, and attribution for, a range of materials including text, images and concepts.*
- Individual assistance is available on request from The Learning Centre.*

Students are also reminded that careful time management is an important part of study and one of the identified causes of plagiarism is poor time management. Students should allow sufficient time for research, drafting, and the proper referencing of sources in preparing all assessment items.

* Based on that proposed to the University of Newcastle by the St James Ethics Centre. Used with kind permission from the University of Newcastle

† Adapted with kind permission from the University of Melbourne.

Student Support Services

Those students who have a disability that requires some adjustment in their teaching or learning environment are encouraged to discuss their study needs with the course co-ordinator prior to, or at the commencement of, their course, or with the Equity Officer (Disability) in the Student Equity and Disabilities Unit (ph. 93854734). Issues to be discussed may include access to materials, signers or note-takers, the provision of services and additional exam and assessment arrangements. Early notification is essential to enable any necessary adjustments to be made.

Student Rights and Responsibilities & Appeal Procedures

Refer to UNSW Student Gateway at myUNSW: www.student.unsw.edu.au

Grievance Resolution Officer

In case you have any problems or grievance about the course, you should try to resolve it with the Course Co-ordinator. If the grievance cannot be resolved in this way, you should contact the School of Medical Sciences Grievance Officer, Dr P.Pandey (9385 2483, P.Pandey@unsw.edu.au).

RESOURCES FOR STUDENTS

Textbook and Reading List

Textbook:

Neuroscience: Exploring the Brain 3rd edition
Mark F. Bear, Barry W. Connors, Michael A. Paradiso
Lippincott Williams & Wilkins
ISBN:0781760038
(recommended for students continuing in neuroscience)

or

Neuroanatomy and Neuroscience at a Glance 4th edition
Roger A. Barker, Francesca Cicchetti
Wiley-Blackwell
ISBN:9780470657683

Recommended reading:

Principles of Neural Science
Kandel, Schwartz & Jessell
McGraw-Hill

Medical Physiology, a cellular and molecular approach.
Boron & Boulpaep
Saunders

Neuroscience.
Purves, Augustine, Fitzpatrick et al.
Sinaur

The books are available from the UNSW Bookshop, and are held by the UNSW library.

CONTINUAL COURSE IMPROVEMENT

Feedback from students is one of the main ways of ensuring the continual development and improvement of this course. You are invited to provide online anonymous course feedback via Blackboard throughout the session to enable immediate response. The end-of-session Course and Teaching Evaluation and Improvement [CATEI] process of UNSW is another way in which student feedback is evaluated, and we ask your assistance in completing this survey at the appropriate time.

Part of the CATEI process is to communicate significant changes to the course to subsequent cohorts of students. The last CATEI course assessment was in 2011 and gave generally very positive feedback. Here are some sample comments:

I liked the range of topics we covered - they were quite varied and gave us a chance to see different aspects of neuroscience. I liked being [able to] try bits of physiology, pharmacology etc, having never done these subjects before. The different lecturers also kept the course fresh and interesting.

The fortnightly quizzes were good because they made me revise the course material regularly.

I enjoyed being able to use EEG, MEG and nerve conductance in the labs - that was fun. The trip to the museum of human disease was also good - I felt it made our neurotrauma module more relevant.

I particularly liked the MS tutorial. Everyone was drawn into her story and we all had something to take away from it.

The course has been modified for 2013 as follows.

1. A new topic on neuroplasticity has been added in response to student demand.
2. The stress practical class will include several new measurement techniques that showcase a combination of psychological subjective data and biological objective data to answer a research question.

ADMINISTRATIVE INFORMATION

General Information

This course is a cross-Faculty course taught by the School of Medical Sciences and the School of Psychology. Administration is based in the Department of Physiology which is part of the School of Medical Sciences and is within the Faculty of Medicine. General inquiries can be made at the BSB Office, located on the Ground Floor of the BioSciences building (office hours are 9.00 am - 5:00pm). Professor Nick Hawkins is Head of the School of Medical Sciences and appointments may be made with him through his Administrative Assistant on 9385 8195.

Further Study

There is a broad range of level II and III subjects in the field of neuroscience offered by the disciplines contributing to this course that would be appropriate if you wish to undertake further study in neuroscience.

For guidance on suitable courses you may consult the Neuroscience study plan in Science or Advanced Science www.handbook.unsw.edu.au. Further advice is available from the Course Co-ordinator, who is also the UNSW Program Authority for Neuroscience.

GROUP ONLINE PROJECT ASSESSMENT TASK

Requirement:	You will work in a group of four students to identify an online media item (such as a YouTube video, advertisement, or newspaper article) in the area of neuroscience. As a group you will prepare a wiki page detailing the neuroscientific context and evaluating the quality of information in the media item. As an individual you will provide editorial review to another group's project.
Contribution to assessment:	The group online project assessment will contribute 25% to your final mark for the course. The mark break down is as follows: 15% for the group project, as a common mark to all group members. 5% for the project review given by you as an individual to one other group. 5% for your individual participation in the group, assessed by Dr Vickery based on your editing and comments in the wiki, and by your team mates.
Due date:	The project has several stages. 1. You must form your group, and submit your topic and work plan in the wiki by Monday, August 12 at 10 am. 2. You must have a draft of the project ready by Monday, September 9 at 10 am. 3. You must provide review comments on your allocated project by Monday, September 16 at 10 am. 4. The final project must be submitted by Monday, September 23 at 10 am. Failure to meet a deadline will incur a penalty of 5% per day. Projects can be submitted any time before the deadline.
How to submit:	All work will be done within wikispaces http://neurosciencefundamentals.unsw.wikispaces.net/ You will receive an email invitation to join the wiki in the first week of classes. Topic choice is indicated by creating a new wiki page that contains <ul style="list-style-type: none"> ▲ the Topic Title ▲ the Names and Student Numbers of group members ▲ a Link to the media item on the page. A work plan including division of labour, deadlines, and evidence of a face-to-face planning meeting (minutes, or a photo) should be posted in the discussion page linked to the wiki content page. Project draft will be the state of your wiki page at the due date. Within the constraints of the site, you have freedom over how to lay out your project. Project review comments should be made through the discussion page linked to the wiki content. You will be assigned a group to review by Dr Vickery. Post your comments by the due date, and label them clearly as "Reviewer comments on draft project by <your name>" Final Project will be the state of your wiki page at the due date. It should include a section indicating the alterations made in response to the reviewers' feedback. Contact Richard.Vickery@unsw.edu.au if you have any problems.
Word limit:	2500 words, excluding tables, figures and legends, references, and appendix.
Format for project:	Create a wiki entry at http://neurosciencefundamentals.unsw.wikispaces.net/ that: <ol style="list-style-type: none"> 1. introduces the online media item that you have chosen; 2. explains the neuroscientific context of the item; 3. analyses the quality of information in the media item;

	<p>4. includes an appendix that details the search strategy by which you identified the supporting evidence you used in your analysis, and also spells out and justifies changes made to the draft in response to the reviewers' feedback.</p> <p>1. The Introduction should briefly describe the nature of the media item that you have chosen (clinical case, research data, advertisement, documentary excerpt etc) and then explain why it is of interest.</p> <p>2. The neuroscientific context is where you provide the neuroscientific background to appreciate the media item by summarising the state of current knowledge relevant to the item. Sometimes it may be necessary to focus on only one aspect of a media item in order to stay within the word limit.</p> <p>3. In the analysis section you should identify the target audience of the media item, determine whether the information is pitched appropriately and in an unbiased manner, and then finally assess the quality of information in the item, especially as to whether it is in accord with accepted current understanding in neuroscience.</p> <p>4. The appendix should explain your search and selection strategy for all resources that you used. It should also summarise the reviewers' comments and detail how these concerns were addressed or dismissed.</p>
<p>Format for the review of another project:</p>	<p>Put your comments in the discussion page of the topic you are reviewing. Clearly label your comments as "Reviewer comments on draft project by <your name>".</p> <p>Feedback should be in the following format:</p> <ol style="list-style-type: none"> 1. strong points 2. weak points 3. general suggestions for improvement (e.g. logic, complexity, content, figures) 4. specific suggestions for improvement (e.g. typos, grammar, labels) <p>A short paragraph or a few dot points is required on each of these four areas. Try and be constructive and insightful.</p>
<p>Marking of Project:</p>	<p>Introduction: 15%; Neuroscientific Context: 50%; Analysis: 25%; Appendix: 10%.</p> <p>The mark for the Introduction is based on the interest and appropriateness of the selected media item, and the rationale you provide for studying that item.</p> <p>The mark for Neuroscientific Context is based on you demonstrating your ability to identify the key aspects of the media item to explore, and your ability to provide a concise and up-to-date summary of the relevant areas of neuroscience. It is acceptable to limit the scope to only one or two areas of those addressed in your media item. This section should show evidence of independent research.</p> <p>The mark for Analysis is based on you demonstrating an understanding of the intention of the media item and identifying its likely target audience. You must then demonstrate an ability to critically analyse the media item for the extent to which the simplifications required to deliver the message compromise the veracity of the message.</p> <p>The mark for the Appendix is based on a demonstration of your ability to use search engines, and your ability to accept and incorporate feedback.</p> <p>In all aspects we are looking for clarity of thinking (logical consistency, thoroughness) and clarity of expression (clear sequencing and presentation of information).</p>

Marking of Project Review:	<p>You will be marked by Dr Vickery based on the:</p> <ul style="list-style-type: none"> • timeliness • depth • quality • constructiveness <p>of the advice that you offer for the topic under review.</p>
Marking of Contribution to Group:	<p>All members of the group are required to demonstrate a minimum level of contribution to the project. The minimum level of participation is</p> <ul style="list-style-type: none"> • editing the wiki on at least two occasions • editing the wiki over more than a one week period • commenting on your editing activities in the history page of the wiki (when you save changes you should document why you made the changes) • contributing to the discussion of the topic on the wiki discussion pages <p>You are required to rate your own and the other group members contributions from 0-5 and add an optional comment via a Blackboard Quiz. These marks will be confidential. Dr Vickery will also look at the wiki to determine the contribution of each individual to the group. These two components will be combined to give a mark out of 5 that counts towards your final course grade.</p>

Week	Lecture: Tue 11-12	Lecture: Thu 9-10	Lab / Tutorial: Thu 10-1
Epilepsy			Course Outline NEUR2201 2013v1.0.doc 08/05/13
week 1 29 / 7	Introduction to brain electricity <i>Andrew Moorhouse</i> Mathews C – 30/7 1100	Genetics of epilepsy <i>Peter Schofield</i> Mathews D - 1/8 0900	Lab: EEG recording and seizure activity <i>Andrew Moorhouse & Richard Vickery</i> Wallace Wurth 120 - 1/8 1000
week 2 5 / 8	Current and novel drug treatments <i>Margaret Morris</i> Mathews C - 6/8 1100	Overview and clinical perspectives <i>Ernie Somerville</i> Mathews D - 8/8 0900	Tute: Cellular and molecular basis of epilepsy <i>Andrew Moorhouse & Richard Vickery</i> Mech Eng 405 - 8/8 1000
Stress			
week 3 project plan 12 / 8	Peripheral nervous system and stress <i>Pascal Carrive</i> Mathews C - 13/8 1100	Central nervous system and stress <i>Pascal Carrive</i> Mathews D - 15/8 0900	Lab: Stress measured in humans using ELISA and thermal imaging <i>Lu Liu & Pascal Carrive</i> Wallace Wurth 120 - 15/8 1000
week 4 19 / 8	Psychology of stress <i>Gavan McNally</i> Mathews C - 20/8 1100	How to treat stress <i>Lu Liu</i> Mathews D - 22/8 0900	Tute: Systems and management <i>Gavan McNally & Pascal Carrive</i> Mech Eng 405 - 22/8 1000
Neuroplasticity			
week 5 26 / 8	Learning and Memory <i>John Power</i> Mathews C - 27/8 1100	Models of learning <i>Bronwyn Graham</i> Mathews D - 29/8 0900	Lab: Conditioning and remapping <i>John Power & Bronwyn Graham</i> Wallace Wurth 120 - 29/8 1000
week 6 2 / 9	Neural modification <i>John Power</i> Mathews C – 3/9 1100	Regulating plasticity <i>Bronwyn Graham</i> Mathews D – 5/9 0900	Tute: Of Mice and Men <i>John Power & Bronwyn Graham</i> Mech Eng 405 – 5/9 1000
Neurotrauma			
week 7 project draft 9 / 9	CNS anatomy <i>Thomas Fath</i> Mathews C - 10/9 1100	Neurotrauma types <i>Thomas Fath</i> Mathews D - 12/9 0900	Lab: Gross anatomy, museum specimens, histology. <i>Thomas Fath & Nicole Jones</i> WW G16/G17 & 101E - 12/9 1000
week 8 project review 16 / 9	Vascular & hypoxic neurotrauma <i>Nicole Jones</i> Mathews C - 17/9 1100	Mechanical neurotrauma <i>Thomas Fath</i> Mathews D - 19/9 0900	Tute: Neuronal death and recovery <i>Thomas Fath & Nicole Jones</i> Mech Eng 405 - 19/9 1000
Multiple Sclerosis			
week 9 project final 23 / 9	Signs and Symptoms of MS <i>Arun Krishnan</i> Mathews C - 24/9 1100	Axonal conduction <i>Richard Vickery</i> Mathews D - 26/9 0900	Recording from human axons: carpal tunnel lab <i>Eric Han</i> Wallace Wurth 120 - 26/9 1000
30 / 9	mid -	session	break
week 10 7 / 10	Treating MS lecture <i>Arun Krishnan</i> Mathews C - 8/10 1100	Measuring nerve conduction <i>Cindy Lin</i> Mathews D - 10/10 0900	Tute: Discussion with a MS patient <i>Cindy Lin</i> Mech Eng 405 - 10/10 1000
Psychophysiology of Cognitive Disorders			
week 11 14 / 10	Real-time neural measurements <i>Richard Vickery</i> Mathews C - 15/10 1100	Applied psychophysiology <i>Jacqueline Rushby</i> Mathews D - 17/10 0900	Lab: The nervous system and the measurement of its electrical activity <i>Jacqueline Rushby</i> Wallace Wurth 120 - 17/10 1000
week 12 21 / 10	Clinical applications of physiological measurements <i>Jacqueline Rushby</i> Mathews C - 22/10 1100	Clinical applications of neuro/biofeedback <i>Jacqueline Rushby</i> Mathews D - 24/10 0900	Tute: Detection of Deception <i>Jacqueline Rushby</i> Mech Eng 405 - 24/10 1000

