



THE UNIVERSITY OF
NEW SOUTH WALES

FACULTY OF MEDICINE

SCHOOL of MEDICAL SCIENCES

DEPARTMENT of ANATOMY

ANAT3411
NEUROANATOMY
COURSE OUTLINE

SESSION 1, YEAR 2015

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ANAT 3411 NEUROANATOMY

COURSE STAFF

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COURSE INFORMATION

ANAT3411 Neuroanatomy is a 6UoC course.

It consists of 6 hours per week of face-to-face teaching (2 lectures and 2 x 2 hour practical classes).

Neuroanatomy is the study of the structure of the nervous system. ANAT3411 involves study of the nervous system structure at both the microscopic and gross levels as well as its development. It also introduces you to some basic research techniques used to explore brain structure. The ANAT3411 course focuses primarily on the human nervous system, although reference is made to findings in other mammals where relevant.

We try to put student learning in context, with reference to the latest developments in research and discussion of relevant clinical cases and scenarios. Students will also have the opportunity to extend their understanding of a chosen area and to develop skills in self-directed learning and critical evaluation by doing a short research project.

Course Aim

The aim of this course is to provide students in the BSc and BMedSc programs with a basic understanding of the structural organisation of the human central nervous system in sufficient depth to form the basis for further clinical or research studies of the nervous system.

Student Learning Outcomes:

By the end of the course students will:

- (i) have gained an overview of the topography and structural organisation of the brain and spinal cord.

- (ii) be able to describe the basic features of development of the nervous system and to understand how and why common malformations occur in the nervous system.
- (iii) understand the ultrastructure of neurons and glia and the major cytoarchitectural features of the brain and spinal cord.
- (iv) have gained a basic understanding of the techniques used to investigate morphology and connections of neurons to provide the basis for further research into the nervous system.
- (v) have a basic understanding of the functional anatomy of sensory and motor processing and higher cerebral functions such as language and emotions and to be able to apply this knowledge to the clinical situation.
- (v) understand the principles of the blood supply and venous drainage of the nervous system and to be able to deduce the effects of rupture or occlusion of the major vessels.

In addition to these, the University of New South Wales (UNSW) has developed a list of attributes that its graduates should possess upon graduation – these are referred to as the ‘**Graduate Attributes**’.

‘Graduate attributes are the qualities, skills and understandings a university community agrees its students should develop during their time with the institution. These attributes include, but go beyond, the disciplinary expertise or technical knowledge that has traditionally formed the core of most university courses. They are qualities that also prepare graduates as agents for social good in an unknown future’ (Bowden et al., 2000).

These generic graduate attributes for UNSW can be found at:
<https://my.unsw.edu.au/student/atoz/GraduateAttributes.html>

In addition to these, the graduate attributes for Science students are:

- **Research, inquiry and analytical thinking abilities.** Technical competence and discipline specific knowledge. Ability to construct new concepts or create new understanding through the process of critical analysis, problem solving, research and inquiry.
- **Capability and motivation for intellectual development.** Capacity for creativity, critical evaluation and entrepreneurship. Ability to take responsibility for and demonstrate commitment to their own learning, motivated by curiosity and an appreciation of the value of learning.
- **Ethical, Social and Professional Understanding.** Ability to critically reflect upon broad ethical principles and codes of conduct in order to behave consistently with a personal respect and commitment to ethical practice and social responsibility. Understanding of responsibility to contribute to the community. Respect and value social, multicultural, cultural and personal diversity.
- **Communication.** Effective and appropriate communication in both professional (intra and inter disciplinary) and social (local and international) contexts.
- **Teamwork, collaborative and management skills.** Ability to recognise opportunities and contribute positively to collaborative scientific research, and to perceive the potential value of ideas towards practical applications. Demonstrate a capacity for self-management, teamwork, leadership and decision making based on open-mindedness, objectivity and reasoned analysis in order to achieve common goals and further the learning of themselves and others.
- **Information literacy.** Ability to make appropriate and effective use of information and information technology relevant to their discipline.

How the course relates to other courses

ANAT3411 is offered as component of the Anatomy major in the BSc and BMedSc or as a year 3 elective in other BSc and BMedSc programs and in the BExPhys program. It is also a key component of the Neuroscience major in the BSc and BSc (Adv) programs. It builds on the basic knowledge of the nervous system, previously obtained in ANAT1521, ANAT2111 or ANAT2511 and provides the background (prerequisite) for NEUR3211 Research Topics in Neuroscience (offered in Session 2). It also provides a useful (though not compulsory) basis for NEUR3221 Neurophysiology also (offered in Session 2).

Changes since 2014

- The major change since 2014 is that students will no longer undertake an individual assignment (2000 word literature review). Instead students will do a group project. Assessment for this project will be based on a written report as well as peer assessment.
- Minor changes have been made to the learning activities in some practical classes.

Teaching Rationale and Strategies

The course involves 6 hours per week of instruction - 2 lectures and 2 x 2 hour practical classes. Each practical class is preceded by a lecture, which usually introduces you to the topic for the practical class. Lecture slides and notes are uploaded to Moodle prior to each lecture. For most lectures given by Dr Tancred, diagram outlines will also be uploaded and you are encouraged to bring these to the lecture with you, either in hard copy or on a tablet. You will have the opportunity to develop and label these during the lectures. In practical/tutorial classes, students working in small groups under the guidance of their tutor, will identify key structures in prosected specimens, models and on sections and MRI images of the brain using computer software (BrainStorm). Students will also participate in tutorial discussion on relevant functional and clinical aspects. BrainStorm is available for you to use on-line so you can prepare and consolidate your learning outside of formal classes. We encourage you to question, observe and share knowledge and experiences with your peers and your teachers. We endeavour to make the material interesting to stimulate in you an enthusiasm for the really fascinating subject matter that is covered in this course. This is of course dependent on your interaction and engagement with the course. Practical classes are compulsory but you are also strongly encouraged to attend the lectures rather than just viewing them online. If you are unable to attend the lectures for some reason you **MUST** ensure that you view or listen to the lecture **PRIOR** to attending the practical classes.

Lectures

Tuesday 5-6 p.m. CLB 3
Wednesday 1-2 p.m. CLB 3

Practical Classes

Either Wednesday & Friday 9-11 a.m. Dissecting Rm (101) WW
OR Wednesday & Friday 11-1 p.m. Dissecting Rm (101) WW

A number of practical classes (involving computers) will be also use WW Rm G06/G07 (Wednesdays) or WW G08 (Fridays)

Attendance

Students are expected to attend **at least 80% of all scheduled learning activities**. **Attendance at practical classes will be recorded** and students who do not attend at least 80% of practical classes may be prevented from undertaking examinations in this course. Please note that absences due to illness or misadventure will be factored into the 20% of allowable absences.

Guidelines on extracurricular activities affecting attendance can be found at:

medalsciences.med.unsw.edu.au/sites/default/files/Extra-curricularActivitiesSOMS.pdf

Resources

Online Resource:

E. Tancred, BrainStorm Interactive Neuroanatomy
Access Details in Course Manual

Text Book:

John Nolte: The Human Brain: An Introduction to its Functional Anatomy, 6th ed. C.V. Mosby, 2008. This is a comprehensive text.

OR

Crossman, A.R. and Neary, D. Neuroanatomy An Illustrated Colour Text, 4th ed. Churchill Livingstone , 2010. This text is adequate but covers just the essentials.

Good Reference Books Available in Library

M.F. Bear, B.W. Connors and M.A. Paradiso. Neuroscience – Exploring the Brain, 4th ed., Lippincott Williams and Wilkins, 2015. (3rd Ed 2007 OK if 4th not available)

Waxman, S, G., Clinical Neuroanatomy, 26th ed. McGraw Hill, 2010.

J.A. Kiernan: Barr's The Human Nervous System. An anatomical Viewpoint, 9th Edition. J. B. Lippincott, 2008.

D. E. Haines: Neuroanatomy. An Atlas of Structures, Sections and Systems: 7th Edition. Urban and Schwarzenberg, 2007.

E.R. Kandel, J.H. Schwartz, T.M. Jessell, S.A. Seigelbaum, and A.J. Hudspeth. Principles of Neural Science, 5th ed. Elsevier, 2013

C. Watson, M. Kirkcaldie, and G. Paxinos, The Brain. Elsevier, 2010

Revision Facilities

BrainStorm is available on all student computers in the Wallace Wurth Building, including those in G06/07, G08 and G16/17. Models and dissections of anatomical structures are available in the Anatomy Museum (Rm G09).

Official Communication by email and Moodle

All students in ANAT3411 Neuroanatomy are advised that email is the official means by which the School of Medical Sciences at UNSW will communicate with you. All email messages will be sent to your official UNSW email address (e.g. z1234567@student.unsw.edu.au) and, if you do not wish to use the University email system you MUST arrange for your official mail to be forwarded to your chosen address. The University recommends that you check your email at least every other day. Facilities for checking email are available in the School of Medical Sciences and in the University Library.

Official announcements relating to the course will also appear on the ANAT3411 page in Moodle, so please make sure that you check this regularly.

Assessment

Spot Test 1	20%
Spot Test 2	20%
Group Project (due week 10)	15 %
Final exam (2hr written paper)	45%

Spot Test and theory examinations will be based on the specific objectives, learning activities and recommended reading listed for each class.

Spot Tests

These are practical examinations that assess your ability to identify structures in brain dissections and cross-sections (including MR images) and to answer relevant short theory questions. In each Spot Test you will rotate around 15 stations. You will be expected to be able to identify structures **shown in bold type** in the class notes and to answer simple theory questions about these structures.

Spot Test 1 will be held in Week 7 and will examine material up to and including the Autonomic Nervous System.

Spot Test 2 will be held during the exam period and will examine material from the Auditory System onwards.

Theory Examination

This will include both multiple choice and written questions and will test understanding of the structural organization of the brain, spinal cord and cranial nerves and its relationship to function, according to the Specific Objectives defined earlier.

Neuroanatomy Group Project

The Neuroanatomy assignment is a compulsory component of the course. It will provide an opportunity for you to develop your research and critical thinking skills by undertaking a literature review of current research on a topic of your interest.

The purpose of this assignment is to help you to develop skills in the (UNSW) graduate capabilities listed below (see p. 4 for details):

- *Research, inquiry and analytical thinking abilities.*
- *Communication.*
- *Information literacy.*
- *Teamwork, collaboration and management skills-*

In week 4, students will be allocated to groups of approximately 4 students. Groups will be able to choose from one of 4 topics. Each topic will include several defined tasks but the final product needs to be a collaboration between groups members. Each group will be expected to submit a written report of no longer than 2,500 words in length.

This project is a **compulsory** requirement of the course and is worth 15% of your final mark for this course. Of this 10% will come from the written report and all students in each group will receive the same mark. The other 5% will be determined by members of the group, each of whom will provide a collective score for each team member. Information on the group project, topics and guidance on peer assessment will be provided in a lecture in Week 5.

Your assignment should be **no longer than 2000 words in length** and you are encouraged to use diagrams where appropriate. References should be cited in the body of the assignment.

Due Date:

This report should be handed in to **Rm G27 in the BioSciences Bldg by 4.30 p.m. on Monday May 11 (beginning of Week 10)**. Marks will be deducted for reports that are handed in after this time, unless Special Consideration is granted.

Project Topics for 2015:

These will be distributed after the commencement of the course.

Criteria for Assessment of the Group Project

Scientific Content:

- Identifies the major concepts related to the assignment topic
- Demonstrates an understanding of the assignment topic
- Uses peer-reviewed research articles to support stated facts and arguments.

Effective Communication:

- Clarity (clear, simple, grammatical language, terms explained)
- Logical structure, use of headings and paragraphs
- Appropriate language length, style and format for the intended audience
- Appropriate use of media (illustrations, graphs etc)

Self-Directed Learning and Critical Evaluation:

- Sources (range, citation standards, quality, relevance)
- Critical thinking (evidence of awareness of bias in sources, others viewpoints, own views, logical argument)

Peer Assessment

- Attendance at group meetings
- Participation in planning of the report
- Contribution to group discussion
- Quality of contribution to the report
- Execution of allocated tasks effectively and on time

Guidelines for referencing in the Neuroanatomy Group Project

Any ideas which are not your own should be cited in the text as per the **APA Style** guidelines as follows:

- References by a single author should be cited as Author (date of publication), eg. Carrive (1996) or if there are two publications listed for the same author in the same year add a or b after the date eg. Carrive (1996a), Carrive (1996b).
- If the reference has two authors it should be cited as Author A and Author B (date) eg. Carrive and Tancred (1998).
- If there are more than two authors it should be cited as Author A et al (date) eg. Carrive et al (1999).

Details of APA referencing guidelines can be found at:

<http://web.med.unsw.edu.au/infoskills/apa/apa.html>

Academic Honesty and Plagiarism

The School of Medical Sciences will not tolerate plagiarism in submitted written work. The University regards this as academic misconduct and imposes severe penalties. Evidence of plagiarism in submitted assignments, etc. will be thoroughly investigated and may be penalized as recommended by the UNSW rules and guidelines on plagiarism and academic honesty. These can be found at

<https://student.unsw.edu.au/plagiarism>

Failure to complete an assessment

Failure to sit a test without lodgement of an application for Special Consideration with Student Central will lead to automatic failure of the test. A student may be required to sit a supplementary exam or written assignment in place of a missed test.

Supplementary Exams

It is intended that the supplementary exam (if required) for ANAT3411 in Semester 1, 2015 will be held on the **14th, 15th or 16th of July, 2015**. Please note that applications for Special Consideration for supplementary exams are not usually accepted except in TRULY exceptional circumstances."

Formative Assessment

Neuroanatomy is a very challenging course so it is essential to revise as you go and not leave it to the last minute. Review questions have been included at the end of most practical classes and you are encouraged to work through these after prac to get some feedback on how you are going. Answers will not be provided for these questions. You should be able to work them out yourself if you have attended the prac classes. If you can't answer them refer to your lecture notes or text book. BrainStorm also contains a Quiz function which enables you to test your ability to identify structures in brain dissections, cross-sections and radiological images.

Applying for Special Consideration

The School of Medical Sciences follows UNSW guidelines when you apply for special consideration on the basis of sickness, misadventure or other circumstances beyond your control. For further information, see:

<https://student.unsw.edu.au/special-consideration>

Please note the following:

1. Applications must be submitted online to UNSW Student Central. It would also be appropriate for you to inform the course convenor that you have lodged an application.
2. The circumstances have to be unexpected and beyond your control. Students are expected to give priority to their University study commitments and any absence must clearly be for circumstances beyond your control. Work commitments are not normally considered a justification.
3. **You must submit the application as soon as possible and certainly within three working days** of the assessment to which it refers. Late applications will only be considered in exceptional circumstances.
4. Submitting a request for Special Consideration does **not** automatically mean that you will be granted additional assessment or awarded an amended result.
5. Your application will be assessed by the course convenor on an individual basis. Note that UNSW Guidelines state that special consideration will not be granted unless academic work has been hampered to a substantial degree (usually not applicable to a problem involving only three consecutive days or a total of five days within the teaching period of a semester). Under such circumstances, the School of Medical Sciences reserves the right to determine your result on the basis of completed assessments.
6. You should note that if you are granted additional assessment or a supplementary examination (which is **not** guaranteed), that assessment may take a different form from the original assessment. Furthermore, the results of the original assessment may then be overridden by the results of the additional assessment, at the discretion of the course convenor. Also be aware that a revised mark based on additional assessment may be greater or less than the original mark.

Please note: Students cannot claim consideration for conditions or circumstances that are the consequences of their own actions or inactions.

Applying for Review of Results

If you wish to make an application for a review of results go to:

<https://my.unsw.edu.au/student/academiclife/assessment/Results.html>

Equity and Diversity issues

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 convener prior to, or at the commencement of, their course, or with the Equity Officer (Disability) in the Equity and Diversity Unit (9385 4734 or www.studentequity.unsw.edu.au/)

Issues to be discussed may include access to materials, signers or note-takers, the provision of services and additional exam and assessment arrangements.

Grievance Officer

In case you have any problems or grievance about the course, you should try to resolve it with the Course Organizer. If the grievance cannot be resolved in this way, you should contact the Head of Department or the Department's Grievance Officer (Dr. Priti Pandey (Office: 32 Botany St, Randwick; email: p.pandey@unsw.edu.au).

Health and Safety Rules for Students in the Dissecting Room

There are some rules that are enforced for the safety of the staff and students, while others are concerned with the need for care and respect of the prosection material.

General courtesy

- Students are required to attend **each lecture and the assigned tutorial/laboratory class** unless given special permission. Applications for Special Consideration should be submitted online to Student Central (see below).
- You may **enter** and **view** specimens in the Dissecting Room 101 **only** in the presence of your tutor and/or during your designated tutorial/laboratory class hours. You are **not permitted** to take visitors into the Dissection Room.

Health and Safety Rules

A detailed risk assessment for student activities in the Dissecting Room is located on the notice board at the front entrance (near 1st floor lifts).

When in the Dissecting Room, you are required to:

- **always put on your laboratory coat** when you enter the lab. If you have forgotten to bring your lab coat, purchase a disposable coat from the ground floor in WW building or the Union shops on campus. Lab coats must not be worn in the hall or anywhere outside the laboratories.
- **wear covered shoes with enclosed heels**, never thongs or sandals.
- **wear latex or vinyl gloves** when touching wet specimens (gloves are available from the Union Shop near CLB theatres).
- **never eat or drink.**
- **never put anything in your mouth.** For example, pens or pencils that you may have picked up from the table.
- **avoid inhaling** preservative solutions for prolonged periods. If you feel in need of fresh air, ask permission to leave the laboratory for a few minutes.
- **report all accidents** or incidents immediately to a staff member for assessment without exception. Injuries involving sharps or needle-stick will require a blood test as soon as possible.

At the end of your laboratory class:

- **cover wet specimens** with the towels provided. Make sure that towels do not hang over the edge of the table, because this allows fluid to drip onto the floor. Fluids on the floor are a major safety hazard and should be reported to staff immediately.
- **replace stools** under the tables in your cubicle.
- **remove your gloves** and dispose in the biowaste bins provided.
- **wash your hands** and instruments thoroughly with the soap provided and dry your hands with the paper towel.
- **remove your laboratory coat** when you leave the dissecting room.

Preservative solution

There are 3 main chemicals used as preservation fluids in the Dissecting Room: **phenoxyethanol** (2% in solution); **methylated spirits** (10%) & **formalin** (5%)

The safety data sheets (SDSs) for these chemicals are located by the lab First Aid Kit and also on the notice board outside the lab. Women of reproductive years, and especially those who know they are pregnant, should note that all of these are suspected human reproductive and developmental toxins and therefore may pose a hazard to the unborn child. In addition, formalin (**formaldehyde** solution) is a human carcinogen. Avoid these chemicals coming into contact with your eyes and skin and they should not be ingested.

Most anatomy specimens are stored in 2% phenoxyethanol, which is classified as relatively non-toxic. You should always wear gloves when handling specimens and must avoid ingestion of this chemical and contact with your skin or eyes. Formaldehyde is reported to cause allergic skin and respiratory effects. The potential for adverse health effects, however, is markedly reduced at the concentrations used for embalming and storage of specimens in the Dissecting Room, i.e., the "formalin" solution is less than 5% of a 37% solution of formaldehyde. The specimens provided for classes are without any formalin and a combination of air extraction and conditioning continuously changes the air in the Dissecting Room.

First Aid

Room 101 staff can provide First Aid during office hours and a list of other safety personnel is located beside the building lifts. First Aid Kits are located on the left wall near the Gross Anatomy Laboratory entrance door and in the east wing on the ledge opposite cubicle E4. All incidents must be reported.

Emergency evacuation

In the case of a fire or other emergency the evacuation alarm will sound. When it sounds for the first time this indicates that everyone should get prepared in case it is necessary to evacuate. When it sounds for the second time, an announcement will be made over the speaker system - **follow these instructions**. Staff will be on hand to supervise any evacuation and the emergency exit is at the south end of the lab, do **not use the lifts**. The evacuation assembly area is the landscaped space immediately to the east of the Chancellery and adjacent to the Clancy Auditorium. **Do not assemble anywhere else** and do not leave this area until instructed.

Additional Safety Information

If additional safety information is required you can ask the course convenor or the Anatomy Dissection Laboratory Manager (Mr Vincent Strack). The latest safety information is always available from the SOMS HS Webpage:

<http://medicalsciences.med.unsw.edu.au/staff/health-safety>

Care and respect of prosected material

You are learning from human material prepared from people who have generously donated their bodies for the benefit of science. Skilled staff members have dissected the specimens to allow you, the student, to see anatomical structures in fine detail. Apart from caring for the specimens, it is important for all students learning Anatomy to have and show **utmost respect** for the specimens at all times, in the Dissecting Room, Room 101, and in the Anatomy Museum Room 105. **Great care** should always be exercised when handling specimens, in order to preserve their delicate structure.

Some specific points:

- **Always use only blunt forceps** to handle specimens and **probes** to point to structures, i.e. **never pull** at any parts of the specimen.
- It is **illegal** for any anatomical material to be removed from the premises of the Department of Anatomy for any purpose whatsoever (except of course, for the funeral). All anatomy specimens are micro-chipped for identification and record keeping.
- Photography and video recording are **not permitted** in the Dissecting Room 101, or the Anatomy Museum 105.

It is your responsibility to make sure that you read and sign the form on the next page before you attend your first prac in the dissecting room. Keep the signed form in your prac manual and bring it to classes with you. It is not necessary to give it to your tutor or Course Convenor).

Hazards	Risks	Controls
Physical Cold temperature (16°C) Sharp bone/plastic Biological Fungi, bacteria (tetanus), hepatitis B and C Chemical Formaldehyde Methanol 2-phenoxyethanol	Cold Penetrating wound of foot Infection Corrosive/Flammable Irritant/toxic Irritant	<ul style="list-style-type: none"> Wear laboratory coat over appropriate warm clothing Wear enclosed shoes with full coverage of the dorsum of the foot Have appropriate immunisation Do not eat, drink or smoke in the Dissecting Room Do not place anything (e.g. pens, pencils) into your mouth Use disposable gloves when handling wet specimens and do not cross-contaminate models or bones with wet specimens Always wash hands with liquid soap and dry thoroughly with disposable paper towel before leaving Low concentrations of chemicals used Chemicals used in well ventilated area Safety Data Sheets for chemicals available in the laboratory

Personal Protective Equipment required

 Closed in Footwear	 Lab. Coat	 Gloves	
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Emergency Procedures

In the event of an alarm sounding, stop the practical class and wait for confirmation to evacuate from demonstrators. Then wash your hands and pack up your bags.
Follow the instructions of the demonstrators regarding exits and assembly points.

Clean up and waste disposal

- Cover wet specimens with the towels provided. Make sure that towels do not hang over the edge of the table, because this allows fluid to drip onto the floor. Fluids on the floor are a major safety hazard and should be reported to staff immediately.
- Replace stools under the tables in your cubicle.
- Remove your gloves and dispose in the biowaste bins provided.
- Wash your hands and instruments thoroughly with the soap provided and dry your hands with the paper towel.
- Remove your laboratory coat when you leave the dissecting room.

Ethics Approval

This type of practical has been previously considered and approved by the UNSW Human Research Ethics Advisory Panel (HREC09372).

Declaration

I have read and understand the safety requirements for this practical class and I will observe these requirements.

Signature:.....Date:.....
Student number:

ANAT3411 Neuroanatomy – Class Schedule 2015

Week	Date	Time	Venue	Activity
1	Tue Mar 3	5-6 p.m.	CLB 3	Lect: CNS Histology
	Wed Mar 4	9-11, 11-1 1 -2 p.m.	Diss Rm CLB 3	Prac: Neurohistology, Research Methods Lect: General Organisation of the Brain
	Fri Mar 6	9-11, 11-1	Diss Rm	Prac: Gross Anatomy of Brain
2	Tue Mar 10	5-6 p.m.	CLB 3	Lect: Development of the Nervous System
	Wed Mar 11	9-11, 11-1 1 -2 p.m.	Diss Rm CLB 3	Prac: Development of the Nervous System Lect: Spinal Cord 1
	Fri Mar 13	9-11, 11-1	Diss Rm	Prac: Spinal Cord 1 – Gross, nuclei, reflexes
3	Tue Mar 17	5-6 p.m.	CLB 3	Lect: Spinal Cord 2
	Wed Mar 18	9-11, 11-1 1 -2 p.m.	Diss Rm CLB 3	Prac: Spinal Cord 2 – tracts, lesions Lect: Brainstem 1: Medulla
	Fri Mar 20	9-11, 11-1	Diss Rm	Prac: Brainstem 1: Medulla
4	Tue Mar 24	5-6 p.m.	CLB 3	Lect: Brainstem 2: Pons & Midbrain
	Wed Mar 25	9-11, 11-1 1 -2 p.m.	Diss Rm CLB 3	Prac: Brainstem 2: Pons & Midbrain Lect: Cranial Nerves 1
	Fri Mar 27	9-11, 11-1	Diss Rm	Prac: Cranial Nerves 9 - 12
5	Tue Mar 31	5-6 p.m.	CLB 3	Lect: Cranial Nerves 2
	Wed Apr 1	9-11, 11-1 1 -2 p.m.	Diss Rm CLB 3	Prac: Cranial Nerves 3 - 7 Lect: Group Project
	Break	Apr 3 - 12		No classes
6	Tue Apr 14	5-6 p.m.	CLB 3	Lect: Reticular Formation
	Wed Apr 15	9-11, 11-1 1 -2 p.m.	Diss Rm CLB 3	Prac: Autonomic Nervous System Lect: Auditory System
	Fri Apr 17	9-11, 11-1	Diss Rm	Prac: Revision
7	Tue Apr 21	5-6 p.m.	CLB 3	Lect: Review of Long Tracts
	Wed Apr 22	9-11, 11-1 1 -2 p.m.	Diss Rm CLB 3	Prac: Spot Test No Lecture
	Fri Apr 24	9-11, 11-1	Diss Rm	Prac: Auditory System
8	Tue Apr 28	5-6 p.m.	CLB 3	Lect: Cerebellum
	Wed Apr 29	9-11, 11-1 1 -2 p.m.	Diss Rm CLB 3	Prac: Cerebellum Lect: Thalamus
	Fri May 1	9-11, 11-1	Diss Rm	Prac: Thalamus
9	Tue May 5	5-6 p.m.	CLB 3	Lect: Visual System
	Wed May 6	9-11, 11-1 1 -2 p.m.	Diss Rm CLB 3	Prac: Visual System Lect: Telencephalon
	Fri May 8	9-11, 11-1	Diss Rm	Prac: Horizontal Slices of Forebrain

Week	Date	Time	Venue	Activity
10	*Mon May 11	4 p.m.	G29 Bio	Group Projects due
	Tue May 12	5-6 p.m.	CLB 3	Lect: Basal Ganglia
	Wed May 13	9-11, 11-1	Diss Rm	Prac: Coronal Slices of Forebrain
	Fri May 15	1 -2 p.m.	CLB 3	Lect: Hypothalamus
	Fri May 15	9-11, 11-1	Diss Rm	Prac: Parkinson's Disease and Basal Ganglia Disorders
11	Tue May 19	5-6 p.m.	CLB 3	Lect: Limbic System
	Wed May 20	9-11, 11-1	Diss Rm	Prac: Limbic System
		1 -2 p.m.	CLB 3	Lect: Cerebral Cortex
	Fri May 22	9-11, 11-1	Diss Rm	Prac: Cerebral Cortex
12	Tue May 26	5-6 p.m.	CLB 3	Lect: Blood Supply of the Brain
	Wed May 27	9-11, 11-1	Diss Rm	Prac: Blood Supply of the Brain
		1 -2 p.m.	CLB 3	Lect: Venous Drainage, Meninges and CSF
	Fri May 29	9-11, 11-1	Diss Rm	Prac: Venous Drainage, Meninges & CSF
13	Tue June 2	5-6 p.m.	CLB 3	Lect: Chemical Systems in the Brain
	Wed June 3	9-11, 11-1	Diss Rm	Prac: Clinical Cases
		1 -2 p.m.	CLB 3	Lect: Neuroplasticity
	Fri June 4	9-11, 11-1	Diss Rm	Prac: No class