School of Medicine

MEDI311: Fundamentals of Neuroscience

Subject Outline
Autumn, 2016
On-Campus
Wollongong

Subject Information
Credit Points: 8
Pre-requisite(s): SHS 111 and SHS 112 or MEDI111 and MEDI112
Co-requisite(s): Nil
Restrictions: Nil
Contact Hours: 2 hrs Lectures per week (Weeks 1-13) 2 hrs Practicals per week (Weeks 2-13) 1hr Tutorial per week (Weeks, 6, 7, 10, 11, 13)

Subject Contacts
Subject Coordinator/Lecturer
Name: Dr Kelly Newell
Location: Building 41, Room 331
Telephone: 61 2 4221 5743 (but I am best reached via email)
Email: knewell@uow.edu.au
Consultation mode and times: Tuesdays 8:30-10:30 and 2:30-4:30; Other times by appointment.

Student Support and Advice
For general enquiries please contact StudentHub 41:
Location: 41.138B
Telephone: 61 2 4221 3492
Email: smah-students@uow.edu.au
Student Consultation and Communication
University staff receive many emails each day. In order to enable them to respond to your emails appropriately and in a timely fashion, students are asked to observe basic requirements of professional communication:

Please ensure that you include your full name and student number and identify your practical class or tutorial group in your email so that staff know who they are communicating with and can follow-up personally where appropriate.

Consider what the communication is about
- Is your question addressed elsewhere (e.g. in the subject outline or, on the eLearning site)?
- Is it something that is better discussed in person or by telephone? This may be the case if your query requires a lengthy response or a dialogue in order to address. If so, see consultation times above and/or schedule an appointment.
- Are you addressing your request to the most appropriate person?

Specific email subject title to enable easy identification of issue
- Identify the subject code of the subject you are enquiring about (as staff may be involved in more than one subject) put this in the email subject heading. Add a brief, specific query reference after the subject code where appropriate.

Professional courtesy
- Address the staff member appropriately by name (and formal title if you do not yet know them).
- Use full words (avoid ‘text-speak’ abbreviations), correct grammar and correct spelling.
- Be respectful and courteous.
- Allow 3 – 4 working days for a response before following up. If the matter is legitimately urgent, you may wish to try telephoning the staff member or inquiring at the School Office.
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### Section A: General Information

#### Subject Learning Outcomes

On successful completion of this subject, students will be able to:

1. Explain key neurophysiological processes including (but not limited to):
   - a) The mechanisms of neuronal function, signalling and communication;
   - b) Somatosensory and motor pathways within the nervous system;
   - c) Neurophysiological basis of behaviour and cognition;
   - d) Development and plasticity of the nervous system.

2. Demonstrate their understanding of neuroscience concepts/neurophysiological processes and apply these concepts to clinical and scientific research scenarios, including (but not limited to):
   - a) Spinal cord injury;
   - b) Neuropharmacology;
   - c) Drug addiction.

3. Identify neuroanatomical structures using human (and possibly animal) brains and spinal cords, models and computer programs such as Brainstorm. Students should be able to identify structures on gross specimens as well as specimens sectioned in the coronal, sagittal and horizontal planes and have an understanding of structure location in relation to other structures.

4. Associate anatomical structures with their functions and apply this knowledge to case-study scenarios of brain or spinal cord injuries or research related to CNS processes.

5. Outline the causes, symptoms and treatments for selected neurological and psychological disorders (e.g. stroke, myasthenia gravis, Parkinson's disease, schizophrenia) and be aware of the latest scientific research in relation to these disorders.

6. Effectively communicate fundamental neuroscience information, in both oral and written formats.

#### Subject Description

Students should gain familiarity with the physiology and the anatomy of the central nervous system. Labs will consist of a detailed study of the functional anatomy of the human brain and spinal cord, as well as an introduction to neuroanatomical techniques. In addition to integrating anatomical function, lectures include aspects of neural development, molecular and cellular mechanisms of signal transmission, CNS coordination with autonomic and neuroendocrine systems and the study of the neural bases for selected behaviours and neurological disorders. Students will also undertake independent learning in an area of neuroscience and demonstrate their ability to engage with the scientific literature and communicate this to various audiences.

#### eLearning Space

This subject has materials and activities available via eLearning. To access eLearning you must have a UOW user account name and password, and be enrolled in the subject. eLearning is accessed via SOLS (student online services). Log on to SOLS and then click on the eLearning link in the menu column. For information regarding the eLearning spaces please use the following link:

http://uowblogs.com/moodlelab/files/2013/05/Moodle_StudentGuide-1petpo7.pdf

#### Lecture, Tutorial, Laboratory Times

All timetable information is subject to variation. Check latest timetabling information on the 'Current Student' webpage on UOW website or log into SOLS to view your personal timetable prior to attending classes. [http://www.uow.edu.au/student/index.html](http://www.uow.edu.au/student/index.html)

Timetable information can be accessed from

Key University Dates can be accessed from
Readings, References and Materials

Textbooks and Prescribed Readings (includes eReadings)
There are no ‘prescribed’ textbooks that students need to purchase for this subject. However it is recommended that students have access to a Neuroscience textbook. Several appropriate Neuroscience and Neuroanatomy texts are available as ebooks via the UoW Library. These have been added as eReadings, accessible for the library website and the MEDI311 eLearning space.

Materials

1. Lab gown. Please note a lab gown that can be worn in the UoW Anatomy Laboratory is required. This gown needs to be white and close at the back, not the front. These can be purchased at the bookshop.
2. Laboratory manual: Can be purchased from the bookshop.
3. Brainstorm: This neuroanatomy program can be borrowed from the library and installed on your personal computer. Brainstorm is also available on computers in the building 17 computer labs, the anatomy lab tutorial room, and the large computer in the Junction (building 41, level 3 foyer).

Recommended Readings
The following references complement the prescribed readings and textbooks:

Neuroscience: Exploring the Brain. Bear, Connors and Paradiso.
Fundamental Neuroscience for Basic and Clinical Applications. Duane F. Haines.

Recommended readings are not intended as an exhaustive list, students should use the Library catalogue and databases to locate additional resources.

Recent Changes to this Subject
Nil

List of Topics Covered
The following are examples of the topics to be covered in this course. This is not an exhaustive list and will be subject to change.

Neurodevelopment
Electrochemical signalling in the nervous system
Somatosensory and motor pathways
Neuropharmacology
Visual system processing
Synaptic plasticity
Reward and addiction
Neurological and Psychiatric Disorders

A Timetable of Topics will be available from the eLearning site in week 1 of session.
Section B: Assessment

Assessment Summary

<table>
<thead>
<tr>
<th>Assessment Item</th>
<th>Form of Assessment</th>
<th>Due Date</th>
<th>Return/Feedback Due Dates</th>
<th>Weighting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment 1</td>
<td>Pre-labs</td>
<td>Prior to the weekly prac class</td>
<td>Immediate</td>
<td>0%</td>
</tr>
<tr>
<td>Assessment 2</td>
<td>Presentation 1</td>
<td>Week 6 or Week 7</td>
<td>Within 21 days of due date</td>
<td>10%</td>
</tr>
<tr>
<td>Assessment 3</td>
<td>Presentation 2</td>
<td>Week 10 or Week 11</td>
<td>Within 21 days of due date</td>
<td>20%</td>
</tr>
<tr>
<td>Assessment 4</td>
<td>Practical Exam</td>
<td>Week 13</td>
<td>Within 21 days of due date</td>
<td>25%</td>
</tr>
<tr>
<td>Assessment 5</td>
<td>Final Exam</td>
<td>Exam Period</td>
<td>Release of results</td>
<td>45%</td>
</tr>
</tbody>
</table>

Total Marks 100%

Details of Assessment Tasks

Assessment tasks will be marked using explicit criteria that will be provided to students prior to submission.

Assessment 1
Due date Must be successfully completed before each practical class
Weighting 0%
Submission Online via Moodle
Type of Collaboration Individual quiz
Length Various

Details
Each pre-lab will open the Tuesday before the relevant practical class. They need to be successfully completed at least 30mins before your scheduled practical class. If they are not completed, you will not be allowed to participate in that week’s class and you risk a technical fail being awarded.

Style and format Online quizzes consisting of multiple choice and short answer questions.
Subject Learning Outcomes 1-4
Marking Criteria Correct answers

Assessment 2
Due date Week 6 or week 7
Weighting 10%
Submission Presentation in class
Type of Collaboration Group Assessment
Length 8 minutes plus questions

Details
Students are required to form groups of 2-3 within their tutorial class. Each group will be allocated one topic to present to the class. This topic will be taken from the topics covered in the lectures. The presenting students need to ensure they understand this topic and use visual aids (e.g. PowerPoint) to explain this concept/topic to the class. The presented content is assessable in the final exam.

Subject Learning Outcomes 1,2,4,6
Marking Criteria The marking criteria will be made available on your eLearning site by week 1 of session.
<table>
<thead>
<tr>
<th>Assessment 3</th>
<th>Presentation 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Due date</td>
<td>Week 10 or Week 11</td>
</tr>
<tr>
<td>Weighting</td>
<td>20%</td>
</tr>
<tr>
<td>Submission</td>
<td>Presentation in class and written summary</td>
</tr>
<tr>
<td>Type of Collaboration</td>
<td>Group Project</td>
</tr>
<tr>
<td>Length</td>
<td>15mins</td>
</tr>
<tr>
<td>Details</td>
<td>Students are required to form groups of 4 within their tutorial class. Each group will be allocated one neurological or neuropsychiatric disorder to present to the class. Students need to present the causes, pathophysiological process, symptoms and treatments. Students need to ensure that they explain why symptoms arise and how treatments work, rather than just provide a list. Students also need to ensure that they incorporate an aspect of current research into their presentation. Students will be required to submit a copy of their presentation. Students will also be required to submit a concise 2 page, single spaced, summary.</td>
</tr>
</tbody>
</table>

| Subject Learning Outcomes | 1-6 |
| Marking Criteria         | The marking criteria will be made available on your eLearning site by week 1 of session. |

<table>
<thead>
<tr>
<th>Assessment 4</th>
<th>Practical Exam</th>
</tr>
</thead>
<tbody>
<tr>
<td>Due date</td>
<td>Week 13</td>
</tr>
<tr>
<td>Weighting</td>
<td>25%</td>
</tr>
<tr>
<td>Submission</td>
<td>Exam papers and answers must be submitted at the conclusion of the exam.</td>
</tr>
<tr>
<td>Type of Collaboration</td>
<td>Individual Assessment</td>
</tr>
<tr>
<td>Length</td>
<td>2 hours</td>
</tr>
<tr>
<td>Details</td>
<td>This exam will incorporate theory and practical elements related to your practical classes. Identification of anatomical structures on cadavers, models, microscopes, pictures and on the “Brainstorm” program will be accompanied by short answer questions and case studies related to your practical work.</td>
</tr>
<tr>
<td>Style and format</td>
<td>Practical Exam</td>
</tr>
<tr>
<td>Subject Learning Outcomes</td>
<td>1-6</td>
</tr>
<tr>
<td>Marking Criteria</td>
<td>Correct answers</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assessment 5</th>
<th>Final Exam</th>
</tr>
</thead>
<tbody>
<tr>
<td>Due date</td>
<td>TBA In Final Exam Period</td>
</tr>
<tr>
<td>Weighting</td>
<td>45%</td>
</tr>
<tr>
<td>Submission</td>
<td>Exam papers and answers must be submitted at the conclusion of the exam.</td>
</tr>
<tr>
<td>Type of Collaboration</td>
<td>Individual Assessment</td>
</tr>
<tr>
<td>Length</td>
<td>3 hours</td>
</tr>
<tr>
<td>Details</td>
<td>Short- and long-answer questions covering all material from the whole session.</td>
</tr>
<tr>
<td>Style and format</td>
<td>Final Exam</td>
</tr>
<tr>
<td>Subject Learning Outcomes</td>
<td>1-6</td>
</tr>
<tr>
<td>Marking Criteria</td>
<td>Correct answers</td>
</tr>
</tbody>
</table>
Minimum Requirements for a Pass in this Subject

To receive a clear pass in this subject a total mark of 50% or more must be achieved. In addition, failure to meet any of the minimum performance requirements is grounds for awarding a Technical Fail (TF) in the subject, even where total marks accumulated are greater than 50%.

The minimum performance requirements for this subject are:

- attempt all assessment tasks
- pass all assessment tasks, including the final exam

Minimum Student Attendance and Participation

It is expected that students will allocate 8 hours per week to this subject, including any required class attendance, completion of prescribed readings and assessment tasks.

Student attendance at tutorials, practicals, seminars and/or simulations is compulsory and students must attend all classes. Absences will require the submission of an application for Academic Consideration via SOLS and the presentation of suitable documentation, for example a Medical Certificate, to Student Central as soon as practical. For further details about applying for academic consideration visit the Student Central webpage:


Scaling

Scaling will not occur in this subject.

Late Submission

Late submission of an assessment task without an approved extension of the deadline is not acceptable. If you are unable to submit an assessment due to extenuating circumstances (e.g. medical grounds or compassionate grounds), you can make an application of academic consideration. Not all circumstances qualify for academic consideration. For further details about applying for academic consideration visit the Student Central webpage:


Late Submission Penalty

Marks will be deducted for late submission at the rate of 5% of the total possible marks for that particular assessment task per day. This means that if a piece of work is marked out of 100, then the late penalty will be 5 marks per day (5% of 100 possible marks per day). The formula for calculating the late penalty is: the total possible marks x 0.05 x number of days late. For the purposes of this policy a weekend (Saturday and Sunday) will be regarded as two days.

For example:

- Student A submits an assessment which is marked out of 100. The assessment is submitted 7 days late. This means that a late penalty of 35 marks will apply (100 x 0.05 x 7). The assessment is marked as per normal out of 100 and is given a mark of 85/100, and then the late penalty is applied. The result is that the student receives a final mark of 50/100 for the assessment (85 (original mark) – 35 marks (late penalty) = 50/100 (final mark)).
- Student B submits a report which is marked out of 20. The report is submitted three days late. This means that a late penalty of 3 marks will apply ((20 x 0.05 x 3). The report is marked as per normal out of 20 and is given a mark of 17/20, and then the late penalty is applied. The result is that the student receives a final mark of 14/20 for the report (17 (original mark) – 3 marks (late penalty) = 14/20 (final mark)).

No marks will be awarded for work submitted either after the assessment has been returned to the students or more than two weeks after the due date, whichever is the sooner. This does not apply to situations where a particular assessment task is undertaken by students at different times throughout
the session, but where the assessment is based on experiments or case studies specific to a student. In this case no marks will be awarded for work submitted more than two weeks after the due date.

Notwithstanding this, students must complete all assessment tasks to a satisfactory standard and submit them, regardless of lateness or loss of marks, where submission is a condition of satisfactorily completing the subject.

**Supplementary Assessments**

Supplementary assessment may be offered to students whose performance in this subject is close to that required to pass the subject, and are otherwise identified as meritng an offer of a supplementary assessment. The precise form of supplementary assessment will be determined at the time the offer of a supplementary assessment is made.

Students can log on to SOLS and click on the link titled “Supplementary Assessment” to view any applicable offers or use the following link; http://www.uow.edu.au/student/exams/suppassign/index.html

**System of Referencing Used for Written Work**

The Author-Date (Harvard) referencing system should, unless otherwise specified for a particular assessment (check Details of Assessment Tasks), be utilised. A summary of the Harvard system can be accessed on the Library website at: http://public01.library.uow.edu.au/refcite/style-guides/html/

**Use of Internet Sources**

Students are able to use the Internet to access the most current information on relevant topics and information. Internet sources should only be used after careful critical analysis of the currency of the information, the role and standing of the sponsoring institution, reputation and credentials of the author, the clarity of the information and the extent to which the information can be supported or ratified by other authoritative sources.

**Plagiarism**

The full policy on Academic Integrity and Plagiarism is found in the Policy Directory on the UOW website.

"The University's Academic Integrity and Plagiarism Policy, Faculty Handbooks and subject guides clearly set out the University's expectation that students submit only their own original work for assessment and avoid plagiarising the work of others or cheating. Re-using any of your own work (either in part or in full) which you have submitted previously for assessment is not permitted without appropriate acknowledgement. Plagiarism can be detected and has led to students being expelled from the University.

The use by students of any website that provides access to essays or other assessment items (sometimes marketed as ‘resources’), is extremely unwise. Students who provide an assessment item (or provide access to an assessment item) to others, either directly or indirectly (for example by uploading an assessment item to a website) are considered by the university to be intentionally or recklessly helping other students to cheat. This is considered academic misconduct and students place themselves at risk of being expelled from the University."

**Submission of Assessments**

Refer to the submission requirements under the details of the individual assessments. Students should ensure that they receive a receipt/evidence acknowledging assessment submission. Students will be required to produce this in the event that an assessment task is considered to be lost. Students are also expected to keep a copy of all their submitted assignments in the event that re-submission is required.
Assessment Return
Students will be notified when they can view their marked assignment. Contact your lecturer/tutor/subject coordinator if you would like feedback on your assessment. In accordance with University Policy marked assessments will usually only be held for 21 days after the declaration of marks for that assessment.
Section C: General Advice

Students should refer to the Faculty of Science, Medicine and Health website for information on policies, learning and support services and other general advice.

University Policies

Students should be familiar with the following University policies:

a. Code of Practice – Teaching and Assessment

b. Student Charter

c. Academic Integrity and Plagiarism Policy

d. Student Academic Consideration Policy

e. Course Progress Policy

f. Graduate Qualities Policy

g. Academic Complaints Policy (Coursework and Honours Students)

h. Policy and Guidelines on Non-Discriminatory Language Practice and Presentation

i. Workplace Health and Safety, where relevant

j. Intellectual Property Policy

k. IP Student Assessment of Intellectual Property Policy, where relevant

l. Policy on Ethical Objection by Students to the Use of Animal and Animal Products in Coursework Subjects, where relevant

m. Human Research Ethics Guidelines, where relevant

Student Support Services and Facilities

Students can access information on student support services and facilities at the following link. This includes information on “Academic Support”, “Starting at University, “Help at University” as well as information and support on “Career’s and Jobs”. http://www.uow.edu.au/student/services/index.html

Student Etiquette

Guidelines on the use of email to contact teaching staff, mobile phone use in class and information on the university guide to eLearning ‘Netiquette’ can be found at http://www.uow.edu.au/student/elearning/netiquette/index.html
## Version Control Table

<table>
<thead>
<tr>
<th>Version Control</th>
<th>Release Date</th>
<th>Author/Reviewer</th>
<th>Approved By</th>
<th>Amendment</th>
</tr>
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<td>20160204</td>
<td>Kelly Newell</td>
<td>Sonia Losinno – ADE nominee</td>
<td>Amend contact details</td>
</tr>
<tr>
<td>1</td>
<td>20160128</td>
<td>Kelly Newell</td>
<td>Sonia Losinno – ADE nominee</td>
<td>Final MEDI311 Autumn 2016 Subject Outline</td>
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