

MACQUARIE  
UNIVERSITY



FACULTY OF  
HUMAN SCIENCES

**DEPARTMENT OF PSYCHOLOGY**

**PSY236**

**Biopsychology & Learning**

**Unit Outline**

**Semester 2, 2011**

**Year and Semester:** 2011, Semester Two

**Unit convenor:** Dr. Jennifer Cornish

**Prerequisites / Corequisites:** PSY104 (P), PSY105 (P), STAT170 (P) or STAT171 (P) or PSY122 or admission to GDipPsych

Students in this unit should read this unit outline carefully at the start of semester. It contains important information about the unit. If anything in it is unclear, please consult one of the teaching staff in the unit.

#### ABOUT THIS UNIT

**Unit Description and rationale:** This is a 3 credit point unit. It is designed to provide a basic knowledge of the neurophysiological basis of behaviour and to give the student an introduction to animal learning and behaviour. Topics include the cytoarchitecture of central and peripheral neurons, neurophysiology, neuroanatomy, neurotransmitters, neural mechanisms of learning, methods in behavioural neuroscience, the function and evolution of behaviour, elicited behaviour, classical conditioning, operant conditioning, reinforcement and extinction behaviours.

It is University policy that the University issued email account will be used for official University communication. **All students are required to access their University account frequently.**

#### TEACHING STAFF

- Convenor : Dr. Jennifer Cornish C3A 412 [jennifer.cornish@mq.edu.au](mailto:jennifer.cornish@mq.edu.au)  
(Office consultation hours Tuesday 1:00-4:00 pm, or consultation by appointment)
- Dr. Anthony Miller F9A 145 [anthony.miller@mq.edu.au](mailto:anthony.miller@mq.edu.au) (Office consultation hours Wednesday 10:00 am - 1:00 pm or by appointment)
- Tutors for practical classes will provide contact details at time of practical

#### CLASSES

##### Lectures

All lectures will only be provided by video recordings on-line (via Blackboard)

##### Revision sessions

1 hr/week: **Fri 11 am – 12 pm, or Fri 12 – 1pm X5B-T1 (both sessions will also be available on blackboard)**

##### Practicals

Practicals will be run on weeks 2, 4, 6, 8, 10, 12 (Stream A) and weeks 3, 5, 7, 9, 11, 13 (Stream B) in building F9A (i.e. each student does 6 practicals, one every second week beginning week 2 or 3, depending on which stream they have been allocated):

Monday 10am -12 pm, 12-2 pm, 2-4pm

Tuesday 9-11 am, 11-1 pm, 4-6 pm

Wednesday 2-4 pm, 4-6 pm, 6-8 pm

Thursday 10am-12pm, 2-4 pm, 4-6 pm

Friday 2-4 pm

The timetable for classes can be found on the University web site at:

<http://www.timetables.mq.edu.au/>

Students in units which have streamed tutorials will be allocated a stream by the Psychology Office. A draft list will be available in week one of semester and the final list in week three. The list will be displayed on Blackboard.

**Managing Classes:** Changes to all units can be done on-line via eStudent. After week 2, no further changes will be entertained unless supporting documentation about the reason for changing is provided and there is space in the tutorial you wish to change into.

**Practical Attendance:** Students must attend classes otherwise grades may be affected.

Students enrolled in the Composite attendance mode can access the iLecture recording of the lecture, but must attend the compulsory tutorial/practical class.

Students who are absent because of medical or other extenuating circumstances must submit an Application for Special Consideration form (and Professional Authority/Documentation if reason is medical, clearly stating the reason(s) for the absence). The form is available outside the Psychology Office or can be downloaded from <http://www.reg.mq.edu.au/Forms/APScons.pdf> ). This should be submitted to the Student Enquiry Services as soon as possible.

#### **REQUIRED AND RECOMMENDED TEXTS AND/OR MATERIALS**

- Kalat, J.W. (2004, 2007 or 2009). Biological Psychology (8<sup>th</sup>, 9<sup>th</sup> or 10<sup>th</sup> ed). Required
- Domjan, M.P. (2005). The Essentials of Conditioning & Learning (3<sup>rd</sup> ed). Recommended
- Both Texts are on reserve in the library
- Further recommended readings will be suggested during lecture time.

#### **UNIT WEB PAGE**

- This course is available by Blackboard (WebCT). The web page for this unit can be found at <http://learn.mq.edu.au>

#### **LEARNING OUTCOMES**

Students participating in PSY236 will gain a general understanding of mechanisms of behavioural neuroscience, neurophysiology, neuropharmacology and learning.

In addition to the discipline-based learning objectives, all academic programs at Macquarie seek to develop students' generic skills in a range of areas. One of the aims of this unit is that students develop their skills in the following:

- Communication and information technology skills: using electronic databases to search for papers in relevant topics.
- Written and oral communication skills: participating in class discussions and presenting papers.
- Self-awareness skills: identifying and setting targets, time management
- Information skills: formulating arguments, judging the relevance and accuracy of information, comparing different points of view.
- Problem solving: comparing alternative interpretations of neuroscience data, formulating new explanations.

## GRADUATE CAPABILITIES DEVELOPED

In addition to the discipline-based learning objectives, students will also develop their generic skills in the following:

- Communication and Information Technology Skills: Computer-based skills will be required to produce the practical report. This will also include using the network and accessing the library to search for information relevant to your report.
- Written communication skills: These skills will be developed through the practical report where you will have to clearly describe the experimental procedure, results that you obtained and what they mean.
- Self-awareness and interpersonal skills: In order to manage the work in the course (and other courses!), to be prepared for exams, and to submit assignments on time, you will need to identify and set targets and goals. You will learn to plan your time in the most productive way possible.
- Problem solving skills: Any piece of assessment is a problem to be solved. You need to identify the problem and implement the most effective and efficient solution. You are then able to reflect on past assessments to learn how you may be able to improve on your problem solving skills. How could you do it better next time? How can you apply this to other scenarios?

## TEACHING AND LEARNING STRATEGY

- The unit will be taught weekly through on-line audio and video recordings of unit topics. These topics will be reviewed in 1 x 1 hr session (two streams available Fri 11am -12pm and Fri 12pm-1pm) in the lecture theatre. There are also 6 compulsory practical classes (2 hrs each) as listed above.
- **Lectures**: The lectures are designed to introduce students to relevant theories of biopsychology and learning. The reading associated with each lecture topic complements and extends the lecture material. Students should be self-directed in reading and summarising this information, and integrating it with the lectures.
- **Review Sessions**: The review sessions are designed to give all students face-to-face review of the lecture material, with opportunity for question and answer time.
- **Tutorials**: Tutorials extend lecture material by examining research and practical applications of the more theoretical material covered in lectures.
- Week-by-week list of the topics to be covered can be found at the end of this document.

## RELATIONSHIP BETWEEN ASSESSMENT AND LEARNING OUTCOMES

Assessment in this unit is directly related to the learning outcomes in the following ways:

- Student's basic understanding of theories and research in biopsychology is assessed in a mid-term exam which contains multiple choice questions.
- The ability to interpret empirical data in relation to theoretical issues and past research literature is assessed using a research report on data collected in the first practical.
- Student's basic understanding of theories and research in learning is assessed in an end of year exam which consists of multiple choice questions.
- The ability to interpret empirical data in relation to theoretical issues and past research literature in the field of learning is assessed by a group presentation.

### Assessment at a Glance

Assessment Task	Due Date	% of Total Mark
On-line Quiz	Every 2 weeks	0% self-assess
1500 Word Report on Prac 1	Monday 5 <sup>th</sup> Sept, 10 am	20 %
Mid-Semester Test (1 hr)	Friday 14 <sup>th</sup> Oct, 11 am or 12pm (TBA by BB)	35%
Group Presentation	Prac 5 or 6 (weeks 10-13)	10 %
End-Semester Exam	Examination Time	35%

Details of the **five** assessment tasks and their weighting are listed below:

1. Fortnightly on-line quiz (5 questions) covering lectures of the past two weeks for early feedback on learning progress (**0%, self assessment only**).
2. A midterm test (multiple 5-choice format) will be held during the scheduled review session (in X5B-T1) in week 9, from **11am-12 pm or 12-1pm on Friday October 14<sup>th</sup> 2011** (35%). Students will be allocated to one of the one hour exam timeslots. This paper will examine the information covered in lectures in weeks 1-6, and in the neuroanatomy pracs (weeks 4-7).
3. A final exam (multiple choice format, 5-choice questions) held in the examination period (35%). This paper will examine the information covered in lectures from weeks 7-8 and 10-13, in addition to material from Practical Four.
4. A group presentation (approx 3/group, worth 10% per student) on a relevant learning research paper during practicals held in weeks 10-13. Information and relevant reference for this will be supplied in your 3rd practical before mid-semester break (week 6 or 7). Presentations should be for 15-20 min per group.
5. A 1,500 word practical report (from behavioural experiment, week 2 Group A or week 3 Group B, 20 %) will be **due at 10 am on Monday September 5<sup>th</sup> 2011**. It is departmental policy that assignments are set in terms of a specified word limit and specified format:

**Word Limit is 1,500 words**

**Double-spacing**

**12-point font**

**Times New Roman font**

### **Margin of 2.54**

The word limit includes in-text referencing but does not include the reference list at the end, nor tables and figures, abstract or title page.

Students should follow the guidelines for presentation of their assignment which are provided in the Practical 1 handout available on blackboard.

### **Penalties will be levied for late submission of assignment and for exceeding word limits:**

Penalties for late submission: The penalty for late submission is 5% of the maximum mark per day overdue. For this assignment, worth 20%, this means that every day late will cost 1 mark out of 20.

Penalty for exceeding word limit: For each 100 words over the word limit a penalty of 5% will be applied. This means that for this assignment that is worth 20%, a 5% penalty will result in the loss of 5% (0.05) x 20 = 1 marks from your total mark for the assignment.

We aim to have your marked assignments available for collection at your 5<sup>th</sup> tutorial in week 10 (Stream A) or week 11 (Stream B), with results for all assignments to be posted on the Web at the beginning of week 10. Please refer to our blackboard page for updates on assignment return.

### **Submission details:**

Assignments can ONLY be submitted via the LABELLED locked boxes in the foyer of building C3A or in the single Psychology Essay Box located outside the entrance of C3A after hours.

The assignment boxes are cleared at 10 am on Mondays to Fridays and again at 4 pm ONLY ON FRIDAYS (Assignments received at 4pm on Fridays, after the 10 am clearing, are counted as an additional 1 day late).

Assignments submitted after the 4 pm clearing on Fridays will be cleared on Monday at 10 am and will incur a weekend (counted as two additional days) penalty.

Assignments will not be accepted after the return of marked assignments

All assignments submitted must be accompanied by a completed and signed Psychology Department coversheet which is available in C3A or downloadable from <http://www.psy.mq.edu.au/pdf/coversheet.pdf>

Assignments will not be accepted unless a correct coversheet is completed and signed.

A copy of the assignment must be kept as proof that the assignment was completed and submitted.

*Electronic copies of assignments are not accepted.  
Assignments submitted by post will not be accepted.*

### **After an assignment has been submitted:**

It is the responsibility of the student to check the Psychology Webpage (<http://www.psy.mq.edu.au/assrec/>) after submitting the assignment to ensure that his/her assignment has been received. The webpage will be updated by 5pm on the due date of

the assignment. If an assignment is not noted as being received, it is the student's responsibility to immediately contact the staff in the Psychology Office in writing to inform them. The student will then be required to submit a fresh copy of the assignment and the date of receipt will be the date the Psychology Office was informed of the non-receipt in writing. Lateness penalty will be applied until the date the Psychology Office is informed of the non receipt of assignment.

Assignments will be returned to students during tutorials. The remaining assignments will then be available for collection from the Psychology Office. During Semester time, the Psychology Office opening hours are 10AM to 5PM. Tutors of evening tutorials will return ALL assignments during the late classes.

### **Request for Extensions for Assignments are granted by the Psychology Office.**

Ordinarily, no extensions of time for submission of written work will be granted since ample time for its preparation will have been given. If an extension is required for medical or other extenuating circumstances, students may request this in writing by completing a Request for Extension on Written Work form, available outside the Psychology Office, with supporting documentary evidence (such as medical certificate, counsellor note, or similar). The form and the supporting documentary evidence must be submitted to the Psychology Office (C3A). The staff in the Psychology Office will make all decisions regarding extensions. Neither individual tutors nor the course convenor will grant extensions.

All requests for extensions must be made prior to the due date for the assignment. If an extension is granted the authorisation section of the form must be collected and attached to the assignment. Failure to do so will result in a late penalty being applied as the marker will not know that an extension has been granted.

### **MID SEMESTER TESTS**

All students must attend the mid-semester test at the same time. There is no separate arrangement available for evening students to sit this test.

Students who are unable to sit the mid-semester test at the specified time must advise the Psychology Office via email and must also submit a Request for Special Consideration form (and Professional Authority if reason is medical, clearly stating the reasons for the absence from the test). The form is available outside the Psychology Office or can be downloaded from <http://www.reg.mq.edu.au/Forms/APScons.pdf>. This should be submitted to the Student Enquiry Services within five days from the day of the examination. The unit chair(s) will determine eligibility for a late mid-semester test and eligible students will be notified via email about the time and location of the test. There will be only one alternative time.

## END OF SEMESTER EXAM

The University Examination period in *Second Half Year 2011 is from November 14<sup>th</sup> to December 2nd, 2011.*

You are expected to present yourself for examination at the time and place designated in the University Examination Timetable. The timetable will be available in Draft form approximately eight weeks before the commencement of the examinations and in Final form approximately four weeks before the commencement of the examinations.

<http://www.timetables.mq.edu.au/exam>

The only exception to not sitting an examination at the designated time is because of documented illness or unavoidable disruption. In these circumstances you may wish to consider applying for Special Consideration. Information about unavoidable disruption and the special consideration process is available at:

<http://www.reg.mq.edu.au/Forms/APSCon.pdf>

If a Supplementary Examination is granted as a result of the Special Consideration process, the examination will be scheduled after the conclusion of the official examination period. Supplementary Examination in the Department of Psychology will be held on the: *15th and 16th of December, for Semester Two 2011.*

Supplementary Exams are only offered to students who have satisfactorily completed all other assessments for the unit and were unable to sit the final exam.

Instructions on applying for sitting of a supplementary exam are available from the website, [www.psy.mq.edu.au/speccond](http://www.psy.mq.edu.au/speccond). It is the student's responsibility to follow the steps outlined in this website. An email will be sent to the student advising them of the outcome of their request for a supplementary exam. If a supplementary exam has been granted it is the student's responsibility to check the Department of Psychology Special Consideration website for information relating to the date and location of the supplementary exam. Students who are granted to sit for a supplementary exam must make themselves available to sit for the supplementary exam on the specified dates. There will be only one alternative time. It is the student's responsibility to email the Psychology Office, [psy\\_off@mq.edu.au](mailto:psy_off@mq.edu.au) to confirm attendance to supplementary exams.

You are advised that it is Macquarie University policy not to set early examinations for individuals or groups of students. All students are expected to ensure that they are available until the end of the teaching semester, which is the final day of the official examination period.

## ACADEMIC HONESTY

Academic honesty is an integral part of the core values and principles contained in the Macquarie University Ethics Statement. The Policy covering Academic Honesty is available on the web at:

[http://www.mq.edu.au/policy/docs/academic\\_honesty/policy.html](http://www.mq.edu.au/policy/docs/academic_honesty/policy.html)

Plagiarism is an example of dishonest academic behaviour and is defined by the Policy on Academic honesty as: "Using the work or ideas of another person and presenting this as your own without clear acknowledgement of the source of the work or ideas".

Plagiarism is a serious breach of the University's rules and carries significant penalties.

The Academic Honesty Procedure is available at:

[http://www.mq.edu.au/policy/docs/academic\\_honesty/procedure.html](http://www.mq.edu.au/policy/docs/academic_honesty/procedure.html)

This procedure notes the following responsibilities for students:

- Act in accordance with the principles of the Academic Honesty Policy.
- Become familiar with what academic dishonesty is, what are appropriate referencing techniques and the consequences of poor practice.
- Seek assistance from the unit convenor (or their nominee) to remedy any deficits or if you are unsure of discipline specific practice.
- Submit only work of which you are the author or that properly acknowledges others.
- Do not lend your original work to any other person for any reason.
- Keep drafts of your own authored work and notes showing the authorship or source of ideas that are not your own.

The penalties which can be applied for academic dishonesty are outlined in the Academic Dishonesty – Schedule of Penalties which can be found at:

[http://www.mq.edu.au/policy/docs/academic\\_honesty/schedule\\_penalties.html](http://www.mq.edu.au/policy/docs/academic_honesty/schedule_penalties.html)

The penalties range from applying a fail grade for the assessment task or requiring the student to re-submit the assessment task for a mark no greater than 50 to applying a fail grade to the unit of study and referral to the University Discipline committee.

You must read the University's Policy and Procedure on Academic Honesty.

#### **UNIVERSITY POLICY ON GRADING**

Academic Senate has a set of guidelines for the achievement of grades across the range from fail to high distinction. Your final result will include one of these grades plus a standardised numerical grade (SNG). On occasion your raw mark for a unit (i.e., the total of your marks for each assessment item) may not be the same as the SNG which you receive. For more information please refer to the Macquarie University Handbook.

#### **STUDENT SUPPORT SERVICES**

Macquarie University provides a range of Academic Student Support Services. Details of these services can be accessed at <http://www.student.mq.edu.au>.

On matters pertaining to the regulations, the Registrar's Office should be consulted or, within the Department of Psychology, Dr Julia Irwin, Director of Undergraduate Studies. Students with disabilities who have problems within the Department should consult Ms Radha Pathy, the Disability Liaison Officer. If your difficulties cannot be resolved by these members of staff you should consult the Head of Department.

If you have a major difficulty associated with writing skills, you could enrol in a short course on writing skills. For details go to:

[http://www.ling.mq.edu.au/support/writing\\_skills/index.htm](http://www.ling.mq.edu.au/support/writing_skills/index.htm)

#### **APPEALS AGAINST GRADES**

Please refer to the Faculty of Human Sciences website:

<http://www.humansciences.mq.edu.au/>

## LECTURE AND PRACTICAL PROGRAM

Week	Lecture Date	Topic	Lecturer	Text	Practical
1	<u>Biopsychology</u> 5 Aug	Behavioural Neuroscience: Genetics	Cornish	Kalat Ch. 1 & 2	<b>NO PRACTICAL</b>
2	12 Aug	The Nervous Systems. Brain cells. Neurophysiology.	Cornish	Kalat Ch. 3 & 4	<b>Practical One</b> Behavioural Experiment (Stream A)
3	19 Aug	Neurochemistry. Communication by Receptors.	Cornish	Kalat Ch. 3	<b>Practical One</b> Behavioural Experiment (Stream B)
4	26 Aug	Neurotransmitters. Neurotransmitter System Dysfunction.	Cornish	Kalat Ch. 3 & App. A	<b>Practical Two</b> Neuroanatomy I Kalat Ch. 4 (Stream A)
5	2 Sep	Substance Abuse. Addiction.	Cornish	Kalat Ch. 15	<b>Practical Two</b> Neuroanatomy I Kalat Ch. 4 (Stream B)
<b>Reports Due Monday September 5<sup>th</sup> @ C3A Lobby, 10am</b>					
6	9 Sep	Neurobiology of Learning & Memory.	Cornish	Kalat Ch. 13	<b>Practical Three</b> Neuroanatomy II (Stream A)
7	<u>Learning</u> 16 Sep	Introduction to Learning. Classical Conditioning I.	Miller	Domjan Ch. 1-4	<b>Practical Three</b> Neuroanatomy II (Stream B)
<b>Mid Semester Break 19<sup>th</sup> September to 3<sup>rd</sup> October, 2010</b>					
8	7 Oct	Classical Conditioning II. Principles and Applications of Classical Conditioning.	Miller	Domjan Ch. 4-5	<b>Practical Four</b> Learning (Sniffy) (Stream A)
9	<u>Mid-semester Test</u> 14 Oct	Covers material from lectures Week 1-6 and Neuroanatomy Pracs 2 & 3	Staff		<b>Practical Four</b> Learning (Sniffy) (Stream B)
10	21 Oct	Theories of Associative Learning. Introduction to Operant Conditioning.	Miller	Domjan Ch. 6-7	<b>Practical Five</b> Group Presentations I (Stream A)
11	28 Oct	Schedules of Reinforcement. Theories and Applications of Reinforcement.	Miller	Domjan Ch. 8-9	<b>Practical Five</b> Group Presentations I (Stream B)
12	4 Nov	Extinction. Punishment.	Miller	Domjan Ch.10-13	<b>Practical Six</b> Group Presentations II (Stream A)
13	11 Nov	No Formal Topic. Revision and Video.	Miller		<b>Practical Six</b> Group Presentations II (Stream B)