PSYX2236

Biopsychology and Learning

Session 2, Fully online/virtual 2020

Department of Psychology

Contents

Notice

As part of Phase 3 of our return to campus plan, most units will now run tutorials, seminars and ot her small group learning activities on campus for the second half-year, while keeping an online ver sion available for those students unable to return or those who choose to continue their studies onli ne.

To check the availability of face-to-face and onlin e activities for your unit, please go to timetable vi ewer. To check detailed information on unit asses sments visit your unit's iLearn space or consult yo ur unit convenor.

General Information

Unit convenor and teaching staff
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Senior Tutor
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Credit points
10

Prerequisites
(PSYC104 or PSYU1104 or PSYX104 or PSYX1104) and (PSYC105 or PSYU1105 or PSYX105 or PSYX1105)

Corequisites

Co-badged status

Unit description
This unit is designed to give students a basic knowledge of central neuronal mechanisms underlying fundamental behaviours and how these behaviours are modified through experience (learning). Half of the program describes the cytoarchitecture of central and peripheral neurons; the physiological and ionic bases of axonal and synaptic transmission; the overall anatomical organisation of the mammalian brain, and; sensory processing. These topics are followed by discussion on the central mechanisms underlying mammalian behaviours, such as motivation and psychopathology. The other half of the program provides a basic understanding of diverse phenomena in learning and behaviour, including classical conditioning and operant conditioning.

Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at https://www.mq.edu.au/study/calendar-of-dates

Learning Outcomes

On successful completion of this unit, you will be able to:

ULO1: Demonstrate a general understanding of the principles and mechanisms of

behavioural neuroscience, neurophysiology, neuropharmacology and learning.

ULO2: Use electronic databases to search for papers on relevant topics.

ULO3: Demonstrate written and oral communication skills, including through participation in class discussions

ULO4: Develop self-awareness skills by identifying and setting targets, and applying time management

ULO5: Critically analyse the key concepts of biopsychology and learning

ULO6: Solve problems by comparing alternative interpretations of neuroscience data and formulating new explanations

Assessment Tasks

Name	Weighting	Hurdle	Due
Online quiz	10%	No	Weekly
Final Examination	50%	No	Examination Period
Research Report	40%	No	Friday 11th September by 5.00pm

Online quiz

Assessment Type [1]: Quiz/Test
Indicative Time on Task [2]: 10 hours
Due: **Weekly**
Weighting: **10%**

Regular online quizzes testing unit content

On successful completion you will be able to:

- Demonstrate a general understanding of the principles and mechanisms of behavioural neuroscience, neurophysiology, neuropharmacology and learning.
- Use electronic databases to search for papers on relevant topics.
- Demonstrate written and oral communication skills, including through participation in class discussions
- Develop self-awareness skills by identifying and setting targets, and applying time management
- Critically analyse the key concepts of biopsychology and learning

- Solve problems by comparing alternative interpretations of neuroscience data and formulating new explanations

Final Examination

Assessment Type [1]: Examination
Indicative Time on Task [2]: 49 hours
Due: **Examination Period**
Weighting: **50%**

Final examination held within the University's formal exam period, in accordance with relevant requirements

On successful completion you will be able to:

- Demonstrate a general understanding of the principles and mechanisms of behavioural neuroscience, neurophysiology, neuropharmacology and learning.
- Use electronic databases to search for papers on relevant topics.
- Demonstrate written and oral communication skills, including through participation in class discussions
- Develop self-awareness skills by identifying and setting targets, and applying time management
- Critically analyse the key concepts of biopsychology and learning
- Solve problems by comparing alternative interpretations of neuroscience data and formulating new explanations

Research Report

Assessment Type [1]: Report
Indicative Time on Task [2]: 30 hours
Due: **Friday 11th September by 5.00pm**
Weighting: **40%**

Students complete a 1500 word research report on a behavioural experiment.

On successful completion you will be able to:

- Demonstrate a general understanding of the principles and mechanisms of behavioural neuroscience, neurophysiology, neuropharmacology and learning.

- Use electronic databases to search for papers on relevant topics.
- Demonstrate written and oral communication skills, including through participation in class discussions
- Develop self-awareness skills by identifying and setting targets, and applying time management
- Critically analyse the key concepts of biopsychology and learning

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[1] If you need help with your assignment, please contact:

- the academic teaching staff in your unit for guidance in understanding or completing this type of assessment
- the Writing Centre for academic skills support.

[2] Indicative time-on-task is an estimate of the time required for completion of the assessment task and is subject to individual variation

Delivery and Resources

Lectures: The unit will be taught weekly through on-line audio and video recordings of several topics. These topics will be reviewed in a 1 hr session in a lecture theatre which is recorded and available as online lectures, or via Zooom that will also be recorded. The review sessions are designed to give all students a review of the lecture topic material.

Tutorial exercises: Students will complete online tutorial exercises once a fortnight. These tutorials extend lecture material by examining research and practical applications of the more theoretical material covered in lectures.

There will be **online quizzes** for students to assess their understanding of the lecture content. These quizzes contribute 10% to the assessment marks of the students.

The **textbooks** used in this unit are:

Mazur, J.E. (2017). *Learning and Behavior* (8th Ed. International Ed.). Engelwood Cliffs, NJ: Prentice-Hall. Library has electronic copy available through ebookcentral-proquest

Kalat, J.W. (2019, 2015, 2013, 2009, 2007). *Biological Psychology* (13^{th}, 12^{th}, 11^{th}, 10^{th} or 9^{th} ed).

In addition, **optionally**, students may purchase the following software (used in tutorial exercises): Alloway, T. Wilson, G. & Graham, J. (2012). *Sniffy the Virtual Rat Lite,* Version 3.0.

Unit Schedule

Class Program	

Week starting		Topic	LECTURER	TEXT	TUTORIAL
1	27 July	**Introduction to Learning.** **Non-associative learning**. **Classical Conditioning 1** — Introduction, terms and forms of CC	Irwin	Mazur Ch. 1-3	**NO PRACTICAL**
2	3 Aug	**Classical Conditioning 2** — Variations of CC and limitations in CC **Classical Conditioning 3** —Temporal parameters of CC — Inhibition and extinction of CR	Irwin	Mazur Ch. 3-4	**Practical One** Learning I Motor skill **(Stream A)**
3	10 Aug	**Classical Conditioning 4** — Contingency — Rescorla Wagner	Irwin	Mazur Ch. 4	**Practical One** Learning I Motor Skill **(Stream B)**
4	17 Aug	**Operant conditioning**	Irwin	Mazur Ch. 5 & 6	**Practical Two** Learning II Behaviour Change **(Stream A)**
5	24 Aug	**Extinction**	Irwin	Pp 64-66, 126	**Practical Two** Learning II) **(Stream B)**
6	31 Aug	**Punishment** **Escape and Avoidance learning**	Irwin	Mazur 7	**Practical Three** Learning III Behaviour Change **(Stream A)**
Biopsychology					
7	7 Sept	Behavioural Neuroscience: Genetics, Animal models of addiction	Ramsey	Kalat Ch. 4 & 12	**Practical Three** Learning III **(Stream B)**
SESSION BREAK					
8	28 Sept	The Nervous Systems. Brain Cells.	Ramsey	Kalat Ch. 1 & 3	**NO PRACTICAL**

9	5 Oct	Neurophysiology, Neurochemistry, Communication by Receptors.	Ramsey	Kalat Ch. 1 & 2	**Practical Four** Neuroanatomy I Kalat Ch. 2 & 3 **(Stream A)**
10	12 Oct	Neurotransmitters. Neurotransmitter System Dysfunction.	Ramsey	Kalat Ch. 2, 14 & App. A	**Practical Four** Neuroanatomy I Kalat Ch. 2 & 3 **(Stream B)**
11	19 Oct	Substance Use, Substance Use Disorder,	Cornish	Kalat Ch. 14	**Practical Five** Neuroanatomy II Kalat Ch. 3 & 4 **(Stream A)**
12	26 Oct	Neurobiology of Learning and Memory.	Ramsey	Kalat Ch. 12	**Practical Five** Neuroanatomy II Kalat Ch. 3 & 4 **(Stream B)**
13	2 Nov	Revision Quiz covering Learning and Biopsychology			**NO PRACTICAL**

Policies and Procedures

Macquarie University policies and procedures are accessible from Policy Central (https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central). Students should be aware of the following policies in particular with regard to Learning and Teaching:

- Academic Appeals Policy
- Academic Integrity Policy
- Academic Progression Policy
- Assessment Policy
- Fitness to Practice Procedure
- Grade Appeal Policy
- Complaint Management Procedure for Students and Members of the Public
- Special Consideration Policy *(**Note:** The Special Consideration Policy is effective from 4 December 2017 and replaces the Disruption to Studies Policy.)*

Students seeking more policy resources can visit the Student Policy Gateway (https://students.mq.edu.au/support/study/student-policy-gateway). It is your one-stop-shop for the key policies you need to know about throughout your undergraduate student journey.

If you would like to see all the policies relevant to Learning and Teaching visit Policy Central (http

s://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central).

Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: https://students.mq.edu.au/study/getting-started/student-conduct

Results

Results published on platform other than eStudent, (eg. iLearn, Coursera etc.) or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in eStudent. For more information visit ask.mq.edu.au or if you are a Global MBA student contact globalmba.support@mq.edu.au

Student Support

Macquarie University provides a range of support services for students. For details, visit http://students.mq.edu.au/support/

Learning Skills

Learning Skills (mq.edu.au/learningskills) provides academic writing resources and study strategies to help you improve your marks and take control of your study.

- Getting help with your assignment
- Workshops
- StudyWise
- Academic Integrity Module

The Library provides online and face to face support to help you find and use relevant information resources.

- Subject and Research Guides
- Ask a Librarian

Student Services and Support

Students with a disability are encouraged to contact the Disability Service who can provide appropriate help with any issues that arise during their studies.

Student Enquiries

For all student enquiries, visit Student Connect at ask.mq.edu.au

If you are a Global MBA student contact globalmba.support@mq.edu.au

IT Help

For help with University computer systems and technology, visit http://www.mq.edu.au/about_us/offices_and_units/information_technology/help/.

When using the University's IT, you must adhere to the Acceptable Use of IT Resources Policy. The policy applies to all who connect to the MQ network including students.

Changes from Previous Offering

A more specific date was provided for the submission of the report

Changes since First Published

Date	Description
05/08/2020	A specific date was provided for the report, and an error in the lecture schedule was amended