Course Outline

PSYC3241

Psychobiology of Memory

School of Psychology

Faculty of Science

T1, 2021

1. Staff

Position	Name	Email	Consultation times and locations	Contact Details
Course Convenor	Prof. Rick Richardson	r.richardson@unsw.edu.au	By appointment, Mathews 511	9385 1048
Lecturer	Prof. Rick Richardson	r.richardson@unsw.edu.au	By appointment, Mathews 511	9385 1048
Lecturer	Associate Professor Bronwyn Graham	bgraham@psy,unsw.edu.au	By appointment 1302 Mathews	9385 3886
Lecturer	Dr Kathryn Baker	k.baker@unsw.edu.au	By appointment, Mathews 508	9065 1795
Tutors	Sylvia Harmon-Jones Aqsa Shahid Tayla McCutcheon	s.harmon-jones@unsw.edu.au aqsa.shahid@unsw.edu.au tayla.mccutcheon@student.unsw.edu.au	By appointment	Via email

2. Course information

Units of credit: 6

Pre-requisite(s):   PSYC2001 and PSYC2081

Teaching times and locations: PSYC3241 Timetable

2.1 Course summary

This course examines research and theory on memory as they underpin adaptive behaviour. The focus is primarily on animal research but the application of this work to the understanding of memory in humans will be made explicit. For example, the implications of this work for our understanding of memory disorders in humans, and the origin and treatment of clinical disorders will be discussed. The course is divided into the following broad topics: basic concepts of memory; consolidation and reconsolidation; fear memory; spatial memory; extinction of learned fear; forgetting; and translating research from animals to humans.

The laboratory component of the course will provide "hands on" experience in observing various aspects of rodent behaviour that are frequently used in studies on the psychobiology of memory. Further, the laboratory component of the course will provide an opportunity for small group discussion/debate on various issues relevant to the material described in the lecture component of the course (note that this will not involve a revision of the lecture material, but rather consideration of related material).

Note that the "hands-on" part of the tutorial will involve handling and experimentation on animal subjects (rats); this work will be group-work (e.g., groups of students will be doing any particular task, and only some will need to actually touch the rats).

Given COVID-related restrictions this year we can only make these face-to-face animal exercises available to **a maximum of 10 students per tutorial** (working in groups of 5). Access to these activities will be provided on a "first-come, first serve" basis. That is, the first 10 students who register their interest in doing these activities will be allowed to participate. If there are more than 10 students from a tutorial that wish to participate, we will make available any empty "slots" in other tutorials. If someone is allocated an "empty slot" in some tutorial other than the one they enrolled in, they will need to go back to their "regular" tutorial in the following weeks.

Note that these face-to face- activities will only happen in Weeks 2 and 3.

Students not engaging in the face-to-face activities in Weeks 2 and 3 should attend their regularly scheduled tutorials online to participate in an activity and/or discuss issues related to the course.

2.2 Course aims

The overall aim of this course is for students to develop and gain further understanding of the psychobiology of memory. Behavioural experiments demonstrating the basic concepts associated with memory, and forgetting, will be described as will experiments that are aimed at determining the neural bases of memory and forgetting.

2.3 Course learning outcomes (CLO)

At the successful completion of this course the student should be able to:

1. Demonstrate an advanced level of knowledge and understanding of the theoretical perspectives, and empirical research relating to the biological basis of behavior, memory, and forgetting.
2. Understand and apply research methods used in psychobiology.
3. Demonstrate practical skills in laboratory-based behavioural research with rodents.
4. Demonstrate effective verbal and written scientific communication skills.
5. Apply psychological principles to broader issues involving memory, including their role in understanding human mental disorders.

2.4 Relationship between course and program learning outcomes and assessments

CLO	1. Knowledge	2. Research Methods	3. Critical Thinking Skills	4. Values and Ethics	5. Communication, Interpersonal and Teamwork	6. Application	Assessment
	Program Learning Outcomes						
1.	Lectures, tutorials, lab practicals, online activities, formative quiz, discussion forum	Lectures, tutorials, lab practicals, online activities, formative quiz, discussion forum	Lectures, tutorials, lab practicals, online activities				Formative quiz, Mid-session exam, Proposal, Final exam
2.	Lectures, tutorials, lab practicals, online activities, formative quiz	Lectures, tutorials, lab practicals, online activities, formative quiz	Lectures, tutorials, lab practicals, online activities	Lectures, tutorials, lab practicals, online activities, formative quiz		Lectures, tutorials, lab practicals, online activities, formative quiz	Formative quiz, Mid-session exam, Proposal, Final exam
3.		Lectures, tutorials, lab practicals, online activities		Lectures, tutorials, lab practicals, online activities		Lectures, tutorials, lab practicals, online activities	Mid-session exam, Proposal, Final exam
4.			Lectures, tutorials, lab practicals, online activities		Tutorials, lab practicals, discussion forum		Proposal
5.	Lectures, tutorials, lab practicals, online activities, discussion forum			Lectures, tutorials, lab practicals, online activities, discussion forum		Lectures, tutorials, lab practicals, online activities, discussion forum	Mid-session exam, Proposal, Final exam

3. Strategies and approaches to learning

3.1 Learning and teaching activities

This course provides an advanced treatment of the neuroscience of learning and memory. It follows on, and assumes knowledge, from PSYC2081 Learning and Physiological Psychology. This course is complementary to PSYC3051 Physiology Psychology in the sense that both courses provide an advanced perspective on issues in biological psychology.

The laboratory component of the course will provide "hands on" experience in observing various aspects of rodent behaviour that are frequently used in studies on the psychobiology of memory and an opportunity for small group discussion/debate on various issues relevant to the material described in the lecture component of the course.

Attendance is monitored in the tutorial/lab component of the course. In order to meet the Course Learning Outcomes attendance at tutorials is essential in accordance with UNSW Assessment Implementation Procedure. Students are required to attend at least 80% of tutorial/lab classes, and be punctual in this attendance (i.e., coming late may mean that you will be marked as absent). **Students should make sure that their name has been marked on the class roll for each class that they attend**. Failure to meet these specified attendance requirements may result in course failure. Explanations for an occasional absence from a class or requests for permission to be absent from a class should be discussed with the lecturer / tutor, and where applicable, accompanied by a medical certificate.

The Discussion Forum on Moodle provides students with an opportunity to question and clarify course content. Students are strongly encouraged to engage with this forum by posting questions or comments, and reading, answering, or replying to other student's posts to enhance understanding of the content, critical thinking, and written communication skills.

An online formative quiz is available for students and provides an opportunity to evaluate understanding of course material prior to the census date.

3.2 Expectations of students

It is expected that students are aware of UNSW Assessment policy and understand how to apply for special consideration if they are unable to complete an assignment/exam due to illness and/or misadventure.

It is expected that students have read the School of Psychology Student Guide.

All new updates and announcements will be made on the 'Announcements' forum on the Moodle page and/or by email. It is the student's responsibility to check Moodle and their student emails regularly to keep up to date.

All students must read the Course Outline and then complete the Course Information Quiz to demonstrate their understanding of course administration information.

The final exam for this course will take place during the UNSW examinations period. Students should not arrange travel during the UNSW exam period until the date of the final exam has been released. Students who arrange travel prior to the release of the final exam date will not be granted consideration in the event they are scheduled to be away when the final exam is to occur.

Students registered with Equitable Learning Services must contact the course coordinator immediately if they intend to request any special arrangements for later in the course, or if any special

arrangements need to be made regarding access to the course material. Letters of support must be emailed to the course coordinator as soon as they are made available.

4. Course schedule and structure

Each week this course typically consists of approximately 2 hours of lecture material, 1.25 hours of tutorials, and 8 hours of online modules and/or self-determined activities (i.e., reading, work on assessments, exam preparation, and revision).

Week	Lecture topic/s	Tutorial/lab topics	Online modules	Self-determined activities
Week 1 15/02/2021	Memory consolidation, modulation, and reconsolidation	"critical analysis" examples how to write a research proposal online	see course Moodle page for details for any specific modules for this week	Readings on: • memory consolidation • memory modulation • memory reconsolidation Revision; mid-semester exam prep; group work on research proposal
Week 2 22/02/2021	Fear memory Development of memory	hands-on animal exercises or online tutorial	see course Moodle page for details for any specific modules for this week	Readings on: • learned fear • memory development Revision; mid-semester exam prep; group work on research proposal
Week 3 1/03/2021	Infantile amnesia Neurogenesis and memory	hands-on animal exercises or online tutorial	see course Moodle page for details for any specific modules for this week Formative quiz	Readings on: • infantile amnesia • neurogenesis Revision; mid-semester exam prep; group work on research proposal
Week 4 8/03/2021	Behavioural and neural aspects of fear extinction (Part 1)	Ethics debate online	see course Moodle page for details for any specific modules for this week Brain Game 1	Readings on: • extinction Revision; mid-semester exam prep; group work on research proposal
Week 5 15/03/2021	Behavioural and neural aspects of fear extinction (Part 2) **Mid-term exam**	Group presentations online	see course Moodle page for details for any specific modules for this week	Readings on: • neural mechanisms of fear extinction Revision; mid-semester exam; group work on research proposal

Week 6 22/03/2021	No lectures – Flex week	No labs – Flex week		No work – Flex week
Week 7 29/03/2021	Mechanisms of sex differences in extinction (Part 1) Mechanisms of sex differences in extinction (Part 2)	Presentation feedback online	see course Moodle page for details for any specific modules for this week	Readings on: • sex differences • sex hormones and memory Revision; individual work on research proposal
Week 8 05/04/2021	Stress, sex, and learning Motherhood	Self-directed tutorial on unlearned fear in own time – no scheduled tutorial meeting	see course Moodle page for details for any specific modules for this week	Readings on: • motherhood • stress Revision; individual work on research proposal
Week 9 12/04/2021	Adolescence and fear regulation	No tutorial activities	see course Moodle page for details for any specific modules for this week	Readings on: • adolescence and fear regulation Revision; individual work on research proposal
Week 10 19/04/2021	Spatial memory; Individual differences in memory	Brain Game 2 online	see course Moodle page for details for any specific modules for this week	Readings on: • spatial memory across species • individual differences in memory Revision; individual work on research proposal
Exam period 01/05/2021				Exam preparation, revision

5. Assessment

5.1 Assessment tasks

All assessments in this course have been designed and implemented in accordance with UNSW Assessment Policy.

Assessment task	Length	Weight	Mark	Due date
Assessment 1: Formative quiz	3 MCQ & 1 short answer	0% (formative)	N/A	N/A
Assessment 2: Mid-session exam	45 min	20%	/100	15/03/2021
Assessment 3: Research proposal	1000-1250 words	30%	/100	23/04/2021
Assessment 4: Final exam	2 hrs	50%	/100	Exam period

Assessment 1: This online quiz will consist of 3 multiple-choice questions and one short-answer question, and will be released on Friday 5 March. Students can take it whenever they wish, but it is designed to provide some formative feedback in terms of whether the course material is being understood. The answers are given at the end of the quiz.

Assessment 2: This 45-min **online** exam (could consist of multiple choice, short- and/or long-answer, and/or fill-in-the-blank questions; more specific details will be provided prior to the exam) will be given on Monday 15 March at 10-11 am (i.e., in regularly-scheduled lecture time period). This exam will be based on material covered in all the lectures posted for the first 3 weeks of the course as well as the readings designated as "assessable" on the course Moodle page for those three weeks.

Assessment 3: This involves a written research proposal on a proposed experiment (based on material/ideas covered in the course). An electronic version of the assignment must be submitted to the course's Moodle module by 4 PM on 23rd April (Friday of Week 10) to allow for plagiarism checks via Turnitin. Penalties will be imposed for late submission of this assignment (see 5.3), and for plagiarism. The deadline for absolute fail (i.e., **the date of submission after which the task will not be assessed is 4 pm on 7th May; any proposals submitted after that time will be given a 0**).

Assessment 4: This 2-hr exam (which could consist of multiple choice, short- and/or long-answer, and/or fill-in-the-blank questions; more specific details will be provided prior to the exam) will be given during the formal exam period. This exam will cover material from the lectures given in Weeks 4-10 of the course as well as the readings designated as "assessable" on the course Moodle page for those weeks (i.e., the material from the first 3 weeks will not be examined in the final exam).

UNSW grading system: https://student.unsw.edu.au/grades

UNSW assessment policy: https://student.unsw.edu.au/assessment

5.2 Assessment criteria and standards

Further details and marking criteria for each assessment will be provided to students closer to the assessment release date (see 4.1: UNSW Assessment Design Procedure).

5.3 Submission of assessment tasks

Assessment 3: In accordance with UNSW Assessment Policy the research proposal must be submitted online via Turnitin. No paper or emailed copies will be accepted.

Late penalties: deduction of marks for late submissions will be in accordance with School policy (see: Psychology Student Guide).

Special Consideration: Students who are unable to complete an assessment task by the assigned due date can apply for special consideration. Special consideration applications must be submitted to Student Central within 3 working days of the assessment due date along with a physical copy of the supporting documentation. Students who have experienced significant illness or misadventure during the assessment period may be eligible. Only circumstances deemed to be outside of the student's control are eligible for special consideration (see - https://student.unsw.edu.au/special-consideration). In the case of take-home assessment tasks, misadventure must occur for at least 3 consecutive days during the assessment period. If approved, students may be given an extended due date to complete take-home assessments, or an alternative assessment may be set.

Alternative assessments: will be subject to approval and implemented in accordance with UNSW Assessment Implementation Procedure.

Supplementary examinations: will be made available for students with approved special consideration application and implemented in accordance with UNSW Assessment Policy.

5.4. Feedback on assessment

Feedback on all pieces of assessment in this course will be provided in accordance with UNSW Assessment Policy.

Assessment	When	Who	Where	How
Formative quiz	Immediate	Richardson	Online	Moodle
Mid-session exam	29/03/2021	Richardson	Online	Moodle
Research proposal	7/05/2021	Tutor	Online	Moodle
Final exam	TBA	N/A	N/A	N/A

6. Academic integrity, referencing and plagiarism

The APA (7th edition) referencing style is to be adopted in this course. Students should consult the publication manual itself (rather than third party interpretations of it) in order to properly adhere to APA style conventions. Students do not need to purchase a copy of the manual, it is available in the library or online. This resource is used by assessment markers and should be the only resource used by students to ensure they adopt this style appropriately:

Referencing is a way of acknowledging the sources of information that you use to research your assignments. You need to provide a reference whenever you draw on someone else's words, ideas or research. Not referencing other people's work can constitute plagiarism.

Further information about referencing styles can be located at https://student.unsw.edu.au/referencing

Academic integrity is fundamental to success at university. Academic integrity can be defined as a commitment to six fundamental values in academic pursuits**:** honesty, trust, fairness, respect, responsibility and courage.[1] At UNSW, this means that your work must be your own, and others' ideas should be appropriately acknowledged. If you don't follow these rules, plagiarism may be detected in your work.

Further information about academic integrity and **plagiarism** can be located at:

- The *Current Students* site https://student.unsw.edu.au/plagiarism**,** and

- The *ELISE* training site http://subjectguides.library.unsw.edu.au/elise

The *Conduct and Integrity Unit* provides further resources to assist you to understand your conduct obligations as a student: https://student.unsw.edu.au/conduct.

7. Readings and resources

Textbook	Nil
Course information	Available on Moodle
Required readings	School of Psychology Student Guide. Refer to Section 4 of this outline and the Assessable Readings listed under each week on Moodle
Recommended internet sites	UNSW Library UNSW Learning Centre ELISE Turnitin Student Code of Conduct Policy concerning academic honesty Email policy UNSW Anti-racism policy statement UNSW Equity and Diversity policy statement UNSW Equal opportunity in education policy statement

8. Administrative matters

The School of Psychology Student Guide contains School policies and procedures relevant for all students enrolled in undergraduate or Masters psychology courses, such as:

- Attendance requirements

- Assignment submissions and returns

- Assessments

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[1] International Center for Academic Integrity, 'The Fundamental Values of Academic Integrity', T. Fishman (ed), Clemson University, 2013.

- Special consideration
- Student code of conduct
- Student complaints and grievances
- Equitable Learning Services
- Health and safety

It is expected that students familiarise themselves with the information contained in this guide.

9. Additional support for students

- The Current Students Gateway: https://student.unsw.edu.au/
- Academic Skills and Support: https://student.unsw.edu.au/academic-skills
- Student Wellbeing, Health and Safety: https://student.unsw.edu.au/wellbeing
- Equitable Learning Services: https://student.unsw.edu.au/els
- UNSW IT Service Centre: https://www.it.unsw.edu.au/students/index.html