FACULTY OF SCIENCE

PSYCHOLOGY

PSYC3051

PHYSIOLOGICAL PSYCHOLOGY

SESSION 2, 2012

Faculty of Science - Course Outline - 2012

1. Information about the Course

NB: Some of this information is available on the UNSW Virtual Handbook[1]

Year of Delivery	2012
Course Code	PSYC3051
Course Name	PHYSIOLOGICAL PSYCHOLOGY
Academic Unit	PSYCHOLOGY
Level of Course	3RD YEAR
Units of Credit	6
Session(s) Offered	S2
Assumed Knowledge, Prerequisites or Co-requisites	PSYC2001, PSYC2081
Hours per Week	4
Number of Weeks	12
Commencement Date	16/07/2012

Summary of Course Structure (for details see 'Course Schedule')

Component	HPW	Time	Day	Location
Lecture 1	*1*	*2 – 3 PM*	*Mon*	*CLB4*
Lecture 2	*1*	*9 - 10 AM*	*Thur*	*CLB2*
Laboratory classes	*2*			
Lab – Class 1		*3 - 5 PM*	*Mon*	*Mat203, TBC*
Lab – Class 2		*9 - 11 PM*	*Tues*	*Mat203, TBC*
Lab – Class 3		*1 - 3 PM*	*Tues*	*Mat203, TBC*
Lab – Class 4		*3 - 5 PM*	*Tues*	*Mat203, TBC*
Lab – Class 5		*10 AM – 12 PM*	*Thur*	*Mat203, TBC*
TOTAL	4			
Special Details				

2. Staff Involved in the Course

Staff	Role	Name	Contact Details	Consultation Times
Course Co-ordinator		*Prof. Simon Killcross*	*Ph: 93853034* *s.killcross@unsw.edu.au*	*By appointment* *MAT1013*
Additional Teaching Staff	Lecturers	Prof. Fred Westbrook	Ph: 93853033 f.westbrook@unsw.edu.au	TBC
		Dr. Gavan McNally	Ph: 93853044 g.mcnally@unsw.edu.au	TBC
		Dr. Ehsan Arabzadeh	Ph: 93853523 e.arabzadeh@unsw.edu.au	TBC
	Tutors & Demonstrators	Melissa Sharpe	Rm: Mat 1502; m.sharpe@student.unsw.edu.au	TBC
		Jean-Richard Dit Bressel	Rm: Mat XXX; p.jean-richardditbressel@unsw.edu.au	TBC
		Kate Hutton-Bedbrook	Rm: Mat 1502; kate@student.unsw.edu.au	TBC
		Stephanie Roughly	Rm: Mat 1502; stephanie.kelly@unsw.edu.au	TBC

[1] UNSW Virtual Handbook: http://www.handbook.unsw.edu.au/2011/index.html

3. Course Details

Course Description[2] (Handbook Entry)	An overview of the neuroscience of learning and memory. Emphasis is placed on contemporary theories and approaches including the role of interactions between environmental events, synapses and genes.
Course Aims[3]	**Lectures:** This course deals with elementary learning processes and their neurobiological substrates. These include: learning about relations between stimuli (e.g., Pavlovian conditioning); learning about relations between actions and outcomes (e.g., instrumental conditioning); how goals are represented and how they drive behavior; and the development of habitual and compulsive behaviours. There will be an overview of the role of appetitive and aversive motivation in learning, behavior and psychopathology. Emphasis will be placed on contemporary theories and approaches, including discussion of the role of molecular signaling cascades and neuronal coding in learning and memory, the role of neural systems in supporting behaviour, and examples of where changes in such systems are thought to underpin human mental disorders. The course is divided into four sections: 1) Westbrook: Behavioural studies of learning and memory 2) McNally: Physiological studies of learning and memory 3) Arabzadeh: Neural coding of choices and decisions 4) Killcross: Neural basis of action and choice **Lab course:** The primary goal of laboratory component of the course is to provide "hands on" experience in various aspects of research in physiological psychology. As such, a significant component of the course will involve handling and experimentation on animal subjects (rats). Given the "hands on" approach in this tutorial course, it is imperative that you contact your lecturer as soon as possible if obligations of any kind prevent you from taking part in these activities.
Major Topics (Syllabus Outline)	**Westbrook (7 lectures, weeks 1-4** — Introduction to physiological psychology; Behavioural studies of learning and memory **McNally (6 lectures, weeks 4-7)** — Physiological studies of learning and memory **Arabzadeh (5 lectures, weeks 7-9†)** — Neural coding of choices and decisions **Killcross (4 lectures, weeks 10-12†)** — Neural basis of action and choice †Lectures by Killcross and Arabzadeh may occur in the reverse order; **no lecture** on Monday 1 October (week 11) due to Labour Day holiday. ***Laboratory classes (Weeks 2 – 10, 12)*** ***Please note: Labs commence in Week 2.*** Week 2: Introduction to research proposal presentation Week 3: Introduction to practical sessions Week 4: Laboratory practical 1 Week 5: Laboratory practical 2 Week 6: Laboratory practical 3 Week 7: Laboratory practical 4 Week 8: Research proposal presentation 1 Week 9: Research proposal presentation 2 Week 10: Research proposal presentation 3 **Week 11: No Labs (Labour Day 1/10) Prepare poster presentation for assessment** Week 12: Presentation of research proposal poster
Relationship to Other Courses within the Program	This course provides an advanced treatment of the neuroscience of learning, memory, and motivation. It follows on, and assumes knowledge, from *PSYC2081 Learning and Physiological Psychology*. This course is complementary to *PSYC3241 Psychobiology of Memory and Motivation* in the sense that both courses provide an advanced perspective on issues in biological psychology.

[2] UNSW Virtual Handbook: http://www.handbook.unsw.edu.au/2011/index.html
[3] Learning and Teaching Unit: http://www.ltu.unsw.edu.au

4. Graduate Attributes Developed in this Course		
School of Psychology Graduate Attributes[4]	**Select the level of FOCUS** *0 = NO FOCUS* *1 = MINIMAL* *2 = MINOR* *3 = MAJOR*	**Activities / Assessment**
1) Knowledge and Understanding of Psychology	*3*	Participation in lectures & tutorials – assessed in exam and research proposal presentation and forming an advanced understanding of the major concepts, theoretical perspectives, empirical findings, and historical trends in multiple aspects of physiological psychology
2) Research Methods in Psychology	3	Development of research proposal, and participation in laboratory experiments, employing sound research design, data analysis and interpretation, and the appropriate use of technologies
3) Critical Thinking Skills in Psychology	3	Development of research literature review for research proposal, showing use of critical and creative thinking, sceptical inquiry, and the scientific approach to solve problems related to behaviour and mental processes
4) Values in Psychology	2	Ongoing discussion of the ethical issues surrounding animal research, and the development of an experimental protocol to yield meaningful empirical evidence, showing a knowledge of the value of empirical evidence, tolerance of ambiguity during the search for greater understanding of behaviour and the ability to act ethically in the development of experiments involving animals.
5) Communication Skills in Psychology	3	Development of in-class presentations of research literature review and proposals encouraging you to communicate effectively in a variety of contexts, both as presenter and critical audience. Participation in demonstration experiments showing collaboration in group work.
6) Learning and the Application of Psychology	2	Be able to apply psychological principles to broader issues derived from physiological psychology, including its role in understanding human mental disorders and the biological basis of cognitive processes, behaviour and learning.
Student Learning Outcomes	By the end of this course you will have: 1. A knowledge and understanding of psychology at an advanced level with regard to: 1.1. The biological basis of behaviour, learning, motivation and emotion, and additional insight into the brain basis of abnormal psychological conditions. 1.2. Physiological psychology as a discipline and its major objectives 1.3. Major themes in physiological psychology and behavioural vs. neural perspectives on learning, motivation and cognition 1.4. The ability to explain psychological phenomena using concepts, language and major theories drawn from physiological psychology 2. An advanced knowledge of research methods in psychology, enabling you to: 2.1. Describe, apply and evaluate different research methods used in physiological psychology 2.2. Demonstrate practical skills in laboratory-based psychological research 2.3. Locate, evaluate and use information appropriately in the research process 2.4. Use basic web-search, spreadsheet, and data analysis programs. 2.5. Design and conduct basic studies to address psychological questions: frame research questions; undertake literature searches; critically analyse theoretical and empirical studies; formulate testable hypotheses; operationalise variables; choose an appropriate methodology; make valid and reliable measurements; analyse data and interpret results. 3. Developed advanced critical thinking skills in Psychology, enabling you to: 3.1. Apply knowledge of the scientific method in thinking about problems related to behaviour and mental processes. 3.2. Question claims that arise from myth, stereotype, pseudo-science or untested assumptions. 3.3. Demonstrate an attitude of critical thinking that includes persistence, open-mindedness, and intellectual engagement. 3.4. Demonstrate a capacity for higher-order analysis, including the capacity to identify	

[4] The *Graduate Attributes of the Australian Undergraduate Psychology Program* was produced as part of the Carrick Associate Fellowship project, "Sustainable and evidence-based learning and teaching approaches to the undergraduate psychology curriculum", and "Designing a diverse and future-oriented vision for undergraduate psychology in Australia", a Discipline-based Initiative funded by the Carrick Institute for Learning and Teaching in Higher Education (see Appendix II), and supported by the Australian Psychological Society, and the University of New South Wales (School of Psychology; Learning and Teaching@UNSW)

	recurrent patterns in behaviour. 3.5. Evaluate the quality of information, including differentiating empirical evidence from speculation. 3.6. Identify and evaluate the source and context of behaviour. 3.7. Recognise and defend against the major fallacies of human thinking. 3.8. Evaluate issues and behaviour using different theoretical and methodological approaches. 3.9. Use reasoning and evidence to recognise, develop, defend, and criticise arguments and persuasive appeals. 3.10. Demonstrate creative and pragmatic problem solving. 4. Developed an advanced appreciation of values in Psychology, including the ability to: 4.1. Use information in an ethical manner 4.2. Explain how prejudicial attitudes and discriminatory behaviours might exist in oneself and in others. 4.3. Exhibit a scientific attitude in critically thinking about, and learning about, behaviour, and in creative and pragmatic problem solving. 4.4. Evaluate psychologists' behaviour in psychological research in relation to the Australian Psychological Society Code of Ethics and the complementary Ethical Guidelines. 4.5. Promote evidence-based approaches to understanding and changing human behaviour. 5. Developed effective communication skills in Psychology, including the ability to: 5.1. Write effectively in a variety of formats (essays, research proposals) and for a variety of purposes (e.g., informing, arguing). 5.2. Demonstrate effective oral communication skills in various formats (e.g., group discussion, presentation). 5.3. Demonstrate effective interpersonal communication skills including : listening accurately and actively; provide constructive feedback to others; adopt flexible techniques to communicate sensitively and effectively with diverse ethnic and cultural partners, including in the context of team-work. 5.4. Collaborate effectively, demonstrating an ability to: work with groups to complete projects within reasonable timeframes in an ethical manner. 6. Come to understand and apply psychological principles derived from an understanding of physiological psychology in a broader framework, including the ability to: 6.1. Apply psychological concepts, theories, and research findings to solve problems in everyday life and in society – including issues of human mental health and aging. 6.2. Demonstrate insightful awareness of one's feelings, motives, and cognitions based on principles of physiological psychology.

5. Course Schedule

Some of this information is available on the Virtual Handbook & the UNSW Timetable. **Week**	**Lectures, Topics & Lecturers**	**Laboratory**	**Assignment and Submissions (see also 'Assessment Tasks & Feedback')**
Week 1	Pavlovian Conditioning **Westbrook**	*NO LABS*	
Week 2	Instrumental Conditioning **Westbrook** *Mid-session exam*	Introduction to research proposal presentation	
Week 3	Motivation and incentive learning **Westbrook**	Introduction to practical sessions	*You will be assigned to groups in this session, so attendance is essential*
Week 4	Matching and choice **Westbrook**	Laboratory practical 1	Formative MCQs released; poster template released
Week 4/5	Introduction to physiological psychology **McNally**	Laboratory practical 2	
Week 6	Neural basis of habituation and sensitisation **McNally**	Laboratory practical 3	
Week 7	Neural basis of conditioning **McNally**	Laboratory practical 4	
Week 7/8	Neural basis of sensory coding **Arabzadeh**	Research proposal presentation **I**	Research proposal presentation (Weeks 8-10) and poster presentation and submission (Week 12)
Week 9	Neural coding of decision making **Arabzadeh**	Research proposal presentation **II**	
Week 10	Representation of goals **Killcross**	Research proposal presentation **III**	
Weeks 11/12 N.B. No lecture on Monday 1 October due to Labour Day holiday	Habit formation **Killcross**	*NO LABS*	

6. Assessment Tasks and Feedback

Task	Knowledge & abilities assessed	Assessment Criteria	% of total mark	Date of		Feedback		
				Release	Submission	WHO	WHEN	HOW
Formative MCQ questions	Research, inquiry and analytical thinking abilities Capability and motivation for intellectual development	Lectures 1-7, weeks 1-4 (**Westbrook**)	0	Week 4 Lecture 1 Mon 6 August	N/A	Online	As taken	Online
Research Proposal and Poster Presentations	Research, inquiry and analytical thinking abilities Communication Information literacy	See below	40	Week 2	Tutorial weeks 8-10; Poster end week 12	Tutor	Tutorial Weeks 8-10, 12	Verbal
Final Exam	Research, inquiry and analytical thinking abilities Capability and motivation for intellectual development	All lectures	60	Exam Period	Exam Period			

Formative MCQs (do not contribute to your final mark): Monday 6th August
These questions will be based on the first seven lectures only (Westbrook, weeks 1-4), and will take the form of a selection of MCQs of the sort that will appear in the final examination. These questions will be presented on Blackboard; when, how, and if you choose to complete them is up to you. There will be no formal assessment of your performance in this task – it is entirely to allow you to judge your own performance in, and understanding of, the course at this time, and to help you to prepare for the final examinations. It is strongly recommended that you make use of this opportunity to prepare for the final examination, and seek feedback from tutors regarding the correct answers (and the reasons behind them).

Research Proposal and Poster Presentations (40% of your final mark): Oral presentations in tutorials (weeks 7-10); poster presented and submitted week 12 (4:30pm, Friday 12 October)
You are expected to conceive, design, and propose a research project in Behavioural or Cognitive Neuroscience. The specific research area and research question is determined by you. However, it is expected to be based upon the current literature. You will be expected to systematically review the relevant literature, identify an outstanding question of interest, and design an experiment that will address this question. This project will be assessed in two parts. The first part comprises oral presentations of your research proposal in Weeks 8, 9 or 10 laboratory classes (12.5% of the marks for this assignment). In the first presentation (5 minutes maximum) you will very briefly review your proposed topic area and identify a research question, together with a brief description of how you would approach this. Your tutor will provide you with feedback in the time available – if your presentation takes the full time allotted, then there will be little or no time for feedback, so plan your presentation carefully**.** Based on this feedback, you will prepare a second presentation, which covers in more detail you research question, a proposed experiment, and some potential findings and possible interpretations and implications. You will have 10 minutes for this. **Completion of the oral presentations is a condition of completing the entire assessment.** The second part is a poster presentation of your proposed experiment, based on a template to be supplied to you in week 4, to be presented in class in week 12, and hard and electronic copies submitted at the end of week 12 following the procedures below (87.5% of your mark for this assignment). This poster will be based on the presentations given in class, allowing you to incorporate feedback from your presentations (and those of others) into your final completed work.

These presentations will be marked according to the following criteria:
Is the literature review appropriate to the research problem?
Do the presentations include a well-formulated problem?
Do the presentations explain clearly what experiment will be done?
Will the experiment presented address the question of interest?
Have you chosen the most appropriate approach to testing the question of interest?
Is the experiment presented feasible?
Are the expected results explained clearly and correctly?

Final exam (60% of your final mark): Exam period
This exam is based on all lecture topics, and will comprise a 2-hr examination with 80 multiple choice questions.

Important additional information regarding assessment procedures in the School of Psychology:

1. Assessment information and assessment structure:
   1.1. Deferred and alternative assessment materials may be in a different format from the original (i.e. short answers instead of MC questions, oral examination instead of written essay etc). In addition, the original and deferred assessment materials may also differ in the specific content, although overall both will be sampled for the same relevant course material. These principles will apply to both deferred final examination and alternative in-session assessments.
   1.2. Students can attend the final examination only once, either in the regularly scheduled or deferred examination period. As students will not be permitted to attend both the regularly scheduled and deferred examinations, you are advised not to attend an exam as originally scheduled if sick on the day of the exam. Instead, you should ensure you obtain the appropriate medical certificate to support your case for sitting the deferred exam. In such a case, a formal application for special consideration must be submitted to Student Central within three working days of the assessment to which it refers.
   1.3. The deferred examination opportunity for each course will be offered only once.

2. Assessment submissions (if applicable):
   2.1. Hard copies of any assignments must be submitted to the drop box located at the School Office on Level 10 (Mathews Room 1011) by 4.30pm on the day it is due or earlier. These will be date stamped by the School Office and taken as a formal evidence of submission. In addition, an electronic version must also be lodged into the Blackboard course module as a Turnitin assignment for plagiarism checking, and as insurance in the case of misplaced hard copies of submitted assignments. If you fail to do this, there will be no proof that the assignment was handed in on time and onus is on you to prove submission.
   2.2. Late submissions may not receive detailed feedback.

7. Additional Resources and Support

Text Books	*No set text*
Course Manual	*Available via course website*
Required Readings	*Available via course website*
Recommended Internet Sites	*http://lms-blackboard.telt.unsw.edu.au* *http://subjectguides.library.unsw.edu.au/content.php?pid=7030&sid=49947* *http://www.psych.upenn.edu/~baron/labrep.html*

8. Administrative Matters

Expectations of Students	*School of Psychology Student Guide is available via the School website (http://www.psy.unsw.edu.au/students/current/files/Student_Guide.pdf)*		
Assignment Submissions	*School of Psychology Student Guide is available via the School website (http://www.psy.unsw.edu.au/students/current/files/Student_Guide.pdf)*		
Assessment Procedures	*School of Psychology Student Guide is available via the School website (http://www.psy.unsw.edu.au/students/current/files/Student_Guide.pdf)*		
Equity and Diversity	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.student**equity**.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. Early notification is **essential** to enable any necessary adjustments to be made.		
Grievances[5]	**School Contact**	**Faculty Contact**	**University Contact**
	Dr. Jacquelyn Cranney Office: Mathews, Rm 509 Telephone: 9385-3527 Fax: (61-2) 9385-3641 Email: j.cranney@unsw.edu.au	Ass. Prof Julian Cox Associate Dean (Education) j.cox@unsw.edu.au Tel: 9385 8574 or Dr Gavin Edwards Associate Dean (UG programs) g.edwards@unsw.edu.au Tel: 9385 6125	Graduate Research School Tel: 9385 5500 UNSW Counselling and Psychological Services[6] counselling@unsw.edu.au Tel: 9385 5418

[5] UNSW Code of Conduct: http://www.gs.unsw.edu.au/policy/documents/codeofconduct.pdf
UNSW student complaint policy: http://www.gs.unsw.edu.au/policy/documents/studentcomplaintpolicy.pdf
[6] UNSW Counselling and Psychological Services http://www.counselling.unsw.edu.au/index.html

10. UNSW Academic Honesty and Plagiarism

The following information should appear in all course outlines or be available on the web in unaltered form. It is recommended, however, that additional discipline-specific advice and/or material be added to assist students wherever possible. UNSW has information on the Learning Centre website[7]:

What is Plagiarism?

Plagiarism is the presentation of the thoughts or work of another as one's own.
*Examples include:

- direct duplication of the thoughts or work of another, including by copying material, ideas or concepts from a book, article, report or other written document (whether published or unpublished), composition, artwork, design, drawing, circuitry, computer program or software, web site, Internet, other electronic resource, or another person's assignment without appropriate acknowledgement;
- paraphrasing another person's work with very minor changes keeping the meaning, form and/or progression of ideas of the original;
- piecing together sections of the work of others into a new whole;
- presenting an assessment item as independent work when it has been produced in whole or part in collusion with other people, for example, another student or a tutor; and
- claiming credit for a proportion a work contributed to a group assessment item that is greater than that actually contributed.†

For the purposes of this policy, submitting an assessment item that has already been submitted for academic credit elsewhere may be considered plagiarism.

Knowingly permitting your work to be copied by another student may also be considered to be plagiarism.

Note that an assessment item produced in oral, not written, form, or involving live presentation, may similarly contain plagiarised material.

The inclusion of the thoughts or work of another with attribution appropriate to the academic discipline does *not* amount to plagiarism.

The Learning Centre website is main repository for resources for staff and students on plagiarism and academic honesty. These resources can be located via:

www.lc.unsw.edu.au/plagiarism

The Learning Centre also provides substantial educational written materials, workshops, and tutorials to aid students, for example, in:

- correct referencing practices;
- paraphrasing, summarising, essay writing, and time management;
- appropriate use of, and attribution for, a range of materials including text, images, formulae and concepts.

Individual assistance is available on request from The Learning Centre.

Students are also reminded that careful time management is an important part of study and one of the identified causes of plagiarism is poor time management. Students should allow sufficient time for research, drafting, and the proper referencing of sources in preparing all assessment items.

* Based on that proposed to the University of Newcastle by the St James Ethics Centre. Used with kind permission from the University of Newcastle
† Adapted with kind permission from the University of Melbourne.

[7] http://www.lc.unsw.edu.au/plagiarism/