FACULTY OF SCIENCE

SCHOOL OF PSYCHOLOGY

PSYC 3211

COGNITIVE SCIENCE

SEMESTER 2, 2017

1. Information about the Course

FACULTY	Science
SCHOOL OR DEPARTMENT	Psychology
COURSE CODE	PSYC3211
COURSE NAME	Cognitive Science
SEMESTER	Semester 2	**YEAR**	2017
UNITS OF CREDIT	6	**LEVEL OF COURSE**	3
ASSUMED KNOWLEDGE, PREREQUISITES OR CO-REQUISITES	PSYC2001 and PSYC2071
SUMMARY OF THE COURSE	See below

2. Staff Involved in the Course

COURSE COORDINATOR

Name	Phone	Email	Office	Contact Time & Availability
Professor Ben Newell	51606	ben.newell@unsw.edu.au	Mats 712	By Appointment

LECTURERS

Name	Phone	Email	Office	Contact Time & Availability
A/Prof. Mike Le Pelley	51294	m.lepelley@unsw.edu.au	Mats 1003	By Appointment
Professor Brett Hayes	53713	b.hayes@unsw.edu.au	Mats 713	By Appointment
Dr Chris Donkin	59444	c.donkin@unsw.edu.au	Mats 706	By Appointment
GUEST LECTURERS				
Dr Rachel Stephens		r.stephens@unsw.edu.au	Mat 703	By Appointment

TUTORS & DEMONSTRATORS

Name	Phone	Email	Office	Contact Time & Availability
Mr Arthur Kary		a.kary@unsw.edu.au	Mat 721	By Appointment
Mr Hanbit Cho		Hanbit.cho@unsw.edu.au	Mat 721	By Appointment

3. Course Timetable

Component	Class Number	Day	Time	Location
Lecture		Monday	5-6pm	CLB 1
Lecture		Wednesday	10-11am	CLB 4
LAB		Thursday	9-11am	MorvB LG2
LAB		Tuesday	11-1pm	MAT 306
LAB		Tuesday	2-4pm	MAT 313

4. Aims of the Course

This course aims to provide you with an advanced-level understanding of the current theories, methods and controversies in four key areas of cognitive psychology: 1) intelligence and thinking; 2) judgment and decision-making; 3) memory and 4) categorisation and reasoning. Wherever possible we will emphasise the links between these areas as well as links to other areas of Psychology including human development, neuropsychology and clinical psychology.

The *Intelligence and Thinking* strand will address questions like: What is intelligence? Do IQ tests really measure intelligence (and if not, what DO they measure)? Do different genders or people from different cultures differ in intelligence? What does it mean to be an expert? Why are experts better at solving problems than novices? Are animals intelligent, and do they differ in how intelligent they are?

The *Categorisation and Reasoning* strand a) examines how and why do people organise things in their physical and social environment into groups (e.g., dogs vs. cats, male vs. female, left-wing politician vs. right-wing politician)?, and b) how to they use such knowledge to reason and make predictions ? It will address issues such as how do people learn to categorise? How are categories organised? What are the functions of categories? How do people use categories in reasoning and decision-making? How many types of reasoning are there?

The Judgment and *Decision-making* strand attempts to answer the following questions: What is a decision? What makes a decision good or bad? Do we make rational decisions? Are we constrained to fall prey to systematic biases when we make judgments? Are we risk averse and if so what does that mean? Do we make different decisions on the basis of described versus experienced information? It will also touch on computational models of decision making, and the burgeoning field of "behavioural insights".

The (Models of) Memory strand focuses on the development and testing of computational models of working memory and long-term memory. The component is focused on how quantitative instantiations of models are necessary to provide a rigorous test of psychological theories.

This course adds new components to the study of cognitive psychology. Some topics are similar to those covered in PSYC2071, but where this is the case, a more detailed treatment will be given to these areas, and an attempt will be made to relate a number of theoretical ideas in thinking, intelligence, decision-making, reasoning and categorisation processes.

5. 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.	Historical perspectives on the development of the cognitive science approach in psychology.
		1.2.	A wide range of topics in cognitive science, including intelligence and thinking, memory, categorisation and decision making.
		1.3.	The links between these areas and how approaches can be integrated and brought to bear in applied problems.
2.	An advanced knowledge of research methods in psychology, enabling you to:	2.1.	Describe, apply and evaluate different research methods used in cognitive science.
		2.2.	Conduct literature searches and critically analyse theoretical and empirical studies.
		2.3.	Conceive an experiment to examine a question of importance within cognitive science.
		2.4.	Create suitable materials to conduct an experiment, collect valid and reliable measurements; analyse data using appropriate statistical tools and interpret the 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.	Demonstrate an attitude of critical thinking that includes persistence, open- mindedness, and intellectual engagement.
		3.3.	Evaluate the quality of information, including differentiating empirical evidence from speculation.
		3.4.	Evaluate issues and behaviour using different theoretical and methodological approaches.

	3.5.	Use reasoning and evidence to recognise, develop, defend, and criticise arguments and persuasive appeals.
	3.6.	Demonstrate creative and pragmatic problem solving.
4. Developed effective communication skills in Psychology, including the ability to:	4.1.	Write effectively in a variety of formats (essays, research proposals) and for a variety of purposes (e.g., informing, arguing).
	4.2.	Demonstrate effective oral communication skills in various formats (e.g., group discussion, presentation).
	4.3.	Demonstrate effective interpersonal communication skills including listening accurately and actively; provide constructive feedback to others.
	4.4.	Collaborate effectively, demonstrating an ability to: work with groups to complete projects within reasonable timeframes.

6. Graduate Attributes

School of Psychology Graduate Attributes[*]	Level of Focus 0 = No focus 1 = Minimal 2 = Minor 3 = Major	Activities/Assessment
1. Core knowledge and understanding	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 cognitive science.
2. Research methods in psychology	3	Understand, apply and evaluate basic research methods in psychology, including research design, data analysis and interpretation, and the appropriate use of technologies. This will involve the development of a research proposal, the creation of experiment materials, data analysis and interpretation of results.
3. Critical thinking skills	3	Development of a research literature review as part of a 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, research and professional ethics	2	Value empirical evidence; tolerate ambiguity during the search for greater understanding of behaviour and knowledge structures; act ethically and professionally; understand the complexity of sociocultural and international diversity; and reflect other values that are the underpinnings of psychology as a discipline. This will be addressed by your participation in experimental work.
5. Communication skills	2	Class discussion of theoretical issues in cognitive science. The research project component requires in-class presentation of experimental research design, analysis of findings and theoretical interpretation.
6. Learning and application of psychology	2	Apply psychological principles and theories from cognitive science research to bear on broader issues. Attempts will be made throughout the lectures to identify the applications of key empirical findings from research on decision making, intelligence, memory, categorization and reasoning to understanding the world around us.

7. Rationale for the Inclusion of Content and Teaching Approach

This course provides an advanced treatment of cognitive psychology. It follows on, and assumes knowledge, from PSYC2071 Perception and Cognition.

8. Teaching Strategies

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[*] 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).

Lectures: The primary objective of the lecture course is to investigate cognition in depth and to relate different areas of cognition to each other. You should come away from the course with a good understanding of the main issues in current research on categorisation, reasoning, memory, intelligence and decision making.

The main aim is to provide a conceptual understanding of the issues. The mid-session and final exam will test this understanding. We shall attempt to pose questions in this exam that test your conceptual understanding rather than your ability to reproduce the lecture notes.

Tutorials: The tutorials will be a combination of demonstrations of 'classic' experimental phenomena, hands on implementation of computational tools and the opportunity to devise, implement and analyse an experiment. As such the tutorials teach specific skills that are of central importance to cognitive scientists. These are: 1) to critically evaluate empirical findings and journal articles; 2) to design novel tests of existing theories and to implement those designs in laboratory-based experiments.

9.	10. Course Schedule			
Date	**Week**	**Lecture Topic & Lecturer**	**Tutorial/Lab Content**	**Suggested Readings**
24/7	1	Intelligence & Thinking 1-2 (Le Pelley)	*No Tutorial*	A suggested text for the Intelligence Component is: Mackintosh, N. *IQ and Human Intelligence* 2e

A suggested text for the Decision Making component is Newell et al. *Straight Choices: The Psychology of Decision Making* 2e |
31/7	2	Intelligence & Thinking 3-4 (Le Pelley)	*No Tutorial*	
7/8	3	Intelligence & Thinking 5-6 (Le Pelley)	Intelligence & Thinking Practical	
14/8	4	Decision Making 1-2 (Newell)	Research Experiment (Design)	
21/8	5	Decision Making 3-4 (Newell)	Decision Making Practical [ONLINE]	
28/8	6	Decision Making 5-6 (Newell)	**MID SESSION EXAM**	
4/9	7	Memory 1-2 (Donkin)	Research Experiment (Analysis)	
11/9	8	Memory 3-4 (Donkin)	Memory Practical	
18/9	9	Memory 5-6 (Donkin)	Research Experiment (Presentation)	
MID SESSION BREAK				
2/10	10	** No lecture on Monday** Reasoning 1 (Hayes)	**No tutorial**	
9/10	11	Reasoning 2-3 (Hayes)	Categorisation Practical	
16/10	12	Reasoning & Categorisation 4-5 (Stephens)	Reasoning Practical	
	13	**No lecture**	**No tutorial**	

11. Assessment

Assessment Task	Weight	Learning Outcomes Assessed	Graduate Attributes Assessed	Date of		Feedback		
				Release	Submission	Who	When	How
Mid Session Exam (short answer questions content from Intelligence & Thinking Lectures)	15%		1-6	Week 6	Week 6	Dr Le Pelley	Week 8	Written
Experimental Research Report (including oral group presentation)	40%	2.1-2.4, 3.1-3.6, 4.1-4.4	1-6	Week 3	Week 10	Tutor	Week 13	Written
Exam	45%	1.1-1.3, 2.1-2.4, 3.1-3.5	1-6	Exam Period	Exam Period	-	-	-

Course Requirements and Assessment:

• A mid-session exam in Week 6 will be worth 15% of the total mark. The exam will be conducted in tutorial/ laboratory classes. This will assess the course content from the lectures on Intelligence & Thinking. It will comprise short answer essay questions.

• The Written Assignment will begin in the tutorial in Week 3 and will be due by **midnight on Thursday October 5, Week 10.** In this assignment you will work in groups to design and conduct an experiment, and analyze the data. You will write up an INDIVIDUAL lab report communicating the results. This assignment has a limit of 2000 words and is worth 40% of the total mark. A late submission penalty of 2% per day applies (see School of Psychology Student Guide for more details). The assignment must be submitted via the Moodle course module as a Turnitin assignment for plagiarism checking.

• The final exam will be worth 45% of the total mark – it will assess content from lectures not assessed by the Mid-session exam (Decision Making, Memory and Categorisation & Reasoning). It will comprise short answer essay questions.

Assessment information and assessment structure.

Deferred and alternative assessment materials may be in a different format from the original. 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.

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, THEY SHOULD BE ADVISED NOT TO ATTEND THE EXAM AS ORIGINALLY SCHEDULED IF SICK ON THAT DAY. Instead, they should ensure the appropriate medical certificate to support their case for deferred medical 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.

A deferred examination opportunity for each course will be offered only ONCE.

12. **Expected Resources for Students**	
TEXTBOOKS	Specific readings will be provided during the course lectures and tutorials. A suggested text for the Intelligence Component is: Mackintosh, N. *IQ and Human Intelligence* 2e A suggested text for the Decision Making component is Newell et al. *Straight Choices: The Psychology of Decision Making* 2e
COURSE MANUAL	
REQUIRED READINGS	
RECOMMENDED INTERNET SITES	

13. **Course Evaluation & Development**
Courses are periodically reviewed and students' feedback is used to improve them. Feedback is gathered using various means including UNSW's My Experience process.

14. **Plagiarism & Academic Integrity**

What is plagiarism?

Plagiarism is presenting someone else's thoughts or work as your own. It can take many forms, from not having appropriate academic referencing to deliberate cheating.

UNSW groups plagiarism into the following categories:

- **Copying:** using the same or very similar words to the original text or idea without acknowledging the source or using quotation marks. This also applies to images, art and design projects, as well as presentations where someone presents another's ideas or words without credit.

- **Inappropriate paraphrasing:** changing a few words and phrases while mostly retaining the original structure and information without acknowledgement. This also applies in presentations where someone paraphrases another's ideas or words without credit. It also applies to piecing together quotes and paraphrases into a new whole, without referencing and a student's own analysis to bring the material together.

- **Collusion:** working with others but passing off the work as a person's individual work. Collusion also includes providing your work to another student before the due date, or for the purpose of them plagiarising at any time, paying another person to perform an academic task, stealing or acquiring another person's academic work and copying it, offering to complete another person's work or seeking payment for completing academic work.

- **Duplication:** submitting your own work, in whole or in part, where it has previously been prepared or submitted for another assessment or course at UNSW or another university.

Where can I find out more information?

In many cases plagiarism is the result of inexperience about academic conventions. The University has resources and information to assist you to avoid plagiarism. The first place you can look is the section about referencing and plagiarism in each Course Guide, as this will also include information specific to the discipline the course is from. There are also other sources of assistance at UNSW:

- **How can the Learning Centre help me?**

  The Learning Centre assists students with understanding academic integrity and how to not plagiarise. Information is available on their website: http://www.lc.unsw.edu.au/academic-integrity-plagiarism. They also hold workshops and can help students one-on-one.

- **How can Elise help me?**

  ELISE (Enabling Library & Information Skills for Everyone) is an online tutorial to help you understand how to find and use information for your assignments or research. It will help you to search databases, identify good quality information and write assignments. It will also help you understand plagiarism and how to avoid it. All undergraduate students have to review the ELISE

tutorial in their first semester and complete the quiz, but any student can review it to improve their knowledge: http://subjectguides.library.unsw.edu.au/elise.

- **What is Turnitin?**

  Turnitin is a checking database which reviews your work and compares it to an international collection of books, journals, Internet pages and other student's assignments. The database checks referencing and whether you have copied something from another student, resource, or off the Internet. Sometimes students submit their work into Turnitin when they hand it in, but academics can also use it to check a student's work when they are marking it. You can find out more about Turnitin here: https://teaching.unsw.edu.au/elearning.

What if plagiarism is found in my work?

If plagiarism is found in your work when you are in first year, your lecturer will offer you assistance to improve your academic skills. They may ask you to look at some online resources, attend the Learning Centre, or sometimes resubmit your work with the problem fixed. However more serious instances in first year, such as stealing another student's work or paying someone to do your work, may be investigated under the Student Misconduct Procedures.

Repeated plagiarism (even in first year), plagiarism after first year, or serious instances, may also be investigated under the Student Misconduct Procedures. The penalties under the procedures can include a reduction in marks, failing a course or for the most serious matters (like plagiarism in a honours thesis) even suspension from the university. The Student Misconduct Procedures are available here

https://www.gs.unsw.edu.au/policy/documents/studentmisconductprocedures.pdf

Examples of plagiarism

Using the internet appropriately

A first year student handed in an assignment where she had copied from a website. Her lecturer realised she didn't understand you have to reference websites in the same way you reference books and journal articles. The lecturer explained how to reference and sent her to a workshop at the Learning Centre to help her improve her skills.

Working together on a math assignment

A group of Mathematics students worked together on an assignment when they had been told this was not allowed. All questions where the students had worked together were given zero, and this lead to some student failing the assessment.

No referencing in an assessment

A third year student submitted a major assessment that included material from a journal article published in Canada. When his essay was submitted into Turnitin, it let the academic know that the student didn't reference the material. The student was given zero for the essay, and because it was worth 50 per cent he failed the course.

Copying design work

A final year design student used images of someone else's designs in her work and he said the designs were his own. The matter was formally investigated by his Faculty and he was found to have committed academic misconduct and failed the course.

Further information and assistance

If you would like further information or assistance with avoiding plagiarism, you can contact the Learning Centre. The Learning Centre at The University of New South Wales has two locations:

UNSW Learning Centre

Lower Ground Floor, North Wing, Chancellery Building

(C22 Kensington Campus – near Student Central)

http://www.lc.unsw.edu.au/

Phone: 9385 2060

Email: learningcentre@unsw.edu.au

Opening Hours:

Monday to Thursday: 9am - 5pm and

Friday: 9am - 2.30pm

UNSW Art & Design Learning Centre

G Block, Room G112

Phone: 9385 0739

https://www.artdesign.unsw.edu.au/current-students/student-services/learning-centre

15. Administrative Matters

The *School of Psychology Student Guide*, available on http://www.psy.unsw.edu.au/current-students/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;
- Special consideration in the event of illness or misadventure;
- Student Code of Conduct;
- Student complaints and grievances;
- Student Equity and Disability Unit; and
- Health & Safety.

Students should familiarise themselves with the information contained in this *Guide*.