

## PSYC2071

### PERCEPTION AND COGNITION

#### 1. INFORMATION ABOUT THE COURSE

<b>Year of Delivery/Session Offered</b>	2012 Session 2
<b>Course Code/Name</b>	PSYC2071 Perception and Cognition
<b>Academic Unit</b>	School of Psychology
<b>Level of Course</b>	Stage 2 Core course
<b>Units of Credit</b>	6UOC
<b>Hours per week</b>	4
<b>Number of Weeks</b>	12 weeks (1-12)
<b>Commencement Date</b>	Lectures start in Week 1 (first lecture on 16/7/2012)
	<b>Practical classes start in Week 2</b>
<b>Prerequisites</b>	PSYC1001 and PSYC1011

Lectures	Day	Time	Location
Lecture 1	Monday	11-12	CLB7
Lecture 2	Friday	1-2	CLB7

Practical Classes	Location
Mon 12-2	Mat 302
Mon 2-4	Mat 302
Tue 9-11	Mat 302
Tue 11-1	Mat 303
Tue 1-3	Mat 303
Tue 3-5	Mat 313
Wed 9-11	Mat 303
Wed 11-1	Mat 302
Wed 1-3	Mat 302
Wed 3-5	Mat 302
Thu 9-11	Mat 302
Thu 11-1	Mat 303
Thu 3-5	Mat 303
Fri 11-1	Mat 302

*All rooms are wheelchair accessible.*

## 2. STAFF INVOLVED IN THE COURSE

### Lecturers:

Name	Contact Details	Consultation Time
<b>Prof Marcus Taft</b> Course and Cognition co-ordinator	Mathews 714 9385-3026 m.taft@unsw.edu.au	<i>Email or phone for questions or appointments, or consult immediately following lectures.</i>
<b>Dr Steve Most</b>	Mathews 705 9385-3827 s.most@unsw.edu.au	
<b>Dr Mark Schira</b>	Neuroscience Research Australia, Barker St 9399-1131 mark.schira@gmail.com	
<b>Dr Joel Pearson</b> Perception co-ordinator	Mathews 510 9385-3969 jpearson@unsw.edu.au	

### Tutors:

Name	Email	Consultation Time
<b>Adam Bove</b>	a.bove@unsw.edu.au	<i>Email for questions or appointments, or consult immediately following laboratory classes.</i>
<b>Hui Chai</b>	hui.chai@psy.unsw.edu.au	
<b>Daniel De Zilva</b>	ddezilva@psy.unsw.edu.au	
<b>Philip J.R. Dit Bressel</b>	philip.jeanrichardditbressel@gmail.com	
<b>Conrad Lee</b>	conrad.lee@student.unsw.edu.au	
<b>Ash Luckman</b>	To be advised	
<b>Xerox Tang</b>	xerox.tang@unsw.edu.au	
<b>Dominic Minh Tran</b>	m.d.tran@unsw.edu.au	
<b>Alya Vlassova</b>	alyavlassova@gmail.com	
<b>Luke Vu</b>	lvu@psy.unsw.edu.au	
<b>Joe Xu</b>	joe.xu@unsw.edu.au	

Note that Cognition part of the course will run before the Perception component.

Students will have registered for specific practical classes (= tutorials) when they enrolled. If circumstances necessitate an unavoidable change to your assigned class, submit your request in an attachment (with detailed justification and other possible tutorial times) to **m.taft@unsw.edu.au** by Wednesday July 18, 5pm. You will then be informed if a transfer can be made.

Students must attend their assigned practical class (i.e., tutorial) for the whole of the session. If you are unable to attend one of your tutorials for medical reasons, please ensure that you go to another tutorial during the week and let that tutor know which tutorial you normally go to. You will also need to show your regular tutor a medical certificate.

Lecture recordings will be available on Blackboard for the benefit of students who unavoidably miss a lecture, and for students who wish to revise lecture material. Students should note that listening to recordings should not be seen as a substitute for regular lecture attendance. Lecture notes will also be made available on the course website, but again, this should not be seen as being a substitute for the lecture itself because important details may be given in the lecture that are not found in these notes.

Tutorial information may not be available on Blackboard, so it is important to take notes during your practical class. Consult your tutor as soon as possible for any clarification of tutorial material.

### 3. COURSE DETAILS

<b>Course Description</b> (Handbook Entry)	Introduces the fundamental principles underlying human perception and cognition such as sensory coding, perceptual organisation, perception of spatial layout, perceptual learning, object recognition, attention, memory storage and retrieval, and decision making. The practical program will provide an introduction to the use of psychophysical methods, experimental approaches to the study of cognitive processes, and the application of findings in society.
<b>Course Aims</b>	<p>This course introduces students to those areas of Psychology that are more closely concerned with “the mind”. These are Perception and Cognition. Perception is concerned with the processes and mechanisms which allow us to respond to our immediate environment, and to know its properties. These range from how far things are away from us or each other to the trajectory of a ball in a game of cricket to a facial expression. It is often a surprise to students to realise how unlike an image on the retina our rich perceptual experience is and how much interesting processing (using about half of the entire cortex of the brain) underlies what seems effortless and immediate. We shall consider a range of issues in this section of the course including the reasons for illusions, perceptual organisation and the way in which we learn to perceive. The cognition part of the course introduces students to theories and methods of investigating the fundamental cognitive processes that underlie attention, memory and thought. Cognitive psychologists study a range of phenomena that include such diverse topics as the factors that influence efficient memory storage and retrieval; the variables that contribute to “information overload”; and the methods people use to solve problems and make decisions. Understanding the perceptual and cognitive processes that underlie human behaviour has a number of important benefits. For example, consider an air traffic controller monitoring plane movements, a driver trying to avoid a pedestrian, a witness in a court case trying to recall past events, or a student studying for an exam. All of these tasks have significant consequences, yet people who perform them are constrained by a number of limitations. In this course we identify these constraints (that are rarely recognised by the people performing the task) and consider their implications.</p> <p>Broadly, all of these phenomena depend on understanding how people process information and are often described as the study of “human information processing”. This subject is primarily concerned with the behaviour of humans, but analogies are often drawn between human information processing and information processing by machines - the domain of “artificial intelligence”. Working out how a computer can be programmed to perform particular perceptual or cognitive tasks contributed to thinking about how people do these tasks. It turns out that the engineering problems that we solve when we see, walk, plan, and make it through the day are far more challenging than landing on the moon or sequencing the human genome. Computers are still very poor at recognising scenes and objects because the complexity of biological perceptual processing cannot yet be replicated. The complementary approaches of cognitive psychologists and computer scientists to understanding mental processes, and their interactions with other disciplines such as philosophy and neuroscience that are also concerned with understanding the mind, have led to the development of the discipline known as “cognitive science”.</p>

<b>Student Learning Outcomes</b>	<p>By the end of this course, you should have developed your research, inquiry and analytical thinking skills by:</p> <ul style="list-style-type: none"> <li>• Becoming aware of theoretical issues and research relevant to perception and cognition, as covered in lectures and tutorial discussions</li> <li>• Gaining an understanding of the major methods of investigating perceptual and cognitive processes, through lectures and practical class demonstrations</li> <li>• Developing the ability to summarise and interpret experimental evidence about perceptual and cognitive processes through practical class exercises and discussion, as well as written assignments</li> <li>• Developing the ability to critically evaluate theories and evidence about perceptual and cognitive processes, through lectures, practical class discussions and written assignments</li> </ul>
<b>Teaching Strategies</b>	<p>In addition to the traditional lecture format, the smaller group tutorials will include interactive exercises, hands on experience in measuring perceptual and cognitive functioning like absolute and relative sensitivity, perceptual illusions, visual search efficiency, memory, and decision making.</p> <p>The assignments for the course should not be seen only as a form of assessment. They are also meant to be provide an opportunity for developing important skills. The assignments are designed to tap into a range of skills, and the preparation required to carry them out should be seen as a learning experience. Feedback is provided not only to justify the mark, but also, and importantly, for the purposes of optimising an understanding of the issues underlying the assignment.</p>

#### 4. GRADUATE ATTRIBUTES

<b>School of Psychology Graduate Attributes<sup>1</sup></b>	<b>Level of Focus</b> 0 = No focus 1 = Minimal 2 = Minor 3 = Major	<b>Activities/Assessment</b>
<b>1. Core knowledge and understanding</b>	3	Lectures and practical classes
<b>2. Research methods in psychology</b>	3	Practical classes
<b>3. Critical thinking skills</b>	3	Lectures and practical classes. Cognition take-home assignment
<b>4. Values, research and professional ethics</b>	1	Practical classes
<b>5. Communication skills</b>	2	Practical classes. Opportunity to answer and ask questions
<b>6. Learning and application of psychology</b>	2	Demonstrations and discussions within practical classes

<sup>1</sup> 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).

## 5. ADDITIONAL RESOURCES AND SUPPORT

<b>Text Books</b>	<p><b><u>Perception</u></b> Wolfe, J.M., Kluender, K.R., &amp; Levi, D.M. (2012). <i>Sensation &amp; perception</i> (3<sup>rd</sup> edition). Sunderland, Mass.: Sinauer Assocs.</p> <p><b><u>Cognition</u></b> Eysenck, M.W., &amp; Keane, M.T. (2010). <i>Cognitive psychology: A student's handbook</i> (6th edition). Hove, UK: Psychology Press.</p> <p><b>A discounted package of the two books is available through the UNSW bookshop.</b></p>
<b>Computer Laboratories or Study Spaces</b>	<p>Computer facilities are available in the Mathews Building for students in the Bachelor of Psychology program.</p> <p>Other students should consult their program officer for information about facilities available to them.</p>

## 6. ADMINISTRATION MATTERS, INCLUDING PLAGIARISM

See the School of Psychology's Student Guide

([http://www.psy.unsw.edu.au/students/current/files/Student\\_Guide.pdf](http://www.psy.unsw.edu.au/students/current/files/Student_Guide.pdf)) for more information about the following issues:

- Expectations of students (including attendance at lectures and tutorials).
- Academic honesty. This includes misconduct such as cheating (on exams or by copying other students' assignments) and plagiarism (see also <http://www.lc.unsw.edu.au/plagiarism/index.html>).
- Procedures for submission of assignments and the School's policy concerning late submissions (e.g., for assignments, 2% of the marks will be deducted for each working day overdue).
- Examination procedures and advice concerning illness or misadventure.
- Withdrawal from the course.
- Student support services (including services for students who have a disability that requires some adjustment in their teaching or learning environment).

**You are responsible for familiarising yourself with this information. This means you cannot say "I didn't know" if you violate any regulations referred to in this document.**

## 7. ASSESSMENT TASKS AND FEEDBACK

Task and Knowledge & abilities assessed	Assessment Criteria and % of total mark	Date of		Feedback	
		Release	Submit	WHEN	HOW
<p><b><u>Cognition take-home</u></b></p> <p><b>You will be given a question that can be answered on the basis of material covered in tutorials (in about one page)</b></p> <p>This exercise assesses your understanding of methodological and theoretical issues in cognitive psychology.</p>	<p>The best answers will show a clear understanding of the issues involved by reporting only relevant ideas that directly address the question.</p> <p><b>This exercise is worth 20%</b></p>	Week 4 tutorial	Week 5 tutorial	Week 7	Marks and general feedback via Blackboard. Individual comments on assignments to be picked up from General Office
<p><b><u>Perception take-home</u></b></p> <p><b>You will be given real data from an experiment performed in class and you will be asked to graph up the data appropriately and interpret the pattern in the graphed data.</b></p> <p>This exercise assesses your ability to understand data presentation and interpretation and how the data relates to the experimental procedures.</p>	<p>The best answers will show clear and easy-to-follow graphs and demonstrate an understanding of what the pattern of data tells us and the particular implications of such results.</p> <p><b>This exercise is worth 20%</b></p>	Week 10 On line via Blackboard	Week 12 tutorial	After Week 12	Marks and general feedback via Blackboard. Specific feedback via appointment or email with tutor
<p><b><u>Final Exam</u></b></p> <p><b>48 multiple choice questions based on lecture and laboratory material. 4 one-page answer questions, one from each lecturer.</b></p> <p>Final exam assesses your understanding of the topics covered in cognition and perception lectures and tutorials</p>	<p>The best open-ended answers will directly address the question being asked, and show a deep understanding of the issues being addressed. Irrelevant or wrong information will detract from one's answer.</p> <p><b>Final exam is worth 60%</b></p>	Exam period		After final marks are released	Individual feedback only by appointment with Course co-ordinator.

## 8. COURSE SCHEDULE

	Lecture 1 (Monday)	Lecture 2 (Friday)	Practical	Assessment
Week 1	July 16 (MT) <b>Intro to Course/Intro to Cognition</b> [E&K: Ch.1]	July 20 (MT) <b>Semantic memory</b> [E&K: pp. 263-267]		
Week 2	July 23 (MT) <b>Propositions and scripts</b> [E&K: pp. 400-410]	July 27 (MT) <b>Imagery</b> [E&K: pp.110-117]	<b><u>COGNITION 1</u></b> Measuring the mind	
Week 3	July 30 (MT) <b>Lexical memory</b> [E&K: pp.336-349]	August 3 (MT) <b>Working memory</b> [E&K: pp. 211-223]	<b><u>COGNITION 2</u></b> Memory reconstruction	
Week 4	August 6 (MT) <b>Long-term episodic memory</b> [E&K: pp.223-233]	August 10 (MT) <b>Everyday memory</b> [E&K: Ch.8]	<b><u>COGNITION 3</u></b> Memory 1	Cognition take-home assignment given out
Week 5	August 13 (SM) <b>Attention 1</b> [E&K: Ch.5 & pp. 143-149]	August 17 (SM) <b>Attention 2</b> [E&K: Ch.5 & pp. 143-149]	<b><u>COGNITION 4</u></b> Memory 2	Cognition assignment due
Week 6	August 20 (SM) <b>Attention 3</b> [E&K: Ch.5 & pp. 143-149]	August 24 (SM) <b>Attention 4</b> [E&K: Ch.5 & pp. 143-149]	<b><u>COGNITION 5</u></b> Decision making	
Week 7	August 27 (MS) <b>Methods in perception research</b>	August 31 (MS) <b>Basic visual processing: Retina</b> [Wolfe: Ch.2]	No tutorials this week	
MID-SESSION BREAK				
Week 8	Sept 10 (MS) <b>Basic visual processing: Cortex</b> [Wolfe: Ch.3]	Sep 14 (MS) <b>Color perception 1</b> [Wolfe: Ch.5]	<b><u>PERCEPTION 1</u></b> Lightness/Perceptual Organisation	
Week 9	Sept 17 (MS) <b>Color perception 2</b> [Wolfe: Ch.5]	Sep 21 (MS) <b>Binocular vision</b> [Wolfe: Ch.6]	<b><u>PERCEPTION 2</u></b> Colour perception	
Week 10	Sept 24 (MS) <b>Motion perception</b> [Wolfe: Ch.7]	Sept 28 (MS) <b>Object perception</b> [Wolfe Ch.4]	<b><u>PERCEPTION 3</u></b> Visual psychophysics	Perception take-home assignment given out
Week 11	Oct 1 Public holiday	Oct 5 (JP) <b>Attention, memory, and visual imagery</b> [Wolfe: Ch.8; E&K: pp.110-117 & 205-211]	No tutorials this week (Monday holiday)	
Week 12	Oct 8 (JP) <b>Sixth sense</b>	Oct 12 (JP) <b>Visual awareness and consciousness</b> [Wolfe: Ch.8; E&K: Ch.16]	<b><u>PERCEPTION 4</u></b> Size/Motion/Ames room	Perception assignment due