Psychology Department

Waikato Faculty of Arts and Social Sciences

2008 Paper Outline

PSYC305-08A -- Applied Cognition & Neuroscience

Lecturers Assoc Prof. Samuel G. Charlton, K1.09, ext 6534, email samiam@waikato.ac.nz
Office Hours: Thursdays & Fridays 10.00-11.00, and by appointment
Dr. Robert B. Isler, K1.11, extn 8401, email r.isler@waikato.ac.nz.
Office Hours: Fridays 9.00-11.00 & 1.00-2.00pm
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Office hours: Mondays 11.00-12.00 & Thursdays 1.00-2.00pm.

Paper Description The objective of this paper, **Applied Cognition & Neuroscience**, is to provide students with an overview of current theory in sensation, perception, attention, memory, decision-making, and psychophysiological aspects of human performance. Students will acquire knowledge of how these principles apply to current issues in aviation & aerospace, road transport, forensic psychology, product design, and information technologies.

Prerequisites The module will build on the material covered in the second year papers in cognitive psychology (PSYC230) perception and attention (PSYC226) and physiological psychology (PSYC227). Students who have not taken these, or equivalent papers, may wish to review second-year material from these courses in order to perform well in this paper.

Required Text Some of the readings will be available via Moodle and others will be provided in class by the lecturers. Please see the Lecture schedule (next page) for details.

Assessment		
	Test 1	30%
	Test 2	30%
	Laboratory project 1 (7-10 pages)	10%
	Laboratory project 2 (7-10 pages)	15%
	Laboratory project 3 (7-10 pages)	15%

The assessment for this paper will be based on a mid-term test (worth 30%), an end-of-term test (30%), and three laboratory reports (worth 40%). The tests are compulsory components of the course; students who do not complete both tests will receive an IC grade.

Tests: There is no external examination for the paper. The tests are comprised of a mixture of multiple choice and short essay questions in order to assess students' mastery of factual information and their deeper understanding and interpretation of the concepts covered. The first test covers lectures, class discussions, and readings from the first half of the term while the second test covers lectures, discussions, and readings from the second half. *Please Note*: Make-up tests are not ordinarily given except by arrangement with the lecturers prior to the test.

Laboratory reports: Each student will complete three laboratory projects. These projects are intended to provide practical exercises which will allow the students to integrate the material from the lectures and readings. The laboratory project reports should be between 7 – 10 pages in length (typed & double spaced) and more details about their content and how they will be marked will be provided in class and on Moodle. The reports should be handed in to the FIC: Laboratory report #1 on 3 April and Laboratory report # 2 on 20 May. The reports should then be collated into a single laboratory journal (including Laboratory report #3) and submitted by 19 June. Reports turned in after their due date will have 2% per day late deducted from the report mark. No reports will be accepted after 26 June. Students who wish to request an extension of time for a report must do so on the Department's Extension Request Form before the due date.

Lecture Schedule and Timetable You are expected to attend each two-hour lecture in **LG.05** on Tuesdays 12.00-2.00 and Thursdays 11.00-1.00.

Date	Topic		Assigned readings (* Available on Moodle ** Provided in class)
26 Feb	Welcome & Intro to Applied Cognition & Neuroscience	SC	*VanCott, *From control systems to knowledge systems* *Flach & Kuperman, *The human capacity for work*
28 Feb	Road Transport: The task of driving	SC	*Groeger, *Applying cognitive psychology to driving* *Summala, *Traffic psychology theories*
4 Mar	Road Transport: Learning to drive	RI	**Dorn, D*river coaching: driving standards higher*
6 Mar	Road Transport: Vision & navigation	JP	** Warren & Hannon. *Direction of self-motion is perceived from optical flow*
11 Mar	Physiology of Performance I	RI	**Nash, *Fertile minds*
13 Mar	Physiology of Performance II	RI	**Barret and Sowden, *Psychophysiological methods*
18 Mar	Aviation& Aerospace Visual function & performance	JP	
20 Mar	Aviation & Aerospace: Biology barrier & cognitive limits	SC	*Roscoe, *Adolescence of engineering psychology* *Hitchcock, *Pilot performance*
25 Mar	University Holiday		
27 Mar	Aviation & Aerospace: Ground ctl & methods	SC	*Niessen, *Air traffic controller's picture*
1 Apr	Methods of investigation	RI	
3 Apr	Methods of investigation Methods used in Neuroscience	JP	
8 Apr	Review: Putting the pieces together	All	
10 Apr	Test #1		
14 – 24 April	Teaching Recess		
29 Apr	Neuroscience: Visual Pathways	JP	**Livingstone & Hubel, *Segregation of form, color, movement and depth*
1 May	Neuroscience: Neurological Disorders	JP	
6 May	Neuroscience: Emotion Regulation	RI	**Gross, *Emotion Regulation*
8 May	Neuroscience: Anxiety Disorders	RI	**Le Doux , *Emotion, memory and the brain*
13 May	Forensic cognition	SC	*Greenberg, *President Bush's false flashbulb memory* *Wells & Loftus, *Eyewitness memory for people & events* *Loftus, *Creating false memories*
15 May	Physiology of Learning & Memory	RI	**Tsien, *Building a brainier mouse*
20 May	Illusions in the real world	JP	
22 May	Cognition & Design: Ergonomics & consumer products	SC	*Kreuzbauer, *Embodied cognition & new product design* *Norman, *Emotion & design*
27 May	Cognition & Design: Knowledge systems	SC	*Myers, *A Brief history of HCI technology* *Duderstadt, *The future of the university in the digital age*
29 May	Cognition & Design: Virtual reality systems	JP	
3 June	Review & Course Evaluation	All	
5 June	Test #2		

Things Students Need To Know

1. **Assessment**

Unless otherwise stipulated, grades are allocated in accordance with the standard University grading system which can be found in the Assessment Regulations of the University Calendar and at this link: http://calendar.waikato.ac.nz/assessment/assessment.html#pt6. Departmental policy is that marked coursework should be returned to students no later than 3 weeks after submission.

2. Workloads

The amount of work expected of a typical student in a half-paper module (offered over one semester) is approximately 6 hours per week. This figure is only approximate, as papers vary in their requirements and students vary in both the amount of effort required and the level of grades they wish to achieve.

3. University policies and regulations which are contained in the University Calendar:

Assessment Regulations
Policy on the use of Maori for Assessment
Human Research Ethics Regulations
Student Discipline Regulations
Computer System Regulations
Student Research Regulations

4. Other information of importance to all students which can be accessed on the Psychology Department website at http://www.waikato.ac.nz/wfass/subjects/psychology/forms/. This includes:

The Department's policy on electronic submission of work for assessment
Regulations relating to IC grades, withdrawal from papers and the calculation of the level of honours at Honours and Masters levels.
Referencing guidelines
Plagiarism
Class Representation
Tutoring Assistance for International Students
Health and Safety Requirements
Children on Campus
Complaints Procedures
Policies relating to the Query of Marking and Final Grades
Medical Certificate Requirements
Graduate Advisor Policy
Kaupapa Maori Policy
Directed Studies Policy
Departmental policy in relation to the use of cell phones in tests and examinations