



UNIVERSITY OF  
CALGARY

**Department of Psychology**  
**Psychology 479 (L01) – Human Neuropsychology**  
**Fall 2011 Course Outline**

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<b>Instructor:</b>	Dr. Andrea B. Protzner	<b>Lecture Location:</b>	A 167
<b>Phone:</b>	403-220-5566	<b>Lecture Days/Time:</b>	MWF 12:00-12:50
<b>Email:</b>	protzner@ucalgary.ca	<b>Lab 01:</b>	T 13:00-14:50
		<b>Lab 02:</b>	A 051/053
			F 13:00-14:50
			A 051/053
<b>Office:</b>	A 030	<b>TA:</b>	Veronika Kiryanova
<b>Office Hours:</b>	By appointment	<b>Email:</b>	vkirvano@ucalgary.ca

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### Course Description and Goals

This course will review major topics in cognitive neuroscience and neuropsychology with an emphasis on human cognitive function and dysfunction. Initial lectures will consist of a general introduction to neuroanatomy, cortical organization and methods used by cognitive neuroscientists. These will be followed by lectures focusing on specific areas of cognitive functioning and related disorders (e.g., attention and neglect; memory and amnesia; language and aphasia, etc). Case reports will be used to illustrate key points and students will be required to examine the relationships between brain, behaviour and cognitive function.

### Prerequisites

Psyc 312 – Experimental Design and Quantitative Methods for Psychology, or  
Psyc 375 – Brain and Behaviour

### Required Text

Banich, M.T. & Compton, R.J. (2011). *Cognitive Neuroscience, 3<sup>rd</sup> edition*. Belmont, California: Wadsworth/Cengage Learning.

Hard copy available at the University Bookstore (eTextbook also exists).

Supplementary readings that are not available online will be available via email. The readings were selected to promote recognition and elaboration of pertinent issues and debates in the field of human neuropsychology.

### Evaluation

#### Course Component:

#### Weight:

#### Lecture

Midterm

25% (Friday, Oct. 14)

Final

40% (scheduled by Registrar's Office)

#### Lab

Presentation	15%
Thought Paper #1	5%
Thought Paper #2	10%
Participation	5%

\* Students must achieve a passing grade on both the class and lab components to pass this course.

### **Midterm and Final Exam**

Tests will be based on all assigned readings and lecture material. The tests will consist of multiple-choice questions (based on textbook and other readings), matching questions (based on readings and lectures), shorter and longer questions, as well as a diagram requiring you to label brain parts (based on lectures, videos and textbook). The shorter and longer questions will require students to *integrate* knowledge analytically (i.e., you will be required to show that you have not only memorized course material, but that you understand it). The midterm will cover information from the lectures and readings for the first 4 weeks. The final exam will be cumulative, covering information from the entire course with an emphasis on material presented after the midterm.

Please refer to *Absence From A Test/Exam* section in case of absence from the midterm.

### **Thought Papers**

During the course, you will be required to submit two thought papers. A thought paper represents *your* opinion on one or more of the assigned articles (not textbook chapters). You may base your thought paper on any of the assigned articles. Your thought papers will be due at the beginning of Monday's class on the week that your chosen article is covered. Acceptable methods of submission are in class or via email. *You may write only one thought paper per class, and late thought papers will not be accepted. If you have not handed in your thought papers by the beginning of class on November 28<sup>th</sup>, 2011, you will receive 0% for that portion on your lab mark.*

The focus of the thought paper should be: 1) a critique the experimental design or interpretation, and/or 2) a proposal for a potential future experiments that the article inspired in you. The thought paper is NOT meant to summarize the readings, but rather to serve as a stimulus for further discussion.

### **Presentations**

A topic will be assigned to each of the weekly laboratories. During the first lab session you will choose partner from your lab section with whom you would like to present (presentations will be done in groups of two), and choose a topic for your presentation. Your presentation date will depend on the topic that you chose, and will be held during the lab. You will be required to discuss your topic in the context of a case study (or two case studies for the purposes of comparison). The presentation should last half an hour.

*If you or your partner are absent on the day of your scheduled presentation, the presentation will be re-scheduled for the last lab as long as the appropriate documentation is provided (please see *Absence From A Test/Exam* section for documentation to be submitted in case of absence). Your TA will need to be notified of your absence as early as possible (this should be PRIOR to the start of Lab so she has time to arrange for alternate material to discuss in lab that day).*

If one of the presenters was absent from his/her scheduled presentation and the appropriate documentation was not provided, the second presenter will present alone on the same assigned topic during the last scheduled lab (appropriate modifications to the presentation can be discussed with your TA).

### Grading Scale

A+	96-100%	B+	80-84%	C+	67-71%	D+	54-58%
A	90-95%	B	76-79%	C	63-66%	D	50-53%
A-	85-89%	B-	72-75%	C-	59-62%	F	0-49%

As stated in the University Calendar, it is at the instructor's discretion to round off either upward or downward to determine a final grade when the average of term work and final examinations is between two letter grades. To determine final letter grades, final percentage grades will be rounded up or down to the nearest whole percentage (e.g., 89.5% will be rounded up to 90% = A but 89.4% will be rounded down to 89% = A-).

### Tentative Lecture Schedule (Lab Schedule Will Follow the Lecture Schedule)

Date	Topic and Readings
M Sep 12	Introduction to Cognitive Neuroscience -- Approaches and Methods - Chapter 3
W Sep 14	Approaches and Methods continued...
F Sep 16	Approaches and Methods continued...
M Sep 19	Brain Structure & Function – Cortical Specialization & Behavioural Neuroanatomy - Chapter 1; Chapter 4 - Price, C.J. & Friston, K.J. (2002). Degeneracy and cognitive anatomy. <i>Trends in Cognitive Sciences</i> , 6(10), 416-421.
W Sep 21	Brain Structure & Function continued...
F Sep 23	Brain Structure & Function continued... <b>* Last day to drop a course with no W grade and tuition refund.</b>
M Sep 26	The Agnosias -- Disorders of Sensory Functioning - Chapter 7 - Ungerleider, L. G., & Haxby, J. V. (1994). 'What and where' in the human brain. <i>Current Opinion in Neurobiology</i> , 4(2), 157-165. - <i>Optional</i> : Price, C.J. et al. (2010). Lesion sites that predict the ability to gesture how an object is used. <i>Archives Italiennes de Biologie</i> , 148(3), 248-253. <b>* Last day for registration/change of registration.</b>
W Sep 28	The Agnosias continued...
F Sep 30	The Agnosias continued...
M Oct 3	The Apraxias -- Disorders of Motor Control - Chapter 5 - Heilman, K.M. (2010). Apraxias. <i>Continuum Lifelong Learning in Neurology</i> , 16(4), 86-98.
W Oct 5	The Apraxias continued
F Oct 7	The Apraxias continued

M Oct 10	<b>* Thanksgiving Day. No lecture. University closed.</b>
W Oct 12	No class or lab – office hour in during class time in A030
F Oct 14	<b>Midterm (held during class time)</b>
M Oct 17	Amnesic Syndromes -- Memory Disorders <ul style="list-style-type: none"> <li>- Chapter 10</li> <li>- Rosenbaum, R.S., Kohler, S., Schacter, D.L., Moscovitch, M., Westmacott, R., Black, S.E., Cao, F., Tulving, E. (2005). The case of K.C.: contributions of a memory-impaired person to memory theory. <i>Neuropsychologia</i>, 43(7): 989-1021.</li> <li>- <i>Optional</i>: Protzner, A.B., Mandzia, J.L., Black, S.E., &amp; McAndrews, M.P. (2011). Network interactions explain effective encoding in the context of medial temporal damage in MCI. <i>Human Brain Mapping</i>, 32(8): 1277-1289.</li> </ul>
W Oct 19	Amnesic Syndromes continued...
F Oct 21	Amnesic Syndromes continued...
M Oct 24	Aphasic Syndromes – Language disorders <ul style="list-style-type: none"> <li>- Chapter 9</li> <li>- Saygin, A.P., Dick, F., Wilson, S.W., Dronkers, N.F., Bates E. (2003). Neural resources for processing language and environmental sounds: Evidence from aphasia. <i>Brain</i> 126(4): 928-45.</li> </ul>
W Oct 26	Aphasic Syndromes continued...
F Oct 28	Aphasic Syndromes continued...
M Oct 31	Neglect Syndromes -- Attention-Based Disorders <ul style="list-style-type: none"> <li>- Chapter 11</li> <li>- Posner, M., &amp; Petersen, S. (1990). The attention system of the human brain. <i>Annual Review of Neuroscience</i>, 13, 25-42.</li> </ul>
W Nov 2	Neglect Syndromes continued...
F Nov 4	Neglect Syndromes continued...
M Nov 7	Frontal Lobe Syndromes -- Executive Function <ul style="list-style-type: none"> <li>- Chapter 12</li> <li>- Stuss, D.T., &amp; Alexander, M.P. (2000). Executive functions and the frontal lobes: a conceptual view. <i>Psychological Research</i>, 63(3-4), 289-298.</li> <li>- D'Esposito, M., Cooney, J. W., Gazzaley, A., Gibbs, S. E., &amp; Postle, B. R. (2006). Is the prefrontal cortex necessary for delay task performance? Evidence from lesion and fMRI data. <i>Journal of the International Neuropsychological Society</i>, 12(2), 248-260.</li> </ul>
W Nov 9	Frontal Lobe Syndromes continued...
F Nov 11	*Reading days. Remembrance Day. No lecture.
M Nov 14	Ageing <ul style="list-style-type: none"> <li>- Chapter 16</li> <li>- Grady, C.L., McIntosh, A.R., Beig, S., Keightley, M.L., Burian, H., Black, S.E. (2003) Evidence from functional neuroimaging of a compensatory prefrontal network in Alzheimer's disease. <i>J Neurosci</i> 23, 986–993.</li> </ul>
W Nov 16	Ageing continued...
F Nov 18	Ageing continued...
M Nov 21	Affective Disorders -- Depression & Neuropsychiatric Syndromes <ul style="list-style-type: none"> <li>- Chapter 14</li> </ul>

	<ul style="list-style-type: none"> <li>- Holtzheimer PE, Mayberg HS. Stuck in a rut: rethinking depression and its treatment. Trends Neurosci. 2011 Jan;34(1):1-9.</li> <li>- Mayberg HS, Lozano AM, Voon V, McNeely HE, Seminowicz D, Hamani C, et al. Deep brain stimulation for treatment-resistant depression. Neuron. 2005 Mar 3;45(5):651-60.</li> <li>- <i>Optional</i>: Seminowicz DA, Mayberg HS, McIntosh AR, Goldapple K, Kennedy S, Segal Z, et al. Limbic- frontal circuitry in major depression: a path modeling metanalysis. Neuroimage. 2004 May;22(1):409-18.</li> </ul>
W Nov 23	Affective Disorders continued...
F Nov 25	Affective Disorders continued...
M Nov 28	Neuropathology and Neuroplasticity <ul style="list-style-type: none"> <li>- Chapter 15</li> <li>- Chen, A.J.-W., Novakovic-Agopian, T., Nycum, T.J., Song, S., Turner, G.R., Hills, N.K., Rome, S., Abrams, G.M., D'Esposito, M. (2011) Training of goal-directed attention regulation enhances control over neural processing for individuals with brain injury. Brain 134(5), 1541-1554.</li> </ul> <b>Last day to hand in thought papers</b>
W Nov 30	Neuropathology and Neuroplasticity continued...
F Dec 2	Neuropathology and Neuroplasticity continued...
M Dec 5	Review for exam
W Dec 7	Review for exam
F Dec 9	<b>* Last day to participate in research and allocate research credits.</b>
F Dec 9	<b>* Lecture ends. Last day to withdraw.</b>

### Reappraisal of Grades

A student who feels that a piece of graded term work (e.g., term paper, essay, test) has been unfairly graded, may have the work re-graded as follows. The student shall discuss the work with the instructor within 15 days of being notified about the mark or of the item's return to the class. If not satisfied, the student shall immediately take the matter to the Head of the department offering the course, who will arrange for a reassessment of the work within the next 15 days. The reappraisal of term work may cause the grade to be raised, lowered, or to remain the same. If the student is not satisfied with the decision and wishes to appeal, the student shall address a letter of appeal to the Dean of the faculty offering the course within 15 days of the unfavourable decision. In the letter, the student must clearly and fully state the decision being appealed, the grounds for appeal, and the remedies being sought, along with any special circumstances that warrant an appeal of the reappraisal. The student should include as much written documentation as possible.

### Plagiarism and Other Academic Misconduct

Intellectual honesty is the cornerstone of the development and acquisition of knowledge and requires that the contribution of others be acknowledged. Consequently, plagiarism or cheating on any assignment is regarded as an extremely serious academic offense. Plagiarism involves submitting or presenting work in a course as if it were the student's own work done expressly for that particular course when, in fact, it is not. Students should examine sections of the University Calendar that present a Statement of Intellectual honesty and definitions and penalties associated with Plagiarism/Cheating/Other Academic Misconduct.

## **Academic Accommodation**

It is the student's responsibility to request academic accommodations. If you are a student with a documented disability who may require academic accommodation and have not registered with the Disability Resource Centre, please contact their office at 403-220-8237. Students who have not registered with the Disability Resource Centre are not eligible for formal academic accommodation. You are also required to discuss your needs with your instructor no later than 14 days after the start of this course.

## **Absence From A Test/Exam**

Makeup tests/exams are NOT an option without an official University medical excuse (see the University Calendar). A completed Physician/Counselor Statement will be required to confirm absence from a test/exam for health reasons; the student will be required to pay any cost associated with this Statement. Students who miss a test/exam have 48 hours to contact the instructor and to schedule a makeup test/exam. Students who do not schedule a makeup test/exam with the instructor within this 48-hour period forfeit the right to a makeup test/exam. At the instructor's discretion, a makeup test/exam may differ significantly (in form and/or content) from a regularly scheduled test/exam. Except in extenuating circumstances (documented by an official University medical excuse), a makeup test/exam must be written within 2 weeks of the missed test/exam.

## **Freedom of Information and Protection of Privacy (FOIP) Act**

The FOIP legislation disallows the practice of having student's retrieve tests and assignments from a public place. Therefore, tests and assignments may be returned to students during class/lab, or during office hours, or via the Department Office (Admin 275), or will be made available only for viewing during exam review sessions scheduled by the Department. Tests and assignments will be shredded after one year. Instructors should take care to not link students' names with their grades, UCIDs, or other FOIP-sensitive information.

## **Evacuation Assembly Point**

In case of an emergency evacuation during class, students must gather at the designated assembly point nearest to the classroom. The list of assembly points is found at <http://www.ucalgary.ca/emergencyplan/assemblypoints>. Please check this website and note the nearest assembly point for this course.

## **Student Organizations**

Psychology students may wish to join the Psychology Undergraduate Students' Association (PSYCHS). They are located in Administration 170 and may be contacted at 403-220-5567.

**Student Union VP Academic:** Phone: 403-220-3911 [suvpaca@ucalgary.ca](mailto:suvpaca@ucalgary.ca)  
**Student Union Faculty Rep.:** Phone: 403-220-3913 [socialscirep@su.ucalgary.ca](mailto:socialscirep@su.ucalgary.ca)

## **Important Dates**

The last day to drop this course with no "W" notation and **still receive a tuition fee refund** is **Sep 23<sup>rd</sup>, 2011**. Last day for registration/change of registration is **Sep 26<sup>th</sup>, 2011**. The last day to withdraw from this course is **Dec 9<sup>th</sup>, 2011**.