



UNIVERSITY OF  
CALGARY

**Department of Psychology**  
**Psychology 521 (L01) – Cognitive and Clinical Neuroscience**  
**Fall 2009**

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<b>Instructor:</b>	Dr. Giuseppe Iaria	<b>Lecture Location:</b>	SH 278
<b>Phone:</b>	(403)-220-8482	<b>Lecture Days/Time:</b>	Tues/Thurs 11:00 - 12:15
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<b>Office:</b>	A218		
<b>Office Hours:</b>	TBA		

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### **Course Description and Goals**

The course provides an overview of the latest research investigating brain mechanisms underlying some of the cutting-edge topics in cognitive neuroscience. At the outset, students will be introduced to basic concepts of cognitive neuroscience and the range of techniques used with both healthy subjects and clinical populations. In subsequent weeks, classes will consist of detailed introductions to specific topics, student presentations and class discussion of scientific literature. The goal is for students to acquire knowledge of selected topics in cognitive neuroscience and to develop critical thinking skills when evaluating scientific literature.

### **Prerequisites**

Psyc 312 (Experimental Design & Quantitative Method) and Psyc 375 (Brain and Behaviour), or consent of the Department.

### **Required Text**

There are no required textbooks for this course. The course material consists of selected articles that will be available on the course website (<https://blackboard.ucalgary.ca>).

The following text is available at the University Bookstore for students who would like to have additional basic knowledge in Cognitive Neuroscience:

Gazzaniga, M.S., Ivry, R. B., Mangun, J.R. (2009). *Cognitive Neuroscience: The Biology of the Mind (3<sup>rd</sup> Ed.)*. New York, NY: W. W. Norton & Company.

### **Evaluation**

Student evaluations will be based on one presentation, one leading discussion related to a selected article, and one term paper (topic selected by students). Missed or late assignments without proper documentation will receive 0%.

**A. Presentation (30% of final grade).** During the first week, students will be asked to select a date (and accordingly a topic according to the course schedule) for delivering their presentation. Students will present singly or in groups depending on class size, and assigned at random if the number of dates and topics chosen voluntarily do not cover the entire course schedule. The presentation should be in the format of PowerPoint slides and examine in detail

one journal article (available on the course website) related to the topic of the week. The length of each presentation will be approximately 45 minutes, followed by a 10 minute class discussion.

As a guideline, each presentation should include: (1) a brief overview of the subject of the article, (2) the main question that the article aims to address, the relevance of it in the context of the topic of the week, and the authors' hypothesis, (3) a detailed description of the methods and procedure used, (4) the results of the study, (5) the authors' interpretation of the results, (6) the authors' general conclusion, (7) the student's observations about the study (including merits and/or limits of the experimental approach used), and (8) the student's suggestions for future studies given the findings provided in the article.

Students are encouraged to read additional research as needed and/or to prepare material (such as handouts or prepared questions) in order to engage the class and stimulate relevant discussion. In order to actively participate in the discussion, students attending should read the article presented as well as additional material related to that topic in advance of the class. Evaluation is based on creativity, clarity, accuracy and completeness of the presentation, as well as success in engaging colleagues' participation in class discussion.

**B. Leading discussion (30% of final grade).** The format of the leading discussion is similar to the presentation with the exception that there will be no slides to be presented to the class. Students will be asked to select a date (and accordingly a topic according to the course schedule) for discussing a given article. Students will outline the content of the article and prepare questions to stimulate class discussion. Presentation and leading discussion may occur singly or in groups depending on class size, and assigned at random if the number of dates and topics chosen voluntarily do not cover the entire course schedule. Evaluation is based on clarity, accuracy and completeness of the article presented, as well as success in engaging colleagues' participation in class discussion.

**C. Term paper (40% of final grade).** Each student will write a term paper consisting of a research proposal. The paper can focus on any topic covered during the course (preferred) or a topic that students may be particularly interested in. The topic chosen for the term paper can be the same as that chosen (or assigned) for the presentation. Students are required to formulate one or two experiments that would make an original contribution to the literature/topic that the paper focuses on. Term paper topics must be pre-approved by the professor (during office hours) and papers (in Word format) may be submitted by email at any time during the course, but no later than December 1, 2009.

The content of the paper must be organized into the following sub-headings: (1) Title, (2) Abstract (150 words maximum), (3) Topic/literature overview, (4) Proposal, (5) Methods, (6) Analyses, (7) Results, (8) Implications and conclusions, (9) References (minimum 10). The body of the paper (excluding title page and reference list) must not exceed 15 pages (double-spaced, 12 pt Times font) and must be written in APA format. No figures or tables should be included in the paper.

Evaluation is based on clarity, accuracy and completeness. Special consideration will be given to the originality of the proposal.

#### **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

Date	Topic/Activity/Readings/Due Date	Readings
Tues, Sept 8	Lectures begin - Introduction to the course	
Thurs, Sept 10	History and principles of cognitive neuroscience	TBA
Tues, Sept 15	Methods: EEG, ERP, MEG, TMS, and others	TBA
Thurs, Sept 17	Methods: Structural and functional MRI	TBA
<b>Fri Sept 18</b>	<b>Last day to drop a course with no W grade and tuition refund.</b>	
<b>Tues Sept 22</b>	<b>Last day for registration/change of registration.</b>	
Tues, Sept 22	Topic 1 - Human topographical orientation (TO) <i>Students' presentation</i>	TBA
Thurs, Sept 24	Topic 1 - Human topographical orientation (TO) <i>Students' discussion</i>	TBA
Tues, Sept 29	Topic 1 - Topographical disorientation (TD) <i>Students' presentation</i>	TBA
Thurs, Oct 1	Topic 1 - Topographical disorientation (TD) <i>Students' discussion</i>	TBA
Tues, Oct 6	Topic 2 - Face processing (FP) <i>Students' presentation</i>	TBA
Thurs, Oct 8	Topic 2 - Face processing (FP) <i>Students' discussion</i>	TBA
Tues, Oct 13	Topic 2 - Prosopagnosia (PROS) <i>Students' presentation</i>	TBA
Thurs, Oct 15	Topic 2 - Prosopagnosia (PROS) <i>Students' discussion</i>	TBA
Tues, Oct 20	<i>Summary - Articles review/discussion</i>	
Thurs, Oct 22	Topic 3 – Neuroplasticity in healthy individuals (NeuroH) <i>Students' presentation</i>	TBA
Tues, Oct 27	Topic 3 – Neuroplasticity in healthy individuals (NeuroH) <i>Students' discussion</i>	TBA
Thurs, Oct 29	Topic 3 - Neuroplasticity in brain-damaged patients (NeuroP) <i>Students' presentation</i>	TBA
Tues, Nov 3	Topic 3 - Neuroplasticity in brain-damaged patients (NeuroP) <i>Students' discussion</i>	TBA
Thurs, Nov 5	Topic 4 - The healthy emotional brain (EmoH) <i>Students' presentation</i>	TBA
Tues, Nov 10	Topic 4 - The healthy emotional brain (EmoH) <i>Students' discussion</i>	TBA
<b>Nov 11-15</b>	<b>Reading Days. No lectures</b>	
Tues, Nov 17	Topic 4 - The damaged emotional brain (EmoP) <i>Students' presentation</i>	TBA
Thurs, Nov 19	Topic 4 - The damaged emotional brain (EmoP) <i>Students' discussion</i>	TBA
Tues, Nov 24	Topic 5 - The neural mechanisms of consciousness (Cosc)	TBA

	<i>Students' presentation</i>	
Thurs, Nov 26	Topic 5 - The neural mechanisms of consciousness (Cosc) <i>Students' discussion</i>	TBA
Tues, Dec 1	Topic 5 - The affected consciousness (AffConsc) <i>Students' presentation</i>	TBA
Thurs, Dec 3	Topic 5 - The affected consciousness (AffConsc) <i>Students' discussion</i>	TBA
<b>Mon, Dec 7</b>	<b>Last day to participate in research and allocate research credits</b>	
<b>Tue, Dec 8</b>	<b>Fall Session Lectures end. Last day to withdraw</b> <i>Summary - Articles review/discussion</i>	

### **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 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.

### **Course Credits for Research Participation**

Students in most psychology courses are eligible to participate in Departmentally approved research and earn credits toward their final grades. A maximum of two credits (2%) per course, including this course, may be applied to the student's final grade. Students earn 0.5% (0.5 credits) for each full 30 minutes of participation. The demand for timeslots may exceed the supply in a given term. Thus, students are not guaranteed that there will be enough studies available to them to meet their credit requirements. Students should seek studies early in the term and should frequently check for open timeslots. Students can create an account and participate in Departmentally approved research studies at <http://ucalgary.sona-systems.com>.

**The last day to participate in research and allocate credits is Dec 7<sup>th</sup>, 2009.**

### **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 220-5567.

**Student Union VP Academic:** Phone: 220-3911 [suypaca@ucalgary.ca](mailto:suypaca@ucalgary.ca)

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

### **Important Dates**

The last day to drop this course and **still receive a fee refund** is **Sep 18<sup>th</sup>, 2009**. The last day to withdraw from this course is **Dec 8<sup>th</sup>, 2009**.