

CLPS 0400
Brain Damage & the Mind
Fall 2012
Monday, Wednesday, Friday
2:00 – 2:50 p.m.



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| Instructor: | Elena Festa Martino, Ph.D. Elena_Festa@brown.edu, 863-3935 |
| Office Location: | 339 Metcalf Research |
| Office Hours: | Thursdays 9:00 - 11:00 a.m., or by appointment |
| Textbook: | Ward, J. (2010). <i>The Student's Guide to Cognitive Neuroscience (Second Edition)</i> . New York: Psychology Press. |
| Assigned Readings: | Available on the CANVAS course website |

Course Description

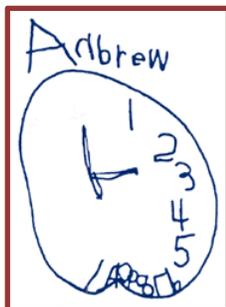
Cognitive neuropsychology has been instrumental in informing and guiding many of the advances in our understanding of the cognitive architecture of the human mind. At the foundation of this discipline is a rich history of investigations of brain-behavior relationships in neurological patients. Much of what we know about the mechanism underlying perception, attention, memory, language, and higher order forms of thought stem from this patient-based approach, and the examination of the patterns of spared and impaired abilities exhibited by these patients has served to develop and refine psychological models of normal cognition.

This course will utilize human information processing models to examine the major neurological disorders of perception, attention, action, language, memory, and thought. We will use psychological models of normal cognition as a first approximation to understanding the cognitive deficits present within these neurological patients. We will then attempt to draw conclusions about how the component processes within these psychological models of normal cognition must be organized to accommodate the particular pattern of spared and impaired abilities associated with each disorder. The emphasis in this course will therefore be on the *psychological processes* and what the patterns of deficits present within these patients can tell us about normal cognition.

Important Dates

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| Tuesday, October 2 nd | Last day to add course/change your grade option |
| Wednesday, October 3rd | EXAM 1, 2:00 pm |
| Monday, October 8 th | Long Weekend Holiday: No Class |
| Wednesday, November 7th | EXAM 2, 2:00 pm |
| Wednesday - Sunday, November 21 st – 25 th | Thanksgiving Recess: No Class |
| Friday, December 7th | EXAM 3, 2:00 pm |
| Thursday, December 20th | FINAL EXAM, 2:00pm |

Course Expectations & Policies



Lectures:

The major expectation is that you have read the assigned readings thoroughly before class so as to facilitate your understanding of the lecture material. There will be some (but not complete) overlap between the readings and the lecture material. I will post my lecture slides to the Canvas website prior to each class. Please note that my slides tend to have few words and will not substitute for attending my lectures. If you miss a class, you should contact a TA to discuss the material from lecture. From time-to-time, I may also post links to interesting web articles or supplementary research articles relevant to the different topics described in class. Feel free to send me links to news items that you discover that you think relevant and would like to share with the class.

Office Hours:

I encourage you to come see me and/or one of the TAs, if you have questions about the readings or lecture material. Please do not wait to see us if you are struggling with the material. Both the TAs and I will be available to meet with you during our weekly office hours throughout the semester. You may e-mail us as well, but do not expect instant responses (particularly the night before an exam); I tend to respond to e-mails within a day or so.

Exams:

The three in-class exams and final exam are mandatory and must be taken on the dates scheduled (see important dates section). Because you are allowed to drop your lowest exam grade, **no make-up exams will be given**. Extreme cases of personal illness, emergency, or family crisis will be handled on a case-by-case basis; notify me as soon as possible and expect to submit a dean's or physician's note. You should double-check the exam schedule prior to registering for this class; travel plans are not a reasonable excuse for missing an exam.

Accommodations:

If you have a documented learning difference which requires special accommodations, it is your responsibility to see me early in the semester so that I can make necessary arrangements. Bring a current copy of your academic accommodations letter from Disability Support Services.

Grading

Your performance in this course will be based on your performance on three in-class exams and a final exam. Each exam is worth 25% of your final grade. Exams will be curved based on the distribution of scores within the class. You are allowed to drop your lowest score (or choose not to take one of the exams); in which case, each exam would then be worth 33.3% of your final grade.

In-Class Exams –The exams will cover material from assigned readings and lectures within each portion of the course. They will include objective questions (True/False, Multiple Choice, Fill-in the Blank), short-answers and/or a longer essay question. Although they are non-cumulative, they will assume knowledge of earlier portions of the course.

Final Exam – The final exam will assess your understanding of all material presented in the course. As on the in-class exams, the final exam will include objective questions (True/False, Multiple Choice, Fill-in the Blank), short-answers and/or a longer essay question. However, the exam will focus on integration of concepts that were covered throughout the semester.

Extra-Credit – You can also receive extra credit points for participation in the CLPS subject pool: For each hour of participation (maximum of 2 credit hours), I will add 3 points to the score of any of your exam grades (whichever most benefits your final grade). See course website for details on how to register for participation.



Topics & Readings

| Dates | Topic | Readings |
|--------------------|--------------------------------|---|
| Sept. 5 | Introduction | |
| Sept. 7 – 10 | Historical Perspective | Chapter 1; Feinberg & Farah, 2006 |
| Sept. 12 –17 | Methodological Approach | Chapter 2; Chapter 5 |
| Sept. 19 – Oct. 1 | Disorders of Visual Perception | Chapter 6; Persaud & Cowey, 2008; Fox et al., 2008 |
| October 3 | EXAM 1 | |
| Oct. 5 – 17 | Disorders of Spatial Attention | Chapter 7; Milner & Goodale, 2008; Domínguez-Borrás et al., 2012 |
| Oct. 19 – 26 | Disorders of Movement | Chapter 8; Goldenberg, 2009; Rossit et al., 2011 |
| Oct. 29 – Nov. 2 | Frontal Lobe Dysfunction | Chapters 14; Floden et al., 2008 |
| November 7 | EXAM 2 | |
| Nov. 5 – 26 | Disorders of Memory | Chapter 9; Baddeley, 2003; Scoville & Milner, 1957; Butler et al., 2004; Leyhe et al., 2010; Patterson et al., 2007 |
| Nov. 28 – Dec. 5 | Disorders of Hearing & Speech | Chapters 10 & 11 |
| December 7 | EXAM 3 | |
| December 20 | FINAL EXAM | |

Please note that the readings in each topic are listed in the order in which they will be covered in lecture. I will announce in class the dates by which specific readings should be read (in terms of their relevance to my lecture material) as we move through each topic.

Additional Readings

Feinberg, T.E. & Farah, M.J. (2006). A historical perspective on cognitive neuroscience. In M.J. Farah & T.E. Feinberg (Eds.), *Patient-based approaches to cognitive neuroscience (2nd Edition)*. Cambridge: MIT Press.

Persaud, N. & Cowey, A. (2008). Blindsight is unlike normal conscious vision: Evidence from an exclusion task. *Consciousness & Cognition*, *17*, 1050-1055.

Fox, C.J., Iaria, G., Barton, J.J.S. (2008). Disconnection in prosopagnosia and face processing. *Cortex*, *44*, 996-1009.

Milner, A.D. & Goodale, M.A. (2008). Two visual systems re-viewed. *Neuropsychologia*, *46*, 774-785.

Domínguez-Borrás, J., Saj, A., Armony, J.L., Vuilleumier, P. (2012). Emotional processing and its impact on unilateral neglect and extinction. *Neuropsychologia*, *50*, 1054-1071.

Goldenberg, G. (2009). Apraxia and the parietal lobes. *Neuropsychologia*, *47*, 1449-1459.

Rossit, S., Fraser, J.A., Teasell, R., Malhotra, P.A., & Goodale, M.A. (2011). Impaired delayed but preserved immediate grasping in a neglect patient with parieto-occipital lesions. *Neuropsychologia*, *49*, 2498-2504.

Floden, D., Alexander, M.P., Kubu, C.S., Katz, D., & Stuss, D.T. (2008). Impulsivity and risk-taking behavior in focal frontal lobe lesions. *Neuropsychologia*, *46*, 213-223.

Baddeley, A. (2003). Working memory: Looking back and looking forward. *Nature Neuroscience Reviews*, *4*, 829-839

Scoville, W.B. & Milner, B. (1957). Loss of recent memory after bilateral hippocampal lesions. *Journal of Neurology, Neurosurgery, and Psychiatry*, *20*, 11-21.

Butler, K.M, McDaniel, M.A., Dornburg, C.C., Price, A.L., & Roediger, H.L., III. (2004). Age differences in veridical and false recall are not inevitable: The role of frontal lobe function. *Psychonomic Bulletin & Review*, *11*, 921-925.

Leyhe, T., Müller, S., Eschweiler, G.W., & Saur, R. (2010). Deterioration of the memory for historic events in patients with mild cognitive impairment and early Alzheimer's disease. *Neuropsychologia*, *48*, 4093-4101.

Patterson, K., Nestor, P.J., & Rogers, T.T. (2007). Where do you know what you know? The representation of semantic knowledge in the human brain. *Nature Neuroscience Reviews*, *8*, 976-987.