PSYC 560
Physiological Psychology
Tuesday & Thursday, 12:15-1:30pm
642 College Hall
Prof. Alexander Kranjec
kranjeca@duq.edu
Office Hours: Monday 3:00pm – 5pm or by appointment

Texts

1. Ward, J. (2009). *The Student's Guide to Cognitive Neuroscience.* Psychology Press (optional)
2. Morgan, J. & Ricker, J. (2008). *Textbook of Clinical Neuropsychology.* Psychology Press (on hold @ library)
3. Ogden, J. (2005). *Fractured Minds*. Oxford University Press (electronic copy @ library)
4. Choudhury, S. & Slaby, J. (2012). *Critical Neuroscience.* Wiley-Blackwell (electronic copy @ library)

COURSE DESCRIPTION

This course surveys fundamental concepts, research methods, and topics in cognitive neuroscience and neuropsychology. Students will become familiarized with the history of neuroscience, related philosophical issues, basic neurophysiology, and anatomy. The course reviews major functional-anatomical relations in the brain while introducing topics in clinical neuropsychology, and case studies. An emphasis is placed on becoming a better consumer of current practices, such that students are expected to think critically and creatively about past and present neuroscience research. Students will come away with tools allowing them to apply neuroscience research findings to their own work, both as scholars and clinicians. The course will also consider some of the ethical and broader philosophical implications of recent findings in neuroscience.

COURSE GOALS

BY THE END OF THIS COURSE YOU SHOULD:

- Have a better understanding for the fundamental concepts, methods, and areas of cognitive neuroscience and neuropsychological research
- Become familiarized with basic neuroanatomy and major functional-anatomical relations in the brain
- Have specialized knowledge of some major topics in clinical neuropsychology
- Be better able to think critically and creatively about neuroscience in a way that makes you a better consumer of research
- Be better able to apply research findings in neuroscience to your own work as a scholar and clinician
- Have a chance to consider the ethical and broader philosophical implications of recent findings in neuroscience

COURSE POLICIES AND PROCEDURES

Course Web Page

Important information, including changes to the syllabus, additional readings, upcoming events, and links to other resources, will be posted on **Blackboard**.

https://duquesne.blackboard.com

Overview

The course will begin with an introduction on major methodological and conceptual issues in neuroscience. This will be followed by journal article readings covering major topics in cognitive neuroscience. Students without prior undergraduate training in neuroscience should review relevant sections in the Ward text. In general, Ward can be used a reference throughout the course. The middle section of the course will review topics in clinical neuropsychology. Readings and assignments will also serve as a means to introduce cognitive functional-anatomical relations. Last student will select a neuropsychological case study of their choosing to present to the class.

Evaluation

This course is taught in a seminar style. Students will be expected to read all assigned materials closely in addition to referencing suggested background sources as necessary. **20%** of students' grades will be based on general class discussion. **20%** on position papers from the Cognitive Neuroscience section. **40%** will be based on a well-researched oral presentation on a topic in Clinical Neuropsychology. Clinical Neuropsychology topics can be chosen from those offered on the syllabus, or alternatively students may choose their own. Ideally (that is not necessarily), topics should (1) cover a clinical neuropsychological disorder in terms of its functional-anatomical/physiological basis, as well as its assessment and treatment. Presentations should then (2) focus on a more specific theoretical, methodological, ethical, or societal issue related to the specific disorder. Ideally (again), for (1) students could find a recent review article in a book (e.g., Morgan, J. & Ricker) or a journal article. For (2) a recent or classic experimental, theoretical or philosophical paper can be selected. The goal is to first provide a broad, practical overview of a particular disorder, and then lead into a more focused discussion on an interesting, potentially controversial or unresolved, theoretical issue. Student presentations can include PowerPoint slides or handouts. Talks should aim to be about 45 minutes leaving ample time for questions and class discussion. Students are responsible for distributing the one or two articles essential to discussion to their classmates at least 3 days in advance of their presentation. The last **20%** will be based on leading discussion of a neuropsychology case study of your choosing. Case studies may be selected from *Fractured Minds* or from another source (i.e., a journal like *Neurocase*).

COURSE SCHEDULE

Note that this schedule **and** readings are subject to change. It is very important that you read before class, so that you can be prepared to participate in class discussions. Any updates will be announced in class, and will also be posted on **Blackboard**.

DATE	TOPIC	READING	Optional
27-Aug	Introductions/Planning		Ward Chapt 2; Morgan & Ricker Chapt 5
29-Aug	Methods & Conceptual Issues		Ward Chapts 3,4,5; Morgan & Ricker Chapts 3,41
3-Sep	Methods & Conceptual Issues	Methods	
5-Sep	CogNeuro 1	Theory	
10-Sep	CogNeuro 2	Vision	
12-Sep	CogNeuro 3	Memory	
17-Sep	CogNeuro 4	Space and Attention	**Neuropsych topic due**
19-Sep	CogNeuro 5	Language	
24-Sep	CogNeuro 6	Social Cognition	
26-Sep	CogNeuro 7	Body Representation	
1-Oct	CogNeuro 8	Consciousness	
3-Oct	Neuropsych topic 1	student presentations (1)	
8-Oct	Neuropsych topic 2	student presentations (1)	
10-Oct	Neuropsych topic 3	student presentations (1)	
15-Oct	Neuropsych topic 4	student presentations (1)	
17-Oct	Neuropsych topic 5	student presentations (1)	
22-Oct	Neuropsych topic 6	student presentations (1)	
24-Oct	Neuropsych topic 7	student presentations (1)	
29-Oct	Neuropsych topic 8	student presentations (1)	
31-Oct	Case Study 1	student presentations (2)	
5-Nov	Case Study 2	student presentations (2)	
7-Nov	Case Study 3	student presentations (2)	
12-Nov	Case Study 4	student presentations (2)	
14-Nov	Case Study 5	student presentations (2)	
19-Nov	Case Study 6	student presentations (2)	
21-Nov	Case Study 7	student presentations (2)	
THANKGIVING BREAK			
3-Dec	Case Study 8	student presentations (2)	
5-Dec	OPEN		
10-Dec	FRIDAY SCHEDULE: NO CLASS		

Example Clinical Neuropsych Topics

1 childhood disorders, autism; Morgan & Ricker Section III
2 childhood disorders, ADHD; Morgan & Ricker Section III
3 stroke, hemorrhage, vascular dementia; Morgan & Ricker Section IV
4 traumatic brain injury, tumors; Morgan & Ricker Section IV
5 neurotoxins, CNS infections; Morgan & Ricker Section IV
6 Huntington's, Parkinson's, Multiple Sclerosis; Morgan & Ricker Section IV
7 learning disabilities; Morgan & Ricker Section IV
8 amnesia; Morgan & Ricker Section IV
9 schizophrenia; Morgan & Ricker Section IV
10 aging, dementia; Morgan & Ricker Section IV
11 Alzheimer's; Morgan & Ricker Section IV
12 assessment, rehabilitation; Morgan & Ricker Sections II & VIII