

## CLP 4420 (Sec 5159): INTRODUCTION TO NEUROPSYCHOLOGY

College of Public Health & Health Professions

Spring 2013  
3 Credit Hours

Monday 5:10-8:10  
HPNP Room G312

### Instructor Information

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### Course Overview

This course is designed to provide an introduction to the science and practice of clinical neuropsychology, including the anatomic, functional, and cognitive substrates underlying human behavior and neuropsychological disorders.

### Course Objectives and/or Goals

Upon successful completion of the course, students will have acquired an understanding of the terminology and concepts essential to the field of clinical neuropsychology, including:

- the role of neuropsychology in the interdisciplinary study and treatment of clinical disorders of higher cognitive function
- the historical origins and future directions of neuropsychology
- key methods and major assumptions in neuropsychology research and clinical practice
- functionally relevant neuroanatomy and neurophysiology
- primary cognitive domains and related neuropsychological disorders, including their assessment and differential diagnosis
- lifespan issues in neuropsychology, including pediatric and geriatric disorders, and the role of neuroplasticity in the brain's response to injury and interventions
- professional considerations, including ethical guidelines, training requirements, and career options.

### Course Materials

**Required textbook:** Zillmer, E.A., Spiers, M.V., & Culbertson, W.C. (2008). *Principles of Neuropsychology: 2<sup>nd</sup> Edition*, Thomson Wadsworth Publishers.

**Online Materials:** Required readings not found in the textbook will be posted via the University's E-learning system/Sakai <<http://lss.at.ufl.edu>>

**Supplemental and Optional Readings/Resources:** Additional articles, videos, and tutorials will also be posted on Sakai.

**NOTE:** *All readings posted online are for educational purposes only and should not be duplicated or redistributed.*

## What to Expect

The human brain is arguably the most complex organ of the body; as a result, understanding its function – and dysfunction – can be both fun and challenging. Our goal is to provide you with the necessary tools and resources to succeed in this course. Therefore, ***you can expect us to:***

- Be passionate about the material and do our best to facilitate interest and learning
- Post PowerPoint files of each lecture on the course website (every effort will be made to post these by the morning of each class)
- Integrate videos, case studies, and guest presentations into class lectures wherever feasible
- Provide supplemental readings, tutorials and videos to enhance learning
- Be available during weekly office-hours in person
- Provide opportunities to review material before each exam

In return, ***we expect you to:***

- Attend class.
- Participate: In addition to simply attending class, we hope and expect that you will participate in discussions and lectures.
- Read: Again, this course will cover a large amount of material, and readings have been carefully selected to help you learn and understand the topics discussed in lecture.
- Be respectful and professional with classmates, instructors, and guest speakers. Professional behavior includes arriving on time for class and turning off all cellphones and PED's. In class, laptops should be used for viewing slides and taking notes, NOT for surfing the web or other non-academic activities.

## Course Requirements/Evaluation/Grading

Final grades will be based on attendance/participation, one paper assignment, and three exams:

Exam 1 (Feb. 4):	25%
Exam 2 (March 18):	25%
Paper (April 8)	25%
Exam 3 (April 22):	25%

We do not plan to include any in-class quizzes. However, we reserve the right to perform unannounced quizzes if attendance and/or reading become problematic.

Exams and participation will each be assigned a number of points in proportion to their contribution to the final grade. Points will be summed and letter grades will be assigned according to the percentage of total points possible. All grades will be rounded to the nearest (ily the highest) integer. The approximate final percentage cut-offs will be as follows:

Percentage or points earned in class	93%-100%	90%-92%	87%-89%	83%-86%	80%-82%	77%-79%	73%-76%	70%-72%	67%-69%	63%-66%	60%-62%	Below 60%
Letter Grade equivalent	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E

Each exam will cover a fair bit of material and will be challenging. The best way to do well is to stay actively involved in the class and in the course material (e.g., take notes, quiz yourself, form study groups, read ahead).

Paper Assignment: Each student will be expected to complete one paper assignment, which will account for 25% of the final course grade, *due April 8 at 5pm*. The paper will consist of a critique of a research article in neuropsychology. Students will choose one article to critique from a list of articles provided for this purpose. Specific format for subsections of the paper, as well as a scoring rubric, are forthcoming. Papers should be 3-5 typed, double-spaced pages in 11-12 point font with 1" margins. Font must be Times New Roman. Students will submit the paper electronically in Sakai by the due date/time.

Extra credit: Extra credit assignments may be added during the semester as appropriate.

**Policy Related to Make-up Exams or Other Work**

Students are expected to attend and be prepared to participate in all class sessions and exams. Personal issues with respect to class attendance or fulfillment of course requirements will be handled on an individual basis. Absences from an exam for appropriate professional obligations (e.g., graduate, professional, or medical school interviews) are permissible, but must be pre-approved by the course-instructor. If a make-up exam is required due to professional obligations or health reasons, documentation (e.g., doctor's note) will be expected. Approved make-up exams must take place within 7 days of originally-scheduled exam date at a time mutually agreed upon by the instructor and student.

## Course Outline

The following is a list of topics and readings for the course. Students will be promptly notified of any necessary changes to this outline.

### **Classes 1-3: Introduction, Methods and Anatomy**

**Jan 7:**  
**Class 1**                                 **INTRODUCTION AND HISTORY**  
Welcome, Course Syllabus

*Lecture Topics:*

- Neuropsychology and Clinical Neuroscience
- History of Neuropsychology

*Required Readings:*

- Zillmer, Spiers & Culbertson: Chapter 1: A History of Neuropsychology

**Jan 14:**  
**Class 2**                                 **FUNCTIONAL NEUROANATOMY AND BEHAVIOR**

*Lecture Topic:*

- Clinically relevant functional neuroanatomy: General principles and functional systems

*Required Readings:*

Zillmer, Spiers & Culbertson:

- Chapter 4: Cells of Thought
- Chapter 5: Functional Neuroanatomy
- Chapter 6: Cerebral Specialization (pp. 155-167)

**Jan 21: No Class (Martin Luther King Holiday)**

**Jan 28:**  
**Class 3**                                 **RESEARCH AND CLINICAL METHODS**

*Lecture Topics:*

- Experimental methods
- Clinical methods of assessment

*Required Readings:*

Zillmer, Spiers & Culbertson:

- Chapter 2: Methods of Investigating the Brain
- Chapter 3: Neuropsychological Assessment and Diagnosis

**Feb 4:**                                     **EXAM 1 (Classes 1-3)**

## Classes 4-8: Cognitive Domains and Disorders

Feb 11:  
Class 4

### LANGUAGE AND APHASIA

#### *Lecture Topics:*

- Overview of Language
- Acquired and Developmental Language Disorders
- **Guest Lecture (Tim Conway, Ph.D.)**

#### *Required Readings:*

Online/Sakai:

- Kolb & Whishaw: Chapter 19: The Origins of Language

#### *Optional Reading:*

- Sacks, O. (2005). Recalled to life: When patients suffer a loss of language, must they also lose their sense of self? *The New Yorker*, October 31, 46-53.

Feb 18:  
Class 5

### ATTENTION AND PERCEPTION

#### *Lecture Topic:*

- Visuospatial Abilities, Attention, Neglect, Agnosia
- Key Topics/Disorders
  - Attentional dysfunction
  - Sensory perception
  - Visuospatial processing
  - Visual Agnosia (object, face agnosia)
  - Hemispatial Neglect
  - Topographical Disorientation

#### *Required Readings:*

- Zillmer, Spiers, & Culbertson: Chapter 9: pp. 240-246

On course website: Selections from Kolb & Whishaw:

- Chapter 13: The Occipital Lobes
  - pp. 323-325 (“Visual Functions Beyond the Occipital Lobes”)
  - pp. 330-340 (beginning with “Disorders of Cortical Function”)
- Chapter 14: The Parietal Lobes
  - pp. 345-364
- Chapter 15: The Temporal Lobes

#### *Optional Readings:*

- Bisiach, E. & Luzzatti, C. (1978). Unilateral neglect of representational space, *Cortex*, 14, 129–133.
- Farah, M. J. & Feinberg, T. E. (2000). Visual object agnosia. In M. J. Farah & T. E. Feinberg (Eds.), *Patient-based approaches to cognitive neuroscience* (pp. 79-84). Cambridge, MA: MIT Press.

**Feb 25:**  
**Class 6**

## **MEMORY AND AMNESIA**

### ***Lecture Topic:***

- Overview of memory, Amnesia
- Episodic and semantic memory disorders

### ***Required Readings:***

Zillmer, Spiers & Culbertson: NONE

Online:

- Kolb & Whishaw: Chapter 18: Memory
- Kuhn & Bauer, 2012

### ***Optional Reading:***

- Sacks, O. (2007). The abyss: Music and amnesia. *The New Yorker*, September 24, 100-111.
- Farah, M.J. & Grossman, M. (2000). Semantic memory impairments. In M. J. Farah & T. E. Feinberg (Eds.), *Patient-based approaches to cognitive neuroscience* (pp. 301-305). Cambridge, MA: The MIT Press.

**March 4:**

**No Class (Spring Break)**

**March 11:**  
**Class 7**

## **FRONTAL LOBE AND EXECUTIVE FUNCTIONS**

### ***Lecture Topics:***

- Functional Anatomy of Frontal Lobes
- Executive function and dysfunction
- Motor Planning and Intention
- Personality and Mood Regulation
- Working Memory

### ***Required Readings:***

- Zillmer, Spiers & Culbertson:
- Chapter 9: pp. 246-259
- Sakai: Kolb & Whishaw:
- Chapter 16: The Frontal Lobes
- Chapter 26: Neurological Disorders – TBI section (pp. 702-706)

### ***Optional Reading:***

- Damasio, H., Grabowski, T., Frank, R., Galaburda, A. M., & Damasio, A. R. (1994). The return of Phineas Gage: Clues about the brain from the skull of a famous patient. *Science*, 264, 1102-1105.

**March 18:**

**Exam 2 (Classes 4-7)**

March 25:  
Class 8

## TRAUMATIC BRAIN INJURY

### *Lecture Topics:*

- Overview of traumatic brain injury
- Functional outcome in head injury
- Assessment and management of head injury and concussion
- Rehabilitation

### *Required Readings:*

Zillmer, Spiers & Culbertson:

- Chapter 13: Traumatic Head Injury and Rehabilitation  
(pp. 369-389)

*Optional Reading:* T.B.D

<b>Classes 9-11: Clinical lifespan and professional issues</b>
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April 1:  
Class 9

## PEDIATRIC NEUROPSYCHOLOGY

### *Lecture Topics:*

- Epilepsy
- Pediatric Neuropsychology
- Pediatric Neuropsychological Disorders:
  - Pre- and perinatal brain damage
  - Genetic/congenital disorders
  - Learning disabilities
  - Pervasive Developmental Disorders
  - Attention Deficit Hyperactivity Disorder

### *Required Readings:*

Zillmer, Spiers & Culbertson:

- Chapter 10: Developmental Disorders of Childhood
- Chapter 11: Learning and Neuropsychiatric Disorders of Childhood

### *Optional Reading:*

- Barkley, R. A. (1998). Attention-Deficit Hyperactivity Disorder. *Scientific American*, September issue, 66-71.

April 8:  
Class 10

## AGING AND DEMENTIA

### **PAPERS DUE BY 5pm**

- Normal Aging
- Pathological Aging and Dementia
- Key disorders:
  - Mild Cognitive Impairment (MCI)
  - Degenerative dementia (cortical and subcortical)
  - Vascular dementia/vascular disease/white matter disease

***Required Readings:***

Zillmer, Spiers, & Culbertson:

- Chapter 12: Cerebrovascular Disorders (pp. 339-347; 351-357)
- Chapter 14: Normal Aging and Dementia: Alzheimer's Disease
- Chapter 15: Subcortical Dementias

***Optional Readings:***

- Reuter-Lorenz, P.A. (2002). New visions of the aging mind and brain. *Trends in Cognitive Sciences*, 6(9), 394-400.
- Park, D. C. and P. Reuter-Lorenz (2009). "The adaptive brain: aging and neurocognitive scaffolding." *Ann Rev Psychol* **60**: 173-96
- DeKosky, S.T., & Marek, K. (2003). Looking backward to move forward: early detection of neurodegenerative disorders. *Science*, 302(5646), 830-834.

**April 15:  
Class 11**

**PROFESSIONAL ISSUES AND APPLICATIONS**

**KEY TOPICS**

Ethical guidelines and considerations  
Multicultural issues in Neuropsychology  
Forensic Neuropsychology  
Training in Neuropsychology  
Careers in Neuropsychology

***Required Readings:***

Online/Sakai:

- Craig, P. (2007). Clinical Neuropsychology: Brain-Behavior Relationships. In R. J. Sternberg (Ed.), *Career Paths in Psychology: Where Your Degree Can Take You* (pp. 161-178). Washington, DC: American Psychological Association.
- Ethical guidelines (TBA)

**April 22:**

**Exam 3 (67% from Class 8-11; 33% cumulative)**

**Statement of University's Honesty Policy (cheating and use of copyrighted materials)**

Cheating, lying, misrepresentation, or plagiarism in any form is unacceptable and inexcusable behavior. Students are expected to act in accordance with the University of Florida policy on academic integrity (see Student Conduct Code, the Graduate Student Handbook or this web site for more details: <http://www.dso.ufl.edu/judicial/academic.php>).

***"We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity. "***

On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: ***"On my honor, I have neither given nor received unauthorized aid***



*in doing this assignment.”*

### **Statement Related to Accommodations for Students with Disabilities**

If you require classroom accommodation because of a disability, you must first register with the Dean of Students Office (<http://www.dso.ufl.edu/>). The Dean of Students Office will provide documentation to you, which you then give to the instructor when requesting accommodation. The College is committed to providing reasonable accommodations to assist students in their coursework.

### **Counseling and Student Health**

Students may occasionally have personal issues that arise in the course of pursuing higher education or that may interfere with their academic performance. If you find yourself facing problems affecting your coursework, you are encouraged to talk with an instructor and to seek confidential assistance at the University of Florida Counseling Center, 352-392-1575, or Student Mental Health Services, 352-392-1171. Visit their web sites for more information: <http://www.counsel.ufl.edu/>.

The Student Health Care Center at Shands is a satellite clinic of the main Student Health Care Center located on Fletcher Drive on campus. Student Health at Shands offers a variety of clinical services, including primary care, women's health care, immunizations, mental health care, and pharmacy services. The clinic is located on the second floor of the Dental Tower in the Health Science Center. For more information, contact the clinic at 392-0627 or check out the website at: <http://shcc.ufl.edu/satellite/shands.shtml>

Crisis intervention is always available 24/7 from:  
Alachua County Crisis Center: (352) 264-6789.

***BUT – Do not wait until you reach a crisis to come in and talk with us. We have helped many students through stressful situations impacting their academic performance. You are not alone so do not be afraid to ask for assistance.***

### **How to access course materials**

You can access course materials (including the syllabus, required readings other than those from the textbook, and optional readings) on the University's E-learning system (Sakai) at the following URL: <http://lss.at.ufl.edu/>. We will make every effort to post lecture notes on the mornings of class, and to post required readings at the beginning of the week in which they are assigned. Please email us if you have any difficulty accessing these materials.