

**CLINICAL NEUROPSYCHOLOGY**  
**Course Syllabus, Spring 2018**  
**Columbia University**

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**Course Description**

This course is an advanced seminar with the goal of introducing students to the theory and practice of Clinical Neuropsychology. This specialized subfield of Clinical Psychology aims to *assess* and *interpret* the relationship between nervous system function, cognition, emotion and behavior; and to *apply* this knowledge to the design of individualized patient interventions. Students will gain an understanding of the field through review of adult and pediatric cognitive and neurological disorders. The psychosocial adjustment of patients living with each disorder and the dynamics among individuals involved in their care are additional themes of emphasis. The course takes an interdisciplinary approach integrating information from several subfields of medicine (neurology, neuroradiology and psychiatry) and psychology (cognitive, abnormal, developmental, biological, health psychology). Students will acquire knowledge through review of both clinical cases and research outcomes. An introductory background in neuroscience is required.

**Organizational Approach**

The course is “case-based” in that students will review presenting symptoms, etiology/neuropathology and neuropsychological profiles for specific disorders/ diseases. An overview of neuroanatomy, neurophysiology and neurodevelopment will be provided within the context of each disease/disorder. Scientific approaches to brain/behavior investigation including animal and human research methodologies will also be reviewed. The process of Neuropsychological Assessment will be taught through a “hands-on” approach in which students will develop skills through direct practice with classmates. Ethical considerations in the field will be integrated throughout the course.

**Course Requirements**

***Attendance***

Consistent attendance is extremely important. One unexcused absence is allowed during the semester. Please email me before the missed class. If you anticipate missing several classes, you must carefully consider the consequences. Unfortunately, due to the content, pace and format of the course, it will be impossible to fully grasp material following a missed class.

You will not be penalized for absences due to Religious Observance.

### *Class Participation*

This class will be taught in seminar format. Student participation is a key factor in nurturing an enriching learning environment. It is expected that all students will contribute to each week's discussion. You will be evaluated on the quality of your contributions. Evaluations of class participation will be based on the following:

- Has the student demonstrated knowledge of the reading assignments?
- Has the student provided new insight which builds on information in the readings?
- Is the student a good listener, addressing and integrating comments from classmates?
- Are the student's comments relevant, on track and non-tangential?

### *Examinations*

Each student will be required to complete a take home midterm and final examination. The final examination is not cumulative. Both exams will be distributed two weeks before the due date. Material will be included from both lecture and assigned readings.

### *Reading Assignments, Weekly Questions and Case Presentation*

Students are expected to read all assigned readings prior to class. You will submit answers to two brief questions from the readings each week. Each student should come to class prepared to discuss the readings. In each class session, two or more students will present a clinical case, applying knowledge in nervous system dysfunction, relevant functional domains (e.g. attention, memory, visuospatial abilities) and current empirically based interventions. The presenters will read all assigned readings as well as additional articles which will add more depth to the discussion.

### *Papers*

*\*Additional detail will be provided for each assignment*

**Neuropsychological Assessment Report (Referral Question, Background and Test Results)**-Students will have the opportunity to conduct a neuropsychological evaluation of a practice subject. This evaluation will consist of an interview and administration of parts of neuropsychological tests. The test subject will be a classmate who may choose to feign symptoms of a disorder assigned by the instructor or chosen by the student. Students will acquire skill in writing a Neuropsychological Assessment report in the course. For this assignment, students will summarize the presenting symptoms/referral question and background history of the test subject. In addition, students will write a Test/Results section.

**Final Paper: Two Options:** **1. Review of Empirical Knowledge**-Students will choose a disorder/disease and focus on one aspect of the disease-etiology and symptomatology, assessment or treatment. Students will review the scientific literature which informs our current knowledge of the chosen subject area. For example, if a student chooses Alzheimer's disease, he/she may review empirical studies contrasting effective treatments or review studies contributing to knowledge of the neuropathology of Alzheimer's. **2. Review of a Cognitive Domain**-The goal of this assignment is to review a particular neurocognitive domain in depth. Students are required to choose a domain of particular interest (e.g. memory, attention, executive function, visuospatial) and summarize current thinking on the theoretical definition of the domain and underlying neural substrates. Current research journal articles must be included as part of this review.

## **Final Grades**

Your final average will be calculated as follows:

Midterm Examination	20%
Neuropsychological Evaluation	20%
Final Paper	20%
Final Examination	20%
Case Presentation	10%
Weekly Questions	10%

## **Course Readings**

**The required texts for the course are:**

Gurd, J.M., Kischka, U. & Marshall, J.C. (2013). The Handbook of Clinical Neuropsychology, Second Edition. NY, NY: Oxford University Press.

Note: You do not have to purchase this text. All readings will be posted on CANVAS.

Ogden, J. A. (2005). Fractured Minds: A Case-Study Approach to Clinical Neuropsychology, 2nd ed. NY, NY: Oxford University Press.

**Additional readings will be provided from the following texts:**

Anderson, V., Northam, E., Hendy, J. & Wrennall, J. (2005). Developmental Neuropsychology: A Clinical Approach (Brain Damage, Behavior and Cognition Series). NY, NY: Psychology Press, Taylor and Francis Group.

Diagnostic and Statistical Manual of Mental Disorders Fifth Edition (2013). Arlington, VA.: American Psychiatric Press.

Grant, I. & Adams, K. (2009). Neuropsychological Assessment of Neuropsychiatric and Neuromedical Disorders, Third Edition. New York, New York: Oxford University Press.

Kolb, B. & Whishaw, I.Q. (2009). Fundamentals of Human Neuropsychology, Sixth Edition. NY, NY: Worth Publishers.

Lezak, M. D., Howieson, D. B, & Loring, D.W. (2012). Neuropsychological Assessment, 5th ed. NY, NY: Oxford University Press.

Morgan, J.E. & Ricker, J.E. (2008). Textbook of Clinical Neuropsychology. NY, NY: Taylor and Francis Publishers, Inc.

Reynolds, C.R.(Editor) & Fletcher-Janzen, E. (Editor) (2008). Handbook of Clinical Child Neuropsychology, Third Edition. NY, NY: Springer Publishers.

Strauss, E., Sherman, E.M.S. & Spreen, Otfried (2006). A Compendium of Neuropsychological Tests:., Third Edition Administration, Norms and Commentary. NY, NY: Oxford University Press.

Yeates, K.O., Ris, M.D., Taylor, H.G. & Pennington, B.F. (2010). Pediatric Neuropsychology: Research, Theory, and Practice, 2<sup>nd</sup> Edition. NY, NY: Guildford Press.

## DISCUSSION TOPICS AND READING ASSIGNMENTS

### Foundations of Clinical Neuropsychology

#### **January 16: Welcome to the Course!**

#### **January 23: Course Overview**

#### **January 30: Conceptualizing Cognitive Domains**

Group Exercise, No Assigned Readings

#### **February 6, 13, 20: Neuroassessment: Theory and Procedures**

*\*Alcohol Dependence and Epilepsy will serve as our Clinical Case Material*

#### ***Reading Assignments:***

#### ***February 6***

Strauss: Chapter 3: History Taking  
Chapter 4: Test Selection, Test Administration, and Preparation of the Patient

Zillmer: Chapter 3: Neuropsychological Assessment and Diagnosis

#### ***February 13***

Grant: Chapter 18: The Neurobehavioral Correlates of Alcoholism (Recommended)

Lezak: Chapter 5: The Neuropsychological Examination: Procedures  
Chapter 6: The Neuropsychological Examination: Interpretation

#### ***February 20***

Grant: Chapter 12: The Neuropsychology of Epilepsy

Ogden: Case 4: Out of Control: The Consequences and Treatment of Epilepsy

Zillmer: Chapter 9: Pages 242-259 (Models of Attention/Executive Functioning)  
Chapter 16: Runaway Brain: Seizure Disorders (Pages 463-475)

### Disorders with Emphasis on Deficits in Specific Cognitive Domains

#### **February 27: Memory: Alzheimer Disease and Other Dementias**

#### ***Reading Assignment:***

Morgan: Chapter 39: Normal Aging, Mild Cognitive Impairment, and Alzheimer's Disease

- Ogden: Case 17: Dementia: A Family Tragedy
- Grant: Chapter 23: The Neuropsychology of Memory Dysfunction and Its Assessment (Recommended)
- Zillmer: Chapter 14: Normal Aging and Dementia: Alzheimer's Disease

**March 6: Language: Aphasia**

***Reading Assignment:***

- Heilman: Chapter 2: Aphasic Syndromes
- Ogden: Case 5: The Breakdown of Language: Case Studies of Aphasia
- Zillmer: Chapter 8: Pages 215-221 (Auditory and Language Processing)

**\*Midterm Examination Distributed\***

**March 12-March 16: SPRING BREAK-NO CLASS MEETING**

**March 20: Executive Function: Attention Deficit Hyperactivity Disorder/Frontal Lobe Disorders**

***Reading Assignment:***

- Anderson: Chapter 11, Case 7: Attention Deficit Hyperactivity Disorder
- Morgan: Chapter 16: Neuropsychological Perspectives on ADHD  
Chapter 35: Adult Attention Deficit Hyperactivity Disorder: Basic and Clinical Issues  
Chapter 11: Pages 322-332 (Disruptive Behavioral Disorders-ADHD)
- Ogden: Case 9: The Impaired Executive: A Case of Frontal-Lobe Dysfunction

**\*Midterm Examination Submission\***

**March 27: Neuropsychological Assessment Review/Training**

All Materials will be distributed in class

<b>Multiple Domains: Psychiatric and Neurological Disorders</b>
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**April 3: Psychological Disorders: Depression, Trauma, Schizophrenia**

***Reading Assignment TBA***

### **April 10: Motor Disorders: Parkinson's Disease**

#### ***Reading Assignment:***

- Grant: Chapter 9: The Neuropsychological Aspects of Parkinson's Disease and Parkinsonism
- Ogden: Case 15: Mind Over Matter: Coping with Parkinson's Disease
- Zillmer: Chapter 7: Motor Systems (Pages 189-197)  
Chapter 15: Subcortical Dementias

### **April 17: Cerebrovascular Disorders**

#### ***Reading Assignment:***

- Morgan: Intracranial Hemorrhage and Subarachnoid Hemorrhage
- Ogden: Case 12: Explosions in the Mind: A Case of Subarachnoid Hemorrhage
- Zillmer: Chapter 12: Cerebrovascular Disorders and Tumors (Pages 340-356)

### **April 24: Head Trauma and Traumatic Brain Injury-Last Class**

#### ***Reading Assignment:***

- Morgan: Chapter 21: Moderate and Severe Traumatic Brain Injury  
Chapter 22: Mild Traumatic Brain Injury and Post Concussion Syndrome
- Ogden: Case 10: Beating the Odds, Severe Head Injury and the Importance of Ongoing Rehabilitation  
Case 11: The Unseen Injury, Minor Closed Head Injury
- Zillmer: Chapter 13: Traumatic Head Injury and Rehabilitation

**\*Neuroassessment Report Submission\***  
**\*Final Examination Distributed\***

### **May 8: Final Paper and Take-Home Final Examination Due**

***\*Please submit to CANVAS***

### **Extra Help**

I am available for individual tutoring by appointment. Please do not hesitate to ask for tutoring, additional study materials, and/or general support throughout the semester. My goal is to make sure that each of you performs at your maximum potential and that your efforts are rewarded.

***WELCOME TO CLINICAL NEUROPSYCHOLOGY!!!***