

**CLINICAL NEUROPSYCHOLOGY**  
**Course Syllabus, Spring 2017**  
**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. It is expected that students will attend all classes unless there is a significant conflict. Please email me before the missed class. Unfortunately, due to the content, pace and format of the course, it will be a challenge to fully grasp material following a missed class.

***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 one week 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. Students will submit two brief questions from the readings each week beginning Feb 7th BEFORE the class session. A discussion board will be created for each class on Coureworks. Each student should come to class prepared to discuss the readings. In each class session, two or more students will present a brief overview of a disease/disorder and 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. Students do not submit questions on the date of their presentation.

### ***Papers***

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

**Neuropsychological Assessment Report (Referral Question, Background, Test Results, Discussion)-** 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. 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 and Discussion 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. Students MUST include a section with specific focus on the relevance of Clinical Neuropsychology to the disorder/disease. **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**

Final averages are calculated as follows:

Midterm Examination	20%	Due: February 28 <sup>th</sup>
Final Examination	20%	Due: May 9 <sup>th</sup>
Final Paper	15%	Due: May 9 <sup>th</sup>
Neuroassessment Report	20%	Due: March 21 <sup>st</sup>
Presentation	20%	
Weekly Questions	5%	

## **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.

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.

Heilman, K.M. & Valenstein, E. (2003). Clinical Neuropsychology. NY, NY: Oxford University Press.

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.

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## DISCUSSION TOPICS AND READING ASSIGNMENT

### **January 17: Welcome to the Course!**

### **January 24: Conceptualizing Cognitive Domains and Case Analysis**

Group Exercise, No Assigned Readings

### **January 31: Neuroassessment: Theory and Procedures**

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

- Gurd: Chapter 1: Neuropsychology: Past, Present and Future  
Chapter 2: Basic Concepts and Principles of Neuropsychological Assessment
- Strauss: Chapter 3: History Taking  
Chapter 4: Test Selection, Test Administration, and Preparation of the Patient
- Lezak: Chapter 5: The Neuropsychological Examination: Procedures  
Chapter 6: The Neuropsychological Examination: Interpretation

## Disorders with Emphasis on Deficits in Specific Cognitive Domains

### **February 7: Memory: Alzheimer Disease and Other Dementias**

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

- Gurd: Chapter 9: Neuropsychological Assessment of Memory Disorders  
Chapter 28: The Neuropsychological Presentation of Alzheimer's Disease and Other Neurodegenerative Disorders
- Morgan: Chapter 39: Normal Aging, Mild Cognitive Impairment, and Alzheimer's Disease
- Ogden: Case 17: Dementia: A Family Tragedy

### **February 14: Language: Aphasia**

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

- Gurd: Chapter 13: The Assessment of Acquired Spoken Language Disorders  
Chapter 14: Motor Speech Disorders: An Overview
- Ogden: Case 5: The Breakdown of Language: Case Studies of Aphasia

**\*Midterm Examination Distributed\***

### **February 21: Executive Function: Attention Deficit Hyperactivity Disorder/Frontal Lobe Disorders**

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

- Anderson: Chapter 11, Case 7: Attention Deficit Hyperactivity Disorder

Gurd: Chapter 18: Assessment of Executive Function

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

### **February 28: IN CLASS NEUROASSESSMENT ADMINISTRATION**

#### **\*Midterm Examination Due\***

<b>Multiple Domains: Psychiatric and Neurological Disorders</b>
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### **March 7: Motor Disorders: Parkinson's Disease**

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

Gurd: Chapter 20: The Neuropsychological Assessment and Treatment of Disorders of Voluntary Movement

Grant: Chapter 9: The Neuropsychological Aspects of Parkinson's Disease and Parkinsonism

Ogden: Case 15: Mind Over Matter: Coping with Parkinson's Disease

### **March 14: SPRING BREAK: NO CLASS**

### **March 21: Cerebrovascular Disorders**

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

Gurd: The Neuropsychology of Vascular Disorders

Morgan: Intracranial Hemorrhage and Subarachnoid Hemorrhage

Ogden: Case 12: Explosions in the Mind: A Case of Subarachnoid Hemorrhage

#### **\*Neuroassessment Report Submission\***

### **March 28: Head Trauma and Traumatic Brain Injury**

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

Gurd: Chapter 27: Neuropsychological Presentation and Treatment of TBI

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

**April 4: Neuropsychological Assessment of Psychological Disorders**

Gurd: Chapter 22: Assessment and Treatment of Emotional Disorders  
Chapter 32: Clinical Presentation of Neuropsychiatric Disorders  
Chapter 33: The Clinical Assessment of Neuropsychiatric Disorders

**April 11: NO CLASS PROFESSOR MCCASKILL CONFERENCE**

**April 18 : Alcohol Use Disorder and Trauma and Stressor Related Disorders**

TBA

**April 25: Schizophrenia**

Gurd: Chapter 34: Neuropsychological Rehabilitation of Schizophrenia

**\*Final Examination Distributed\***

**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!!!***