

Faculty of Health Department of Psychology

Course: HH/PSYC4080.06A Neuropsychology of Abnormal Behaviour

Term, Time and Location: Fall/Winter 2014-2015, Tuesday 11:30-2:30, Founders College (FC) 110

Prerequisite / Co-requisite: AK/AS/HH/SC/PSYC 1010 6.00 or AK/HH/PSYC 2410 6.00, with a minimum grade of C; AK/AS/HH/SC/PSYC 2030 3.00 or AK/HH/PSYC 2530 3.00; one of AK/AS/HH/SC/PSYC 2021 3.00, AK/AS/HH/SC/PSYC 2020 6.00, AK/HH/PSYC 2510 3.00; AK/AS/HH/SC/PSYC 2240 3.00 or AK/HH/PSYC 3145 3.00; AK/HH/PSYC 3140 3.00 (after Winter 2002) or AS/SC/PSYC 3140 3.00 or AK/HH/PSYC 3215 3.00. Students without these prerequisites, but with equivalent experience may enroll with the permission of the undergraduate office. Course credit exclusion: None.

Course Instructor

Dr. R. Walter Heinrichs
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Consultation hours

Tuesday 10 a.m. – 11 a.m. (Fall and Winter)
Winter: TBA

Course Text/Readings

Course readings are posted on course/Moodle website (see also course dates/content) unless otherwise indicated.

Website

Make sure you have a Passport York account. Go to <http://moodle.yorku.ca> Click on 2014-2015 and log in with Passport York account. Registered students will be added automatically to the course.

Expanded Course Description

This course is designed to develop an appreciation of research and clinical issues in human neuropsychology with special reference to psychiatric and neurological disorders. I have structured the course in such a way that I carry the primary responsibility for instruction during the first term. In the second term students will work more independently and with my guidance to develop and present a formal research proposal. This proposal will be based on the student's interests and chosen from a list and/or in consultation with the instructor. Most students find the experience rewarding, but challenging.

During the first term I will provide a half-course on schizophrenia, my principal research interest. I will cover aspects of neuropsychology, psychophysiology, and neuroscience along with information that is specific to understanding schizophrenia. This disorder is the most severe form of mental illness and represents a major scientific and clinical challenge to psychology, psychiatry, and neuroscience. It is also a misunderstood illness, something that I hope the course will help to

correct. You are free to explore the wide range of clinical neuroscience in your research proposals and are not restricted to the study of schizophrenia. A glance at the topic list that follows will give an additional idea of what the course content is like.

Previous & Potential Presentation/Proposal Topics

Research proposals must include both behavioural and neurobiological content and measures. Here are some topics that students have chosen for their papers/proposals in the past:

aphasia, apraxia, agnosia, acalculia, alexia, dementia, dysexecutive syndrome, amnesia, neglect, anosagnosia, emotion, ADHD, synesthesia, neuroimaging, medication frontiers, effectiveness of music therapy for autism, alien hand syndrome, relative effectiveness of behaviour therapy and medication in bipolar disorder, violence and criminality, addictions, motor disorders, multiple sclerosis, Parkinsonism, cerebrovascular disorders, head injury, prevention of Alzheimer's disease, animal models, deep brain stimulation, testing issues, cognitive rehabilitation, speech therapy, cognitive reserve.

Course Learning Objectives

The specific objectives of the course are that students will be able to:

- understand the current state of schizophrenia science, diagnosis and treatment
- appreciate critically several neuroscience-related perspectives on serious mental illness
- formulate a feasible research idea in terms of granting agency requirements
- describe and communicate research ideas in oral and written formats
- use and provide constructive feedback from and to peers

Course dates and class content 2014-2015

September 9: **Orientation to course**; introduction to schizophrenia; clinical description; research issues. Reading: NIMH booklet on schizophrenia.

September 16: **Symptoms and cognition I**. Reading: Russo, M., Reichenberg, A. & Murray R. (2013). Cognitive impairment and symptom dimensions in psychosis. *Cognitive impairment in schizophrenia: characteristics, assessment and treatment* (P. D. Harvey ed.), pp. 69-84. New York: Cambridge University Press.

September 23: **Symptoms and cognition II**. Reading: Moritz, S. et al. (2014). Sowing the seeds of doubt: a narrative review on meta-cognitive training in schizophrenia. *Clinical Psychology Review*, 34, 358-366.

September 30: **Genetic and developmental perspectives**. Glatt, S. J. (2008). Chapter 6:

Genetics. *Clinical Handbook of Schizophrenia*, K. T. Meuser & D. Jeste (eds.), pp. 55-64. New York: Guilford. McDonald, P. P. & Singh S. M. (2011). Chapter 9: Schizophrenia has high heritability, but where are the genes? *Handbook of schizophrenia spectrum disorders, Volume 1. Conceptual issues and neurobiological advances*. (M. S. Ritsner, ed.), Pp. 219-236. New York: Springer.

October 7: **Markers and endophenotypes**. Reading: Allen, A. J. et al. (2009). Endophenotypes in schizophrenia: a selective review. *Schizophrenia Research*, 109 24-37.

October 14: **Frontal system brain structure and function**. Reading: Ogden, J. (2005). *Fractured Minds: A case study approach to clinical neuropsychology*, 2nd edition. (Chapter 9: The impaired executive: a case of frontal lobe dysfunction). New York: Oxford. Neirynck, J. & Garey, L. (2009). *Your brain and yourself: What you need to know*. (Chapter 2: A simple architecture of the brain). Berlin: Springer.

October 21: **Temporal lobe system structure and function**. Reading: Ogden, J. (2005). *Fractured Minds: A case study approach to clinical neuropsychology*, 2nd edition. (Chapters 3: Marooned in the Moment: H.M., A Case of Global Amnesia; and 5: The Breakdown of Language: Case Studies of Aphasia. New York: Oxford.

October 28: **Neurochemistry and medication**. Reading: Williamson, P. (2005). Chapter 4: Clues from drugs that affect dopamine, glutamate and other neurotransmitters. *Mind, brain and schizophrenia*. New York: Oxford.

November 4: **Theories**. Readings: Heinrichs, R. W. (2001) Chapter 8: Flights of theory. *In Search of Madness*, pp. 216-247. New York: Oxford.

November 11: **Synthesis**. Readings: Heinrichs, R. W. (2001) Chapter 9: The end of the beginning, *In Search of Madness*, pp. 248-276. New York: Oxford. Sullivan, P.F. (2012). Schizophrenia as a pathway disease. *Nature Medicine*, 18, 210-211. Tost, H. & Meyer-Lindenberg, A. (2012). Schizophrenia, social environment and the brain. *Nature Medicine*, 18, 211-213.

November 18: **Review and term/test preparation**

November 25: **Term test**

December 2: **Study day, no class**

HOLIDAY BREAK

January 6: **Orientation to second term**; proposal sketch due; discussion of proposal ideas. Schedule of student presentations

January 13: Return of proposals. Discussion of **“Background” section of final research/paper proposal**. Individual consultation.

January 20: Discussion of “**Hypotheses-Research Questions**” section of paper. Individual consultation.

January 27: Discussion of “**Methods**” section of research paper/proposal. Individual consultation.

February 3: Discussion of “**Originality**” section of research paper/proposal. Individual consultation.

February 10: **Student presentations.** First date to hand in paper drafts for feedback. (February 6 last date to drop course without receiving grade)

February 17: **(Reading Week, no class)**

February 24: **Student presentations.** Hand in paper drafts for feedback.

March 3: **Student presentations.** Hand in paper drafts for feedback.

March 10: **Student presentations.** Hand in paper drafts for feedback.

March 17: **Student presentations.** Hand in paper drafts for feedback.

March 24: **Student presentations.** Last day to hand in paper drafts for feedback.

March 31: **Student presentations, last class (April 6: Formal research proposal submission date)**

REQUIREMENTS AND EVALUATION:

Term test November 25, 2014:	20%
Presentation/proposal sketch due January 6, 2015:	5%
Oral presentation in class (winter term):	20%
Written research proposal due April 6, 2015:	40%
Participation:	15%

Grading, assignment submission, lateness penalties and missed tests

Grading:

A+ = 90-100%	B+ = 75-79%	C+ = 65-69%	D+ = 55-59%	E = 40-49%
A = 80-89%	B = 70-74%	C = 60-64%	D = 50-54%	F = 0-39%

Students may take a limited number of courses for degree credit on an ungraded (pass/fail) basis. For full information on this option see Alternative Grading Option in the Faculty of Health section of the Undergraduate Calendar.

Assignment Submission: Proper academic performance depends on students doing their work not only well, but on time. Accordingly, assignments for this course must be received on the due date specified for the assignment. Assignments are to be handed in to the teaching assistant or course director in person.

Lateness Penalty: Assignments received later than the due date will be penalized 10% of the value of the assignment per day. Exceptions to the lateness penalty for valid reasons such as illness, family deaths and emergencies, etc., may be entertained by the Course Instructor but will require supporting documentation (e.g., a doctor's letter explicitly stating that a medical condition prevented normal activity). Notification of lateness due to valid reasons must be communicated immediately to the instructor. Failure to do so can result in denial of accommodation.

Missed Tests: Students with a documented reason for missing a course test, such as illness, compassionate grounds, etc., which is confirmed by supporting documentation (e.g., doctor's letter) may request accommodation from the Course Instructor. In the case of the term exam, accommodation will comprise writing a make-up examination on an arranged date as close as possible to the original exam date. Further extensions or accommodation will require students to submit a formal petition to the Faculty.

ADDITIONAL IMPORTANT COURSE INFORMATION FOR STUDENTS

All students are expected to familiarize themselves with the following information available on this website: http://www.yorku.ca/secretariat/senate_cte_main_pages/ccas.htm

York's Academic Honesty Policy and Procedures/Academic Integrity Website

Ethics Review Process for research involving human participants

Course requirement accommodation for students with disabilities, including physical, medical, systemic, learning and psychiatric disabilities

Student Conduct Standards

Religious Observance Accommodation