

Neuropsychological Rehabilitation (PSYC33H3S)
 University of Toronto Scarborough
 Winter 2010

Course Director: Dr. Eva Svoboda

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Office Hours: By appointment (in person or online)

Course Websites: <http://intranet.utoronto.ca>
<http://psyc33.ning.com>

Class Time and Location: Thursdays 9:00 am – 11:00 am, MW223

Objective: In this course, methods of neuropsychological rehabilitation that are used to treat cognitive deficits in a variety of domains (e.g., behavioural, attention, memory, sensory-perception, and executive function) will be examined. The importance of using a combination of theory/research and clinical/functional relevance in the rehabilitation process will be emphasized.

Recommended Text: Publication Manual of the American Psychological Association, 6th Ed. (5th edition is fine if you already have it)

Evaluation:

Evaluation	Due dates	Content	Course weight (%)
Midterm exam	Feb. 25	Lectures + required readings	30%
Research paper	Apr. 1	20 page (max) paper detailing the design and evaluation of an intervention to rehabilitate a neuropsychological deficit. This can be a case or group study from topics covered in class.	30%
Final exam	TBD	ALL lectures and readings	40%

Exam Format: Midterm and final examinations will include multiple choice, short answer and essay questions. Information from lectures and readings will be tested equally on both midterm and final exams. The final exam is cumulative on ALL material covered in the course. However, emphasis will be placed on material covered since the midterm.

Missed Exam Policy: Students who miss the midterm exam will have their grade prorated over the research paper and final exam. The prorating option will NOT be granted unless the instructor(s) receives appropriate documentation, such as a signed medical certificate or college

registrar's note within one week of the missed exam. There will be no make-up exam for missed midterms.

Penalty for lateness: The research paper is due on April 1. Email the paper to Kris Romero by 5PM on the due date and submit the hard copy to the Psychology Department main office (the email will time stamp your paper submission). The penalty for lateness is 5% per day.

Course Schedule

Date	Topic	*Required Readings
Jan 7	-Course overview: content, layout, marking scheme -What is neuropsychological rehabilitation?	- Taub, E. , et al., (2002). Nature Reviews Neuroscience, 3, 228-235. - Wilson, B.A. (2002). Neuropsych. Rehab. 12, 97-110
Jan 14	Attention	- Sohlberg & Mateer , (2001). Management of attention disorders, 125-161. - Rode et al. (2006). Restorative Neurology & Neuroscience, 24 (2006) 347-356.
Jan 21	Memory Systems	- O'Connor & Verfaellie (2002) In Baddeley, Kopelman & Wilson (Eds.). Handbook of Memory Disorders. - Schacter, D. (2000). In Tulving & Craik (Eds.). The Oxford Handbook of Memory.
Jan 28	Memory Intervention – moderate to severe amnesia Guest speaker: patient	- Svoboda & Richards (2009) Journal of the International Neuropsychological Society, 15, 629-638. - Kapur (2009) In Wilson (Ed). Memory Rehabilitation: Integrating theory and practice.
Feb 4	Memory Intervention Programs for Older Adults & MCI	- Troyer , et al (2008). Neuropsych Rehab, 18(1), 65-88 - Thompson & Forth (2005). Educ Gerontology, 31, 603-636.
Feb 11	Program Evaluation	- Cicerone, K.D. et al., (2005). Arch Phys Med Rehabil, 86, 1681-1692. - Perdices & Tate (2009). Neuropsych. Rehab. 19 (6), 904-927
Feb 18	READING WEEK	NO CLASS
Feb 25	MIDTERM EXAM	All lectures and readings
Mar 4	Executive Functions Guest Lecturer: Dr. Deirdre Dawson Kunin-Lunenfeld Applied Research Unit, Baycrest	TBA
Mar 11	Behavioural/cognitive Interventions Guest Lecturer: Dr. Guy Proulx York University	- Camp, C (2006). In (Ed) Geriatric Neuropsychology - Barrick, A.L (2006) In (Ed) Geriatric Neuropsychology
Mar 18	Perceptual (Visual)	- Francis, D.R. , et al., (2002).

		Neuropsychological Rehabilitation, 12, 1-26. -Barrett, M.A., et al., (2006). Journal of Cog Neurosci, 18:7, 1223-1236
Mar 25	Recovery & plasticity	TBA
Apr 1	EXAM REVIEW & PAPER DUE	

*Readings will be provided online.

Reading List

January 7

Taub, E., Uswatte, G. & Elbert T. (2002). New treatments in neurorehabilitation founded on basic research. *Nature Reviews: Neuroscience*, 3, 228-235

Wilson, B.A. (2002). Towards a comprehensive model of cognitive rehabilitation. *Neuropsychological Rehabilitation*, 12, 97-110.

January 14

Sohlberg, M. M., & Mateer, C. (2001). Management of attention disorders. In *Cognitive Rehabilitation: An Integrative Neuropsychological Approach* (pp. 125-161). New York, London: The Guilford Press.

Rode, G., Klos, T., Courtois-Jacquin, S., Rossetti, Y., & Pisella, L. (2006). Neglect and prism adaptation: A new therapeutic tool for spatial cognition disorders. *Restorative Neurology and Neuroscience* 24, 347–356.

January 21

O'Connor, M., Verfaellie, M. & Cermak, L.S. (1995). Clinical Differentiation of Amnesic Subtypes. In A.D. Baddeley, B.A. Wilson & F.N.Watts (Eds.) *Handbook of Memory Disorders*. (pp 53-80) Cambridge: John Wiley & Sons Ltd.

Schacter, D Wagner, Anthony D; Buckner, Randy L (2000). Memory systems of 1999. In Tulving, E. & Craik, F.I.M. (Eds) *The Oxford handbook of memory*. (pp. 627-643). New York, NY, US: Oxford University Press

January 28

Svoboda, E., & Richards, B. (2009). Compensating for anterograde amnesia: a new training method that capitalizes on emerging smartphone technologies. *Journal of the International Neuropsychological Society*, 15, 629-638.

Kapur, N. (2009). Compensating for memory deficits with memory aids. In B. A. Wilson (Ed.), *Memory Rehabilitation: Integrating Theory and Practice* (pp. 52-71). New York: The Guilford Press.

February 4

Troyer, A. K., Murphy, K. J., Anderson, N. D., Moscovitch, M., & Craik, F. I. M. (2008). Changing everyday memory behaviour in amnesic mild cognitive impairment: A randomised controlled trial. *Neuropsychological Rehabilitation*, 18(1), 65-88.

Thompson, G., & Foth, D. (2005). Cognitive-training programs for older adults: What are they and can they enhance mental fitness? *Educational Gerontology*, 31, 603-626.

February 11

Cicerone, K.D., Dahlberg, C., Malec, J.F., et al., (2005). Evidence-Based Cognitive Rehabilitation : Updated Review of the Literature From 1998 Through 2002. *Archives of Physical and Medical Rehabilitation*, 86, 1681-1692.

Perdices, M., & Tate, R. L. (2009). Single-subject designs as a tool for evidence-based clinical practice: Are they unrecognised and undervalued? *Neuropsychological Rehabilitation* 19(6), 904–927.

March 4

TBA

March 11

Camp, C.J. (2006). Spaced Retrieval: A model for dissemination of a cognitive intervention for persons with dementia. In Attix, D K. Welsh-Bohmer, K. A. (Eds). *Geriatric Neuropsychology* pp. 275-292, New York, NY, US: Guilford Publications

Barrick, A.L. (2006) Behavioral treatment of impaired functioning and behavioural symptoms. In Attix, D K. Welsh-Bohmer, K. A. (Eds). *Geriatric Neuropsychology* pp. 367-393, New York, NY, US: Guilford Publications

March 18

Francis, D.R., Riddoch, M.M. & Humphreys, G.W. (2002). “Who’s that girl?” Prosopagnosia, person-based semantic disorder, and the reacquisition of face identification ability. *Neuropsychological Rehabilitation*, 12, 1-26.

Barrett, A.B., Buxbaum, L.J., Coslett, B., Edwards, E., Heilman, K.M., Hillis, A.E., et al., (2006). Cognitive rehabilitation interventions for neglect and related disorders: Moving from bench to bedside in stroke patients. *Journal of Cognitive Neuroscience*, 18:7, 1223-1236.

March 25

TBA

Research Papers**Objectives**

Writing a research paper will help you achieve three important objectives: (1) To expand your knowledge of neuropsychological invention by focusing on an area that is of particular interest to you, (2) To further develop your skills as a critical reader of psychological research, (3) To develop your scientific writing skills.

Research Paper 1: Design a neuropsychological intervention**General Requirements**

In the research paper you should review critically an area of neuropsychological rehabilitation with respect to interventions designed to treat a neuropsychological deficit covered in the course. Choose from the general topics of attention, memory, language, motor, executive, perceptual, etc. and decide on a deficit within one of these domains to address with a neuropsychological intervention. You will design an intervention to rehabilitate the neuropsychological deficit of interest, evaluate the efficacy of your intervention (in which you will generate mock data) and critically discuss your findings in the context of the current literature in the field. A list of research topics chosen by prior students is provided.

Specific Requirements

- The research paper should be a maximum of 20 double-spaced pages in length (not including references, tables or figures generated)
- Use 12 point font, Times New Roman.
- You must have a minimum of 10 primary sources (journal articles) in your reference section. The references should be mainly from the 1990s and 2000s.

Required Sections of the Research Paper

The research paper should be written as if it were a peer-reviewed journal article, in proper APA format.

Abstract. One paragraph, approximately 120 words in length, that briefly describes the area of investigation, type of participant(s), the presenting problem, the nature of the intervention and lastly the results and the significance of those results. Put the abstract on a separate page immediately following the title page.

Introduction. This section should describe the research area and findings from previous studies. The literature review should also discuss an issue or question that needs to be addressed in that area and provide a clear rationale for the proposed study. It should also include generally the theory behind the rehabilitative approach that is used in the study.

Methods: This section should include a description of the participant(s) and their presenting problem, a description of any equipment and how it was used, as well as a description of how the intervention was applied and specific description of the independent and dependent variables measured.

Results (mock data you generate). This section should describe your findings. You will generate mock data based upon what you might reasonably expect to have happened. Provide a table or a graph to represent the data along with a verbal explanation of the results.

Discussion. Discuss and review your findings in the context of what is currently known in the field. Include an explanation of how well the results fit the specific hypotheses, limitations of the study, and other theoretical issues. Try to highlight the significance / contribution of your research to the field and suggest future investigations.

References. You must have at least 10 primary sources (journal articles). The references should be mainly from the 1990s and 2000s.

Use APA Format

You should use the guidelines for scientific writing that have been developed by the American Psychological Association (APA). It is recommended that you consult the Publication Manual, 6th edition of the APA to determine the appropriate methods for citing research in your research paper and for creating your list of references.

Neuropsychological Rehabilitation
Some suggestions of research topics chosen by previous students

Multiple Sclerosis and Attention: A Computer Training Program for Sustained Attention Deficits in Multiple Sclerosis Patients

Improving memory in old age by positive self stereotyping

The Effect of Constraint-induced Movement Therapy and Limb Activation Training on Adolescent Patients with Motor Neglect

Treatment of Attention Deficit Hyperactivity Disorder through Cognitive Rehabilitation

Hemineglect: Experimental Alert Study Design

Motor Error Awareness Therapy and Goal Management Training in Early-stage Huntington's Disease Patients: A Novel Approach to Motor Disturbances

The Efficacy of Limb Activation Training for the Treatment of Upper-Body Hemiplegia Associated with Unilateral Visual Hemineglect

Antioxidants and Focused Memory Training: An Attempt to Impede the Progression from MCI to Alzheimer's Disease

Visual Restitution Training with Attentional Cueing Causes Restoration of Vision in Patients with Visual Defects

Increasing the Autonomy of Amnesic Individuals: An Errorless Learning/Vanishing Cues Rehabilitation Program

Memory and Lifestyle Intervention in MS Patients

A multifaceted approach to rehabilitation for MCI patients

Employing Video Games to Maximize Spontaneous Recovery of Cognitive Functions in Traumatically Brain Injured Individuals

The effects of education, concentration and motivation in the cognitive rehabilitation of elderly with late-life depression

Parkinson's Disease and Freezing of Gait Phenomenon

Effect of stress on cognitive functions and stress management in patients with cognitive disorders

Naturalistic neuropsychological rehabilitation of the Traumatically Brain-Injured Individuals

Behavioural Approaches to the treatment of a patient with Pick's Disease