Neuropsychological Rehabilitation (PSYC33H3 S)
University of Toronto Scarborough
Winter 2014

Course Director: Dr. Eva Svoboda
Email: esvoboda@baycrest.org
Office Hours: By appointment (1 hour
before/after class)

Teaching Assistant: Ron Chu
E-mail: ron.chu@mail.utoronto.ca
Office Hours: By appointment (in person or
online)

Course Websites: https://portal.utoronto.ca

Class Time and Location: Thursdays 9:00 am – 11:00 am; BV 355

Objective: Neuropsychological interventions are discussed against a backdrop of evidence-based practice, relevant neuropsychological theory and research. The course examines interventions across a number of cognitive domains including attention, visuoperception, memory (healthy aging, mild cognitive impairment and amnesia), language, executive function and Behavioural or emotional disorders. Other relevant topics in neuropsychological rehabilitation are also covered including program evaluation methodology, neuroplasticity and recovery.


Evaluation:

<table>
<thead>
<tr>
<th>Evaluation</th>
<th>Due dates</th>
<th>Content</th>
<th>Course weight (%)</th>
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</thead>
<tbody>
<tr>
<td>Midterm exam</td>
<td>February 27</td>
<td>Lectures + required readings 20 page (max) paper detailing the design and evaluation of an intervention for a neuropsychological deficit. This can be a case or group study from topics covered in class.</td>
<td>30%</td>
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<tr>
<td>Research paper</td>
<td>April 3</td>
<td></td>
<td>30%</td>
</tr>
<tr>
<td>Final exam</td>
<td>TBD</td>
<td>ALL lectures and readings</td>
<td>40%</td>
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Exam Format: Midterm and final examinations will include multiple choice and short answer 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 3rd. Email the paper to Ron Chu by 5PM on the due date. The penalty for lateness is 5% per day.

### Course Schedule

<table>
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<tr>
<th>Date</th>
<th>Topic</th>
<th>*Required Readings</th>
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| Jan 9   | -Course overview: content, layout, marking scheme  
Wilson (2011). Cutting edge' developments in neuropsychological rehabilitation and possible future directions |
| Jan 16  | Attention & neglect                        | von Bastian (2013). Effects and mechanisms of working memory training: a review  
Singh-Curry (2008). Rehabilitation of neglect                                        |
| Jan 23  | Memory Systems                              | Wilson (2014). Jose David’s story - Life After Brain Injury: Survivor’s stories     |
| Jan 30  | Memory Intervention – moderate to severe amnesia  
| Feb 6   | Memory Intervention Older Adults and MCI    | Troyer (2008). Changing everyday memory behaviour in amnestic mild cognitive impairment: A randomized controlled trial  
| Feb 20  | READING WEEK                                | NO CLASS                                                                            |
| Feb 27  | MIDTERM EXAM                                | All lectures and readings to date                                                   |
Marshall (2005). Can speech and language therapy with aphasic people affect activity and participation levels? |
Bozeat (2000). Which neuropsychiatric and behavioural features distinguish frontal and temporal variants of frontotemporal dementia from Alzheimer’s disease?  
Woolley (2007). Binge eating is associated with right orbitofrontal-insular-striatal atrophy in frontotemporal dementia – OPTIONAL READING |
|       |                             | Robertson (1999). Rehabilitation of brain damage: Brain  
|       |                             | plasticity and principles of guided recovery.  
Apr 3  | EXAM REVIEW & PAPER DUE     | Last half of class open for discussion about applying to  
|       |                             | graduate school, psychology, rehabilitation field in general …

*Readings will be posted online.

**Reading List**

**January 9**


**January 16**


**January 23**


**January 30**


**February 6**


**February 13**


**March 6**


**March 13**


**March 20**


Research Papers

Objectives
Writing a research paper will help you achieve three important objectives: (1) To expand your knowledge of neuropsychological intervention 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, behaviour, language, executive function, perception, motor, etc. and decide on a deficit within one of these domains to address with a neuropsychological intervention. You will design an intervention to ameliorate 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: Let’s dance.
- 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