



UNIVERSITY OF  
**TORONTO**  
SCARBOROUGH

DEPARTMENT OF PSYCHOLOGY



# Clinical Neuropsychology

**PSYC32H3**

**Tuesdays**

**Lecture 5-7 PM, SW 143**

**Lab 7-9 PM SW 143**

**Professor Konstantine Zakzanis**

**Office Hours: by appointment**

**Teaching Assistant:**

**Eliyas Jeffay: [eliyas.jeffay@utoronto.ca](mailto:eliyas.jeffay@utoronto.ca)**

## Brief Description of Clinical Neuropsychology

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**Neuropsychology** is the research discipline that seeks to understand brain and behavior relationships through the study of both healthy and damaged central nervous systems. It seeks to identify the biological substrates of behaviors, from creative genius to mental illness, which account for intellectual processes as well as personality.

**Clinical Neuropsychology** is an *applied science* that is concerned with the behavioural expression of brain dysfunction (Lezak et al., 2004). The clinical neuropsychologist uses standardized tests to tie the biological and behavioral aspects together. Inferences are made on the basis of accumulated research. Overall, the clinical neuropsychologist interprets every aspect of the examination (both quantitative and qualitative components) to ascertain the relative cognitive strengths and weaknesses that a patient with suspected or known neuropathology. Findings from a neuropsychological examination can be used to make diagnoses, inform rehabilitation strategies, and direct various aspects of patient care.

In this course we will comprehensively explore the science and practice of clinical neuropsychology.

### Important Notes

- A. All course related inquiries are to be directed to the Teaching Assistant course E-Mail addresses as provided on the first page.
- B. Every enrolled student must ensure that they have access to the course website via the UTSC BLACKBOARD. All course related content will be posted here (e.g., lecture slides, important announcements, and midterm grades).
- C. All students need to ensure that they have the necessary prerequisites for this course. If this course is taken without having completed the prerequisites, the registrar will not allow you credit for this course at the time of graduation. This can jeopardize the completion of your degree.
- D. The prerequisites are Psychological Research Methods (PSYB01H), Abnormal Psychology (PSYB32H), Human Brain & Behaviour (PSYB65H), and any of the following statistics courses: PSYB07H, SOCB06H, STAB22H. The only exclusion for this course is PSYC32H, which is reserved for co-op students in the Behavioural Disorders Stream.
- E. Students enrolled in PSYC32 also need to be enrolled in the Specialist (Co-op) Mental Health Studies Program in Psychology and its Applications. The only exclusion for this course is PSYC31.
- F. If a lecture is cancelled because of an unforeseen circumstance (e.g., snow-storm cancellation, unexpected illness), students are still responsible for the material that was to be presented in the lecture that day. I will do what I can to cover the missed material the following week as time permits.
- G. If a student is absent from a midterm examination due to illness or other extenuating circumstance, they must contact the Teaching Assistant via the course e-mail addresses as soon as possible. For medical reasons, students must use the University of Toronto Student Medical

certificate. Matters concerning the final examination are dealt with solely by the Registrar's office. Any medical documentation that you provide must indicate the date(s) that you needed to be excused from coursework, which must include the date of mid term exam that you missed. You are advised to see your physician within one day of a missed examination. Only documentation from a member registered with the College of Physicians and Surgeons of Ontario will be accepted. You must contact your Teaching Assistant within one week of a missed exam (or as soon as is reasonably possible).

The University of Toronto's *Verification of Student Illness or Injury* form is located at the following web address:

[http://www.utsc.utoronto.ca/~registrar/resources/pdf\\_general/UTSCmedicalcertificate.pdf](http://www.utsc.utoronto.ca/~registrar/resources/pdf_general/UTSCmedicalcertificate.pdf)

- H. Make-up midterm examination details will be listed on BLACKBOARD.
- I. For all examinations, you must bring your UTSC student ID cards. You are also encouraged to bring a pencil and eraser to allow for making answer changes.
- J. Students with diverse learning styles and needs are welcome in this course. In particular, if you have a disability/health consideration that may require accommodations, please feel free to approach me and/or the AccessAbility Services Office as soon as possible. We will work with you and AccessAbility Services to ensure you can achieve your learning goals in this course. Enquiries are confidential. The UTSC AccessAbility Services staff (located in S302) are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations (416) 287-7560 or [ability@utsc.utoronto.ca](mailto:ability@utsc.utoronto.ca).
- K. For reasons of privacy as well as protection of copyright, unauthorized video or audio recording in classrooms is prohibited. This is outlined in the Provost's guidelines on *Appropriate Use of Information and Communication Technology*. Note, however, that these guidelines include the provision that students may obtain consent to record lectures and, "in the case of private use by students with disabilities, the instructor's consent must not be unreasonably withheld."
- L. Grade Scales and Meaning of Grades

NUMERICAL MARKS	LETTER GRADE	GRADE POINT VALUE
90 - 100%	A+	4.0
85 - 89%	A	4.0
80 - 84%	A-	3.7
77 - 79%	B+	3.3
73 - 76%	B	3.0
70 - 72%	B-	2.7
67 - 69%	C+	2.3
63 - 66%	C	2.0
60 - 62%	C-	1.7
57 - 59%	D+	1.3
53 - 56%	D	1.0
50 - 52%	D-	0.7
0 - 49%	F	0.0

M. Academic integrity is essential to the pursuit of learning and scholarship in a university, and to ensuring that a degree from the University of Toronto is a strong signal of each student's individual academic achievement. As a result, the University treats cases of cheating and plagiarism very seriously. The University of Toronto's *Code of Behaviour on Academic Matters* (<http://www.governingcouncil.utoronto.ca/policies/behaveac.htm>) outlines the behaviours that constitute academic dishonesty and the processes for addressing academic offences. Potential offences include, but are not limited to:

**In papers and assignments:**

- Using someone else's ideas or words without appropriate acknowledgement.
- Submitting your own work in more than one course without the permission of the instructor.
- Making up sources or facts.
- Obtaining or providing unauthorized assistance on any assignment.

**On tests and exams:**

- Using or possessing unauthorized aids.
- Looking at someone else's answers during an exam or test.
- Misrepresenting your identity.

**In academic work:**

- Falsifying institutional documents or grades.
- Falsifying or altering any documentation required by the University, including (but not limited to) doctor's notes.

All suspected cases of academic dishonesty will be investigated following procedures outlined in the Code of Behaviour on Academic Matters. If you have questions or concerns about what constitutes appropriate academic behaviour or appropriate research and citation methods, you are expected to seek out additional information on academic integrity from your instructor or from other institutional resources (see <http://www.utoronto.ca/academicintegrity/>).

## Readings

Lezak, M.D., Howieson, D.B., Bigler, E.D., & Tranel, D. (2012). Neuropsychological assessment (5<sup>th</sup> Edition). New York: Oxford University Press.

*\*The price of this text is quite hefty (~\$108.00) and thus, a copy of this text has been made available at the UTSC library for short term loan. This text will be likely useful for the preparation of your presentation (see below).*

Strauss, E., Sherman, E., & Spreen, O. (2006). A compendium of neuropsychological tests: Administration, norms, and commentary (3<sup>rd</sup> Edition). Oxford University Press.

Mitrushina, M., Boone, K.B., Razani, J., & D'Elia, L.F., (2005). Handbook of Normative Data for Neuropsychological Assessment., 2nd edition. NY: Oxford University Press.

*\* all texts can be purchased at Amazon.ca. Pertinent pages from Strauss et al. (2006) and Mitrushina et al., (2005) will be photocopied/provided on blackboard.*

## Grading Scheme

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### Lecture Component – Worth 60% of your final grade

#### 1<sup>st</sup> Midterm

Administered in-class (February 3)  
Will consist of 60 multiple-choice questions  
Worth 20% of your final grade

#### 2<sup>nd</sup> Midterm

Administered in-class (March 10)  
Non-Cumulative  
Will consist of 60 multiple-choice questions  
Worth 20% of your final grade

#### Final Exam

UTSC final examination period  
Non-Cumulative (but representative of entire course learning)  
Will consist of 60 multiple-choice questions  
Worth 20% of your final grade

### Laboratory Component – Worth 30% of your final grade

#### Laboratory Take-home Test

Due on January 27, 2015  
Will consist of short-answer and practical (scoring) questions from Strauss et al. and Mitrushina et al.  
Worth 5% of your final grade

Presentation – Administration/scoring of neuropsychological tests

Dates to be determined in class and will be added to presentation schedule (please see last section of syllabus for schedule)

Worth 10% of your final grade

Final In-vivo Examination (1 hour)

Date to be determined in class (usually prior to UTSC final examination period)

Will involve in-vivo testing (~30 min) and scoring/behavioural observation summaries (~30 min)

Worth 15% of your final grade

### **Paper Assignment**

Worth 10% of your final grade

For this assignment, students will be presented with a Clinical Case demonstration that will unfold throughout the academic term in class. You will be provided with brief background information, referral documentation from the family physician, and neuropsychological test score data. In addition, you will be provided with weekly in-class demonstrations which will reflect the patient's disease/disorder. Your assignment will require you to write up your diagnostic impression and treatment recommendations for the fictitious patient. You will be expected to outline a clinical diagnosis and why you have made it. For example, you should speak to what symptoms were evident and how they fit into the clinical diagnosis you come up with (e.g., behavioral observations, test findings; behavioral relationship to brain and disorder) and moreover, what other clinical diagnoses you ruled out and why (i.e., state your differential diagnosis if there is one to make, and select your clinical diagnosis and state why). The maximum length of this assignment is ONE page, double spaced using 12 point font - anything longer and you will be given a grade of 0% on this assignment. All submissions will go through blackboard.

**This assignment will be worth 10% of your final grade in the course and is due exactly 5 days after the last lecture.**

### **Important Dates**

Monday, January 5	Classes begin in S courses and resume in Y courses.
Sunday, January 11	Last day for students writing deferred examinations in April to adjust their current course load (on ROSI only).
Sunday, January 18	Last day to add S courses (on ROSI only).
Friday, February 13	Last day to confirm intention to graduate at the 2015 Spring Convocation.
Monday, February 16	Last day to drop Y courses (on ROSI only) without academic penalty and have them removed from the transcript.
Monday, February 16	Last day to add or remove the CR/NCR mode of assessment for an Y section course (on ROSI only). (Note: For details go to <a href="http://www.utoronto.ca/registrar">www.utoronto.ca/registrar</a> )
Monday, February 16	Family Day holiday -> University closed.
Tuesday, February 17 - Saturday, February 21	Reading Week -> No classes held.
Monday, February 23	Classes resume in S and Y courses.
Sunday, March 22	Last day to drop S courses without academic penalty and have them removed

	from the transcript (on ROSI only).
Sunday, March 22	Last day to add or remove the CR/NCR mode of assessment for an S section course (on ROSI only). (Note: For details go to <a href="http://www.uts.utoronto.ca/registrar">www.uts.utoronto.ca/registrar</a> )
Friday, April 3	Good Friday – University Closed
Monday, April 6	UTSC Friday: Last day of classes and last day for submission of term assignments in S and Y courses that normally meet on a Friday.
Tuesday, April 7 - Thursday, April 9	Study Break.
Tuesday, April 7 – Saturday, April 25	2014 Fall deferred examinations
Thursday, April 9	Last day to drop UTSC S and Y courses (on eService only) and have them remain on the transcript with a grade of LWD indicating withdrawal without academic penalty. After this date grades are assigned whether or not course work is completed (with a '0' assigned for Incomplete work) and they are calculated into GPAs. ( <b>Note:</b> See <a href="http://www.uts.utoronto.ca/registrar">www.uts.utoronto.ca/registrar</a> for LWD dates for courses on other campuses.)
Friday, April 10 - Saturday, April 25	Final examinations in S and Y courses.
June TBA	2015 Spring Convocation. Check "Ceremony Dates" at <a href="http://www.convocation.utoronto.ca/">www.convocation.utoronto.ca/</a> for the date of the UTSC ceremonies.

## Lecture Dates and Readings (see below for LAB dates/readings)

January 6

Lecture:

Welcome & Introduction

*History, Theory and Practice of Neuropsychological Assessment*

Chapter 1

January 13

Lecture:

*Basic Concepts*

Chapter 2

Demonstration:

*The Neuropsychological Examination: Procedures*

Chapter 5

January 20

Lecture:

*The Behavioural Geography of the Brain*

Chapter 3

Demonstration:

*Orientation and Attention*

Chapter 9

## Lecture Dates and Readings (continued)

January 27

Lecture:

*The Rationale of Deficit Management*

Chapter 4

Demonstration:

*Perception*

Chapter 10

February 3

First Mid-Term Examination

The examination will cover chapters 1, 2, 3, 4, 5, 9 & 10

February 10

Lecture:

*The Neuropsychological Examination: Interpretation*

Chapter 6

Demonstration:

Memory I: Tests

Chapter 11

February 17

No class (Reading week)

February 24

Lecture:

*Neuropathology for Neuropsychologists*

Chapter 7

Demonstration:

*Verbal Functions and Language Skills*

Chapter 13

March 3

Lecture:

*Neuropathology for Neuropsychologists, Continued*

Chapter 7

Demonstration:

*Construction*

Chapter 14



## Lecture Dates and Readings (continued)

March 10

Second Mid-Term Examination

The examination will cover chapters 6, 7, 11, 12 & 14

The examination is non-cumulative

March 17

Lecture:

*Neurobehavioral Variables and Diagnostic Issues*

Chapter 8

Demonstration:

*Concept Formation and Reasoning*

Chapter 15

March 24

Lecture:

*Neurobehavioral Variables and Diagnostic Issues Continued*

Chapter 8

Demonstration:

*Executive Functions and Motor Performance*

Chapter 16

March 31

Demonstration:

*Testing for Response Bias and Incomplete Effort*

Chapter 20

Overall Review of the Neuropsychological Examination

### End of the Term

The final examination will be scheduled by the registrar's office approximately midway through the term. Details will be provided in class and on the intranet once known. The final examination will cover Chapters 8, 15, 16, and 20 and is cumulative although do note that the exam questions will be most representative chapters 8, 15, 16, and 20.

## LABORATORY SCHEDULE

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January 6

Laboratory 1

Topic: Neuropsychological Evaluation & History Taking (figure 3-1 from Strauss et al., 2006)

January 13

Laboratory 2

Topic: Scoring Procedures

Practice Questions

Assigned Lab Readings: Chapters 1-3 from Mitrushina – readings will be posted on the intranet

Chapters 1-5 from Strauss et al., 2006

January 20

Laboratory 3

Topic: Attention & Working Memory; Perception

Tests: WAIS-IV Digit Span, Judgment of Line Orientation, Visual Form Discrimination, Face Discrimination Test

Take-home test handed out – covers assigned readings, lecture notes, and scoring procedures

January 27

Laboratory 4

Topic: Verbal Memory

Tests: California Verbal Learning Test-II; WMS-IV Logical Memory I & II

Take-home test due today

February 3

Midterm #1 – No Lab Today

February 10

Laboratory 5

Topic: Visual Memory

Tests: Rey-Osterreith Complex Figure Test, WMS-IV - Designs I & II, WMS-IV Visual Reproductions I & III

February 17

No Lab Today (Reading week).

February 24

Laboratory 6

Topic: Language

Tests: Boston Naming Test, Controlled Oral Word Association Test

March 3

Laboratory 7

Topic: Construction

Tests: NAB Designs; WASI-II Block Design

March 10  
Midterm #2 – No Lab Today

March 17  
Laboratory 8  
Topic: Executive Function  
Tests: Wisconsin Card Sorting Test, Tower of London, WAIS-IV – Figure Weights,  
Trail Making Test

March 24  
Laboratory 9  
Topic: Motor Performance  
Tests: Grooved Pegboard, Finger Tapping Test

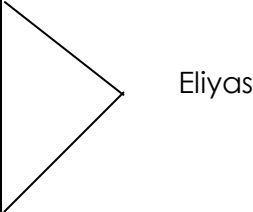
March 31  
Laboratory 10  
Topic: Intelligence  
Tests: NAART, Wechsler Abbreviated Scale of Intelligence (WASI-II)\*

*\*Note: The Block Design subtest of the WASI-II will have already been covered during Lab #7 (Construction)*

**Final In-Vivo Exam: Date(s) and details to be announced in lab (usually a few days before or into reading week)**

## PRESENTATION SCHEDULE

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Date	Tests	Presenter(s)
January 20	<b>ATTENTION &amp; WM; PERCEPTION</b> <ul style="list-style-type: none"> <li>• WAIS-IV Digit Span</li> <li>• Judgment of Line Orientation Test</li> <li>• Visual Form Discrimination</li> <li>• Face Discrimination</li> </ul>	
January 27	<b>VERBAL MEMORY</b> <ul style="list-style-type: none"> <li>• California Verbal Learning Test-II</li> <li>• WMS-IV Logical Memory I &amp; II</li> </ul>	
February 10	<b>VISUAL MEMORY</b> <ul style="list-style-type: none"> <li>• Rey-O Complex Figure Test</li> <li>• WMS-IV - Designs I &amp; II</li> <li>• WMS-IV - Visual Reproductions I &amp; II</li> </ul>	
February 24	<b>LANGUAGE</b> <ul style="list-style-type: none"> <li>• Boston Naming Test</li> <li>• Controlled Oral Word Association Test</li> </ul>	
March 3	<b>CONSTRUCTION</b> <ul style="list-style-type: none"> <li>• NAB Designs</li> <li>• Block Design (WASI-II)</li> </ul>	
March 17	<b>EXECUTIVE FUNCTIONS</b> <ul style="list-style-type: none"> <li>• Wisconsin Card Sorting Test</li> <li>• Tower of London</li> <li>• Figure Weights (WAIS-IV)</li> <li>• Trail Making Test</li> </ul>	
March 24	<b>MOTOR PERFORMANCE</b> <ul style="list-style-type: none"> <li>• Grooved Pegboard</li> <li>• Finger Tapping Test</li> </ul>	
March 31	<b>INTELLIGENCE</b> <ul style="list-style-type: none"> <li>- NAART</li> </ul> <b>Wechsler Abbreviated Scale of Intelligence - II</b> <ul style="list-style-type: none"> <li>• Vocabulary</li> <li>• Similarities</li> <li>• Matrix Reasoning</li> </ul>	