



UNIVERSITY OF  
**TORONTO**  
SCARBOROUGH

DEPARTMENT OF PSYCHOLOGY



# Clinical Neuropsychology Lab

PSYC31H3

Lecture: Thursdays 5-7 PM, SW 319

Lab 7-8 PM BV 359

Professor Konstantine Zakzanis

Teaching Assistants:

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## Brief Description of Clinical Neuropsychology

**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 Co-op Behavioural Disorders Stream.
- E. 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.
- F. If a student is absent from a midterm examination due to illness or other extenuating circumstance, they must follow the protocol outlined in the syllabus for missed term work (see last page).
- G. Make-up midterm examination details will be listed on BLACKBOARD.

- H. 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.
- I. 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 as soon as possible. AccessAbility Services staff (located in Rm SW302, Science Wing) are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations 416-287-7560 or email [ability@utsc.utoronto.ca](mailto:ability@utsc.utoronto.ca). The sooner you let us know your needs the quicker we can assist you in achieving your learning goals in this course.
- J. 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."

K. 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

- L. 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/>).

Lastly, you may see advertisements for services offering grammar help, essay editing and proof-reading. Be very careful. If these services take a draft of your work and significantly change the content and/or language, you may be committing an academic offence (unauthorized assistance) under the *Code of Behaviour on Academic Matters*. It is much better and safer to take your draft to the Writing Centre as early as you can. They will give you guidance you can trust. Students for whom English is not their first language should go to the English Language Development Centre. If you decide to use these services in spite of this caution, you must keep a draft of your work and any notes you made before you got help and be prepared to give it to your instructor on request.

## 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.

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.

*\* Pertinent pages from Strauss et al. (2006) and Mitrushina et al., (2005) will be photocopied/provided on blackboard.*

## Grading Scheme

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

All exams are multiple-choice in format.

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

Administered in-class (February 8)  
Will consist of 60 multiple-choice questions  
Worth 20% of your final grade

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

Administered in-class (March 15)  
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 February 1<sup>st</sup>, 2018  
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 (will occur in April)

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 that 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. Please note that all papers will be processed through turnitin.com.

**This assignment will be worth 10% of your final grade in the course and is due April 6, 2018 @ 11:55 pm on blackboard. Late submissions will result in a deduction of 10% per day to a maximum of 3 days.**

**Important Dates:**

<http://hive.utsc.utoronto.ca/public/registrar/Calendar%20Sessiona1%20Dates%20for%20RO1%20website.pdf>

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

January 11

Lecture:

Welcome & Introduction

*History, Theory and Practice of Neuropsychological Assessment*

Chapter 1

Laboratory 1

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

January 18

Lecture:

*Basic Concepts*

Chapter 2

Demonstration:

*The Neuropsychological Examination: Procedures*

Chapter 5

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 25

Lecture:

*The Behavioural Geography of the Brain*

Chapter 3

Demonstration:

*Orientation and Attention*

Chapter 9

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

February 1

Lecture:

*The Rationale of Deficit Management*

Chapter 4

Demonstration:

*Perception*

Chapter 10

Laboratory 4

Topic: Verbal Memory

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

**Take-home test due today (must be submitted before 7pm)**

February 8

First Mid-Term Examination

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

No Laboratory this week.

February 15

Lecture:

*The Neuropsychological Examination: Interpretation*

Chapter 6

Demonstration:

Memory I: Tests

Chapter 11

Laboratory 5

Topic: Visual Memory

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

February 22

No class/laboratory (Reading week)

March 1

Lecture:

*Neuropathology for Neuropsychologists*

Chapter 7

Demonstration:

*Verbal Functions and Language Skills*

Chapter 13

Laboratory 6

Topic: Language

Tests: Boston Naming Test, Controlled Oral Word Association Test

March 8

Lecture:

*Neuropathology for Neuropsychologists, Continued*

Chapter 7

Demonstration:



*Construction*  
Chapter 14

Laboratory 7  
Topic: Construction  
Tests: NAB Designs; WASI-II Block Design

March 15

Second Mid-Term Examination  
The examination will cover chapters 6, 7, 11, 12 & 14  
The examination is non-cumulative

No Laboratory

March 22

Lecture:  
*Neurobehavioral Variables and Diagnostic Issues*  
Chapter 8

Demonstration:  
*Concept Formation and Reasoning*  
Chapter 15

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

March 29

Lecture:  
*Neurobehavioral Variables and Diagnostic Issues Continued*  
Chapter 8

Demonstration:  
*Executive Functions and Motor Performance*  
Chapter 16  
*Testing for Response Bias and Incomplete Effort*  
Chapter 20

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

April 5

Overall Review of the Neuropsychological Examination

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)*

### **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 non cumulative although do note that the exam questions will be representative of entire course learning.

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

## PRESENTATION SCHEDULE

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Date	Tests	Presenter(s)
January 25	<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>	Courtney Courtney Courtney Courtney
February 1	<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 15	<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>	
March 1	<b>LANGUAGE</b> <ul style="list-style-type: none"> <li>• Boston Naming Test</li> <li>• Controlled Oral Word Association Test</li> </ul>	
March 8	<b>CONSTRUCTION</b> <ul style="list-style-type: none"> <li>• NAB Designs</li> <li>• Block Design (WASI-II)</li> </ul>	
March 22	<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 29	<b>MOTOR PERFORMANCE</b> <ul style="list-style-type: none"> <li>• Grooved Pegboard</li> <li>• Finger Tapping Test</li> </ul>	
April 5	<b>INTELLIGENCE</b> <ul style="list-style-type: none"> <li>- NAART</li> <li>Wechsler Abbreviated Scale of Intelligence - II               <ul style="list-style-type: none"> <li>• Vocabulary</li> <li>• Similarities</li> <li>• Matrix Reasoning</li> </ul> </li> </ul>	

# *Missed Term Work due to Medical Illness or Emergency:*

All students citing a documented reason for missed term work must bring their documentation to the Psychology Course Coordinator in SW427C **within three (3) business days** of the assignment due date. You must bring the following:

- (1.) A completed [Request for Missed Term Work form](http://uoft.me/PSY-MTW) (<http://uoft.me/PSY-MTW>), and
- (2.) Appropriate documentation to verify your illness or emergency, as described below.

## Appropriate Documentation:

In the case of missed term work due to **illness**, only an **original copy** of the official [UTSC Verification of Illness Form](http://uoft.me/UTSC-Verification-Of-Illness-Form) will be accepted (<http://uoft.me/UTSC-Verification-Of-Illness-Form>). Forms are to be **completed in full**, clearly indicating the start date, anticipated end date, and severity of illness. The physician's registration number and business stamp are required.

In the case of **medical emergency**, an original copy of the record of visitation to a hospital emergency room should be provided.

In the case of a **death of a family member**, a copy of a death certificate should be provided.

In the case of a **disability-related** concern, an email communication should be sent directly to the Course Coordinator ([psychology-undergraduate@utsc.utoronto.ca](mailto:psychology-undergraduate@utsc.utoronto.ca)) from your Disability Consultant at AccessAbility Services, detailing the accommodations required. The Course Instructor should also be copied on this email.

For U of T **Varsity athletic commitments**, an email communication should be sent directly to the Course Coordinator ([psychology-undergraduate@utsc.utoronto.ca](mailto:psychology-undergraduate@utsc.utoronto.ca)) from a coach or varsity administrator, detailing the dates and nature of the commitment. The email should be sent **well in advance** of the missed work.

Documents covering the following situations are **NOT acceptable**: medical prescriptions, anything related to personal travel, weddings/personal/work commitments.

## Procedure:

Submit your (1.) [request form](#) and (2.) [medical](#)/other documents in person **within 3 business days** of the missed test or assignment. Forms should be submitted to **SW427C between 9 AM - 4 PM**, Monday through Friday. If you are unable to meet this deadline for some reason, you must contact the Course Coordinator via email ([psychology-undergraduate@utsc.utoronto.ca](mailto:psychology-undergraduate@utsc.utoronto.ca)) within the three business day window. Exceptions to the documentation deadline will only be made under exceptional circumstances.

Within approximately one week, you will receive an email response from the Course Instructor / Course Coordinator detailing the accommodations to be made (if any). You are responsible for checking your official U of T email and Blackboard course announcements daily, as accommodations may be time-critical. The Course Instructor reserves the right to decide what accommodations (if any) will be made for the missed work.

**Failure to adhere to any aspect of this policy may result in a denial of your request for accommodation.**

Note that this policy applies only to missed term work (assignments and midterms). Missed final exams are handled by the Registrar's Office (<http://www.utsc.utoronto.ca/registrar/missing-examination>)