# Department of Psychology

**PSYC-4225H-A: Advanced Cognitive Neuroscience – Brain Plasticity**  
**FA 2014 Peterborough**

<table>
<thead>
<tr>
<th>Instructor:</th>
<th>Hugo Lehmann, Ph.D.</th>
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<tbody>
<tr>
<td>Trent email:</td>
<td><a href="mailto:hugolehmann@trentu.ca">hugolehmann@trentu.ca</a></td>
</tr>
<tr>
<td>Office Location</td>
<td>LHS-C117</td>
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<tr>
<td>Telephone:</td>
<td>705-748-1011 x7236</td>
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<tr>
<td>Office Hours:</td>
<td>Tuesdays 14:00-15:00 PM or appointment</td>
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<tr>
<td>Psychology Dept.</td>
<td>LHS C104, 705-748-1011 ext. 7535</td>
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**Course Description:**  
The aim of this course is to discuss brain plasticity, behaviour, and cognition from a lay perspective to the scientific level. The first part of the course will focus on the scientific definition of brain plasticity. The relationship between plasticity and exercise, learning and memory, addiction, pain, aging, and recovery of function after brain injury will then be considered. These views will be compared and contrasted with lay perspectives on brain plasticity. Part of the course will focus on fact checking and aim to determine whether the discussions of brain plasticity in popular lay texts are accurate. Throughout, the importance of empirical findings, including those from human and non-human animal studies, will be stressed.

**Course Prerequisites:**  
Listed on pp. 204-210 of the 2014-15 Academic Calendar  
[http://www.trentu.ca/calendar/](http://www.trentu.ca/calendar/)

**Course Format:**  
**Seminars:** Mondays (14:00 – 16:50)  
[https://scheduler.trentu.ca/AcademicTimetable/Peterborough/Winter/TimeTableGen22.htm](https://scheduler.trentu.ca/AcademicTimetable/Peterborough/Winter/TimeTableGen22.htm)

**For classroom locations please see:**  
[https://scheduler.trentu.ca/AcademicTimetable/](https://scheduler.trentu.ca/AcademicTimetable/)

Weekly seminars that will involve student presentations of empirical research, theory and concept description, review of lay perspectives, as well as group discussion.

LearningSystem/Blackboard will also be used for communication and submission of written work: [http://www.trentu.ca/mytrent/](http://www.trentu.ca/mytrent/)

**Required Readings:**  
**Mandatory Scientific Articles:**  


**Lay texts:**


**Additional Readings:**


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**Learning Outcomes**

Students successfully completing this course will be able to:

1. Describe the meaning of brain plasticity and how it relates to behaviour and cognition;
2. Discuss seminal papers on brain plasticity;
3. Identify and discuss key views, issues, and promising avenue for brain plasticity and recovery of function (behaviour and cognition) after brain injury;
4. Contrast scientific views and findings with lay descriptions and texts on brain plasticity;
5. Complete “fact checking” using empirical evidence;
6. Give strong oral presentations.

**Withdrawal Deadline**

Students will have 38% of their grades by the final date for withdrawal without penalty - November 4th, 2014.

**Evaluation**

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<tr>
<th>Component</th>
<th>Percentage</th>
<th>Due Date</th>
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<tbody>
<tr>
<td>1. Presentation 1</td>
<td>20%</td>
<td>Nov 3rd or earlier (dates to be assigned)</td>
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<tr>
<td>2. Presentation 2</td>
<td>20%</td>
<td>Dec 1st or earlier (dates to be assigned)</td>
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<tr>
<td>3. Paper</td>
<td>30%</td>
<td>Dec 1st</td>
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<tr>
<td>4. Fact checks (5)</td>
<td>20%</td>
<td>~Bi-weekly starting Sep 22nd</td>
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<td>5. Seminar participation</td>
<td>10%</td>
<td>Weekly</td>
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**Due Date**

*It is the responsibility of each student to read and accept the due dates*
outlined on the syllabus.

**Explanation of Assignments**

**Presentation 1 (20%)**: Presentations should be approximately 30-40 min in length and include visual aid (e.g., PowerPoint). Students should discuss the readings from the lay book “Spark” and contrast it with empirical research on the topic. Basically, the presentation should aim to verify the accuracy of the lay perspective by presenting actual studies. Students should be ready for questions on the topic and know more than the sole paper. Scheduling of the presentations will be completed during the first seminar. Students will receive feedback and their mark before withdrawal without penalty date (Nov 8th).

**Presentation 2 (20%)**: Same format as Presentation 1 with the exception that the lay book will now be “The brain that changes itself”.

**Paper (30%)**: On Dec 1st you will need to hand in a ~2400 word perspective/review on one of the topics that you picked for your oral presentations. The perspective paper should follow APA format and guidelines. The paper is again to contrast the lay perspective with empirical evidence. Late papers will be penalized 10% per day.

**Fact checks (5; each worth 4%)**: For each seminar you will need to provide a ~300 word paper examining a claim from the lay readings with an empirical article. Ideally, the original source leading to the lay claim would be used to verify accuracy. These papers must be typed and submitted the evening prior to seminar by 11:59 PM) through Blackboard.

**Seminar participation (10%)**: Each seminar will be worth 1% for attendance & participation

**Course Policy on Late Submissions**

- Papers are due at the beginning of class. Late papers will **be penalized** 10% per day including weekends. Late papers need to be submitted electronically by email and a hardcopy must be provided at the following lecture.

- Fact checks are due by 11:59 PM the Sunday prior to seminar and must be submitted through the Blackboard system. Late submissions will not be accepted.

**Course Policy on attendance in class/labs**

**Seminar participation (10%)**: Each seminar will be worth 1% for attendance & participation. This course requires in class discussion of the material and interaction.

**COURSE OUTLINE**

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<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Topic</th>
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<tr>
<td>Sep 8</td>
<td>Seminar</td>
<td>Introduction and organization</td>
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<td>Sep 15</td>
<td>Seminar</td>
<td>Defining brain plasticity</td>
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<td>Mandatory Scientific Articles (1-5)</td>
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<td>Sep 22</td>
<td>Seminar</td>
<td>Exercise, learning, and plasticity</td>
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<td><strong>Fact check due</strong></td>
<td>Spark – Chap 1 &amp; 2</td>
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<td>Presenters</td>
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<td>Topic</td>
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<td>Sep 29</td>
<td>Seminar</td>
<td>Stress, anxiety, and plasticity</td>
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<td>Oct 6</td>
<td>Seminar</td>
<td>Disorders and plasticity</td>
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<td>Oct 13</td>
<td>No class</td>
<td>Thanksgiving</td>
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<td>Oct 20</td>
<td>No class</td>
<td>Reading week</td>
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<td>Oct 27</td>
<td>Seminar</td>
<td>Addiction and plasticity</td>
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<td>Nov 3</td>
<td>Seminar</td>
<td>Aging and brain gymnastics</td>
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<td>The brain that changes itself</td>
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<td>Nov 10</td>
<td>Seminar</td>
<td>Brain injury and plasticity</td>
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<td>Nov 17</td>
<td>TBA</td>
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<td>Nov 24</td>
<td>Seminar</td>
<td>Pain, imagination, and plasticity</td>
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Dec 1  Seminar  Adding to the plasticity
The brain that changes itself – Chap 9-11

Paper due  Electronic submission (Blackboard)
Fact check due  Floating fact check – can be submitted earlier

Presenters

University Policies

ACADEMIC INTEGRITY:
Academic dishonesty, which includes plagiarism and cheating, is an extremely serious academic offence and carries penalties varying from a 0 grade on an assignment to expulsion from the University. Definitions, penalties, and procedures for dealing with plagiarism and cheating are set out in Trent University’s Academic Integrity Policy. You have a responsibility to educate yourself – unfamiliarity with the policy is not an excuse. You are strongly encouraged to visit Trent’s Academic Integrity website to learn more – www.trentu.ca/academicintegrity.

ACCESS TO INSTRUCTION:
It is Trent University’s intent to create an inclusive learning environment. If a student has a disability and/or health consideration and feels that he/she may need accommodations to succeed in this course, the student should contact the Student Accessibility Services Office as soon as possible – in Peterborough (accessibilityservices@trentu.ca, BH Suite 132, 748-1281) or in Oshawa (Student Accessibility Services Office Room 111, nancyhempel@trentu.ca, (905) 435-5102, ext. 5024).

Departmental Policy on Tests, Exams, and Assignments

A. MIDTERMS & FINAL EXAMINATIONS
Midterm examinations for half courses within the Psychology Department are scheduled by the instructor of the course. Midterm examinations for full courses and final examination for all courses are scheduled by the Registrar’s Office. Students are strongly urged NOT to make any commitments (i.e., vacation, job related, or other travel plans) during either the term as a whole or the final examination period. Students are required to be available for all examinations during the periods for which they are scheduled (as published in course syllabi).

B. DEFERRAL OF MIDTERM / FINAL EXAMINATIONS and/or TERM WORK
Extensions of deadlines for completion of assignments or writing of midterms/final examinations may be granted to students on the basis of illness, accident, or other extreme and legitimate circumstances beyond their control. Consideration for deferrals will not normally be granted on the basis of vacation/travel plans or job-related obligations.

C. SUPPORTING DOCUMENTATION
Students should expect that supporting documentation will be required and must be submitted before a deferral is approved. For illness or accident, supporting documentation will take the form of: (1) the Trent University Medical Certificate from Health Services: (http://www.trentu.ca/healthservices/medical.html), or (2) a certificate or letter from the attending physician clearly indicating the start and end dates of the illness and the student’s inability to write an examination, complete assignments, and/or attend classes, as relevant to the particular request. For other circumstances, students should consult the individual Psychology faculty member about acceptable forms of documentation.

Notes

1. Academic Integrity:
For the purpose of interpreting and applying the University policy on academic dishonesty, the Department of Psychology has adopted the following:

When a student submits a piece of written work in fulfillment of an assignment, he/she implicitly acknowledges the following: a) that she/he is the sole author of the work; b) that the wording and organization of the work, apart from acknowledged quotations, is her/his own; and c) that she/he has not and will not submit this work, either as a whole or in part, to satisfy another course requirement. These basic assumptions will be reasonably interpreted. They do not preclude collaboration between students upon a single project, by prior arrangement with the instructor, for shared academic credit (either for written or oral presentation).

For an elaboration of the Department’s policy on, and for specific examples of, plagiarism, students should consult p. 178 in the APA (2010) and the sections on academic honesty (pp. 6-8), and appropriate citing and referencing (pp. 135-137, 169) in Mitchell et al. (2010) on reserve in the library. Students who have doubts about what might be considered academic dishonesty are urged to consult the instructor of the course. Ignorance of the University or Department policy does not excuse academic dishonesty. Submissions that fail to meet one or more of these considerations will be subject to procedures laid down in the policy on academic dishonesty as stated in the University calendar.
2. It is the policy of the Department NOT to accept faxed assignments.

3. The same assignment cannot be submitted in more than one course without the prior written permission of all instructors concerned. The written approval must be attached to the work when it is submitted.


5. Please see the Trent University academic calendar for University Diary dates, Academic Information and Regulations, and University and departmental degree requirements.

6. Last date to withdraw without academic penalty is November 4th, 2014 for Fall half courses.