

# Syllabus

NRO D62F Neuroplasticity: Mechanisms and Function

**Fall Term, 1998**

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Classes are Tuesday (11am-1pm) Room R-3230

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## Course Description

This course provides a thorough consideration of the research that has been conducted on the many facets of neuroplasticity. We will move from the most simple animal models to the plastic changes observed during human cognition with a focus on memory systems. The hallmark of the course will be the opportunity for each student to present one area of this research.

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## My Goals and Expectations

This is a fourth year course that explores an exciting and growing area of neuroscience. I am personally involved in research exploring the biological underpinnings of learning and memory. My main goal for the course is to facilitate your own exploration of the kinds of research being conducted in this area. Completing this course successfully will require effort and commitment. My expectations are that you will complete the weekly readings in advance of each class thereby preparing for the weekly quizzes and the discussion that will follow each presentation. You are also expected to submit your research proposal and paper on time. I strongly encourage you to bring any difficulties you may be having with the material to my attention during office hours.

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## Textbook

"The Neurobiology of Memory: Concepts, Findings, and Trends" by Yadin Dudai, Oxford University Press. In my opinion, this is one of the best books available on this topic. We will use the various chapters in the textbook as the basis for each set of talks.

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## **Evaluation**

Weekly quizzes on the chapter(s) of the textbook assigned for that week will take the form of one essay question. Your answer will be no more than 1 page in length. The purpose of these quizzes is to evaluate your understanding of the material and to ensure that you are prepared for the discussion that will follow each presentation. There will be 10 quizzes and your best 8 will count (each worth approximately 3% of your final grade, total of 30%). You will NOT be quizzed on the day you present. Also, one additional quiz can be missed but after that an official doctor's note is required to avoid a '0' on that quiz. Observing recognized religious holidays will also exempt you from the quiz for that week but please inform me in writing of your specific observances.

Each student will give an oral presentation based on the topic chosen from the text but focusing on one or more current research papers. This presentation will be graded on preparation and ability to lead discussions during the question period. This component of the course will be worth 20 percent. Length of presentations will be no more than 30 minutes with about 10 minutes for class discussion.

A substantial research paper will be written on the same subject considered during the oral presentation. A proposal will be submitted midway through the course that should outline which area of the topic you will be focussing on and include a complete list of references. The final paper will be no longer than '10' pages including the abstract page but excluding references (APA format is required). You are encouraged to be as concise as possible in these papers while adequately covering the topic. The paper will be worth 40 percent of your final grade (10 percent for the proposal, 30 percent for the final paper).

The final 10 percent of your mark will be based on class participation. I will be looking for contributions and informed questions during the discussion period following each presentation. There will not be a final exam for this course.

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## **Webpage**

There will be a webpage in support of this course at

<http://www.scar.utoronto.ca/~weeks/NROD62.htm>

The webpage will include this syllabus, a list of the research papers people are presenting (as they become available), and other supporting documents and hints for the research papers.

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## SCHEDULE

<b>Date:</b>	<b>Topic</b>	<b>Book Chapters</b>
Sept 15	Introduction	
Sept 22	Basic Concepts	1, 2, 3
Sept 29	Aplysia	4 (quiz #1)
Oct 6	Hermisenda	5 (quiz #2)
Oct 13	Long-term Potentiation	6 (quiz #3)
Oct 20	Neurogenetics: Drosophila	7 (quiz #4)
Oct 27	Molecules and Memories	8 (quiz #5)
Nov 3	Internal representations and Engrams	9, 10 (quiz #6)
Nov 10	NO CLASS	Society for Neurosciences Meeting
Nov 17	Memory Systems in Vertebrates	11 (quiz #7)
Nov 24	Imprinting and sensitive periods	12, 13 (quiz #8)
Dec 1	Monkey vision and lesions	14 (quiz #9)
Dec 8	Amnesia in humans	15 (quiz #10)

RESEARCH PAPERS DUE by 9:30am Dec 9<sup>th</sup> at the latest. Submit papers to Life Sciences Office 5<sup>th</sup> floor S-wing or to me personally before the 9<sup>th</sup> (not under the office door).

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