

Neuroscience II Syllabus (Spring 2003)

Biology U7233 / Psychology U711 Profs. Levitt (Biology) and Harding (Psychology)
 Graduate Center Room 6495 Fridays 1:00-5:00 p.m.
 Text: Kandel, E.R., Schwartz, J.H., & Jessell, T.M.(1999) Principles of Neural Science, 4th Ed.

Date	Topic	Instructor	Readings
Jan 31	Common principles of sensory systems	Zeigler	2(Review), 18, 21
Feb. 7	Introduction to Neuroanatomy: Structural Foundations	Jenab	1 7, 18, 44
Feb. 14	Development I:	Braun	52, 53.
Feb. 21	Development II:	Balaban	4 articles*
Feb 28	Vision I: Reception and Transduction	Gordon	26, 29
March 7	Vision II: Central visual pathways	Gordon	27, 28 (548-552)
March 14	Somatosensory System	Brumberg	22, 23, 20(384-90)
March 21	Midterm examination		
March 28	Cognitive Neuroscience I	Levitt	19, 20 + Handouts
April 4	Cognitive Neuroscience II	Levitt	28 (565-569) + Handouts
April 11	Motor I: Spinal system	Levitt, Wallman. & Edelman	33, 34, 36
April 18	Spring Break		
April 25	Motor II: Supraspinal/Oculomotor system	Levitt, Wallman, Edelman	
May 2	Neuroendocrine system I	Harding	49 (972-980) +Assigned
May 9	Neuroendocrine system II	Harding	67 (1131-1146)
May 16	Final Examination		

* Balaban readings: Fraser SE & Perkel DH (1990) Competitive and positional cues in the patterning of nerve connections. *Journal of Neurobiology* 21: 51_72.
 Benson DL, Coolman DR & Huntley GW (2001) Molecules, maps and synapse specificity. *Nature Reviews Neuroscience* 2: 899_ 909.
 Katz LC & Crowley JC (2002) Development of cortical circuits: Lessons from ocular dominance columns. *Nature Reviews Neuroscience* 3: 34_42.
 Knudsen EI (2002) Instructed learning in the auditory localization pathway of the barn owl. *Nature* 417: 322 _ 328.

Faculty:

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Organization of Neuroscience II

The course is designed to provide a common body of knowledge about contemporary Neuroscience, at the level presented in Kandel et al. (Fourth Edition), as well as exposure to some recent research reports. The course is very demanding and you should expect to spend a great deal of time studying the material; we shall try to see that your work is justified by the intellectual rewards.

1. Each instructor will provide study questions which should define for the student those issues considered to be central for that section of the syllabus. These questions will be given to the students the week prior to the lecture.
2. At the start of each lecture instructors will give a quiz based on the chapters and study questions for that day's lecture. Quizzes will be given out at 1:05 PM and collected promptly at 1:30 PM. Quizzes are primarily a pedagogical device to encourage reading of the material by the student and its coverage by the instructor. Students are strongly urged to form study groups to prepare for the quizzes and exams.
3. Up to three original papers will be assigned by each instructor and covered in the examinations.
4. Each student will write a short term paper on one of the topics covered in the course. It should be based on original research papers, and approximately five double spaced pages in length. Students must select their topics by the second week of the semester. Papers are due at the time of the final exam (May 17, 2002).
5. The final grade will be determined as follows:

Midterm Examination	35%
Final Examination	35%
Quizzes	15%
Term Paper	15%