

**BIOLOGY 447-H02: SYSTEMS NEUROBIOLOGY – HONORS**

<b>INSTRUCTOR:</b>	Dr. Farzan Nadim	<b>EMAIL:</b>	<a href="mailto:farzan@njit.edu">farzan@njit.edu</a>
<b>OFFICE:</b>	Central King Bldg.	<b>OFFICE HOURS:</b>	T, F: 1:30PM - 2:30PM
<b>COURSE SCHEDULE:</b>	T, F: 2:30PM – 3:55PM ▪ CKB 315	<b>COURSE WEBSITE:</b>	<a href="http://moodle.njit.edu/">http://moodle.njit.edu/</a>

**COURSE SUMMARY:** This course will examine neurophysiological phenomena from the systems perspective. After reviewing the basic concepts of cellular neuroscience such as excitability, impulse conduction, we focus on the integration of activity at the network level. The goal is to provide the basic knowledge to understand neurobiological processes at the systems level.

**TEXTBOOK:**

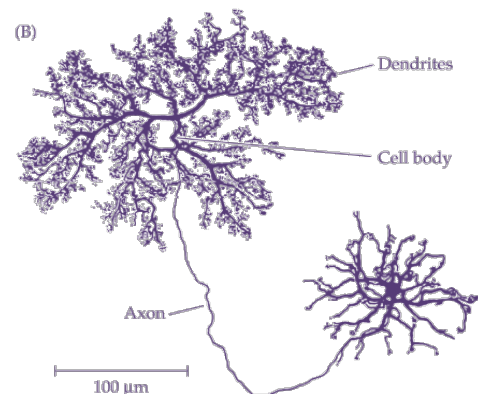
- ⊗ Neuroscience (Fifth Edition); Dale Purves, et al Editors, Sinauer Associates © 2012; **eText:** ISBN-10: 0-87893-587-8, ISBN-13: 978-0-87893-587-1; **Print:** ISBN-10: 0-87893-695-5, ISBN-13: 978-0-87893-695-3.

**IMPORTANT RULES AND COURSE POLICIES:**

- ⊗ **Academic Integrity:** The [Academic Integrity Code](#) strictly enforced!
- ⊗ **Electronic Devices:** The use of cell phones and other electronic devices during class or exam times is prohibited.
- ⊗ **Make-Up Exams and Quizzes:** There will be no make-up exams or quizzes. Students who miss an exam due to a valid medical excuse will need to provide a doctor’s note. The grade of any missed exam resulting from a verifiable valid excuse will be determined on a case-by-case basis. Any missed exam or quiz, with a valid excuse, will be calculated based on the student performance in other quizzes and exams.

**GRADING POLICY:** The final grade in this course is determined as follows:

GRADE SCALE:			
A	93-100	C	60-66
B+	84-92	D	51-59
B	75-83	F	0-50
C+	67-74		
Quizzes:		24%	
Midterm Exams:		22% each	
Final Exam:		32%	



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**COURSE OUTLINE:**

WEEK	DATES	TOPICS
1	Jan. 20 Jan. 23	Basic Properties of Neurons / The Membrane Potential
2	Jan. 27 Jan. 30	Action Potentials / The Hodgkin-Huxley Formalism
3	Feb. 3 Feb. 6	Action Potential Propagation / Principles of Synaptic Transmission
4	Feb. 10 Feb. 13	Synaptic Excitation, Inhibition and Integration
5	Feb. 17 Feb. 20	Intracellular Signaling; <b>MIDTERM 1</b>
6	Feb. 24 Feb. 27	Synaptic Plasticity; Functional Organization of the Nervous System
7	Mar. 3 Mar. 6	Somatic Sensory System: Touch and Proprioception; Pain
8	Mar. 10 Mar. 13	Vision, the Eye and Central Visual Pathways
9	Mar. 17 Mar. 20	<b>SPRING BREAK – MARCH 16-20, 2015</b>
10	Mar. 24 Mar. 27	The Auditory System; The Vestibular System
11	Mar. 31 Apr. 3	The Olfactory System <b>Good Friday - No Classes</b>
12	Apr. 7 Apr. 10	Development (Dr. Friedman); <b>MIDTERM 2</b>
13	Apr. 14 Apr. 17	Lower Motor Systems; CPGs; Upper Motor Systems
14	Apr. 21 Apr. 24	Basal Ganglia (Dr. Koos); Sleep
15	Apr. 28 May 1	Learning and Memory; <b>STUDENT PRESENTATIONS</b>
16	May 5	Classes Follow a <b>Friday</b> schedule; <b>STUDENT PRESENTATIONS</b>
<b>FINALS</b>		<b>FINAL EXAM WEEK: MAY 8-14, 2015</b>