Instructor: Brian J. Norris  
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Office: Science Hall 304  
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Office Hours: T 10:00-11:30  
Any other time by appointment

Description:  
The nervous system in most animals is tremendously complex and exquisitely precise. This course serves as an introduction to invertebrate and vertebrate nervous systems. Primary focus will concern the structure and function of individual neurons, structure of neural networks and neural development.

Text:  

Exams: The course will have five exams and a final. All material in the assigned chapters of the book is subject to examination whether discussed in lecture or not. Additional material from other sources will be presented in class. Exams will consist of short answer and essay questions, as well as problems. Students are recommended to bring calculators to exams. The final exam will be comprehensive. Exams can not be taken late without prior arrangement with the instructor.

Writing: The University mandates 2,500 words for every course. Writing requirements will be met through essay questions on exams and a paper. Due to the current state of the University library, preliminary topics for papers and lists of references will be due prior to the first exam (Feb). Final paper is due on or before May 6. Topics can be selected from anywhere within the broad field of Neurobiology, but must be approved by the instructor. Papers must be summaries of current research and references must be primary literature and hard copies of references must be included with the paper. Failure to include references will result in a 50 point deduction. The paper must be typed and double-spaced and at least 3 pages in length, not counting references. Students are encouraged to use the web as a source.

Grades: The course will be graded based on 1600 points, divided as follows

- Exams: 200 points each
- Final: 400 points
Paper: 200 points

MW 13:00 - 14:15

8/28 Intro to Cells. Ch. 1
8/30 Electrical signals and action potentials. Ch. 2,3

9/4 Holiday
9/6 Channels and Synapse. Ch. 4,5

9/11 Transmitters and Receptors. Ch. 6,7
9/13 Signal transduction Ch. 8

9/18 Exam 1. Paper topics due
9/20 Somatosensory and Pain Ch. 9,10

9/25 Vision and processing. Ch. 11,12
9/27 Auditory. Ch. 13

10/2 Vestibular. Ch. 14
10/4 Chemical senses. Ch. 15.

10/9 Exam 2
10/11 Lower and upper motor circuits. Ch. 16,17

10/16 **No Class**
10/18 Basal Ganglion & Cerebellum. Ch. 18,19

10/23 Eye movement. Ch. 20
10/25 Visceral. Ch. 21

10/30 Exam 3
11/1 Early development. Ch. 22

11/6 Construction of Neural circuits. Ch. 23
11/8 Modification of circuits. Ch. 24

11/13 Plasticity. Ch. 25
11/15 Exam 4

11/20 Association cortices and Language. Ch. 26,27
11/22 Sleep. Ch. 28 – **PAPER DUE**

11/27 Emotions. Ch. 29
11/29 Sex and brain. Ch. 30
12/4   Memory. Ch. 31
12/6   Exam 5

12/11  Final Exam. 11:30-13:30