Spring 2-1-2008

BMED 347.01: Covering Introduction to Neuroscience

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Covering Introduction to Neuroscience BMED/BIOL 347

Course Instructor: Michael Kavanaugh, Ph.D.

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Course Description:

This course will focus on the molecular and cellular physiology of the human nervous system. The topics will range from the basis of electrical and chemical signaling in neurons to the organization of the nervous system and its functions in generating behavior.
PREREQUISITES: Introductory Chemistry, Biology
TEXTBOOK: Neuroscience, edited by Bear et al. 3rd edition

Course Format:

3 credits: MWF 2:10-3:00 CP 212

Goals:

The goals of the course are 1) to give students a basic understanding of neuronal signaling by exploring the cellular and molecular properties of neurons and 2) to begin to apply these principles to understand the higher level organization and functions of the brain, such as sensory perception, behavior, and learning and memory.

Course Content and Tentative Schedule:

DATES	**TOPIC**	**CHAPTER**	

WEEK 1: Basic Overview, Cell Biology and Electrical Properties of Neurons (Ch. 1-3) **Aug 27,29,31**
WEEK 2: The Action Potential, Synaptic Transmission (Ch. 4,5) **Sep 5,7**
WEEK 3: Neurotransmitters, Structure of the Nervous System (Ch. 6,7) **Sep 10,12,14**
WEEK 4: Structure of the Nervous System, Sensory Mechanisms: Taste, Smell (Ch. 7,8) **Sep 17,19,21**
WEEK 5: Vision and Central Visual Pathways (Ch. 9,10) **Sep 24,26,28** (Sep 28 exam 1 ch 1-8)
WEEK 6: Auditory and Vestibular Systems (Ch. 11) **Oct 1,3,5**

WEEK 7: Somatic Sensory Systems, Spinal Motor Control (Ch. 12,13) **Oct 8,10,12**
WEEK 8: Spinal and Central Motor Control (Ch. 13,14) **Oct 15,17,19**
WEEK 9: Central motor control, Brain Chemistry and Behavior (Ch. 14,15) **Oct 22,24,26** (Oct 26 exam 2 ch. 9-14)
WEEK 10: Brain Chemistry and Behavior (Ch.15) **Oct 29,31, Nov 2**
WEEK 11: Motivation and Sex (Ch. 16,17) **Nov 5,7,9**
WEEK 12: Emotion and Language (Ch. 18,20) **Nov 14,16**
WEEK 13: exam 3 (Ch 15-20) **Nov 19 (Nov 21,23-Thanksgiving)**
WEEK 14: Attention, Mental Illness (Ch 21,22) **Nov 26,28,30**
WEEK 15: Memory, Synaptic Plasticity (Ch. 24,25) **Dec 3,5,7**

FINAL Dec 10 1:10-3:10