Functional Neuroanatomy, Neuroscience 1011/2011
Fall 2012

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Class: Class is held four times per week in L9 Clapp Hall: M-W-F from 10:00-10:50 AM plus an additional hour on Wednesday from 11:00-11:50 AM.

An optional recitation is offered by the Undergraduate Teaching Assistants on Thursdays from 4:30-5:30 in Crawford 169.

Optional exam reviews will be held usually two nights before each exam. Please see CourseWeb for the detailed schedule.

Grading: Students are responsible for all material presented in lectures. Many exam questions come from the handouts that accompany each lecture, but additional questions come from the lectures themselves. There are a total of 5 non-cumulative exams, each worth 20% of the total grade. Four exams are administered during the scheduled class time and the fifth exam is given during finals week.
Students in 2011: The 5 exams count for a total of 80% of your grade. The remaining 20% requires submission of a paper by the end of class, December 7th. Please see Dr. Sesack for further instructions.


Kingsley, *Concise Text of Neuroscience*  
Heimer, *The Human Brain and Spinal Cord*  
Kandel, Schwartz, and Jessell, *Principles of Neural Science, 4th ed*  
Sundsten, *Interactive Brain Atlas, CD-Rom for Windows and Mac*

Internet Neuroanatomy Sites  
*(all were working on August 24th 2012)*

Action Potential Animation  
http://bcs.whfreeman.com/thelifewire/content/chp44/4402s.swf

Action Potential Conduction Animation  
http://www.blackwellpublishing.com/matthews/actionp.html

Blood Supply  
http://www.csus.edu/indiv/m/mckeoughd/AanatomyRev/VascSys/Schematic/CerebAsSchematic.html

Brain Facts  
http://www.brainfacts.org

Comparative Mammalian Brain Collections  
http://www.brainmuseum.org/index.html

Embryology, including neuroembryology  
http://embryology.med.unsw.edu.au/

Harvard University Whole Brain Atlas  
http://www.med.harvard.edu/AANLIB/home.html

The History of Neuroscience - Milestones in Research  
http://faculty.washington.edu/chudler/hist.html

MedPix: Medical Image Database  
http://rad.usuhs.edu/medpix/

Neuroanatomy and Pathology on the Internet  
http://www.neuropat.dote.hu/

Neuroanatomy Tutorial  
http://library.med.utah.edu/WebPath/HISTHTML/NEURANAT/NEURANCA.html
Neuron Wikipedia 

Neuroscience for Kids 
http://faculty.washington.edu/chudler/neurok.html

Primary Visual Cortex 
http://webvision.med.utah.edu/VisualCortex.html

Retinal Information Processing - Receptive Fields 
http://www.sumanasinc.com/webcontent/animations/content/receptivefields.html

Synapse Web (electron microscopic and 3D rendering of cellular elements in the nervous system) 
http://synapses.clm.utexas.edu/

University of Chicago Neuroanatomy Collection 
http://neuroanatomy.bsd.uchicago.edu/

From Patty Reagan - needs to be purchased for full capacity 
www.drawittoknowit.com
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Fall 2012 Schedule

Each block has 7 lectures, with some of the titles below counting as multiple lectures. Please note that new lectures started in the class just before an exam are usually not on that exam.

Dates with no lectures:
September 3rd Labor Day
October 8th Fall break (lecture given instead on Tuesday October 9th at 10:00)
October 15th Society for Neuroscience meeting
November 19th Thanksgiving recess
November 21st Thanksgiving recess
November 23rd Thanksgiving recess

Other important dates:
September 7th Fall term add/drop period ends
October 26th Fall term deadline for monitored withdrawal
December 13th Final Exam, 10:00-11:50

Block 1
August 27th - September 12th
Exam Review on Sept 12th at 6:00-8:00 PM
EXAM 1 on September 14th at 10:00 AM
Chapters in Brodal: 1-4, 17
Neurocytology and Simple Circuits (2)
Methods for Studying the Nervous System
Neuroembryology
Gross Structure: Spinal Cord
Gross Structure: Brainstem
Gross Structure: Higher Centers

Block 2
September 12th - October 1st
Exam Review on October 1st at 6:00-8:00 PM
EXAM 2 on October 3rd at 10:00 AM (NOTE: Exam at 10:00, Lecture at 11:00)
Chapters in Brodal: 3, 5, 6, 8, 9
Gross Structure: Support and Circulation
Introduction to Sensory Systems, Somatosensory Receptors and Receptive Fields (2)
Ascending Somatosensory Pathways: Dorsal Column and Spinothalamic Tract (2)
Vestibular and Auditory Systems (guest lecture, Yates)(2)
**Block 3**
October 3\(^{rd}\) - 22\(^{nd}\) (NOTE: Monday Oct 8\(^{th}\) class to be held on Tuesday Oct 9\(^{th}\))
Exam Review on October 22\(^{nd}\) at 6:00-8:00 PM
**EXAM 3 on October 24\(^{th}\) at 10:00 AM (NOTE: Exam at 10:00, Lecture at 11:00)**
Chapters in Brodal: 6, 7, 10-12
*Visual System (3)*
*Olfactory System*  
*Introduction to Motor Systems*  
*Spinal Reflexes and Descending Brainstem Pathways (2)*

**Block 4**
October 24\(^{th}\) - November 9\(^{th}\)
Exam Review on November 11\(^{th}\) at 12:00-2:00 PM
**EXAM 4 on November 12\(^{th}\) at 10:00 AM**
Chapters in Brodal: 12-15, 17, 18  
*Eye Movements*  
*Descending Pathways for Voluntary Movement*  
*Basal Ganglia (1.5)*  
*Cerebellum (1.5)*  
*Autonomic Nervous System (2)*

**Block 5**
November 14\(^{th}\) - December 7\(^{th}\)
Exam Review on December 11th at 6:00-8:00 PM
**EXAM 5 (Final) on December 13\(^{th}\) at 10:00-11:50**
Chapters in Brodal: 4, 16, 19-21  
*Hypothalamus*  
*Reticular Formation and Regulation of Conscious States*  
*Limbic Circuitry*  
*Hippocampus*  
*Cerebral Cortex*  
*Cognitive and Neurodegenerative Disorders*  
*Plasticity and Regeneration in the Nervous System*