

Syllabus

BIO 309: Biology of the Brain (4 units)

Topic	Days	Time	Bldg	Rm	Instructor
Biology of Brain	MW	10:00-11:50	8	120	Dr. Glenn H. Kageyama

Professor: Dr. Glenn H. Kageyama Office hours: M-Th 11:00-12:00 p.m.
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Date	Day	#	Topic
<u>Week 1: Organization of the Nervous system</u>			
	M	1	Organization of the nervous system (Ch. 1)
	W	2	Neurons and Supporting Cells
	F	3	The Structure of Synapses
<u>Week 2: Electrical Signaling</u>			
	M	4	Electrical signals of nerve cells (Ch. 2)
	W	5	Voltage-dependent membrane permeability (Ch. 3)
	F	6	Channels and transporters (Ch. 4)
<u>Week 3: Chemical Neurotransmission</u>			
	M	7	Synaptic transmission (Ch. 5)
	W	8	Neurotransmitters and neurotransmitter receptors (Ch. 6)
	F	9	Intracellular signal transduction (Ch. 7)
<u>Week 4: Sensation and Sensory Processing</u>			
	M		Midterm I
	W	10	The Somatic Sensory System (Ch. 9 and 10)
	F	11	Vision: The Eye (Ch. 11)
<u>Week 5: Brain Imaging Techniques</u>			
	M	12	Central Visual Pathways (Ch. 12)
	W	13	Auditory and Vestibular Systems (Ch. 13 and 14)
	F	14	The Chemical Systems (Ch. 15)
<u>Week 6: Movement and Its Control</u>			
	M	15	Lower Motor Neuron Circuits and Motor Control (Ch. 16)
	W	16	Upper Motor Neuron Control of Brainstem and Spinal Cord (Ch. 17)
	F	17	Modulation of Movement by the Basal Ganglia (Ch. 18)
<u>Week 7: Brain Evolution</u>			
	M	18	Modulation of Movement by the Cerebellum (Ch. 19)
	W	19	The Limbic System and Visceromotor Systems (Ch. 21)
	F		Midterm II
<u>Week 8: The Changing Brain</u>			
	M	20	Evolution of the Brain and Nervous System
	W	21	Early Brain Development; Detailed Brain Anatomy: Lobes & Gyri (Ch. 22)
	F	22	Development and Plasticity of Neural Circuits (Ch. 24 and 25)
<u>Week 9: Complex Functions of the Human Brain</u>			
	M	23	Functional Organization of the Brain: The Association Cortices (Ch. 26)
	W	24	Language and Lateralization (Ch. 27)

F 25 Sleep and Wakefulness (Ch. 28)

Week 10: Brain Imaging Techniques

M 26 Emotions, Sex, Sexuality and the Brain (Ch. 29 and 30)

W 27 Human Memory Systems (Ch. 31)

F 28 Neurological Disorders; How Drugs Damage the Brain; Brain Imaging

Final Examination (comprehensive)

Suggested Text:

Purves, D., G.J. Augustine, D. Fitzpatrick, L.C. Katz, A.-S.LaMantia, J.O. McNamara and S. M. Williams (2001) Neuroscience, 2nd Ed, Sinauer Associates, Sunderland, MA (ISBN: 0-87893-742-0)

Prepared by: Glenn H. Kageyama

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