

PCB		5845 Cellular and Molecular Neuroscience									
Fall		2016								Possible Papers and discussions	
				Wednesday, Friday 10:15 - 11:45 PDB-A105 + Thurs. 11:15-12:05 PDB 105 or KIN 1058							
Day		Date		Topic		BSC 2010 Class					
Week 1		Mon 8/29		First day of Fall Semester		mm					
1	Wed	8/31/16	Overview of Mammalian nervous system/ Polarity of Neurons /Axonal transport/glia function/ Review of Cell Biol./Mol. Bio., Metabolism		mm		TAH 1	Introduction			
2	Thurs	9/1/16	Membranes; transport, Ion channels; Nernst potential;			MM 1		Biophysics / Cellular-Neuro-physiology			
3	Fri	9/2/16	Membran potential; Goldman equation; Action potential; Conduction; CAP: Voltage/current/patch clamp		mm	MM 2					
Week 2		Mon 9/05		Labor Day Holiday		mm					
4	Wed	9/7/16	Molecular structure of channels; Control of resting Vm and firing probability; Passive properties; Myelin; MS;		mm	MM 3					
5	Thurs	9/8/16	Synapses: Gap junctions; Neuromusc. Jnc.; Receptor/Ion-channels; Synaptic and circuit integration;		mm	MM 4					
6	Fri	9/9/19	Computer simulation lab - Membrane/action potential MM			MM 5		(KIN 1058)			
Week 3		Mon 9/12				mm					
7	Wed	9/14/16	Synaptic Transmission: Ionotropic and Metabotropic Receptors; 2nd. Messengers; Interactions; Modulation		mm	MM 6					
8	Thurs	9/15/16	Neurotransmitter release, Calcium		mm	MM 7					
9	Fri	9/16/16	Computer simulation lab - Membrane/action potential MM			MM 8		(KIN 1058)	& discussion	MM	
Week 4		Mon 9/19				mm					
10	Wed	9/21/16	Vesicle mechanisms; Modulation; Ligands and Receptors; Agonists and Antagonists; ACh; Myasthenia grav.		mm	MM 9					
11	Thurs	9/22/16	GABA; Glycine; Glutamate; Other transmitters/ candidates			MM 10		Cell/ Mol Biology of Transmitters / Neuro-pharmacology			
				End of material for Exam 1							
12	Fri	9/23/16	Catecholamines, Serotonin; Other transmitters/candidates		mm		TAH 2				
Week 5		Mon 9/26				(e1)					
13	Wed	9/28/16	Neuropeptides; Nuclear receptors		mm		TAH 3				
e1	Thurs	9/29/16	EXAM 1 (Material (11) from 9/1 - 9/22)			E-1	E-1				
14	Fri	9/30/16	Review Cell Metabolism (energy production/storage). Review Mol-Biol. (transcription/translation/protein-modif.). Glial function.		mm		TAH 4	Cell/ Mol Biology of neurons; intracellular signals			
Week 6		Mon 10/03				mm					
15	Wed	10/5/16	Intracellular signaling		mm		TAH 5				
16	Thurs	10/6/16	Molecular Signaling				TAH 6				
17	Fri	10/7/16	Paper TH		mm		TAH 7		* paper	TAH	
Week 7		Mon 10/10				mm					
18	Wed	10/12/16	Vertebrate Plan: Homeobox Genes; Neuro/gliogenesis; Migration/Differentiation (e.g. neural crest); Axon guidance				TAH 8	Developmental NS			
19	Thurs	10/13/16	Synapse formation; Adult Neurogenesis;		mm		TAH 9				
20	Fri	10/14/16	Apoptosis; Degeneration, Regeneration		mm		TAH 10				
				End of material for Exam 2							
Week 8		Mon 10/17				(e2)					
	Wed	10/19/16	Sensory Systems: Somatosensory I: Periph. Touch and Coding; Pathways		th		MM 11	Sensory Systems			
e2?	Thurs	10/20/16	EXAM 2 (Material (9) from 9/23 -10/14)			E-2	E-2				
21	Fri	10/21/16	Somatosensory II: Central processing and plasticity; Nociception and thermoreception .		th		MM 12				
Week 9		Mon 10/24				th 10/19 th					
22	Wed	10/26/16	Audition: Cochlea mechanics, Hair cell function; Cochlear Amplifier; Central mechanisms; Sound localization; // Vestibular: Maculae; Hair cells; Adaptation		th		MM 13				
23	Thurs	10/27/16	Vestibular System: Semi-circ. Canals.; VOR; Balance				MM 14				
24	Fri	10/28/16	Paper MM		th		MM 15		*paper	MM	
Week 10		Mon 10/31				th					
25	Wed	11/2/16	Vision I: Transduction; Retinal circuits, Contrast, Gang. cells; Dark adaptation		th		MM 16				
26	Thurs	11/3/16	Vision II: Central mechanisms: Orientation select.; What/Where; Stereo; Color; Perception; Visual plasticity// Olfaction I: Peripheral transduction				MM 17				
27	Fri	11/4/16	Olfaction II: Coding; Pathways; Central Function// VNO/Pheromones/Amygdala (NT)		th		MM 18				
				End of material for Exam 3							
Week 11		Mon 11/07				th					
28	Wed	11/9/16	Muscle Excit-Contract./Motor Units; Muscle/Tendon receptors; Spinal Circuits		th		MM 19	Motor Systems			
29	Thurs	11/10/16	EXAM 3 (Material (8) from 10/19 - 11/04)			E-3	E-3	Or MM 20			
	Fri	11/11/16	No Class - Veteran's Day Holiday								
Week 12		Mon 11/14				th		Neuroscience Meeting Nov 12 -16			
30	Wed	11/16/16	Spinal circuits and reflexes; Central Pattern Generators; Locomotion/Posture; Autonomic/Enteric NS; Visceral reflexes				MM 20				
	Thurs	11/17/16	Cerebellum; Basal Ganglia I		th		MM 21	Or Exam 3			
31	Fri	11/18/16	Basal Ganglia II; Cortical/Brainstem/spinal heirarchy for motor control		th		MM 22				
				End of material for MM section of Exam 4							
Week 13		Mon 11/21				th					
	Wed	11/23/16	Thanksgiving Holiday Nov 26-28								
	Thurs	11/24/16	THANKSGIVING Nov 27								
	Fri	11/25/16	Thanksgiving Holiday Nov 26-28								

	Week 14		Mon 11/28	th					
32	Wed	11/30/16	Taste I: Peripheral Mechanisms	th		TAH 11			
33	Thurs	12/1/16	Taste II: Central mech.; Affective/motivational; Taste and Intake			TAH 12			
35	Fri	12/2/16	Molecular Biology of Drug Addiction and Depression I	th		TAH 13	Molecular Biol. of Higher Neural Function		
	Week 15		Mon 12/05	th					
36	Wed	12/7/16	Molecular Biology of Drug Addiction and Depression II; Molecular Biology of Learning & Memory I	th		TAH 14			
37	Thurs	12/8/16	Molecular Biology of Learning & Memory II			TAH 15			
38	Fri	12/9/16	Molecular Biology of Neurodegenerative Diseases	th		TAH 16		** paper	TAH
	Last day of classes		End of material for TH section of Exam 4						
	EXAM WEEK		Mon Dec 14; Exam week Dec 14-16						
	Wednesday	12/14/16	FINAL EXAM: 4 (Material (11) from 11/09 - 12/09)		E-4	E-4	<i>Non Cumulative</i>		
		FINAL	Wed 12:30 pm - 2:30 pm				Note Day and Time		