	PCB	**5845**	**Cellular and Molecular Neuroscience**			
	Fall	**2016**				
			Wednesday, Friday 10:15 - 11:45 PDB-A105 **+ Thurs. 11:15-12:05 PDB 105 or KIN 1058**			
	Day	**Date**	**Topic**			
	Week 1		Mon 8/28 First day of Fall Semester			
1	Wed	8/30/17	Overview of Mammalian nervous system/ Polarity of Neurons /Axonal transport/glial function/ Review of Cell Biol./Mol. Bio., Metabolism		**TAH 1**	**Introduction**
2	Thurs	8/31/17	Membranes; transport, Ion channels; Nernst potential;	**MM 1**		**Biophysics / Cellular-Neuro-physiology**
3	Fri	9/1/17	Membrane potential; Goldman equation; Action potential; Conduction; CAP; Voltage/current/patch clamp	**MM 2**		
	Week 2		Mon 9/04 Labor Day Holiday			
4	Wed	9/6/17	Molecular structure of channels; Control of resting Vm and firing probability; Passive properties; Myelin; MS;	**MM 3**		
5	Thurs	9/7/17	Synapses: Gap junctions; Neuromusc. Jnc.; Receptor/Ion-channels; Synaptic and circuit integration;	**MM 4**		
6	Fri	9/8/17	*Computer simulation lab - Membrane/action potential MM*	*MM 5*		(KIN 1058)
	Week 3		Mon 9/11			
7	Wed	9/13/17	Synaptic Transmission: Ionotropic and Metabotropic Receptors; 2nd. Messengers; Interactions; Modulation	**MM 6**		
8	Thurs	9/14/17	Neurotransmitter release, Calcium	**MM 7**		
9	Fri	9/15/17	*Computer simulation lab - Membrane/action potential MM*	MM 8		(KIN 1058)
	Week 4		Mon 9/18			
10	Wed	9/20/17	Vesicle mechanisms; Modulation; Ligands and Receptors; Agonists and Antagonists; ACh; Myesthenia grav.,	**MM 9**		
11	Thurs	9/21/17	GABA; Glycine; Glutamate; Other transmitters/ candidates	**MM 10**		**Cell/ Mol Biology of**
	`		**End of material for Exam 1**			**Transmitters / Neuro-**
12	Fri	9/22/17	Catecholamines, Serotonin; Other transmitters/candidates		**TAH 2**	**pharmacology**
	Week 5		Mon 9/25			
13	Wed	9/27/17	Neuropeptides; Nuclear receptors		**TAH 3**	
e1	Thurs	9/28/17	***EXAM 1*** *(Material (10) from 8/31 - 9/21)*	***E-1***	***E-1***	
14	Fri	9/29/17	Review Cell Metabolism (energy production/storage). Review Mol-Biol. (transcription/translation/protein-modif.) Glial function.		**TAH 4**	**Cell/ Mol Biology of**
	Week 6		Mon 10/02			**neurons; intracellular**
15	Wed	10/4/17	Intracellular signaling		**TAH 5**	**signals**
16	Thurs	10/5/17	Molecular Signaling		**TAH 6**	
17	Fri	10/6/17	*Paper TH*		*TAH 7*	
	Week 7		Mon 10/9			
18	Wed	10/11/17	Vertebrate Plan: Homeobox Genes; Neuro/gliogenesis; Migration/Differentiation (e.g. neural crest), Axon guidance		**TAH 8**	**Developmental NS**
19	Thurs	10/12/17	Synapse formation; Adult Neurogenesis;		**TAH 9**	
20	Fri	10/13/17	Apoptosis; Degeneration, Regeneration		**TAH 10**	
			End of material for Exam 2			
	Week 8		Mon 10/16			
	Wed	10/18/17	Sensory Systems: Somatosensory I: Periph. Touch and Coding; Pathways	**MM 11**		**Sensory Systems**
e2?	Thurs	10/19/17	***EXAM 2*** *(Material (9) from 9/22 -10/13)*	***E-2***	***E-2***	
21	Fri	10/20/17	Somatosensory II: Central processing and plasticity; Nociception and thermoreception .	**MM 12**		

	Week 9		Mon 10/23			
22	Wed	10/25/17	Audition: Cochlea mechanics, Hair cell function; Cochlear Amplifier; Central mechanisms; Sound localization; // Vestibular: Maculae; Hair cells; Adaptation	**MM 13**		
23	*Thurs*	10/26/17	Vestibular System: Semi-circ. Canals.; VOR; Balance	**MM 14**		
24	Fri	10/27/17	*Paper MM*	*MM 15*		
	Week 10		Mon 10/30			
25	Wed	11/1/17	Vision I: Transduction; Retinal circuits, Contrast, Gang. cells; Dark adaptation	**MM 16**		
26	Thurs	11/2/17	Vision II: Central mechanisms: Orientation select.; What/Where; Stereo;Color; Perception; Visual plasticity// Olfaction I: Peripheral transduction	**MM 17**		
27	Fri	11/3/17	Olfaction II: Coding; Pathways; Central Function// VNO/Pheromones/Amygdala (NT)	**MM 18**		
			End of material for Exam 3			
	Week 11		Mon 11/06			
28	Wed	11/8/17	Muscle Excit-Contract./Motor Units; Muscle/Tendon receptors; Spinal Circuits	**MM 19**		**Motor Systems**
29	Thurs	11/9/17	***EXAM 3*** *(Material (8) from 10/18 - 11/03)*	***E-3***	***E-3***	Or **MM 20**
	Fri	11/10/17	***No Class - Veteran's Day (observed) Holiday***			
	Week 12		Mon 11/13			
30	**Wed**	11/15/17	Spinal circuits and reflexes; Central Pattern Generators; Locomotion/Posture; Autonomic/Enteric NS; Visceral reflexes	**MM 20**		
	Thurs	11/16/17	Cerebellum; Basal Ganglia I	**MM 21**		Or ***Exam 3***
31	**Fri**	11/17/17	Basal Ganglia II; Cortical/Brainstem/spinal heirarchy for motor control	**MM 22**		
			End of material for MM section of Exam 4			
	Week 13		Mon 11/20			
	Wed	11/22/17	*Thanksgiving Holiday Nov 22-24*			
	Thurs	11/23/17	*THANKSGIVING Nov 23*			
	Fri	11/24/17	*Thanksgiving Holiday Nov 22-24*			
	Week 14		Mon 11/27			
32	Wed	11/29/17	Taste I: Peripheral Mechanisms		**TAH 11**	
33	Thurs	11/30/17	Taste II: Central mech.; Affective/motivational; Taste and Intake		**TAH 12**	
35	Fri	12/1/17	Molecular Biology of Drug Addiction and Depression I		**TAH 13**	**Molecular Biol. of**
	Week 15		Mon 12/04			**Higher Neural Functio**
36	Wed	12/6/17	Molecular Biology of Drug Addiction and Depression II; Molecular Biology of Learning & Memory I		**TAH 14**	
37	Thurs	12/7/17	Molecular Biology of Learning & Memory II		**TAH 15**	
38	Fri	12/8/17	Molecular Biology of Neurodegenerative Diseases		**TAH 16**	
	Last day of classes		**End of material for TH section of Exam 4**			
	EXAM	WEEK	Mon Dec 14: Exam week Dec 14-16			
	Thursday	***12/14/17***	***FINAL EXAM: 4*** *(Material (11) from 11/08 - 12/08)*	***E-4***	***E-4***	*Non Cumulative*
		FINAL	**Thurs. 7:30 am - 9:30 am**			
			Note Day and Time: Yes; that's 7:30 am			