

BMI 821, Neuroscience for Brain-Mind Research

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Lecture #	Date	Topic	Required Reading
1	16- July	Introduction to course; brain anatomy; membrane potentials;	Chap 3
2	17-July	Quiz 1. ; brain circuits as unit of analysis; cell signaling; synaptic organization; gene activation	Chap 4-6
3	18-July	The visual sense; attention, visual processing, neglect syndromes; circuit interactions	Chap 9-10, 21
4	19- July	Olfaction, taste, auditory and somatosensory circuits	Chap 8-12
5	20-July	Motor processes and clinical syndromes Exam 1	Chap 13-14
6	23-July	Quiz 2 Emotion. Genetics of fear; development; epigenetics	Chap 18
7	24-July	Stress, PTSD*, emotional memories; unconscious processing	Chap 15
8	25-July	Epigenetics of conduct disorders and depression; animal models;	Chap 22
9	26- July	Chemical control of complex functions; social bonding; romantic love and the brain's reward circuits	Readings on website
10	27-July	Sex differences in the brain; development; sexual orientation Exam 2	Chap 17
11	30-July	Quiz 2. Learning and memory circuits	Chap 24
12	31-July	Biological rhythms, sleep, annual cycles, clock genes	Chap 19
13	1-August	Neuropharmacology, placebos, acupuncture,	Readings on website

		environmental toxins	
14	2-August	The Moral Mind, decision making, free will	Readings on website
15	3-August	The damaged brain, brain injury, the violent brain Exam 3	Readings on website

Required textbook: *Neuroscience* by Bear, Connor and Paradiso, Williams & Wilkins, 3rd edition. Additional required readings will be available on the course website.

Evaluation of performance: Three quizzes will cover the reading assignments before class. Three exams will be given covering the work done in class.

*--PTSD: Post Traumatic Stress Disorder