

## Syllabus of Neuroscience II

W34F34, Spring 2009

### Textbook

**Fundamental Neuroscience**, the 3rd Edition by Larry R. Squire, Floyd E. Bloom, Nicholas C. Spitzer, Sascha du Lac, Anirvan Ghosh, Darwin Berg (2008, Academic Press)

### Lecturers

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### **YC Chang (Part I, Weeks 1-6)**

1. Fundamentals of motor systems
2. The spinal cord and peripheral motor system
3. Descending control of movement
4. The basal ganglion
5. Cerebellum
6. Eye movement
7. The hypothalamus: an overview of regulatory systems
8. Central control of autonomic functions: organization of the autonomic nervous systems
9. Neural regulation of the cardiovascular system
10. Neural control of breathing

### **SR Yeh (Part II, Weeks 7-12)**

1. Electrophysiological instrumentation
2. Postsynaptic potentials and synaptic integration
3. Information processing in complex dendrite
4. Reward, motivation, and addiction
5. Learning and memory I: basic mechanisms
6. Learning and memory II: brain systems

### **CC Chiao (Part III, Weeks 13-18)**

1. Circadian timekeeping
2. Sleep, dreaming, and wakefulness
3. Human brain evolution

4. Cognitive development and aging
5. Visual perception of objects
6. Spatial cognition
7. Attention
8. Language and communication
9. The prefrontal cortex and executive brain functions
10. The neuroscience of consciousness