

Crown 85 Winter 2016

Visual Perception: A Window to Brain and Behavior

Lecture 1- Neurons, Synapses, Neurotransmitters, Action Potentials

Reading: [Joy of Visual Perception](#)
[Eye Brain and Vision](#)

1. Be able to identify the following morphological features of the neuron and to describe the role they play in receiving and transmitting neural impulses.
 - a. neuron
 - b. cell body
 - c. dendrite
 - d. axon
 - e. synapse
 - f. axon hillock
 - g. presynaptic bulb
 - h. myelin sheath
 - i. node of Ranvier

2. Understand the basic functioning of the neural action potential and be familiar with the following terms and concepts:
 - a. ion concentrations inside and outside the neuron (how do they give rise to the membrane potential ?)
 - b. resting potential
 - c. action potential
 - d. subthreshold hyperpolarization and depolarization

3. Understand the role each of the following plays in the transmission of electrical signals (information) between neurons
 - a. neurotransmitter
 - b. synaptic vesicle
 - c. synaptic cleft
 - d. Postsynaptic receptor

4. "Recognize" the names of the major neurotransmitters and their primary 'effect'
 - a. acetylcholine [Ach]
 - b. norepinephrine (noradrenaline) [NE,NAd]
 - c. dopamine [DA]
 - d. serotonin (5-hydroxytryptamine) [5-HT]
 - e. GABA (gamma-aminobutyric acid)