UCONN BIOLOGY ECE 1107

**Unit III - Exam 2 Study Guide**

**Ch. 48(Neurons, Synapses and Signaling)**

* General functions of nervous system
* Neuron structure
* Types of neurons and functions/location
* Resting potential, depolarization, polarization, hyperpolarization
* Saltatory conduction
* Movement of Na+/K+ to generate an action potential
* What happens at a synapse
* Neurotransmitters/functions
* Action potential graph
* Sodium/Potassium pump

**Ch. 49(Nervous Systems)**

* Comparisons between simple and complex nervous systems
* Reflexes
* Fight-or-flight response
* Parasympathetic vs Sympathetic activation
* CNS, PNS, ANS(control/functions)
* Brain regions and functions
* Short term memory
* Sleep

**Ch. 50(Sensory and Motor Mechanisms)**

* Taste vs Smell
* Sensory adaptation
* Types of sensory receptors
* Eye(parts and functions)
* Vision
* Fast twitch vs Slow twitch muscle
* Sarcomere structure, contraction process
* Steps involved in a muscle contraction

**Ch. 45(Hormones and the Endocrine System)**

* Lipid-soluble vs water-soluble hormones
* Growth factors/GH
* Hormones and their effects(table 45.1)
* Regulating blood sugar levels(insulin, glucagon, diabetes)
* Thyroid/Parathyroids(PTH vs calcitriol)
* Integration of Nervous & Endocrine systems(thalamus/pituitary)
* Hormones, target cells, receptors
* Negative feedback / Positive feedback

**Ch. 43(Immune System)**

* Histamines/inflamation
* Antigens/antibodies
* Lysozyme
* Specific vs non-specific defenses
* MHC molecules
* T-cells / B-cells
* Memory cells
* Initial response/exposure to pathogens
* Cytotoxic-T cells(activation)
* Vaccines
* Active vs passive immunity