

NEUROPHYSICS

Neuroscience + Physics = Quantitative Neuroscience

Gennady Cymbalyuk

When: Monday-Wednesday: 12:00 pm - 1:15 pm Where: Arts & Humanities 319

NEUR 4340 CRN: 85837 NEUR 6340 CRN: 85838 PHYS 4340 CRN: 87072 PHYS 6340 CRN: 87073

Prerequisites: NEUR 3000, and PHYS 2212K or consent of the instructor



Learn:

Fundamentals of Physics of Neuronal Systems

Matlab

Quantitative and Qualitative Laws of Neuronal Dynamics

Refresh:

Your knowledge of Physics for exams like **MCAT**

Topics:

Kinematics of limb motion

Muscles and Reflexes

Ionic Channels and Pumps

Dynamics of a single neuron

Multistability of neuronal activity

Transcranial magnetic stimulation

Synaptic coupling & Neuronal Networks

Neural Coding

Coordinate Systems

Laws of Dynamics

Biophysically Accurate Neuronal Models

Regimes of electrical activity of neurons

Energy cost of rest and spiking

Laws of Electricity and Magnetism

Synchronization of neuronal networks

Self-organized criticality

Questions? Contact: gcymbalyuk@gsu.edu