



nanoHUB-U Special Edition

nanoHUB-U offers NEW course BIOELECTRICITY

A \$30 instructor-paced course brought to you by nanoHUB-U

Taught by Purdue Associate Professor Pedro Irazoqui

Register TODAY! Course opens February 13

This five-week short course aims to introduce students to bioelectricity using a unique, "bottom up" approach.



Course Description

Fundamentals of bioelectricity of the mammalian nervous system. Passive and active forms of electric signaling in both intra and inter-cellular communication at the atomic, molecular, and engineered device level. Mathematical analysis including the Nernst equation, core conductors, cable theory, and the Hodgkin-Huxley Model of the action potential. Neuromodulation with nano-engineered sensors and actuators.

Course Objective

The objective of this course is to establish a background to dig deeper into some of the applications of bioelectricity to medicine. Students will learn about how bioelectricity can be used to record and control the way the body electric behaves.

[Scientific Overview](#)

[Course Information and Registration](#)

COURSE SCHEDULE:

February 13- March 20

WEEK ONE:

Introduction to the Nervous System

WEEK TWO:

Chemical Basis of Electrical Signals

WEEK THREE:

Models of Biological Conductors

WEEK FOUR:

The Hodgkin-Huxley Model

WEEK FIVE:

Applications of Bioelectricity

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