NPTEL Video Course - Electronics and Communication Engineering - NOC:Neural Science for Engineers

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Sub-Titles - Available / Unavailable | MP3 Audio Lectures - Available / Unavailable

Lecture 1 - Course Outline and Scope
Lecture 2 - Biological Information Systems
Lecture 3 - Analogy between Living Systems with Semiconductor Structures
Lecture 4 - Action Potential - I
Lecture 5 - Action Potential - II
Lecture 6 - Synaptic Potential
Lecture 7 - Threshold and Action Potential Propogation
Lecture 8 - Anatomy of a Neuron
Lecture 9 - Neuro Muscular Junction
Lecture 10 - Spatial and Temporal Summation of neuronal electrical activities
Lecture 11 - Brain Anatomy Introduction
Lecture 12 - Architecture of the Nervous System
Lecture 13 - Architecture of the Nervous System (Continued...)
Lecture 14 - Analog and Digital Processing in the Neuron - I
Lecture 15 - Analog and Digital Processing in the Neuron - II
Lecture 16 - Energy Sources of Neuronal Systems
Lecture 17 - Skull Demonstration
Lecture 18 - Brain Anatomy: Skull
Lecture 19 - Brain Anatomty 3D - I
Lecture 20 - Brain Anatomty 3D - II
Lecture 21 - Brain Anatomty 3D - III
Lecture 22 - Basics of Brain Imaging Techniques
Lecture 23 - Brain anatomy using MR images - I
Lecture 24 - Brain anatomy using MR images - II
Lecture 25 - Spinal Cord Anatomy
Lecture 26 - Reflexes: Introduction
Lecture 27 - Monosynaptic Reflexes
Lecture 28 - Polysynaptic Reflexes
Lecture 29 - Criteria for electrode material

Lecture 30 - Introduction to brain stimulation
Lecture 31 - Brain Stimulation: Device fabrication - Illustration
Lecture 32 - Brain Stimulation: Electronic Systems (Current Mirrors)
Lecture 33 - Brain regions and associated functions
Lecture 34 - Human vision system - II
Lecture 35 - Network analysis during visual processing
Lecture 36 - Control of eye movements
Lecture 37 - COMSOL Multiphysics for Medical Devices
Lecture 38 - COMSOL Brain Electrical Stimulation Demo
Lecture 39 - Human vision system - III
Lecture 40 - Human auditory system - I
Lecture 41 - Human auditory system - II
Lecture 42 - Human auditory system - III
Lecture 43 - The human balance system
Lecture 44 - Movement: Introduction
Lecture 45 - Movement: Synchronization
Lecture 46 - Movement: Role of Spinall Cord
Lecture 47 - Movement: Role of Cerebellum
Lecture 48 - Memory and Learning - I
Lecture 49 - Memory and Learning - II
Lecture 50 - Microengineering devices for Neural Signal Acquisiton
Lecture 51 - Microfabrication Process for Multi Electrode Array
Lecture 52 - Introduction and Applications of Event Related Potentials
Lecture 53 - ERP Extraction Demonstration