

NPTEL Video Lecture Topic List - Created by LinuXpert Systems, Chennai

NPTEL Video Course - Biotechnology - NOC:Microsensors, Implantable Devices and Rodent Surgeries for Biomedical

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Co-ordinating Institute - RUAS IISc - Bangalore

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

- Lecture 1 - Course Introduction - I
- Lecture 2 - Course Introduction - II
- Lecture 3 - Neuro anatomy for Neurosurgery
- Lecture 4 - Neural Implant Fabrication: PVD - I
- Lecture 5 - Neural Implant Fabrication: PVD - II
- Lecture 6 - Rodent Neuroanatomy
- Lecture 7 - Basics of BCI and Signal Processing
- Lecture 8 - Neural Implant Fabrication: Sputtering and CVD
- Lecture 9 - Principles of Stereotactic Rodent MicroNeurosurgery
- Lecture 10 - Neural Signal Processing: Demonstrations
- Lecture 11 - Neural Implant Fabrication: Photolithography - I
- Lecture 12 - Neural Implant Fabrication: Photolithography - II
- Lecture 13 - Craniotomy and Stereotactic Implantation Surgeries
- Lecture 14 - Lithography Numericals
- Lecture 15 - IDE Patterning
- Lecture 16 - Etching
- Lecture 17 - Introduction to Cleanroom and Gowning
- Lecture 18 - E-Beam Evaporation Demonstration
- Lecture 19 - Craniotomy and Cranial Window Surgeries
- Lecture 20 - Flexible MEA: Introduction and Process Flow
- Lecture 21 - Flexible MEA: EIB, Characterization and Analyses
- Lecture 22 - Stereotactic Implantation Surgeries
- Lecture 23 - Sputtering Demonstration
- Lecture 24 - 3D Printing - Part I
- Lecture 25 - Bioresorbable Microelectrode Array-based System
- Lecture 26 - Fundamentals of Spinal Neuroanatomy
- Lecture 27 - 3D Printing - Part II
- Lecture 28 - Neural Implant - Microneedle
- Lecture 29 - Spinal Cord Structure, and Circuits

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- Lecture 30 - Surgical Steps in Spinal Surgeries
- Lecture 31 - 3D Printing - Part III
- Lecture 32 - 3D Printing - Demonstration
- Lecture 33 - Wet Etching Demonstration
- Lecture 34 - Neural Implants for Parkinson's Disease
- Lecture 35 - Spinal micro neuro Surgery
- Lecture 36 - Anesthesia in Rodents
- Lecture 37 - Physiological Monitoring in Rodents
- Lecture 38 - Lithography Demonstration
- Lecture 39 - Electronic System Development for Neural Engineering - I
- Lecture 40 - Anesthesia Administration Equipments and Vital Monitoring
- Lecture 41 - Standard Safety Practices
- Lecture 42 - Euthanasia
- Lecture 43 - Euthanasia in Rodents
- Lecture 44 - Electronic System Development for Neural Engineering - II
- Lecture 45 - Rodent Brain and Spinal Cord Harvest
- Lecture 46 - Rodent Behavioural Setups
- Lecture 47 - Study Plan for Behavioural Setups: Stroke Model
- Lecture 48 - PCB Design Demonstration for Neural Systems
- Lecture 49 - Electronic Systems for Brain Stimulation - I
- Lecture 50 - Behavioural Tasks in Rodent Models - I
- Lecture 51 - Behavioural Tasks in Rodent Models - II
- Lecture 52 - Behavioural Setup for Rodents: Parkinsonism Model - I
- Lecture 53 - Behavioural Setup for Rodents: Parkinsonism Model - II
- Lecture 54 - Electronic Systems for Brain Stimulation - II
- Lecture 55 - Course Concluding Remarks