

NEUROPHYSIOLOGY
(2 credits)
(LS 507) M. Sc. SEMESTER III

(DS, ACM & SKJ*)

(The course will be taught by the faculties in the same order as the name is mentioned in the course content)

| <u>Faculty</u> | <u>Topics</u> | <u>Approx No. of Lectures</u> |
|----------------|---|-------------------------------|
| DS | Development and evolution of the brain, Organization of Nervous system Anatomy and Cyto-architecture: Different Cortical Areas, Brainstem, Cerebellum, reticular formation, Ascending, and descending tracts, The spinal cord, Vertebral column, CSF, Blood-brain-barrier. | 6 |
| | Touch, Pain, Heat, Itch, etc. | 2 |
| ACM | General Structure and Functions of Neuron and Glia Ionic distribution, Transmembrane potential, Action potential generation, propagation, Membrane, lipids, Myelination. | 4 |
| | Receptors and Channels: Types, properties, second messenger systems, Synapse, Axoplasmic transport | 2 |
| | Regulation of Neurotransmitters synthesis and their release | 2 |
| SJ | Methods to study sympathetic & parasympathetic nervous system Reflex, properties, types: Myotatic reflex, conditioned and unconditioned reflex, Motor control and decerebrate rigidity Injury to brain, | 4 |
| | Coding of information, Sensation, Adaptation, Denervation hypersensitivity, Sensitization, | 2 |
| | Gross to cellular study - stimulation, lesion, unit studies, anatomical, histological, biochemical, microdialysis, microiontophoresis, molecular studies, in vivo and in vitro cell culture studies | 2 |
| | | ----- 24 ± 2 lectures |

***Coordinator: Sushil Jha**