

STATE MEDICAL FACULTY OF WEST BENGAL

COURSE SYLLABUS: DNEP COURSE

PRELIMINARY COURSE

E.E.G. COURSE CURRICULUM:

1. NEURO-ANATOMY: Lobes of the brain and neurons.
2. NEURO-PHYSIOLOGY :
 - i) Physiology of excitable neurons
 - ii) Membrane potentials and action potentials
 - iii) Synaptic activity
 - iv) Neurotransmitters
 - v) Generation of EEG rhythm and basic EEG rhythm
3. NEURO-PATHOLOGY:
 - i) Pathology of nerve cell injury
 - ii) Generation of epileptiform activity
4. CLINICAL:
 - A) Seizure disorder and its differential diagnosis
 - B)
 - i) Normal EEG pattern in children and adult, awake and sleep.
 - ii) Neonatal EEG
 - iii) Normal variants
 - iv) Artifacts : Eye movements, muscle pulse
 - v) Activation methods: Hyperventilation, photic stimulation, sleep deprivation, others
 - vi) Abnormal EEG records, definition-spike, sharp, slow waves, other abnormalities
 - vii) Abnormal EEG in neurological diseases
 - viii) Brain death
5. TECHNICAL ASPECTS:
 - i) Different parts of EEG machine and its functions, i.e. montage, electrodes, filter, calibration, sphenoidal electrode, depth electrodes.
 - ii) Electroencephalographic monitoring (in patients and ambulatory), Video Electroencephalography, Intraoperative records, Quantitative electroencephalography, Brain mapping and others (in brief).
 - iii) Electroencephalographer's reporting
 - iv) Record keeping.

FINAL COURSE

EEMG, NCV AND EVOKED POTENTIALS COURSE CARRICULUM:

1. NEURO-ANATOMY:

Muscle : Origin, insertion, nerve supply, structure
Nerve : Course-cranial and peripheral, structure

2. NEURO-PHYSIOLOGY :

Muscle :

- i) Functions of muscles
- ii) Muscle contractions
- iii) Electrical properties of muscles

Nerve:

- i) Functions of nerve
- ii) Electrical properties of nerve. Near field potential and Far field potential
- iii) Nerve conduction
- iv) Neuromuscular junction and neurotransmitters

3. NEURO-PATHOLOGY:

Muscle : Pathological changes in muscles

- i) Primary muscle disease
- ii) Injury
- iii) Metabolic
- iv) Inflammatory
- v) Others
- vi) Neurogenic muscle involvement
- vii) Neuromuscular junction abnormalities

Nerve:

- i) Demyelination
- ii) Axonopathy

4. CLINICAL:

- 1) Nerve:
 - a) Disease affecting cranial and peripherals
 - i) Bell's palsy
 - ii) Peripheral neuropathy
 - iii) Entrapment neuropathy

b) Basic principles of nerve conduction study (NCS)

- i) Motor NCS
- ii) Sensory NCS
- iii) F-wave
- iv) H-reflex
- v) Blink reflex and others
- vi) Repetitive nerve stimulation
- vii) Abnormalities in disease
- viii) Central motor conduction

2) Muscle:

- a) Disease of muscle and neuromuscular junctions
- b) Normal EMG recording-Resting/Insertional activity/Volitional recruitment pattern, Interference pattern.
- c) Abnormal EMG –
 - i) Myopathies
 - ii) Neurogenic muscle involvement
 - iii) Involuntary muscle contractions
 - iv) Neuromuscular transmission disorder
- d) Needle EMG – Conventional, Macro EMG, Surface EMG, Single fibre EMG

3) Evoked potential studies:

- i) Visual evoked potential
- ii) Brainstem auditory evoked potential
- iii) Somatosensory evoked potential

4) Instruments:

- i) Basic knowledge about the machines
- ii) Electrodes
- iii) Electrode impedance
- iv) Identification of wave pattern
- v) Artifacts
- vi) Normal laboratory values
- vii) Electromyography reporting
- viii) Record keeping

5. Polysomnographic studies – Normal sleep and sleep disorder (in brief)
