

NEUROMUSCULAR SCIENCES I

Course Title	NEUROMUSCULAR SCIENCES I	
Course Code	PT603	
Course Credit	Lecture: 4	
	Practical/ Clinical Training : 1	
	Total: 5	
Course Objectives		
<ol style="list-style-type: none"> 1. To familiarize the students with basic knowledge in anatomy, physiology, common diseases/ conditions involving neuromuscular system. 2. To be able to perform detailed assessment and treatment of neuromuscular conditions. 3. To obtain advance skill in Neuromuscular Physiotherapy for prevention and treatment of the diseases. 		
#	Detailed Syllabus	Hours Allotted
Section I		
1	Introduction of Neuromuscular Sciences-I Basic Anatomy and Physiology of Neuromuscular System	1
2	Physical and Functional outcome measures in Neuromuscular System	
	Physical outcome measures Basic history taking to determine whether the brain, spinal cord, peripheral nerve is involved, Assessment of higher mental function – orientation, memory, attention, speech, language, Assessment of cranial nerves, Assessment of motor power, Assessment of sensory function – touch, pain, temperature, position Assessment of tone – spasticity, rigidity, and hypotonic. Assessment of cerebellar function, Assessment of higher cortical function – apraxia, Assessment of gait abnormalities	8
	Investigations Orientation and Introduction, Physical basis, normal result & common abnormal responses, (in brief) Skull X-ray, Computerized Tomography, Magnetic Resonance Imaging, Intracranial Pressure Monitoring Evoked Potentials, EMG/ NCV, Lumbar puncture ,Common Laboratory tests in Neurological disorders .	7
	Functional outcome measures Barthel Index	10

	Functional Independence of Measure Glasgow Coma scale Edinburgh 2 coma Scale Galveston Orientation Amnesia Test National Institute of Scale Unified Parkinson Disability Rating Scale Kartz Disability	
3	Therapeutic approaches Neuromuscular System	4
	NDT	4
	Brunnstrom	4
	PNF Concept	2
	Sensory Integration	4
	Motor Relearning Programme	2
	Constraint Induced Therapy	2
	Neural Mobilisation	2
Section II		
	Neuromuscular diseases and disorders Clinical manifestation Definition, Classification, , aetiology, pathogenesis, clinical features, clinical investigation and complications of the following conditions Medical, surgical and physiotherapy management (assessment and treatment)	
10	Cerebrovascular Accidents –CVA-Thrombotic ,Embolic ,Haemorrhagic	8
11	Head Injuries –Trauma	6
12	Tumours of Brain	6
13	Degenerative Conditions of Brain	
	Parkinson's Disease	8
	Huntington's Disease	2
	Dementia and Alzheimer's Disease	2
14	Cerebellar Ataxia	4
15	Movement disorders	4
	Chorea, athetosis, Hemiballism, tics, myoclonus, Willson' disease, writer's cramp, Progressive supranuclear palsy, progressive muscular atrophy Olivo-ponto cerebellar atrophy, Physiotherapy management of movement disorders, Chorea, athetosis	
16	Congenital Disorders	

Cerebral Palsy	4
Hydrocephalus	2
Infantile Hemiplegia	2

Instruction Method

1. Teaching and training sessions will be carried out through active learning. Active participation and contribution in group discussion and seminars are mandatory for students
2. Lectures to be conducted with the help of black board and/or audio-visual aids that includes multi-media projector, OHP, etc.
3. Problem based and/or case based assignments based on course content will be given to the students at the end of each unit/topic and will be evaluated at regular interval.
4. The course includes a laboratory where the students have an opportunity to build and appreciation for the concepts being taught in lectures.
5. Instruction method will be integrated with clinical training, bedside / class room teaching and tutorials as necessary.

Text Books

1. Adams and Victor's Principles of Neurology. 10th edition. Ropper AH, Samuels MA. McGraw-Hill Professional
2. Carpenter's human neuro-anatomy. 9th edition. Parent A; Carpenter MB. Williams & Wilkins
3. NeuroRehabilitation: A multisensory approach. 1st edition. Farber SD. W.B. Saunders Publications
4. Physical therapy for children. 4th edition. Campbell SK, Palisano RJ, Orlin M. Saunders Publications.

Reference Books

1. The Mental Status Examination in Neurology. 4th edition. Strub RL; Black FW. F. A. Davis Company
2. Brain's Clinical Neurology. 3rd edition. Bannister R. Oxford university press.
3. Hutchison's Clinical Method. 21st edition. Swash M. W B Saunders
4. Neurological Examination. 5th edition. Haerer A. Lippincott Williams & Wilkins.
5. Harrisons Manual of Medicine. 18th edition. Longo D, Fauci A, Kasper et al. Mc-Graw Hill Professional
6. Umphred's Neurological Rehabilitation. 6th edition. Umphred DA et al. Elsevier Publications
7. Stroke Therapy. 1st edition. Fisher M. Butterworth-Heinemann Medical
8. Adult hemiplegia: Evaluation and Treatment. 3rd edition. Bobath B. Butterworth-Heinemann
9. Brains diseases of Nervous system. 11th edition. Donaghy M. Oxford University Press

10. Principles of Neurosciences. 5th edition. Kendal ER, Schwartz JH et al.
McGraw-Hill Professional