INSTITUTE	**FACULTY OF PHYSIOTHERAPY**
PROGRAM	**MASTER OF PHYSIOTHERAPY**
SEMESTER	**2**
COURSE TITLE	**PHYSIOTHERAPY IN NEUROLOGICAL SCIENCES-II**
COURSE CODE	**17MP0209**
COURSE CREDITS	**6**

Objective:

1 To have the thorough knowledge of various neurological conditions
2 To learn the various advanced techniques of physiotherapy assessment

Course Outcomes: After completion of this course, student will be able to:

1 Develop strategies to manage chronic, progressive neurological conditions, such as multiple sclerosis and Parkinson's disease, with an emphasis on maintaining function, preventing complications, and improving quality of life.
2 Know the emotional and psychological impact of neurological conditions on patients and caregivers, and incorporate strategies to address these challenges in rehabilitation
3 Integrate modern rehabilitation technologies such as robotic-assisted therapy, virtual reality, and wearable devices for the treatment and monitoring of patients with neurological impairments.
4 Use the knowledge of current clinical guidelines and best practices for managing common neurological conditions (e.g., stroke rehabilitation guidelines, Parkinson's disease management) and incorporating these into patient care

Pre-requisite of course: To have the knowledge of advance physiotherapy management skills and techniques

Teaching and Examination Scheme

Theory Hours	Tutorial Hours	Practical Hours	ESE	IA	CSE	Viva	Term Work
2	0	2	50	30	20	50	50

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Contents : Unit	Topics	Contact Hours
1	**Clinical neurological conditions** Causes, clinical features, pathophysiology, general investigation (blood test, serum creatinine, CSF analysis, etc), Intracranial neoplasms, Gliomas, meningiomas, neuromas, angiomas, cranio, pharyngiomas, pituitary adenomas, medical and surgical management, Pyogenic infections of CNS: Meningitis, brain abscess, tuberculosis, neurosyphillis, Viral infections of CNS: Poliomyelitis, viral encephalitis, substance sclerosing encephalitis, AIDS, Cerebro vascular disease: Stroke syndrome, ischaemic stroke infarction, thrombo- embolic stroke, Hemorrhagic stroke, Transient ischaemic attack, arterio- venous malformation of the brain, intracranial hemorrhage, Metabolic disorders of brain : Hypoencephalopathy, hypoglycemic encephalopathy, hepatic encephalopathy, Degenerative disease of the brain: Parkinson's disease, motor neurone disease, amyotrophic lateral sclerosis, progressive bulbar palsy, Alzheimer's disease, Cerebral palsy, Spina bifida, Polyneuropathy: Post infective Polyneuropathy (gullian bare syndrome) diabetic neuropathy, hereditary sensory neuropathy, Disorders of spinal cord: Compression of spinal cord, neoplasm of the vertebral column, inter vertebral disc prolapsed, extra dural or epidural abscess, Syringomyellia, multiple sclerosis, myasthenia gravis, Peripheral nerve and plexus lesions, Carniovertebral junction abnormalities, Hydrocephalus, Cerebral lessions, Disorders of motor unit (Neuromuscular disease) a. Muscle pain and tenderness b. Muscle weakness c. Changes in muscle mass d. Muscle hyperactivity states e. Muscle fatigability f. Abnormal muscle tone (Hypotonic) g. Abnormalities of sensation h. Reduced or absent stretch reflexes, Disorders of muscle (Myopathies) a. Myasthenia gravis and other disorders of neuromuscular transmission b. Disorders of the peripheral nervous system c. Disorders of the anterior horn cells (Neuronopathies), Disorders of central motor control a. Abnormal muscle tone b. Muscle weakness c. Loss of muscular endurance d. Altered muscle activation patterns e. Involuntary movements f. Associated reactions g. Abnormalities of coordination h. Apraxia i. Hypokinesia j. Abnormal skeletal muscle reflexes k. Abnormal balance l. Abnormalities of sensation, Other associated manifestations a. Abnormalities in communications b. Abnormalities in swallowing c. Abnormalities of bladder and bowel functions d. Learning disorders e. Visual dysfunction f. Cognitive and perceptual dysfunction, Polyneuropathy Post infective poly radiculo-neuropathy (Gullainbarresyndrome) diabetic neuropathy, hereditary sensory neuropathy.	40

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Contents : Unit	Topics	Contact Hours
2	**Physiotherapy interventions in neurological conditions** Physiotherapeutic interventions for relief of pain, Physiotherapy management of patients with postural control , mobility control disorders, Neurological rehabilitation – neurofacilitation approach, Intracranial neoplasms; Gliomas, meningiomas, neuromas, angiomas, craniopharyngiomas, pituitary adenomas, medical and surgical management., Pyogenic infections of CNS; MSIS, Neurosyphilis, Viral infection on CNS; Poliomyelitis, viral encephalitis, Substance sclerosing encephalitis, AIDS, Cerebro – vascular Diseases; Stroke syndrome, ischaemic stroke infarction, thrombo-embolic stroke, hemorrhagic stroke, Transient ischaemic attack, Arterio- venous malformations of the brain, Intra cranial hemorrhage., Metabolic disorders of the brain; Hypoxic encephalopathy, hypoglycemic encephalopathy, hepatic encephalopathy, Degenerative disease of the brain Parkinson's disease, motor neuron disease, amyotrophic lateral sclerosis, progressive bulbar palsy, Alzheimer's disease, Cerebral palsy, Spina bifida, Polyneuropathy Post infective poly radiculo-neuropathy (Gullainbarresyndrome) diabetic neuropathy, hereditary sensory neuropathy, Disorders of spinal cord Compression of spinal cord, neoplasm of the vertebral column, inter vertebral disc prolapsed, extra dural or epidural abscess, Syringomyellia, multiple sclerosis, myasthenia gravis, Peripheral nerve and plexus lesions, Carniovertebral junction abnormalities, Hydrocephalus, Cerebral lesions	40
Total Hours		**80**

Suggested List of Experiments:

Contents : Unit	Topics	Contact Hours
1	**Practicals/OPD/Case Presentation** Practicals/OPD/Case Presentation	80
Total Hours		**80**

Textbook :

1 Physical Rehabilitation, Susan B. O'Sullivan, F.A. Davis Company, 2014

2 Clinical Neurophysiology: Nerve Conduction, Electromyography, Evoked Potentials, U.K, Misra Kalita, Elsevier Health Sciences, 2014

3 Illingworth's The Development of the Infant and Young Child Normal and Abnormal, Ronald S Illingworth, Elsevier, 2012

4 Cash Text book of Neurology for Physiotherapists 4th edition, John . E . Cash, Wolfe, 1992

5 Physiotherapy in Neuro-Conditions, Glady Samuel Raj, Jaypee Brothers, 2006

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References:

1 Pediatric Physical Therapy , Pediatric Physical Therapy , Jan S. Tecklin , Lipnikot williams, 2015

2 Treatment of Cerebral Palsy and Motor Delay , Treatment of Cerebral Palsy and Motor Delay , Sophie Levitt , Wolters Kluwer, 2010

3 Control Motor Control: Translating Research in Clinical Practice, Control Motor Control: Translating Research in Clinical Practice, Anne Shumway-Cook , Wolters Kluwer, 2012

4 Mobilization of Nervous Sydtem, Mobilization of Nervous Sydtem, David S Butler, Churchill Livingstone, 1994

5 Neurology and Neurosurgery Illustrated, Neurology and Neurosurgery Illustrated, Kenneth W Lindsay, IAN Bone,Gerriaint Fuller, Elsevier, 2010

6 Neurological Rehabilitation, Neurological Rehabilitation, Darcy . A .Umphered, Rolando . T . Nazaro, Elsevier, 2013

Suggested Theory Distribution:

The suggested theory distribution as per Bloom's taxonomy is as follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

Distribution of Theory for course delivery and evaluation

Remember / Knowledge	Understand	Apply	Analyze	Evaluate	Higher order Thinking / Creative
0.00	0.00	35.00	35.00	30.00	0.00

Instructional Method:

1 THEORY+PRACTICAL

Supplementary Resources:

1 NA

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