

<b>COURSE</b>	<b>FACULTY OF PHYSIOTHERAPY</b>
<b>PROGRAM</b>	<b>BACHELOR OF PHYSIOTHERAPY</b>
<b>SEMESTER</b>	<b>3</b>
<b>COURSE TITLE</b>	<b>PHYSICAL &amp; FUNCTIONAL DIAGNOSIS</b>
<b>COURSE CODE</b>	<b>17PT0304</b>
<b>COURSE CREDITS</b>	<b>6</b>

**Objective:**

- 1 To acquire the skill of detection & objective documentation of the Neuro-Musculoskeletal dysfunction such as Pain, altered muscle power, mobility, endurance, limb length, posture, gait, hand function & A.D.L.s.
- 2 To analyse & discuss the Physiological & Biomechanical bases of movement dysfunction
- 3 To acquire the skill of performance and interpretation of electrodiagnostic tests and Pulmonary Function Test
- 4 To analyse Arterial Blood Gas analysis and Exercise Tolerance Test

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

- 1 Acquire the skill of detection & objective documentation of the Neuro-Musculoskeletal dysfunction such as Pain, altered muscle power, mobility, endurance, limb length, posture, gait, hand function & A.D.L.s.
- 2 Analyse & discuss the Physiological & Biomechanical bases of movement dysfunction
- 3 Acquire the skill of performance and interpretation of electrodiagnostic tests and Pulmonary Function Test
- 4 Analyse Arterial Blood Gas analysis and Exercise Tolerance Test

**Pre-requisite of course:** 1. Able to acquire the skill of detection & objective documentation of the Neuro-Musculoskeletal dysfunction such as Pain, altered muscle power, mobility, endurance, limb length, posture, gait, hand function & A.D.L.s.

**Teaching and Examination Scheme**

<b>Theory Hours</b>	<b>Tutorial Hours</b>	<b>Practical Hours</b>	<b>ESE</b>	<b>IA</b>	<b>CSE</b>	<b>Viva</b>	<b>Term Work</b>
80	0	80	50	30	20	50	50

<b>Contents : Unit</b>	<b>Topics</b>	<b>Contact Hours</b>
1	<b>General principles of Human development &amp; maturation</b> Aspects: physical, motor, sensory, cognitive, emotional, cultural, social., Factors influencing human development & growth: Biological, environmental, inherited., Principles of maturation - in general - in anatomical directional pattern cephalo – caudal proximo – distal centro – lateral, mass to specific pattern, gross to fine motor development., Reflex maturation tests, Development in specific fields: Oromotor development, sensory development, neurodevelopment of hand function.	10
2	<b>Electrodiagnosis</b> Bioelectricity-Physiology of generation & propagation of action potential, volume conduction., Therapeutic current-as a tool for electro diagnosis., Physiological principles, use of alternating & direct currents in electro-diagnosis such as sensory & Pain threshold, Pain tolerance, Short & long pulse test, S.D. curves, Chronaxie & Rheobase, accommodation ratio., Principles of nerve conduction studies, late responses., E.M.G. instrumentation, basic components, panel diagram, types of electrodes., Principles of Electro- myography, motor unit –Normal characteristics-activity at rest, recruitment/frequency pattern at minimal activity, Interference pattern.	10
3	<b>Assessment of Neurological dysfunction</b> Higher functions, cranial nerves, sensations & sensory organization, body image, tone, reflexes: superficial & deep, voluntary control, muscle strength, coordination, balance, posture, gait., Scales: FRT, Berg's Balance, modified Ashworth, Glasgow Coma, TUG, FIM., Functional diagnosis using ICF., Interpretation of electro diagnostic findings, routine biochemical investigations.	10
4	<b>Assessment of Musculoskeletal Dysfunction</b> Tightness, deformity, joint mobility, muscle strength, limb length, trick movement, girth, posture, gait, special tests., Functional diagnosis using ICF., Interpretation of X-ray of extremities & spine, routine bio-chemical investigations, CT scan, MRI. Assessment of pelvic floor muscle strength and function, Digital evaluation of vagina, Perineometer, Pad test, Disability Evaluation: Gait and gait parameters, percentage of disability (temporary and permanent).	10
5	<b>Assessment of cardio-pulmonary dysfunction</b> Vital parameters, chest expansion, chest excursion, breath holding test, breath sounds, Rate of Perceived Exertion (RPE), Peak Flow Rate (PFR), Exercise Tolerance: six minutes' walk test, shuttle test, theoretical bases of Bruce's protocol, step test., Ankle Brachial Index, tests for peripheral arterial & venous circulation., Functional diagnosis using ICF., Interpretation of X-ray chest, routine bio-chemical investigations, ABG, PFT, ECG (normal values).	10
6	<b>Assessment of pain</b> Intensity & quality., Objective assessment & documentation: VAS, Numerical Rating Scale. Other scales.	8

<b>Contents : Unit</b>	<b>Topics</b>	<b>Contact Hours</b>
7	<b>Assessment of Hand</b> Sensations, mobility of joints, strength., Special tests., Hand function: Precision & power grips.	8
8	<b>Assessment of Obesity</b> Classification., Assessment – BMI, Waist circumference, Waist – Hip ratio., Introduction to Quality-of-Life Questionnaire.	8
9	<b>Assessment of Wounds.</b> Assessment of wounds.	6
<b>Total Hours</b>		<b>80</b>

#### **Suggested List of Experiments:**

<b>Contents : Unit</b>	<b>Topics</b>	<b>Contact Hours</b>
1	<b>General principles of Human development &amp; maturation</b> Assessment	10
2	<b>Electrodiagnosis</b> Assessment	10
3	<b>Assessment of Neurological dysfunction</b> Assessment	10
4	<b>Assessment of Musculoskeletal Dysfunction</b> Assessment	10
5	<b>Assessment of Cardio-pulmonary dysfunction</b> Assessment	10
6	<b>Assessment of Pain</b> Assessment	8
7	<b>Assessment of Hand</b> Assessment	8
8	<b>Assessment of Obesity</b> Assessment	8
9	<b>Assessment of wounds</b> Assessment	6
<b>Total Hours</b>		<b>80</b>

#### **References:**

- 1 Orthopaedic Physical Assessment, David J Magee
- 2 Muscles: Testing and Function, with Posture and Pain: 5th edition. Kendall FP; McCreary E. K. et al. Lippincott Williams and Wilkins
- 3 Practical Exercise Therapy: 3rd edition. Hollis M; Cook PF. Wiley-Blackwell

#### **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

<b>Remember / Knowledge</b>	<b>Understand</b>	<b>Apply</b>	<b>Analyze</b>	<b>Evaluate</b>	<b>Higher order Thinking</b>
20.00	20.00	30.00	10.00	10.00	10.00