Subject Title:	**PHYSICAL & FUNCTIONAL DIAGNOSIS**
Subject Code:	**1PT1010304**
Year:	**Third Year**
Pre-requisite Subject	**-NONE-**

Objectives of course:

At the end of the year the student will be able to:

1. Describe the human development & maturation; with special emphasis to psychomotor development, maturation & alteration during aging process
2. Acquire the skill of detection & objective documentation of the Neurological, Musculoskeletal, Cardiovascular & pulmonary dysfunctions such as pain, altered muscle power, mobility, endurance, limb length, posture, gait, hand function & A.D.L. in adult & pediatric conditions & acquire skill & to arrive at the Functional diagnosis as per International Classification of Functioning(ICF)
3. Describe the physiology of nerve impulse, motor unit, its electro-physiological character and acquire the skill of performance and interpretation of various electro-diagnostic tests in the assessment of peripheral nerve lesions
4. Be able to do interpretation of common investigations used to arrive at the Physical & Functional diagnosis.

Teaching Scheme (Hours)			**Evaluation Scheme (Marks)**					
			Theory(T)		**Practical(P)**		**Total Marks**	
Lecture	**Practical**	**Total**	**External Assessment**	**Internal Assessment**	**External Assessment**	**Internal Assessment**	**Theory**	**Practical**
100	100	200	80	20	80	20	100	100

Subject Contents			
Sr. No.	**Topic**	**Total Hours**	**Weight (%)**
1	**General principles of Human development & maturation** 1. Aspects: physical, motor, sensory, cognitive, emotional, cultural, social 2. Factors influencing human development & growth: Biological, environmental, inherited. 3. Principles of maturation -in general -in anatomical directional pattern cephalo –caudal proximo – distal centero–lateral, mass to specific pattern, gross to fine motor development 4. Reflex maturation tests 5. Development in specific fields: Oromotor development, sensory development, neurodevelopment of hand function		
2	**Electro diagnosis** 1. Bioelectricity-Physiology of generation & propagation of action potential, volume conduction 2. Therapeutic current - as a tool for electro diagnosis 3. 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 4. Principles of nerve conduction studies, late responses* 5. E.M.G. instrumentation, basic components, panel diagram, types of electrodes 6. Principles of Electro - myography, motor unit - Normal characteristics-activity at rest, recruitment/frequency pattern at minimal activity, Interference pattern		

3	**Assessment of Neurological dysfunction:** 1. Higher functions, cranial nerves, sensations & sensory organization, body image, tone, reflexes: superficial & deep, voluntary control, muscle strength, coordination, balance, posture, gait 2. Scales: FRT, Berg's Balance, modified Ashworth, Glasgow Coma, TUG, FIM 3. Functional diagnosis using ICF 4. Interpretation of electro diagnostic findings, routine biochemical investigations		
4	**Assessment of Musculoskeletal Dysfunctions:** 1. Tightness, deformity, joint mobility, muscle strength, limb length, trick movement, girth, posture, gait, special tests 2. Functional diagnosis using ICF 3. Interpretation of X- ray of extremities & spine, routine bio chemical investigations, CT scan, MRI		
5	**Assessment of cardio-pulmonary dysfunction:** 1. Vital parameters, chest expansion, chest excursion, breath holding test, breath sounds, rate of perceived exertion (RPE), peak flow rate 2. Exercise Tolerance: six minutes' walk test, theoretical bases of Bruce's protocol, step test 3. Ankle Brachial Index, tests for peripheral arterial & venous circulation 4. Functional diagnosis using ICF 5. Interpretation of X -ray chest, routine bio-chemical investigations, ABG, PFT, ECG (normal values)		
6	**Assessment of pain** 1. Intensity & quality 2. Objective assessment & documentation: VAS, Numerical Rating Scale. Other scales,		
7	**Assessment of Hand** 1. Sensations, mobility of joints, strength 2. Special tests 3. Hand function: Precision & power grips.		
8	**Assessment of Obesity** 1. Classification 2. Assessment- BMI,Waist circumference,Waist-Hip ratio Introduction to Quality of Life Questionnaire		
Total Hours		**200**	
Practical & Demonstrations:			
1 2	Skills to be practiced on peer/model Case presentation with Physical & Functional diagnosis in medical-surgical conditions		