

PHYSICAL AND FUNCTIONAL DIAGNOSIS

Course Title	Physical and Functional Diagnosis	
Course Code	PT413	
Course Credit	Lecture: 4	
	Practical / Clinical Posting: 3	
	Total: 7	
Course Objectives:		
<ol style="list-style-type: none"> 1. Physical and Functional Diagnosis focuses on the basic assessment skills for physical and Functional diagnosis i.e. Musculoskeletal, Neurological and Cardiovascular-Respiratory in order to study the various impairments and their impact on activity and participation of the individual 2. Understand the use of appropriate tools or instruments of assessment for diagnosis in various diseases and disorders including musculoskeletal, neurological and cardio-vascular pulmonary conditions 3. Understand the use of diagnosis for physiotherapy practice. 4. To learn the applied aspect of the subject for physiotherapy practice. 		
#	Detailed Syllabus	Hours
Section I		
1.	Introduction of physical and functional diagnosis Physical Diagnosis and its importance in clinical practice Functional Diagnosis and its importance in clinical practice	2
2.	Subjective examination including	
3.	Name, age, sex, height, weight, BMI, address, occupation, chief complain, present history, past history, personal history, history of hospitalization, medical and surgical history, family history, etc...	3
4.	Assessment of Pain : with techniques and clinical reasoning Types of pain: Somatic, referred, Neurogenic, Visceral, etc. Location, duration, progressive or non-progressive, localize or generalize, distribution, quality, diurnal variations, Modifying factors, Severity, nature of pain, tissue irritability Measurement and Documentation Visual Analogue Scale (VAS), Numerical Rating Scale(N.R.S.) McGill’s modified questionnaire (including Body charts)	3
	Loss of function	1
5.	Developing Differential Diagnosis (DD)	1
6.	Objective examination	
7.	Vitals parameter - PR, RR, BP, Temp, Hydrets	3
	Level of conciseness, Glasgow Coma Scale (GCS), Higher mental function	6

	(time, place, person, etc...) mental status, communication, memory, cognitive, Cranial Nerves Examination	
	Systemic examination PICCKLE	3
	Inspection (LOOK): with techniques and clinical reasoning Body built, Posture, swelling, wasting, perspiration, breathing pattern, deformity, asymmetry, tropical changes, and symmetry of structure.	4
	Lines and tube attached with the patients including external appliance , assistive devices, footwear,	2
8.	Palpation (FEEL): with techniques and clinical reasoning Tenderness, swelling / oedema, temperature, asymmetry, spasm, Surface contour, tautness	4
9.	Auscultation : Techniques with Clinical Reasoning, Breath sounds, Heart sounds,	4
10.	Percussion e.g. thorax and abdominal	2
	Measurement	
	Joint PJROM, AJROM – brief goniometry Joint End feel, capsular pattern and non-capsular pattern, joint play	8
	Sensory examination : with techniques and clinical reasoning, Superficial , deep and cortical sensation examination, Dermatome Examination techniques and clinical reasoning	8
	Motor Examination : with techniques and clinical reasoning	
	Muscles Girth, wasting – Atrophy and Hypertrophy	4
	Muscles Tone: Normal, hypo and hypertonic	3
11.	Myotomes - Examination techniques and clinical reasoning	4
	Reflex : Deep and superficial reflex	4
	Muscles Power : Muscle grading / manual muscle testing (MMT) 1. Introduction, Principles 2. Uses, Precaution and Contraindication 3. Types of muscle grading 4. Available ROM method 5. Grading system - Medical Research Council (MRC) 6. Demonstrate the skill to grade	3
	7. Head, Face, neck, shoulder and Upper limb muscle	8
Section II		
	Muscles power – continued....	
	8. Trunk muscle, pelvic muscles including respiratory muscles	6
	9. Lower limb muscle	8
12.	Modified Ashworth scale	3

13.	Chest Expansion Measurement: Chest Circumference Hemithorax, Book method, chest symmetry, etc.	2
14.	Limb Length Measurement	2
15.	Q- Angle Measurement with techniques and clinical reasoning	2
16.	Tightness, Contracture and Deformity	4
17.	Balance tests: Clinical importance with techniques and clinical reasoning, Romberg test, Hall pike test, Functional reach test etc.	3
18.	Coordination tests with techniques and clinical reasoning Equilibrium and non-equilibrium tests Coordination Tests in Standing, Walking, Sitting or Supine, Finger to nose, Finger to therapist finger, Finger to finger, Alternate nose to finger, Finger opposition, Pronation /Supination, Alternate heel to knee, Drawing an imaginary circle on air with UE and LE, etc.	3
19.	Gait Measurement with techniques and clinical reasoning Normal and abnormal gait, Gait parameters assessment procedures Gait Evaluation and demonstrate Pathologic gait examination Description of some of the most commonly used types of observational gait analysis; Advantages and disadvantages	9
20.	Functional Diagnosis – measures – Basics Functional Activity Specific Assessment – FIM, ADLs scales Assessment of health and wellness 36 – SF health questioners Questioners for quality of life and quality of care	3
21.	Special Investigations	
22.	Principles and application of investigative and imaging techniques in Physiotherapy	3
	Blood investigation: Blood test.	5
	Radiological diagnosis, identification of normal investigations, X-ray, Computerized Tomography (CT), Magnetic Resonance Imaging (MRI), Functional MRI in Rehabilitation, Ultrasonography (US) PFT, ABG Analysis, ECG,	
	Electro diagnostic tests - Demonstration and brief introduction to Nerve conduction studies - SD Curve, normal and abnormal EMG studies. Biofeedback Evoked potentials	
23.	Assessment of Physical fitness: Flexibility, Strength, Endurance, Agility, speed, reaction time, power, coordination, balance, etc... Exercise Tolerance Testing – with Techniques with clinical reasoning, Energy Systems and Exercise Physiology	6
24.	Obesity Examination with techniques and clinical reasoning Weight, height and weight, body part circumference evaluation (measure	5

	tape method), BMI, Skin fold method, Under water technique	
25.	Functional evaluation: ICIDH, ICIDH2 and ICF - brief The concepts of health status impairment; functional limitations; disability and handicap; definition of functional activity and the purposes and components of the functional assessment	4
	Special Outcome measures for Cardiovascular and pulmonary system Breath Holding Test, Rate of Perceived Exertion (R.P.E.) Target Heart Rate (RHT), 6 minute walk test, 3 minute walk test, 2 minute walk test	4
	Outcome measures for Musculoskeletal system examination with techniques and clinical reasoning - Techniques with clinical reasoning Low Back Functional Scale (LBFS), Neck Disability Index (NDI)	4
	Outcome measures for Neuromuscular system examination with techniques and clinical reasoning 10 meter walk test, Time up and go test (TUG), Get up and go test (GUG), MASS, STREAM	4
Instruction method		
<ol style="list-style-type: none"> Teaching and training sessions will be carried out through active learning. Active participation and contribution in group discussion and seminars are mandatory for students Lectures to be conducted with the help of black board and/or audio-visual aids that includes multi-media projector, OHP, etc. 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. The course includes a laboratory where the students have an opportunity to build and appreciation for the concepts being taught in lectures. Instruction method will be integrated with clinical training, bedside / class room teaching and tutorials as necessary. 		
Text Books		
<ol style="list-style-type: none"> Orthopedic Physical Assessment, Magee DJ. 5th edition. Saunders Muscles: Testing and Function, with Posture and Pain: 5th edition. Kendall FP; McCreary EK et al. Lippincott Williams and Wilkins Practical Exercise Therapy: 3rd edition. Hollis M; Cook PF. Wiley-Blackwell 		
Reference books		
<ol style="list-style-type: none"> Training in the Community for the people with disabilities. Goerdt et al. World Health Organization Hand Rehabilitation- A practical Guide. 2nd edition. Clark GL. Churchill Livingstone Physiotherapy for Respiratory and Cardiac Problems. Adults and Paediatrics. 3rd ed. Pryor JA, Webber BA. London: Churchill Livingstone, 2002. Training in the Community for the people with disability – Hallender Padmini Mendes Hand 		

- Rehabilitation - Clark W.
5. Physical Rehabilitation. Assessment and Treatment: 5th Edition. Sullivan SO; Schmitz TJ. F.A. Davis Company
 6. Daniels and Worthingham's Muscle Testing: Techniques of Manual Examination. 8th edition. Hislop H; Montgomery J. Saunders Publication
 7. Hand Rehabilitation – Toubiana
 8. Therapeutic Exercise Moving Toward Function: 3rd edition. Carie MH; Brody LT. Lippincott Williams and Wilkins.
 9. Therapeutic Exercise: 6th edition. Carolyn K; Kolby. Jaypee Brothers Medical Publishers