INSTITUTE	**FACULTY OF PHYSIOTHERAPY**
PROGRAM	**MASTER OF PHYSIOTHERAPY**
SEMESTER	**1**
COURSE TITLE	**CLINICAL, PHYSICAL AND FUNCTIONAL DIAGNOSIS IN MUSCULOSKELETAL PHYSIOTHERAPY**
COURSE CODE	**MPT (MS)-104**
COURSE CREDITS	**9**

Objective:

1 Elicit and interpret clinical signs and symptoms of diseases commonly seen in Orthopedics& interpret clinical tests and special investigations commonly used in the diagnosis of these conditions.

2 Generate a primary diagnosis and a list of differential diagnoses consistent with typical presentations.

3 Identify normal & pathological anatomy on diagnostic images.

4 Discuss how the serious and common disorders and the specialized areas of medical practice may impact on Orthopedic Physiotherapy practice.

5 Demonstrate a broad range of technical skill in diagnosing the Physiotherapy related Orthopedic conditions. a) Cardiac efficiency tests and spirometry b) Fitness test for sports c) Physical disability evaluation and disability diagnosis. Gait analysis and diagnosis. d) Coping Strategies in chronic painful musculoskeletal conditions. Checkouts of orthotics and prosthetics for neuro-musculoskeletal problems. Effect of Immobilization on Musculoskeletal System e) Application of ICF in Musculoskeletal diagnosis f) Medical screening for potential referred pain and Red Flags

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

1 Elicit and interpret clinical signs and symptoms of diseases commonly seen in Orthopedics& interpret clinical tests and special investigations commonly used in the diagnosis of these conditions.

2 Generate a primary diagnosis and a list of differential diagnoses consistent with typical presentations.

3 Identify normal & pathological anatomy on diagnostic images.

4 Discuss how the serious and common disorders and the specialized areas of medical practice may impact on Orthopedic Physiotherapy practice.

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Pre-requisite of course: Students entering this course should have a foundational understanding of human anatomy, physiology, biomechanics, pathology, and basic clinical examination skills acquired during the undergraduate physiotherapy program. They should also possess fundamental knowledge of communication skills, clinical reasoning, and the ability to interpret basic clinical findings relevant to physiotherapy practice.

Teaching and Examination Scheme

Theory Hours	Tutorial Hours	Practical Hours	ESE	IA	CSE	Viva	Term Work
120	0	120	100	0	0	0	0

Contents : Unit	Topics	Contact Hours
1	**Part I** Clinical Decision Making - Planning Effective Treatment. Clinical decision making models, Team approach, Foundation for clinical decision making. , Vital Signs. Identification of reasons for monitoring vital signs; importance of monitoring vital signs; common techniques of monitoring vital signs; identification and analysis of normal values with that of abnormal values. , Principles and application of investigative and imaging techniques in Physiotherapy a. Blood test b. Arterial Blood Gas (ABG) analysis c. Pulmonary Function Test (PFT) d. Radiological examination e. Computerized Tomography (CT) f. Magnetic Resonance Imaging (MRI) g. Ultrasonography (US) h. Electrocardiography (ECG) i. Dope testing , Evaluation assessment and treatment planning strategies for musculoskeletal, neurological, cardiopulmonary, sports specific and other physiotherapy conditions: Principles of evaluation, clinical manifestations, general and specific clinical examination. i. Physiotherapy assessment of the following: a. Range of motion (ROM) b. Tone c. Muscular strength and endurance d. Flexibility e. Coordination - Non equilibrium test - Equilibrium test f. Sports specific skills g. Cardiac efficiency h. Sensory evaluation i. Functional Evaluation - Various scoring methods in functional assessment - Validity and reliability j. Fitness evaluation - Aerobic - Anaerobic k. Spasm l. Trigger Point m. Tender Point n. Spasm ii. Assessment of cognitive, perceptual dysfunctions and vestibular dysfunction., Electro-Diagnosis: i. Characteristics and components of Electro therapeutic stimulation systems and Electro physiological assessment devices. ii. Instrumentation for neuromuscular electrical stimulation. iii. Electrical properties of muscle and nerve. iv. Neurobiology of afferent pain transmission and central nervous system mechanisms of pain modulation. v. Electrical stimulation and circulation., Clinical Electro physiological testing: Instruments, Techniques and Interpretations of a. Nerve conduction velocity including Repetitive Nerve Stimulation (RNS) b. Electromyography c. Bio-feedback technique. d. Late responses , Concepts of electro physiological studies in neuro muscular diseases as a diagnostic and therapeutic tool., Evoked potentials – VEP, SSEP, MEP, BAEP	60

Contents : Unit	Topics	Contact Hours
2	**Part II** Psychological aspects of rehabilitation in disability: Psychological tests. , Developmental Screening i. Factors Motor control assessment ii. Motor control theories/mechanism iii. Patterns of normal development iv. specific procedures and tests used to assess motor control defects, Anthropometry 1. Body measurements - Height - Weight - Circumference 2. Body Proportion - Body Mass Index (BMI) - Waist Hip Ratio (WHR) 3. Body Composition i. ii. Somatotyping Methods of measurement a. Water displacement method for body fat. b. Skin fold measurement c. Under water weighing d. Bioelectric Impedance Analysis (BIA) , Differential diagnosis in Physiotherapy , i. Functional evaluation. a. The concepts of health status impairment; functional limitations; b. Disability and Persons with Disabilities; c. Definition of functional activity and the purposes and components of the functional assessment; d. Selection of activity and roles for an individual based on his or her capabilities and functional limitations. ii. iii. iv. Various forms of functional tests; a. Physical function test b. Multi-dimensional functional assessment instrument, c. Identification of instrument for testing function. Various scoring methods used in functional assessment; Reliability and validity of various functional assessments. , Evaluation of aging	60
Total Hours		**120**

Suggested List of Experiments:

Contents : Unit	Topics	Contact Hours
1	**Practical demonstration for applicable topics** Practical demonstration for applicable topics	120
Total Hours		**120**

Textbook :

1 Orthopedic Physical Assessment, David J. Magee, Saunders / Elsevier, 2014

2 Clinical Orthopaedic Examination , Ronald McRae, Churchill Livingstone, 2010

3 Differential Diagnosis in Physical Therapy, Catherine Goodman & Teresa Snyder, Saunders / Elsevier, 2017

4 Differential Diagnosis for Physical Therapists: Screening for Referral, Catherine Goodman & Teresa Snyder, Saunders, 2013

5 Mosby's Guide to Physical Examination, Seidel et al., Mosby / Elsevier, 2019

6 Maitland's Vertebral Manipulation , Geoffrey Maitland , Butterworth-Heinemann, 2005

7 Maitland's Peripheral Manipulation , Geoffrey Maitland , Butterworth-Heinemann, 2005

8 Grieve's Modern Manual Therapy , Boyling & Palastanga , Churchill Livingstone, 2004

9 Fundamentals of Manual Therapy, Eyal Lederman , Churchill Livingstone , 2005

10 Taylor's Manual of Physical Evaluation and Treatment, Lynn Paul Taylor , McGraw-Hill, 2005

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					
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 Case-Based Learning (CBL)
2 Clinical Demonstrations
3 Simulation-Based Learning
4 Interactive lectures

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