

SYLLABUS MPT PART - II (Speciality)

Master of Musculoskeletal Physiotherapy MPT (Musculoskeletal Conditions)

Course Objectives:

At the end of the course, the candidate will be able to

1. Identify, discuss & analyse, the Musculoskeletal dysfunction in terms of Biomechanical, Kinesiological and Biophysical basis & co-relate the same with the provisional diagnosis, routine radiological & electro-physiological investigations and arrive at appropriate functional diagnosis (ICF) with clinical reasoning.
2. Be able to recognize the dysfunction on the Neuro- Musculoskeletal and Neurovascular-system with appropriate functional diagnosis (ICF) with clinical reasoning.
3. Use appropriate rationale for subjective and physical examination assessment & clinical tests used in differential diagnosis. Acquire the ability to perform subjective and objective examination, with development of suitable analytical skills to evaluate data obtained.
4. Develop clinical reasoning incorporating theoretical basis and evidence-based guidelines & adopt diagnostic & therapeutic procedures based on it in the field of musculoskeletal physiotherapy.
5. Develop the skill of appropriate documentation of the diagnostic and treatment procedures.
6. Apply recent evidence related to technique/ approaches/ technology etc. to treat & train patients with musculo-skeletal deficit in neonates, children, adults & geriatrics etc.
7. Demonstrate proficiency in planning and executing physiotherapy services and teaching technology skills.
8. Demonstrate managerial and administrative skills.

**Master of Musculoskeletal Physiotherapy
MPT (Musculoskeletal Conditions)**

- 1) Embryological development, growth & maturation of Musculoskeletal system.
- 2) Applied Anatomy & Physiology of Musculoskeletal system.
- 3) Applied Biomechanics of Joints & Soft tissues. Kinetic and kinematic analysis for various functional activities.
- 4) Epidemiology, Pathophysiology & Pathomechanics of various Musculoskeletal dysfunctions. Fractures, dislocation, soft-tissue involvement, infective and inflammatory conditions, post-operative conditions, Neuromuscular Diseases and Neurovascular diseases) etc.
- 5) Assistive technology to enhance musculoskeletal function
External aids, appliances, adaptive self-help devices, prescription, biomechanical compatibility, checkout and training.
Orthopaedic Impants- Designs, materials, indications, post-operative assessment and training & clinical implications for management with recent advances.
- 6) Evaluation of Disability & Compensation.
- 7) Advances in field of Manual Medicine.
- 8) Recent advances in Pain evaluation & management.
- 9) Advanced Skills of Physical & Functional assessment including relevant investigations of musculoskeletal system and appropriate outcome measures.
- 10) Clinical decision making skills in Assessment & Management of Musculoskeletal dysfunctions in Neonates, Pediatric, Adult & Geriatrics.
- 11) Evidence based practice in assessment & management.
- 12) Ergonomics in Musculoskeletal dysfunctions.
- 13) Home Program & Counselling of care givers
- 14) Emergency Care & Musculoskeletal Therapeutics.

Advances in Physiotherapy in Musculoskeletal Conditions Paper I- based on topics from number 1 to 8

Advances in Physiotherapy in Musculoskeletal Conditions Paper II- based on topics from number 9 to 14

Master of Neurophysiotherapy
MPT (Neurological Conditions)

Course Objectives:

At the end of the course, the candidate will be able to

1. Identify, discuss & analyse, the pathophysiological basis of the various Adult and Pediatric neurological disorders, the Neuromuscular and Biomechanical, Pathomechanical basis of the observed dysfunction, the involvement of all systems including sensory, cognitive, respiratory and co-relate the same with the provisional diagnosis, routine radiological & electrophysiological investigations and arrive at appropriate functional diagnosis (ICF) with clinical reasoning.
2. Use appropriate rationale for subjective and physical examination assessment & clinical tests used in differential diagnosis. Acquire the ability to perform subjective and objective examination, with development of suitable analytical skills to evaluate data obtained.
3. Develop clinical reasoning incorporating theoretical basis and evidence-based guidelines & adopt diagnostic & therapeutic procedures based on it in the field of Neurophysiotherapy.
4. Plan appropriate functional goals based on the client's strengths and needs.
5. Develop the skill of appropriate documentation of the diagnostic and treatment procedures.
6. Apply recent evidence related to technique/ approaches/ technology etc. to treat & train pediatric and Adult clients with neurological disorders in view of mitigating impairments and enhancing functional ability and participation.
7. Demonstrate proficiency in planning and executing physiotherapy services and teaching technology skills.
8. Demonstrate managerial and administrative skills.

**Master of Neuro-Physiotherapy
MPT (Neurological Conditions)**

I. Physiotherapy in Pediatric neurological conditions

- 1) Embryological development, growth & maturation of nervous system
- 2) Applied Anatomy and Physiology of nervous system, Normal development.
- 3) Epidemiology, Pathophysiology and Pathomechanics of pediatric Neurological and Neuropsychological dysfunctions.
- 4) Advanced skills of physical, cognitive and perceptual assessment including relevant investigations,
- 5) Assessment of posture, movement and gait and Use of appropriate outcome measures in pediatric neurological and neurosurgical conditions
- 6) Theories of motor control and learning, Neuroplasticity
- 7) Clinical decision making skills in Assessment and treatment, Evidence based practice in pediatric population
- 8) Physiotherapy management of all Congenital and Acquired Neurodevelopmental conditions, Advanced Neurotherapeutic skills in management.
- 9) Early identification and intervention in paediatric neurological disorders, Physiotherapy in intensive care unit
- 10) Home programme and counselling of care givers and genetic counselling.

II. Physiotherapy in adult neurological conditions

- 1) Epidemiology, Pathophysiology and Pathomechanics of adult Neurological and Neuropsychological dysfunctions.
- 2) Advanced skills of physical, cognitive and perceptual assessment including relevant investigations,
- 3) Assessment of posture, movement and gait and Use of appropriate outcome measures in adult neurological conditions

- 4) Clinical decision making skills in Management of Neurological & Neuropsychological dysfunctions in Adult & Geriatrics, Evidence based practice.
- 5) Post operative care in Neurosurgical conditions and corrective surgeries for secondary complications
- 6) Physiotherapy management of all neurological conditions, use of advanced Neurotherapeutic skills
- 7). Assistive technology to enhance Neurological function
- 8) Ergonomics in Neurological dysfunctions.
- 9) ICU management and early intervention for neurological dysfunctions in adult
- 10) Management of terminally ill, Home programme and counselling of care givers

Advances in Physiotherapy in Neurological conditions Paper I- based on Physiotherapy in Pediatric neurological conditions

Advances in Physiotherapy in Neurological conditions PaperII - based on Physiotherapy in Adult neurological conditions

Master of Cardiovascular & Pulmonary Physiotherapy
MPT (Cardiovascular & Pulmonary Conditions)

Course Objectives:

At the end of the course, the candidate will be able to

1. Acquire in-depth knowledge of structure and function of human body related to the cardiovascular and pulmonary systems
2. Know basics of applied anatomy, physiology & biomechanics with pathomechanics of the various cardiovascular and pulmonary diseases in both adult and pediatric age groups
3. Use appropriate rationale for subjective and physical examination assessment & clinical tests used in differential diagnosis.
4. Identify, discuss & analyze the various cardio-respiratory dysfunctions & correlate the same with the provisional diagnosis, routine radiological, electrocardiographical, pulmonary function & biochemical investigations and arrive at appropriate functional diagnosis with clinical reasoning
5. Apply recent evidence related to technique/ approaches/ technology etc. to treat & train patients with cardiovascular and pulmonary diseases in neonates, children, adults & geriatrics.
6. Apply recent evidence related to assessment and improvement in physical activity levels
7. Develop the skill of appropriate documentation of the diagnostic and treatment procedures.
8. Apply recent evidence related to technique/ approaches/ technology etc. to treat & train patients with cardiovascular and pulmonary deficits in neonates, children, adults & geriatrics.
9. Demonstrate proficiency in planning and executing physiotherapy services and teaching technology skills.
10. Demonstrate managerial and administrative skills.

**Master of Cardiovascular & Pulmonary Physiotherapy
MPT (Cardiovascular & Pulmonary Conditions)**

- 1) Anatomical and embryological development (growth and maturation) of the cardio-pulmonary system
- 2) Applied Anatomy, Physiology & Biomechanics related to Cardiovascular & Pulmonary System, Anatomical and physiological differences between adult and neonate/ pediatric systems
- 3) Epidemiology & Pathophysiology of Cardiovascular & Pulmonary System.
- 4) Pathomechanics of the Cardiovascular & Pulmonary System.
- 4) Principles of Exercise Physiology in Health & Disease & Fitness training.
- 5) Advanced skills of Physical & Functional Assessment including rationale for the relevant Investigations of the Cardiovascular & Pulmonary System with appropriate outcome measures to assess effectiveness of treatment.
- 6) Clinical decision making skills in Assessment & Management of Cardiovascular & Pulmonary dysfunctions in Neonates, Pediatric, Adult & Geriatrics.
- 7) Implications of cardio-pulmonary Pharmacology in assessment and management
- 8) Evidence based practice in assessment & management.
- 9) Exercise Testing, Planning & Prescription, Aerobic & Anaerobic training in health and disease
- 10) Risk factors, Preventive measures & Health promotion.
- 11) Intensive Care Unit & Role of Physiotherapist in ICU.
- 12) Emergency Care & Cardiovascular & Pulmonary Therapeutics.
- 13) Cardiac & Pulmonary Rehabilitation.
- 14) Advances in Assessment & Management of PVD
- 15) Ergonomics in Cardiovascular & Pulmonary Conditions
- 16) Physical activity – Assessment/measurement and recommendations
- 17) General and Disease specific Quality of life assessment

18) Disability evaluation.

19) CPR

Advances in Physiotherapy in Cardio vascular and pulmonary conditions Paper I – based on topics Cardiovascular Conditions

Advances in Physiotherapy in Cardio vascular and pulmonary conditions Paper II- based on will topics from Pulmonary System

Master of Community Physiotherapy
MPT (Community Health)

Course Objectives

At the end of the course the candidate will-

1. Acquire the in-depth understanding of the concept of community based rehabilitation
2. Be able to assist in planning and organization of camps at community level including urban and rural areas.
3. Be able to work towards identifying various predisposing factors to illness in community and work towards Prevention of various disabilities and Promotion of Health
4. Be able to recognize the dysfunction on the Neuro- Musculoskeletal and Neurovascular-system with appropriate functional diagnosis (ICF) with clinical reasoning.
5. Be able to impart services and training at the community level effectively with minimum resources
6. Plan appropriate functional goals based on the patients strengths and needs.
7. To enable the candidate to expertise in the community health and function in the general set up as consultant.
8. Be able to learn Institute based rehabilitation and multidisciplinary approaches
9. To attain ability as a consultant and mandatory member of health professionals, involved in various sub- specialties such as Industrial Health, Geriatric Health, Mother and Child Care, Life- style disorders etc.
10. Demonstrate managerial and administrative skills.

MPT in Physiotherapy in Community Health

I. General Concepts of Physiotherapy in Community Health

1. Definition of Community, Concepts of Community, Community Based Rehabilitation.
2. Epidemiology of dysfunctions related to Community.
3. Public health education methods and appropriate media – Public awareness of the various
4. disabilities, communications, message dissipation and outcome measures
5. Role of Government & NGOs in CBR, inter-sectoral programs and co-ordination, Implementation of the Acts- PWD Act, Factory Act etc.
6. W.H.O.'s policies-about rural health care -Role of P.T.as a member of Rehab team- Medical person/P.T./O.T. audiologist/speech therapist /Prosthetist & Orthotist/vocational guide in CBR of Person with disabilities.
7. Health care in the Community – Principles & Health Care Delivery Systems in the Community.

II. Role of Physiotherapy in Disability and Dysfunction

- 1) Evidence-Based Practice in assessment & management of dysfunctions.
- 2) Advanced Skills of Physical & Functional assessment including relevant investigations for dysfunctions related to Community and appropriate outcome measures.
- 3) Clinical Decision Making skills in assessment & management of dysfunctions related to community.
- 4) Policies, Strategies & Services pertaining to Disabled. (Health & Insurance policies/schemes for the welfare of PWD (State & National)
- 5) Evaluation of Disability & Compensatio

III. Industrial Health

1. Applied anatomy, physiology and biomechanics related to Industrial health.
2. Clinical decision making skill in assessment and management of dysfunction related to Industrial physiotherapy- prevention of injuries, physiological restoration, rehabilitation in industrial injuries, work station adaptations/ modifications.

3. Role of Yoga in Stress management

4. Environmental stress in the industrial area --Accidents due to a] Physical agents- e.g.- Heat/cold, light, noise, Vibration, U.V. radiation, Ionizing radiation.

b] Chemical agents-Inhalation, local action, ingestion,

c] Mechanical hazards-overuse/fatigue injuries due to ergonomic alteration & ergonomic evaluation of work place-mechanical stresses.

5. Psychological hazards- e.g.-executives, monotony & dissatisfaction in job, anxiety of work completion with quality, Role of P.T. in Industrial setup & Stress management relaxation modes.

6. Role of Physiotherapy in industry – preventive, promotive, curative, intervention, ergonomic and rehabilitative services.

7. Ergonomic considerations and health promotion in the industry, job analysis, job description, job demand analysis, task analysis, Employee fitness, job modification, Employment acts. Vocational Rehabilitation; evaluation & management.

IV. Disaster Management & Advances.

V. Women's health

1. Applied anatomy, physiology and biomechanics related to Women's health- Peri pubertal age to geriatric age- from menarche to menopause

2. Clinical decision making skill in assessment and management of dysfunction related to mother & child.

3. Anatomy of Pelvic floor-Physiological changes occurring in female during pregnancy, Physical exercises during pregnancy. -Clinical reasoning for care to be taken while performing exercises during pregnancy.

4. Physiotherapy in Maternal Health & Child Health including early intervention. Prenatal /antenatal programme

5. Physiotherapy during labor -Post-natal exercise programme after normal delivery, assisted delivery or delivery with invasive procedures.

6. Importance of Breast feeding

7. Fitness programmes for mothers, and
8. Psychological and emotional changes and coping with demands of new born.
9. Role of PT in Uro-genital dysfunctions. Common Gynaecological surgeries and role of P.T
10. Osteoporosis and Menopause.

VI. Geriatric Health Promotion

1. Applied anatomy, physiology and biomechanics related to Aging / degenerative changes-
Musculoskeletal / Neuromotor/ cardio respiratory / Metabolic/ integumentary / sensory
2. Clinical decision making skill in assessment and management of dysfunction related to
geriatric health.
3. Role of Physiotherapy in a Geriatric Home.
4. Holistic Intervention for the Aged
5. Fitness and Health promotion in elderly.
6. Psychosomatic approaches in management of disorders of stress, reducing risk factors and
promoting life-style changes and disability prevention
7. Assistive Technology used for Stability & mobility to enhance function.

VII. Health promotion in the Community

1. Peripubertal age group, Women, Geriatrics, Obese & Overweight Individuals, Cardio-
Vascular & Pulmonary conditions, Neurological conditions, Musculoskeletal conditions,
Metabolic dysfunctions & Sports person.
2. Yoga for Physical and Mental Health Promotion in Women's Health, Geriatric Health,
Industrial Health & Sports.

Advances in Physiotherapy in Community Health Paper I- based on topics from I to IV

**Advances in Physiotherapy in Community Health Paper II - based on topics from number
V to VII.**

Masters of Sports Physiotherapy

Course Objectives:

At the end the course, the candidate should be able to:

- 1) Know basics of applied anatomy, physiology & biomechanics with pathomechanics including mechanism of Sport injuries.
- 2) Know Predisposing factors, Definition of sports injuries, Pathology, Types & Classification, Clinical features, signs, differential diagnosis, Investigations, various Techniques of assessment following orthopaedic & sport injuries.
- 3) Know Sports related types of injuries.
- 4) Know the Types & Management (including physiotherapy assessment, clinical Correction, decision making, physiotherapy treatment protocol, evidence, effect of various techniques & complications & physiotherapy management) of sports injuries.
- 5) Design a training programme for prevention & rehabilitation of athletes.
- 6) Design, maintain & develop an on field research background.
- 7) Demonstrate managerial and administrative skills.

Masters in Sports Physiotherapy

Part I:

1. Introduction to Sports Medicine
2. Growth and Maturation of Musculoskeletal, Cardiovascular, Pulmonary and Nervous System
3. Aerobic System of Energy Delivery and Utilization, Human Energy Transfer, Energy Expenditure During at Rest And during various Sports
4. Applied Exercise Physiology:
 - a. Training of Muscle Strength
 - b. Environment Stress and Exercise Performance
 - c. Training of Aerobic and Anaerobic Power
5. Biomechanics, Pathomechanics, and Pathophysiology of Various Sports and Related Injuries
6. Body Composition Analysis and Nutrition Related to Specific Sports for Maximizing Sports Performance
7. Principles of Diagnosis, Intervention, and Specific Outcome Measures in Sports Injuries
8. Strength Training and Conditioning Program Design for Sports Players
9. Pre Participation Evaluation of Risk, Assessment and Safety of Exercise in Sports
10. Regional Assessment of Soft tissue injuries in (Upper Limb, Lower limb, Spine, TM joint) and Rationale of Sports therapeutic Skills in Management with Recent Advances
11. On field Evaluation of Sports Injuries and Rationale for Management with Emphasis on Evidence Based Practice
12. Rehabilitation, Principles of Injury Prevention, Rehabilitation (Principle Of Rehabilitation, Principles of Tissue Healing, Methods Of Rehabilitation)

Part II

1. Overview of Applied Biomechanics of tissues and structures of Musculoskeletal System related to sports performance
2. Evaluation of Core and Strategies to improve core strength to improve sports performance
3. Sports Emergency and Their Onsite Management, CPR, Special Emphasis On Concussion
 - a. Neck Injuries
 - b. Facial Injuries
 - c. Thoracic And Abdomen Injuries

4. Assessment and Evaluation of Sports specific Health Related Fitness Component and Skill Related Fitness Component

5. Sports and Exercise Psychology

6. Problem of Special Population:

a. Female Athlete

b. Adolescent Athlete

c. Aging Athlete

d. Disabled Athlete

7. Non Traumatic Medical Condition Of Athlete and its Management

-Cardiovascular System

-Respiratory System

-Gastroenterology

-Diabetes

-Infection

-Tired Athlete, Overtraining syndrome

-DOMS

-Epilepsy Etc

8. Performance Enhancing Drugs/Blood Doping

9. Ethicolegal Aspect in Sports Physiotherapy

10. Sports performance Analysis

10. Overview of surgical management of sports injuries including recent advances

11. Sports Equipment(Including gym equipment) and Protective equipment in sports

12. Sports management: Principles of management, planning, organization, budget, policy procedures, and quality assurance, Communication skills, leadership quality & teamwork

Advances in Physiotherapy in Sports Paper I - based on Part I

Advances in Physiotherapy in Sports Paper II- based on Part II.

SCHEME OF EXAMINATION – MPT (PART II)

Eligibility for Annual Exams

1. Minimum 50% in Prelims
2. Submission of Dissertation within 6 months in 1st year
3. Minimum 85% attendance in each term.

MPT Part II examination will be held at the end of second Academic Year.

Theory

There will be 2 papers of 100 marks each based on Speciality

Nomenclature of Paper I will be “**Advances in Physiotherapy in Speciality – I**”

Nomenclature of Paper II will be “**Advances in Physiotherapy in Speciality – II**”

The pattern of each paper can be as follows

Q.1)LAQ	- 30 marks
Q.2)LAQ	- 30 marks
Q.3)Write short answers (any 4 out of 5)	
10 mks each	- 40 marks
Total	100 marks each

Practical

Case 1 – Based on Speciality	75 marks
Case 2 – Based on Speciality	75 marks
Viva based on Dissertation	30 marks
Internal Assessment	20 marks
(Journal club- 10mks; 5 Cases- 10 mks)	
Total	200 marks