

## **Master in Physiotherapy (M.P.T.)- Orthopaedics/Neurology/Sports**

### **Course Summary**

Duration: 2 years

### **Eligibility**

Bachelor's degree in Physiotherapy (B.P.T) with minimum 50% marks in aggregate.

### **Program outcome:**

- The main aim of the course is to prepare the postgraduate student towards his/her professional autonomy with self regulating discipline at par with global standards.
- It works for formation of base of the professional practice by referral as well as first contact mode using evidence based practice.
- Implantation of research basis in order to validate techniques & technology in practice to physiotherapy is the main goal of the course.
- It helps in acquainting a student with concept of quality care at the institutional as well as the community levels.
- It inculcates appropriate professional relationship in multidisciplinary set up, patient management and co partnership basis.
- Prepares the students to address problems related to health education and community physiotherapy.
- The course adds Experience in clinical training and undergraduate teaching partly and provides the honest, competent and accountable physiotherapy services to the community.

**Course outcome:**

S. no.	Course code	Course name	Max marks	Course outcome
<b>1<sup>st</sup> Year</b>				
1	MP- 101	Review of Human Sciences	70	<p>Applied anatomy for supportive specialization.</p> <p>Normal functional anatomy for analysis between normal and abnormal.</p> <p>Subject support: Diagnosis &amp; related mechanics.</p> <p>Pharma: Medical Professional supportive purpose / action reaction of medical related to different specialization.</p> <p>Pathology: Basic condition knowledge, their pathological changes &amp; their relevant conditions to support the specialization.</p> <p>Biochemistry: For nutritional and diet chart of different conditions.</p>
2	MP-102	Review of Basic Therapeutics	70	<p>Review of Exercise Therapy which includes Assessment techniques like MMT &amp; Goniometry, Stretching and mobilization, Re-education and strengthening, Balance and co-ordination exercises.</p> <p>Gait analysis and training (Both normal &amp; Pathological gait).</p> <p>Review of techniques like Relaxation and soft tissue manipulation, Posture, PNF, Traction and Hydrotherapy.</p> <p>Review of Electrotherapy includes Gen. Review of low &amp; medium frequency currents frequencies and their modifications like di-dynamic and Russian currents, Ultrasound, UVR and IRR along with Cryotherapy and other thermal modalities.</p> <p>Review of biomechanics includes Evaluation and assessment of joint motion, Evaluation and assessment of locomotion and Evaluation and assessment of posture. A review of Bio-Engineering.</p>
3	MP -103	Advance Therapeutics	70	<p>Introduction of new Advance therapy conditions like MET, PRT, MFR and Cyriax. Introduction, History, Basic Classification, Assessment for manipulation, discussion in brief about the concepts of mobilization like Maitland, Mulligan, Butler in Neural tissue mobilization etc.</p> <p>Recent advances on advance therapeutics like Laser, Micro currents, Biofeedback, EMG and Radiological and Pathological Investigations.</p>
4	MP-104	Practical in Therapeutics	70	<p>Knowledge of basic therapeutics and Advance therapeutics.</p> <p>Practical of all type of strengthening techniques.</p> <p>All type of mobilization techniques.</p> <p>Soft tissues stretching &amp; mobilization.</p> <p>Gait analysis &amp; Training.</p> <p>Postural assessment &amp; re-education.</p> <p>Balance &amp; coordination.</p> <p>Special technique of exercise therapy</p> <p>Traction and Hydrotherapy.</p> <p>I. All types of low &amp; medium frequency currents.</p> <ul style="list-style-type: none"> <li>•Faradic</li> <li>•Galvanic</li> <li>•High Voltage Current</li> <li>•Di dynamic</li> </ul>

				<ul style="list-style-type: none"> <li>•Russian</li> <li>•Interferential Therapy</li> <li>•TENS</li> <li>•Micro currents</li> </ul> <p>II. All type of high frequency currents &amp; modalities.</p> <ul style="list-style-type: none"> <li>• Short wave diathermy</li> <li>• Microwave diathermy</li> <li>• Ultrasound</li> <li>• Cryotherapy</li> <li>• Biofeedback UVR IRR LASER</li> </ul>
<b>2<sup>nd</sup> Year</b>				
5	MPN-201	Physical therapy in neurological disorders	70	<p>Review of neurological disorders, examination of the patients and rehabilitation through Advanced therapeutic techniques like Bobath, Motor re learning, Rood, PNF, Mobilization etc.</p> <p>Testing of cranial nerves, Stupor and Coma. Management of Disorders of the Cerebral circulation, Infectious disorders, Demyelinating disease of the Nervous system, Movement disorders, Degenerative diseases of the spinal cord and cerebellum, Disorders of the spinal cord &amp; cauda equine, Disorders of Peripheral Nerves, muscular disorders and Autonomic Nervous Disorders.</p>
6	MPN-202	Neurosurgical rehabilitation	70	<p>Techniques, Types of skull, brain, spine, surgery &amp; its complication. Pre &amp; post physiotherapy assessment, Treatment. Management of Closed skull fractures, Haematomas, epidural, sub dural, intracerebral, Open cranio cerebral injuries, Re construction operation in head injuries.</p> <p>Tumors Patho -physiology, classification effects of Mass lesion, Symptoms and Sign, Examination Management Pre &amp; Post Operative Rehabilitation protocol.</p> <p>Vascular disease of the Brain and its management.</p>
7	MPN-203	Physical therapy in pediatric Neurology	70	<p>General Developmental sequence of Normal Child.</p> <p>Normal nutritional requirement of a child infant feeding prevention of some nutritional disorders nutritional deficiency diseases.</p> <p>Immunization (Salk and Sabin DPT and against some common viral diseases)</p> <p>Neurological Affection of Childhood: Poliomyelitis, spina bifida hydrocephalus, encephalitis etiology, clinical features &amp; rehabilitation peripheral nerve injuries in early child hood.</p> <p>Management of Seizures epilepsy of child hood and muscular dystrophies.</p>
8	MPN-204	Skill enhancing studies	70	<ol style="list-style-type: none"> <li>1. Biostatistics &amp; Computer for collecting data &amp; programme project work &amp; for planning effective treatment.</li> <li>2. Ethics &amp; Medico legal aspects for clinical purposes.</li> <li>3. Educational Technology for Teaching &amp; Learning purposes.</li> <li>4. Research methodology.</li> </ol>
9	MPN-205	Practical	70	<ol style="list-style-type: none"> <li>1. Assessment               <ol style="list-style-type: none"> <li>a) Physical</li> <li>b) Clinical</li> <li>c) Pathological</li> </ol> </li> </ol>

				d) Other Investigations 2. Differential diagnosis & its reason. 3. Treatment: Physiotherapy Management & advanced technique application. 4. Home programme. Neurorehabilitation and self care with Mat exercise and ambulatory care.
10	MPN-206	Dissertation	200	The dissertation is aimed to train a postgraduate student in research method and techniques. It includes identification of a problem, formation of a hypothesis, search and review of literature, getting acquainted with recent advances, designing of a research study, collection of data, statistical analysis of results, discussion and drawing Conclusion. Presentation of own dissertation in prescribed manner.
11	MPO-201	Orthopaedic Physical Therapy	70	Detailed assessment & management in view of advanced and traditional methods considering both surgical and physical therapy aspects in general orthopaedics and regional orthopaedics. Incidence, etiology, clinical features, complications, assessment investigations and conservative reductions physiotherapy management of the Traumatological conditions. Methodology of different types of surgeries and its rehabilitation. Meniscectomy, laminectomy, patellectomy, total knee replacement, total hip replacement, triple arthrodesis, hip arthrodesis and arthroplasty, bone grafting, internal and external fixations, tendon transfers, nerve suturing and grafting etc. Vascular injuries management, amputation and Bioengineering
12	MPO-202	Vertebral disorders & rehabilitation	70	Classification, Pathophysiology, causes, clinical features, complication examinations, management, physiotherapy treatment of common vertebral disorders. Traumatology and Spinal cord Injury management. Advance techniques like Maitland, Cyriax, PNF etc. apply according to the necessary cases.
13	MPO-203	Hand Rehabilitation	70	Functions of hand as motor and sensory organ with advanced bio and pathomechanics of hand injuries. Classification of hand injuries and principles of hand Rehabilitation (Functional and Vocational Training) Tendon injuries, Nerve injuries and Crush injury management. Incision and their effects on later rehabilitation, fractures, joint injuries and correction of Deformities. Management of Burns in hand, Spastic hand, Rheumatoid hand, Hand in Hansen's disease and Reflex sympathetic dystrophy. Rehabilitation in prosthetic hand.
14	MPO-204	Skill enhancing studies	70	1. Biostatistics & Computer for collecting data & programme project work & for planning effective treatment. 2. Ethics & Medicolegal aspects for clinical purposes. 3. Educational Technology for Teaching & Learning purposes. 4. Research methodology.
15	MPO-205	Practical	70	1. Assessment a) Physical b) Clinical c) Pathological d) Other Investigations 2. Differential diagnosis & its reason. 3. Treatment: Physiotherapy Management & advanced technique application.

				4. Home programme. Fracture Cases : Intensive care, Emergency care, Positioning, Reduction, Plaster application care in period of immobilization & post immobilization rehabilitation.
16	MPO-206	Dissertation	200	The dissertation is aimed to train a postgraduate student in research method and techniques. It includes identification of a problem, formation of a hypothesis, search and review of literature, getting acquainted with recent advances, designing of a research study, collection of data, statistical analysis of results, discussion and drawing Conclusion. Presentation of own dissertation in prescribed manner.
17	MPS-201	Traumatology	70	Analyse and Interpret Various Sports Injuries / Patho Mechanics And Apply Appropriate Therapeutic Techniques On And off The Field. Devise / Modify Various Exercises For Sports Personnel And Prevent Injuries By Applying Proper Dynamics During Play. Analyse The Effect Of Therapeutic Modalities, Indications And Contra Indications And Precaution To Ensure Safety. Demonstrate Skills Of Assessment And Management In Both Acute And Long Standing Injury Conditions. Carry Out Research In a Particular Aspect / Specific Event Based On Bio Mechanical / Physiological And Other Variables.
18	MPS-202	Fundamentals in Sports	70	<b>Brief idea about some common sports:</b> Terminology, methodology, rules, equipments and infrastructure. Cricket, football, hockey, tennis, badminton, table tennis, wrestling, boxing, track and field, gymnastics volleyball, basketball and aquatic sports. Physics in sports, Biomechanics of running. Biomechanics of throwing. Biomechanics of jumping. Introduction to analysis equipment. Psychological aspect in sports. Spirit and moral values, doping in sports and performance enhancing drugs. Special aids in performance. Body composition, its analysis and effects of sports. Protective equipment used in sports.
19	MPS-203	Rehabilitation in Sports	70	<b>Physiological Responses to Exercise.</b> Risk factors in sports (intrinsic and extrinsic). Strategies of Injury prevention. Sporting emergencies, onfield assessment, clinical assessments principles of management ( acute management, remodeling and conditioning, maintainance of fitness and rehabilitation). <b>Nutrition in Sports.</b> Various techniques like Plyometrics etc. in sports training. <b>Some common injuries related to some common &amp; popular sports and their management.</b>
20	MPS-204	Skill enhancing studies	70	2. Biostatistics & Computer for collecting data & programme project work & for planning effective treatment. 2. Ethics & Medicolegal aspects for clinical purposes. 3. Educational Technology for Teaching & Learning purposes. 4. Research methodology.
21	MPS-205	Practical	70	1. Assessment a) Physical b) Clinical c) Pathological d) Other Investigations 2. Differential diagnosis & its reason. 3. Treatment: Physiotherapy Management & advanced technique application. On field and off field management. 4. Home programme.

22	MPS-206	Dissertation	200	The dissertation is aimed to train a postgraduate student in research method and techniques. It includes identification of a problem, formation of a hypothesis, search and review of literature, getting acquainted with recent advances, designing of a research study, collection of data, statistical analysis of results, discussion and drawing Conclusion. Presentation of own dissertation in prescribed manner.
----	---------	--------------	-----	--