MASTER OF PHYSIOTHERAPY

Era University, Lucknow

Course Outline: 2024-2025

Name of the Program	**MPT**			**Year/ Semester:**	**II year/IV Sem**
Course Name	**Musculoskeletal Conditions & Management-II**	**Course Code:**	**MPT 402M MPP 402M**	**Type:**	**Theory & Practical**
Credits	**04+01**			**Total Sessions Hours:**	**60 Hours+20 Hours**
Evaluation Spread	**Internal Continuous Assessment:**	**30 Marks**		**End Term Exam:**	**70 Marks**
Type of Course	○ Compulsory	◉ Core		○ Creative	○ Life Skill

Course Objectives

On completion of the study of this subject the student should be able to:-

- **Develop comprehensive understanding** of congenital, developmental, metabolic, infective, rheumatological, neuromuscular, and neoplastic musculoskeletal conditions relevant to physiotherapy practice.
- **Assess, plan, and implement evidence-based physiotherapy management** for general orthopedic conditions, soft tissue injuries, and traumatic musculoskeletal disorders of the upper and lower limbs.
- **Apply clinical reasoning and problem-solving skills** to formulate individualized, rationalized treatment plans across conservative, pre-operative, and post-operative orthopedic scenarios.
- **Evaluate and compare different physiotherapeutic treatment approaches**, analyzing outcomes to optimize functional recovery and patient-centered care.
- **Integrate principles of tissue healing, biomechanics, and rehabilitation protocols** in managing soft tissue injuries and post-surgical orthopedic conditions.
- **Demonstrate competence in rehabilitation following common orthopedic surgeries**, including joint replacements, arthrodesis, arthroplasty, fixation procedures, tendon transfers, and nerve repair.
- **Maintain accurate clinical documentation**, including assessment findings, treatment progression, outcomes, and professional record-keeping in accordance with ethical and legal standards.

Course Outcomes (CO): *After the successful course completion, learners will develop following attributes:*

Course Outcome(CO)	Attributes
CO1	**Analyze, assess, and manage general orthopedic musculoskeletal conditions**, including

	congenital, developmental, metabolic, infective, rheumatological, neuromuscular, and neoplastic disorders, using evidence-based physiotherapy principles.		
CO2	**Evaluate and rehabilitate upper and lower limb soft tissue injuries and related musculoskeletal dysfunctions** by applying appropriate assessment techniques, clinical reasoning, and stage-wise physiotherapy interventions		
CO3	**Plan, implement, and document physiotherapy management** for traumatic musculoskeletal conditions and common orthopedic surgeries, integrating conservative, pre-operative, and post-operative rehabilitation strategies to optimize functional outcomes.		
Pedagogy	Interactive, discussion-bases, student-centered , presentation.		
Internal Evaluation Mode	Mid-term Examination: 30 Marks Class test: 12 Marks Class participation or any other : 04 Marks Assignments/Project: 04 Marks Attendance: 04 Marks Class Presentation: 04 marks Bed Side behavior or Interaction in Class: 02 marks		
Session Details	**Topic**	**Hours**	**Mapped CO**
UNIT 1	**PHYSIOTHERAPY MANAGEMENT IN GENERAL ORTHOPAEDIC CONDITIONS** • Congenital Disorders (Congenital torticollis, CTEV, Congenital dislocation of hip) • DevelopmentalDisorders(Achondroplasia,Osteopetrosis, Paget'sdisease,Congenital neurofibromatosis) • Metabolic Disorders (Rickets, Osteomalacia) • Osteomyelitis • Skeletal Tuberculosis(Tuberculosis spine, Tuberculosis of the hip joint, Tuberculosis of the Knee joint) • Disorders of Joints (Arthritis) • Rheumatic Diseases(Rheumatoid arthritis , Ankylosing spondylitis ,Fibromyalgia, Gout, Pseudogout) • Neuromuscular Disorders(Cerebral palsy , Poliomyelitis , Leprosy in orthopedics) • Bone Neoplasias (Osteochondroma, Chondrosarcoma,Osteoma,Ewing's sarcoma)	20 hrs	CO1
UNIT 2	**PHYSIOTHERAPY MANAGEMENT IN SOFT TISSUE INJURY** **S**oft tissue injuries & repair, Clinical presentation, & physiotherapy management of– **Upper limb**. - Rotator Cuff Injuries, Impingement, Labral Tear, Bicipital Tendonitis, Bursitis, Tendonitis, Snapping & winged scapula, Tenosynovitis. Carpel tunnel syndrome. Dupuytren's contracture. VIC, Reflex Sympathetic Dystrophy, Periarthritis of shoulder, Thoracic outlet syndrome, Tennis & Golfers elbow, Trigger finger, Carpal instability, Carpal Tunnel Syndrome, De-quervain's Tenosynovitis, **Lower Limb** –Hip flexor pain, Impingement, Labral Tears, Baker's cyst. ACL, PCL, MCL & LCL Injuries, Meniscal	20 hrs	CO2

	injury, Chondromalacia patella, Quadriceps Fibrosis, Bursitis around the knee, Jumpers & Runners Knee, Hyperextension injuries, Knee sprain & strain, IT Syndrome, Calf & Shin Pain, Plantar Fascitis, Calcaneal Spur, **Ankle sprain & strain,**		
UNIT 3	**<u>UNIT-3</u>: PHYSIOTHERAPY MANAGEMENT IN DIFFERENT TRAUMATIC CONDITIONS**. Physiotherapy management of post conservative and pre and post- surgical management of- **Upper limb** - Trauma of shoulder complex & associated bones, Trauma of elbow & associated bones, Trauma of wrist and hand & associated bones. **Lower limb** - Trauma of hip complex &associated bones, Trauma of knee complex & associated bones, Trauma of foot & ankle complex & associated bones. **Some Common Orthopaedic surgeries** - Methodology of different types of some common surgeries and its rehabilitation, Menisectomy, 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.	20 hrs	CO3
Practical	Comprehensive history taking, physical examination, posture and gait analysis in general orthopaedic, soft tissue, and traumatic musculoskeletal conditions • Clinical assessment and physiotherapy planning for congenital, developmental, metabolic, infective, rheumatologic, and neuromuscular orthopaedic disorders • Evaluation of upper and lower limb soft tissue injuries using special tests and functional outcome measures • Pre-operative and post-operative physiotherapy assessment and rehabilitation for upper and lower limb trauma and common orthopaedic surgeries (TKR, THR, meniscectomy, laminectomy, patellectomy) • Demonstration and application of splints, braces, taping, strapping, assistive devices, and gait aids • Exercise prescription across phases of healing, including strengthening, mobility, balance, and functional training • Use of electrotherapy and manual therapy techniques where indicated • Patient education, home exercise program planning, discharge planning, and clinical documentation.	20 Hrs	

CO-PO Mapping

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	3	3	3	2	2	2	3	2	2	3
CO2	3	3	3	2	2	2	3	2	2	3
CO3	3	3	3	3	2	2	3	2	2	3

Strong contribution-3, Average contribution-2, Low contribution-1,

Suggested Readings:

Text-Books	1. Campbell's Orthopaedic surgery 2. Turek's Orthopaedics (6th Edition)

	3. Textbook of Orthopaedics and trauma - Kulkarni 4. Essential of Orthopedics Physiotherapy - John Ebenezer. 5. Management of common musculoskeletal disorders - Kessler 6. Cash Textbook of Orthopedics Physiotherapy - Marian Tidwel 7. Treatment and rehabilitation fractures - Hoppenfield 8. Textbook of Orthopaedics – Cash 9. Tidy's Physiotherapy – Thomson, Skinner et al 10. Essentials of Orthopaedics and Applied Physiotherapy – Jayant Joshi & Prakash Kotwal 11. Clinical Orthopaedic Rehabilitation: A Team Approach – S. Brent Brotzman, Kevin E. Wilk 12. Orthopedic Physical Assessment – David J. Magee
Para Text	https://youtu.be/E3Eu0F73ROI https://youtu.be/0aDcov5JrxI Knee Joint Full Assessment Run Through | Clinical Physio (491) The Musculoskeletal Physical Examination: Part 1 - Upper Extremity - YouTube The Exam for Shoulder Pain - Stanford Medicine 25

Recapitulation & Examination Pattern

Internal Continuous Assessment:

Component	**Marks**	**Pattern**
Class test	12	Contains 01 long queation. question carries 04 marks 02 short questions. each question carries 02 marks 04 multiple choice questions. each question carries 01 marks
Class participation or any other	04	This to be made on activities and instruction given by subject teacher
Marks assignments/project	04	Assignment to be made on topics and instruction given by subject teacher
Class presentation	04	This to be made on topics and instruction given by subject teacher
Bed side behavior or interaction in class	02	This is to be made on activities and instruction given by subject teacher
attendance	04	As per policy
Total marks	**30**	

Master of Physiotherapy
Era University, Lucknow
Course Outline
Effective
From: 2025-26

Name of the Program	**Master of Physiotherapy**			**Year/Semester:**	**II year/IV Sem**
Course Name	**Musculoskeletal Physiotherapeutics - II**	**Course Code:**	**MPT-401M MPP-401M**	**Type:**	**Theory & Practical**
Credits	**04+01**			**Total Sessions Hours:**	**80 Hours**
Evaluation Spread	**Internal Continuous Assessment:**		**30 Marks**	**End Term Exam:**	**70Marks**
Type of Course	Compulsory		✓ Core	Creative	Life Skill
Course Objectives	• Students will learn all advance Musculoskeletal Manual Therapy approaches and their implementation in the field of physiotherapy.				

Course Outcomes(CO): After successful completion of the course, the student will be able to-

CO1	• Integrate theoretical knowledge with practical application by critically analyzing different schools of thought in physiotherapy (Pilates, Cyriax)
CO2	• Develop advanced clinical reasoning skills to select and apply appropriate manual therapy techniques (IASTM, Butler's neural mobilization, positional release) based on patient assessment, safety, and contraindications.
CO3	• Demonstrate competence in advanced manual interventions such as stretching, soft tissue mobilization, and Pilates-based exercise, ensuring evidence-based practice and patient-specific modifications.
CO4	• Evaluate and manage musculoskeletal dysfunctions using specialized techniques, while adhering to professional standards of safety, precautions, and ethical practice.
CO5	• Promote holistic rehabilitation by understanding the mind-body connection, integrating manual therapy with exercise principles, and applying these approaches to diverse patient populations.
Pedagogy	Interactive, discussion-based, student-centered, presentation.
Internal Evaluation Mode	Mid-term Examination: 30 Marks Class test: 12 Marks Class participation or any other : 04 Marks Assignments/Project: 04 Marks Attendance: 04 Marks Class Presentation: 04 Bed Side behavior or Interaction in Class: 02

Session Details	Topics	Hours	Mapped CO
Unit1	**Unit I: Schools of Thought** **Pilates School of Thought** • Overview and evolution • Principles of Pilates (breathing, concentration, control, precision, flow, centering) • Indications, limitations, contraindications, and precautions • Application of techniques: mat-based Pilates, equipment-based Pilates **Cyriax School of Thought** • Historical background • Examination methods (selective tissue tension testing, diagnosis) • Specific treatment techniques (deep transverse friction massage, manipulation,)	20	CO1 , CO2, CO3
Unit2	**Unit II: Advanced Manual Techniques I IASTM** **(Instrument Assisted Soft Tissue Mobilization)** • Overview and history • Principles and benefits • Indications and contraindications • Instrument selection and handling • Techniques, safety, and precautions **Butler's Neural Mobilization** • Historical background • Neural mobilization techniques • Indications, contraindications, and precautions **Positional Release Technique (PRT)** • Overview of the technique • Indications and contraindications • Clinical applications	20	CO3,CO4
Unit3	**Unit III: Advanced Manual Techniques II** **Stretching** • Concept and types (static, dynamic, PNF, ballistic) • Advantages and disadvantages • Muscle-specific stretching techniques **Soft Tissue Mobilization** • General overview • Principles of various techniques (myofascial release, trigger point therapy, massage approaches) • Clinical applications in musculoskeletal rehabilitation	20	CO5

Practical	**Pilates School of Thought (6 hours)** • Demonstration and practice of mat-based Pilates exercises. • Use of Pilates equipment (resistance bands, reformer basics). • Application of breathing, concentration, and control principles. • Case-based practice: designing Pilates routines for rehabilitation. **Cyriax School of Thought (4 hours)** • Practice of selective tissue tension testing. • Demonstration of deep transverse friction massage. • Clinical scenarios: applying Cyriax principles in musculoskeletal injuries. • Safety and contraindication checks during practice. **Advanced Manual Techniques I (6 hours)** • **IASTM:** Instrument handling, stroke techniques, patient positioning. • **Butler's Neural Mobilization:** Practical demonstration of upper limb and lower limb neurodynamic tests and mobilizations. • **Positional Release Technique:** Hands-on practice of tender point identification and positional release application. **Advanced Manual Techniques II (4 hours)** • **Stretching:** Static, dynamic, and muscle-specific stretching drills. • **Soft Tissue Mobilization:** Myofascial release, trigger point therapy, massage techniques. • Case-based practice: applying stretching and mobilization in sports injuries.	20 hours

CO-PO and PSOMapping

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	1	2	1	3	3	1	1	3	-	-	-	-	-	-
CO2	2	3	3	3	2	3	2	2	-	-	-	-	-	-
CO3	1	3	2	2	1	2	3	2	-	-	-	-	-	-
CO4	2	2	1	2	2	2	3	2						
CO5	2	2	2	3	1	2	3	3						

Strongcontribution-3, Averagecontribution-2, Lowcontribution-1,

SuggestedReadings:

ReferenceBooks	1. Pilates anatomy – Rael Isacowitz & Karen clippinger 2. Orthopaedic physical assessment by David J. Magee 3. Instrument assisted soft tissue mobilization: a comprehensive guide by Warren Hammer 4. The sensitive nervous sytem by David S. Butler 5. Positional release techniqus by Leon Chaitow
ParaText	1. https://youtu.be/3y9xvenNoCo?si=dq_lfRqK6bcCDUPD 2. https://youtu.be/UQevUU58j0g?si=5vDERnslXKzs06KM 3. https://youtu.be/sGdaojhjlrk?si=G0IARr13VN9b2Jnm 4. https://youtu.be/LePMCq7qGP4?si=uDbCHRdb8J_NnQ4K

Recapitulation &Examination Pattern

Internal Continuous Assessment:

Component	Marks	Pattern
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Class participation or any other	04	This to be made on activities and instruction given by subject teacher.
Marks Assignments/Project:	04	Assignment to be made on topics and instruction given by subject teacher
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