

**KRISHNA VISHWA VIDYAPEETH, (DEEMED TO BE UNIVERSITY),**

**KRISHNA COLLEGE OF PHYSIOTHERAPY**

**KARAD, MAHARASHTRA.**



**MASTER OF PHYSIOTHERAPY (M. P. Th)**

**CBCS PATTERN SYLLABUS**

**M.P.Th - (ORTHOPEDIC MANUAL THERAPY)**

**PROGRAMME CODE: 3209**

## **RULES FOR EXAMINATION SCHEME LEADING TO**

### **POST GRADUATE PHYSIOTHERAPY PROGRAMME IN THE FACULTY OF PHYSIOTHERAPY (Approved by the Board of Management)**

#### **MASTER OF PHYSIOTHERAPY (M. P. Th.)**

#### **PREAMBLE:-**

The Department of Human Resource Development, Government of India, on the recommendation of the University Grants Commission (UGC) has accorded the status of a Deemed University to Krishna Vishwa Vidyapeeth, (Deemed To Be University), Karad for Faculty of Medicine, Dentistry, Physiotherapy Nursing, Allied Sciences and Pharmacy respectively.

The Degrees, Diploma and the Fellowship programmes of Krishna Vishwa Vidyapeeth, (Deemed To Be University), Karad shall have the same status as of those given by any Statutory University duly recognized by the University Grants Commission. (UGC).

The Master of Physiotherapy Programme is directed towards rendering training in Specialty discipline so as to enhance professional competence in order to fulfill requirement for Physiotherapy Education and Practice.

1. This shall apply to all the examinations leading to Post Graduate Physiotherapy namely Programmes offered: - Total Programmes offered: 10 Programmes.

<b>Sr No</b>	<b>Programme Code</b>	<b>Programme Name</b>
1.	3201	M.P.Th in Musculoskeletal Sciences
2.	3202	M.P.Th in Neuro Sciences
3.	3203	M.P.Th in Cardio Pulmonary Sciences
4.	3204	M.P.Th in Pediatric Neurology
5.	3205	M.P.Th in Community Health Sciences
6.	3206	M.P.Th in Oncology Physiotherapy
7.	3207	M.P.Th in Sports Physiotherapy
8.	3208	M.P.Th in Orthopedic Manual Therapy
9.	3209	M.P.Th in Obstetrics and Gynecology
10.	3210	M.P.Th in Geriatric Physiotherapy

## **SEMESTER WISE SUBJECTS:**

<b>Sr No</b>	<b>Course Code</b>	<b>Year</b>	<b>Semester</b>	<b>SUBJECT</b>
1	3209-11	M.P.Th - I Year	I	1. Basic Sciences
2	3209-12			2. Basic Therapeutics
3	3209-21	M.P.Th - I Year	II	1. Advanced therapeutics in Specialty Subject
4	3209-22			2. Biostatistics and Research Methodology
5	3209-31	M.P.Th - II Year	III	1. General Physiotherapy in Specialty Subject – <b>Paper 1</b>
6	3209-32			2. Advances in Specialty Subject – <b>Paper 1</b>
7	3209-41	M.P.Th - II Year	IV	1. General Physiotherapy in Specialty Subject- <b>Paper 2</b>
8	3209-42			2. Advances in Specialty Subject – <b>Paper 2</b>

**Duration:** Master of Physiotherapy shall be a full time programme with duration of TWO academic years divided into FOUR semesters.

### **2. Eligibility for admission:**

Applicant for admission to the programme, Master of Physiotherapy should have the Bachelor degree from I.A.P recognized institution or from the recognized university. Selection of candidate is strictly through Krishna PGAIET, which is conducted by Krishna Vishwa Vidyapeeth, (Deemed To Be University), Karad.

### **3. ELIGIBILITY FOR APPEARING FOR THE EXAM:**

- The examination for the degree, Master of Physiotherapy shall be conducted twice in a academic year (i.e. Semester Pattern).
- Every student should present his / her dissertation at least three months prior to the fourth semester university examination. The acceptance of the dissertation by the examiners is important for the student's admission for the Written & Clinical (Practical) examination.
- Dissertation should be based on the Specialty Subject. A student who has submitted his / her dissertation once will not be required to submit a fresh dissertation if he / she re- appears for the examination in the same branch on a subsequent occasion, provided that the dissertation has

been accepted by the examiners.

- The Degree of Master of Physiotherapy shall not be conferred upon a student unless he / she have passed in the Written, Practical and the Dissertation prescribed for the examination in accordance with the provision.
- The dissertation has been evaluated and approved AND
- Has passed both the headings i.e.

(With minimum of 50%) in Theory and Practical including Internal Assessment for both.

#### **4. GOALS OF THE M.P.TH PROGRAMME:**

- The goal of training post- graduate candidate in the respective specialty is to enable him / her to function as a consultant in the respective Physiotherapy specialty. This requires a thorough knowledge of the fundamental and recent advances.
- He/she should be able to make logical decisions regarding patient management & adapt interventions independently.
- During this period he/she will be expected to acquire skills in teaching technology & gain experience in research methodology.
- He/she should practice Physiotherapy in respective specialty and maintain the highest regards for ethical aspect.
- The programme shall focus on clinical reasoning, problem solving and measurement of treatment outcome, emphasizing on the recent diagnostic & therapeutic trends and skill specific Physiotherapy.

#### **5. OBJECTIVES OF THE PROGRAMME: -**

At the end of the programme the candidate shall be able to:

- Acquire the in-depth knowledge of structure and function of human body related to the respective branch of specialty.
- Acquire the in-depth knowledge of movement dysfunction of human body & principles underlying the use of physiotherapeutic interventions for restoring movement dysfunction towards normalcy.
- Ability to demonstrate critically appraises recent physiotherapeutic and related medical literature from journals & adapts diagnostic & therapeutic procedures based on it.
- Ability to perform skill in Physical & functional diagnosis pertaining to patient under care.
- Ability to make clinical decision & select appropriate outcome measures based on the comprehensive knowledge of theoretical aspects of specialty.
- Expertise in evidence-based skill in the management of movement dysfunction.
- Expertise in health promotion & quality restoration of functional movement pertaining to specialty.

- Planning and implementation of treatment programme adequately and appropriately for all clinical conditions related to respective specialty in acute and chronic stage, in intensive care, indoor and outdoor institutional care, independent practice, on fields of sports and community and during disaster or natural calamities.
- Proficiency in planning and executing Physiotherapy services and teaching technology skills.
- Develop managerial and administrative skills.
- Develop the knowledge of legislation applicable to compensation for functional disability & appropriate certification

## POSTGRADUATE PROGRAMME OUTCOMES

### **M.P.TH (Master of Physiotherapy)**

The course is of two years duration (Divided into 4 Semesters) advanced learning programme in Physiotherapy with CBCS Pattern.

Total Specialties offered: 10 Specialties

1. M.P.Th In Musculoskeletal Sciences
2. M.P.Th In Neuro Sciences
3. M.P.Th In Cardio Pulmonary Sciences
4. M.P.Th In Pediatric Neurology
5. M.P.Th In Community Health Sciences
6. M.P.Th In Oncology Physiotherapy
7. M.P.Th In Sports Physiotherapy
8. M.P.Th In Orthopedic Manual Therapy
9. M.P.Th In Obstetrics And Gynecology
10. M.P.Th In Geriatric Physiotherapy

### **M.P.Th - I<sup>ST</sup> YEAR INCLUDES TWO SEMESTERS NAMELY,**

- **I - Semester:** It is common for all the specialties which include the two subjects Basic Sciences & Basic Therapeutics.
- **II - Semester:** Biostatistics and Research Methodology is a common subject for all specialties & Advanced Therapeutics in Specialty Subject is the second one.

### **M.P.Th – II<sup>ND</sup> YEAR INCLUDES TWO SEMESTERS NAMELY,**

- **III - Semester:** It includes two subjects which are specialty specific namely, General Physiotherapy in Specialty Subject - Part I & Advances in Specialty Subject - Part I
- **IV - Semester:** It includes two subjects which are specialty specific namely, General Physiotherapy in Specialty Subject- Part II & Advances in Specialty Subject - Part II
- **\*Dissertation:** An individual research project preferentially interventional study is mandatory to be completed before appearing for the IV - Semester examination.

## **M.P.Th (FIRST YEAR): I - SEMESTER**

### **1. BASIC SCIENCES (3209-11 )**

#### **COURSE OBJECTIVES:**

- The student should be able to know the background of Physiotherapy profession, basic ethics and its principles.
- To understand and apply the principles of exercise physiology and nutrition
- To master various assessment tools, test.
- To obtain knowledge of Orthotics & Prosthetics.

#### **COURSE OUTCOMES:**

At the end of the course the student should be able to apply the basic principles and ethics of Physiotherapy profession, Biomechanics, Patho-mechanics and in depth Kinesiology of human body, all the assessments and clinical tests, diagnosis of various conditions, in depth knowledge of the Orthotics and Bio-engineering.

### **2. BASIC THERAPEUTICS (3209-12 )**

#### **COURSE OBJECTIVES:**

The student should be able to obtain detail knowledge with evidence base of all the Electrotherapeutic modalities, Electro-Diagnostic tests with its application for diagnosis and treatment of Physiotherapy conditions

#### **COURSE OUTCOMES:**

At the end of the course the student should have in depth knowledge of the Basic Electrotherapeutics, Physical And Functional Diagnosis, EMG / NCV and Radiological investigations.

## **M.P.Th (FIRST YEAR): II - SEMESTER**

### **1. ADVANCED THERAPEUTICS SPECIALITY SPECIFIC (3209-21 )**

#### **COURSE OBJECTIVES:**

- To interpret various therapeutics used in the treatment of speciality specific conditions.
- To evaluate and generate a diagnosis and differential diagnosis of all related conditions related to speciality and its complications.
- Demonstrate condition specific various skills in the treatment.

#### **COURSE OUTCOMES:**

At end of the session the student will be able to learn the conditions pertaining to the speciality, the diagnostic test for the same. The students shall learn to make a correct diagnosis and also a differential diagnosis and learn the advanced techniques to treat the same.

## **2. BIOSTATISTICS AND RESEARCH METHODOLOGY ( 3209-22 )**

### **COURSE OBJECTIVES:**

- To understand the statistical measures used for analysis and interpretation of research data.
- Enhanced training to apply the information on research design and their implementation
- To identify, read, critique research articles and understand and apply the principles of research to perform a guided research.

### **COURSE OUTCOMES:**

- At the end of the course the student should have a sound knowledge regarding the basic concept of research, research designs, types of data, sampling methods, interpretation of result and various statistical tests.
- The student will be able to identify appropriate statistical technique reference, use of various software packages for analysis and data management. Interpretation of the results and its application in Physiotherapy.
- The student will be able to learn fundamental of reading and understanding research methods, design and statistics.
- Special emphasis is given to Biostatistics and Research methodology and for completing a scientific research project in the second year as per their elective subject.

## **M.P.Th (SECOND YEAR): III - SEMESTER**

### **1. GENERAL PHYSIOTHERAPY IN SPECIALTY SUBJECT – PAPER 1 (3209-31 )**

### **COURSE OBJECTIVES:**

- Evoke and interpret clinical signs and symptoms of speciality specific disorders & interpret various diagnostic tests, clinical and special investigations used in the diagnosis of the conditions.
- Management of patient, consultation, identifying the problem, derive a provisional diagnosis with differential diagnosis and to chalk out a treatment plan.
- Maintain a precise patient documentation.
- Discuss and develop a specific exercise prescriptions plan with their clinical use, and the sequence of treatment.

### **COURSE OUTCOMES:**

- Be able to apply the knowledge for planning and evaluation of teaching methods in Physiotherapy.
- Be able to apply the knowledge on clinical education to spread awareness and guidance to common people about health and disease.
- Understand the pathophysiology of common conditions, their management and its effects on body systems.
- Assess patients' physical function, considering disease and treatment-related impairments.
- Design and implement evidence-based Physiotherapy interventions as per the health issues.



## **2. ADVANCES IN SPECIALTY SUBJECT – PAPER 1 (3209-32 )**

### **COURSE OBJECTIVES:**

- Understand the application of the information regarding recent advances in Physiotherapy for patient care.
- Application and proper implementation of specific evidences available for assessment and management appropriate to the health conditions.

### **COURSE OUTCOMES:**

- The students learn and excel in various aspects of Physiotherapy as per their speciality in theoretical and practical knowledge with a solid platform and tend to train them to be the best in the field.
- To analyse and undertake data for research purpose and its documentation for long life learning in Physiotherapy.
- To develop educational experience for proficiency in profession and promote Preventive and Rehabilitative aspect on the society.

## **M.P.Th (SECOND YEAR): IV - SEMESTER**

### **1. GENERAL PHYSIOTHERAPY IN SPECIALTY SUBJECT- PAPER 2 (3209-41 )**

#### **COURSE OBJECTIVES:**

To equip Physiotherapy students with the knowledge and skills necessary to provide problem specific effective rehabilitation and supportive care for patients.

#### **COURSE OUTCOMES:**

- Recognize and manage potential complications specific to the condition.
- Demonstrate knowledge of protocol specific principles and their application in Physiotherapy practice.
- Communicate effectively with patients, their families, and the multidisciplinary team.
- Critically evaluate current research in the area of rehabilitation to inform clinical decision-making.

### **2. ADVANCES IN SPECIALTY SUBJECT – PAPER 2 ( 3209-42 )**

#### **COURSE OBJECTIVES:**

To provide students with an in-depth understanding of recent developments and emerging trends in the specialty subject, focusing on innovative diagnostic techniques, treatment modalities, and research breakthroughs.

**COURSE OUTCOMES:**

- Analyze cutting-edge research and its potential clinical applications.
- Evaluate novel diagnostic technologies and their impact on early detection and personalized treatment.
- Critically assess emerging advanced and targeted therapies.
- Explain advancements in Prevention strategies and Risk assessment.
- Interpret complex clinical trial data and their implications for patient care.
- Describe innovations and apply knowledge of recent advances to case studies and clinical scenarios.

**END OF PROGRAMME:**

After completion of PG (M.P.Th) Programme, with the above mentioned Programme features the Post-Graduates will be equipped with advanced knowledge in respective specialty related to Technical, Problem Solving and Scientific skills to practice with Evidence Based Physiotherapy Practice through firm decision making process in assessment and treatment, establish advance research hypotheses and undertake research works effectively within the healthcare sectors and community safely and efficiently inculcating effective communication skills.

**TOTAL HOURS: MPTth**

Semester	Subject	Theory	Theory Credit point	Practical	Practical Credit point	Total Credit point
<b>I - MPTth</b>						
<b>I - Semester</b>	Basic Sciences	100	7	100	7	14
	Basic Therapeutics	100	7	100	7	14
<b>II - Semester</b>	Advanced Therapeutics in Speciality	100	7	150	5	12
	Biostat & Research	100	7			7
<b>II - MPTth</b>						
<b>III - Semester</b>	General PT in Speciality <b>Paper - 1</b>	200	13	225	8	21
	Advances in Speciality <b>Paper - 1</b>	200	13	250	8	21
<b>IV - Semester</b>	General PT in Speciality	200	13	225	8	21

	<b>Paper - 2</b>					
	Advances in Speciality <b>Paper - 2</b>	200	13	250	8	21
		<b>1200</b>	<b>80</b>	<b>1300</b>	<b>51</b>	<b>131</b>
<b>Total Hrs: 2500</b>			<b>Total Credit point: 131</b>			

### **EXAMINATION SCHEME:**

	Theory		Practical	IA	
				Theory	Practical
<b>Sem. I</b>	Basic Sciences (100 Marks)	Basic Therapeutics (100 Marks)	-	50 marks x 2 Subjects	-
<b>Sem. II</b>	Advanced Therapeutics in Speciality (100 Marks)	Biostatistics & Research Methodology (100 Marks)	Advanced Therapeutics in Speciality (250 Marks)	50 marks x 2 Subjects	50 Marks
<b>Sem. III</b>	General Physiotherapy in Speciality <b>Paper – 1</b> (100 Marks)	Advances in Speciality <b>Paper – 1</b> (100 Marks)	-	50 marks x 2 Subjects	
<b>Sem. IV</b>	General Physiotherapy in Speciality <b>Paper – 2</b> (100 Marks)	Advances in Speciality <b>Paper – 2</b> (100 Marks)	Specialty Practical (300 Marks)	50 marks x 2 Subjects	50 Marks
<b>Total: 1850 marks</b>					

### **EXAMINATION PATTERN:**

#### **THEORY: (ALL SEMESTERS)**

Q1. 10 BAQ (All compulsory)

10 x 5 = 50 marks

Q2. 2 LAQ (All compulsory)

2 x 25 = 50 marks

**Total: 100 marks**

**\*\*\* INTERNAL ASSESSMENT: Out of 50 MARKS for each Subject**

**PRACTICAL: (II & IV SEMESTER)**

**SEMESTER II PATTERN**

- |  |           |
|--|-----------|
| 1. Long Case (Specialty)               | 100 marks |
| 2. Short Case 1. (Assessment)          | 50 marks  |
| 3. Short Case 2. (Management)          | 50 marks  |
| 4. Spots                               | 50 marks  |
| <b>Total: 250 marks + IA: 50 marks</b> |           |
| <b>= 300 Marks</b>                     |           |

**SEMESTER IV PATTERN**

- |  |           |
|--|-----------|
| 1. Long Case (Specialty)               | 100 marks |
| 2. Short Case (Assessment)             | 50 marks  |
| 3. Short Case (Management)             | 50 marks  |
| 4. Dissertation Presentation           | 50 marks  |
| 5. Microteaching                       | 50 marks  |
| <b>Total: 300 marks + IA: 50 marks</b> |           |
| <b>= 350 Marks</b>                     |           |

**MPT<sub>h</sub> - I: SEMESTER: I**

**COURSE: MPT<sub>h</sub> IN ORTHOPEDIC MANUAL THERAPY**

**SUBJECT: BASIC SCIENCES**

<b>Subject</b>	<b>Theory</b>	<b>Credit</b>	<b>Practical</b>	<b>Credit</b>	<b>Total Credits</b>
Basic Sciences	100	7	100	7	14

<b>Sr. No</b>	<b>Content</b>	<b>Teaching Hours (200 Hrs.)</b>		<b>MK</b>	<b>DK</b>	<b>NK</b>
		<b>Didactic (100 Hrs.)</b>	<b>Practical (100 Hrs.)</b>			
1.	<b>PRINCIPLES AND ETHICS:</b> a. Theoretical background of Physiotherapy profession.	5 hrs	-	MK		
	b. Professional sources in the community.					
	c. Principles and practice of physiotherapy in India.					
	d. Ethical background of physiotherapy.					
	e. Ethics of IAP & WCPT. Professional ethics.					
	f. Modified Referral ethics in the practice of Physiotherapy					
	g. Governing body of Physiotherapy Profession state & central level.					
2	<b>EXERCISE PHYSIOLOGY AND NUTRITION:</b> a. Nutrition and physical performance.	15 hrs	15 hrs	MK		
	b. Energy transfer.					
	c. Systemic adaptation during exercise.					
	d. Physical performance.					
	e. Factors affecting physical					

	performance.					
	f. Fatigue and lactate.					
	g. Training.					
	h. Fitness and testing.					
	i. Obesity.					
	j. Diabetes.					
	k. Applied exercise physiology.					
3.	PATHOMECHANICS AND CLINICAL KINESIOLOGY: Review of mechanical principles and applied biomechanics of human body.	10 hrs	5 hrs	MK		
4.	Review of various types of exercises, principles and its applications for joint mobility, muscle re-education, Strengthening and endurance training.	15 Hrs	5 Hrs	MK		
5.	Posture, analysis of normal and abnormal posture, posture training.	5 hrs	10 hrs		DK	
6.	Gait, analysis of normal and abnormal gait, gait training.	5 hrs	15 hrs			NK
7.	ADL, assessment and training of ADL.	5 hrs	10 hrs		DK	
8.	Clinical assessment, clinical tests and diagnosis of: <ul style="list-style-type: none"> <li>• Musculoskeletal conditions</li> <li>• Manual Therapy clinical reasoning</li> <li>• Sports conditions</li> <li>• Neurological conditions</li> <li>• Cardio-pulmonary conditions</li> <li>• Obstetrics and Gynecology conditions</li> <li>• Pediatric conditions</li> <li>• Geriatric conditions</li> <li>• Oncology conditions</li> <li>• Community Health conditions</li> </ul>	10 hrs	15 hrs	MK		
9.	Measuring tools in therapeutics: Goniometry, accelerometer, pressure transducers, force plates,	5 hrs	10 hrs	MK		

	spondylometer, Body composition, anthropometric measurements, etc.					
10.	<b>ORTHOTICS, PROSTHETICS &amp; BIOENGINEERING:</b>	25 hrs	15 hrs	MK		
	a. Orthosis of spine.					
	b. Orthosis of upper limb.					
	c. Orthosis of lower limb.					
	d. AK and BK Prosthesis.					
	e. Prosthetic fitting and training.					
	f. Biomechanical principles governing them.					

**BASIC SCIENCES - RECOMMENDED BOOKS:**

1. Ross and Wilson Anatomy and Physiology in Health and Fitness – Kathleen. J, Churchill Livingstone.
2. Samson Wright’s Applied Physiology – Neil and Joel, Oxford press.
3. Principles of Anatomy – Harper Collins College Publications
4. Anatomy and Physiology for Physiotherapists – Mottram, Moffat, Blackwell Scientific
5. Atlas of Anatomy – Tank Patrick, Lippincot Williams
6. Surface and Radiological Anatomy – Halim A, CBS

**REFERENCE BOOKS:**

1. Clinical Kinesiology for the Physical therapist Assistants – Lippert L, Jaypee.
2. Brunnstrom’s Clinical Kinesiology – Letimkuni W, Jaypee.
3. Clinical Kinesiology – Laura Weiss, Jaypee.
4. Joint Structure & Function – Levangie P, Norkin C, Jaypee.
5. Basic Biomechanics of the musculoskeletal system – Nordin M, Lippincot Williams.
6. Biomechanical Basis of Movement – Hamill J & Krutzen K M, Lippincot Williams.
7. Measurements of Joint Motion – Norkin C, F. A. Davis.
8. Principles of Mechanics & Biomechanics – Bell, Frank, Stanley Thornes Pvt. Ltd.
9. Basic Biomechanics – Hall, Susan J, McGraw hill.
10. Kinesiology – Oatis, Carol A, Lippincot Williams.
11. Applied Kinesiology – Robert Frost, North Atlantic Books.
12. Biomechanics of Spine – White and Punjabi, Lippincot Williams

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**MPT h - I: SEMESTER: I**

**COURSE: MPT H IN ORTHOPEDIC MANUAL THERAPY**

**SUBJECT: BASIC THERAPEUTICS**

<b>Subject</b>	<b>Theory</b>	<b>Credit</b>	<b>Practical</b>	<b>Credit</b>	<b>Total Credits</b>
Basic Therapeutics	100	7	100	7	14

<b>Sr. No</b>	<b>Content</b>	<b>Teaching Hours (200 Hrs.)</b>		<b>MK</b>	<b>DK</b>	<b>NK</b>
		<b>Didactic (100Hrs)</b>	<b>Practical (100Hrs)</b>			
1.	<b>Basic Electrotherapeutics:</b> Review the principles and applications of the following electrotherapy modalities and justify the effects and uses of it with evidence	25 hrs	25 hrs	MK		
	1. Short wave diathermy.					
	2. Microwave diathermy.					
	3. Ultrasonic therapy.					
	4. Ultraviolet radiation.					
	5. Infrared radiation.					
	6. Iontophoresis.					
	7. Electric stimulation.					
	8. D i - Dynamic currents.					
	9. Interferential therapy.					
	10. Cryotherapy.					
	11. TENS.					
	12. LASER Therapy.					
	13. Paraffin wax bath.					
	14. Hydrotherapy.					
	15. Hydro collator packs.					
	16. Contrast bath.					
	17. Traction.					
	18. Mechanical external Compression therapy.					
	19. Fluidotherapy.					
	20. Phonophoresis.					
	21. Shock Wave Therapy					
3.	Pain and pain modulation.	5 hrs	5 hrs		DK	
4.	Conventional electro diagnosis.	5 hrs	5 hrs	MK		
	1) FG Test.					
	2) SD Curve.					

5.	Electrocardiogram.	10 hrs	10 hrs		DK	
6.	Echocardiography.	10 hrs	10 hrs			NK
7.	Physical & functional diagnosis.	25 hrs	25 hrs	MK		
	1. Clinical examination in general and detection of movement dysfunction.					
	2. Principles of pathological investigations and imaging techniques related to neuromuscular, skeletal and cardiopulmonary disorders with interpretation					
	3. Development screening development diagnosis, neurodevelopment assessment and motor learning-voluntary control assessment					
	4. Physical fitness assessment: <ul style="list-style-type: none"> <li>• Cardiac efficiency tests and spirometry</li> <li>• Fitness test for sport</li> </ul>					
	5. Electro diagnostics-EMG/NCV <b>A. Electromyography (EMG)</b> Electro-diagnosis, clinical and kinesiological electromyography and evoked potential studies. 1. Instrumentation. 2. Types of electrodes. 3. Cathode ray oscilloscope digital processing. 4. Electrical safety. 5. Artifacts. 6. Normal and abnormal motor action potential. 7. EMG Examination. a. Muscle at rest. b. Insertional activity. c. Minimum effort. d. Maximum effort. 8. Motor unit's potential in disease. <ul style="list-style-type: none"> <li>• Motor neuron disease.</li> <li>• Hereditary motor neuron disease.</li> <li>• Poliomyelitis.</li> <li>• Muscular dystrophy.</li> <li>• Inflammatory myopathies.</li> <li>• Congenital myopathies</li> <li>• Myotonia.</li> <li>• Metabolic myopathies.</li> </ul>					

	9) Quantitative methods in EMG.					
	<b>B. Nerve conduction studies (NCV):</b> I. Motor and sensory conduction. II. Physiology of nerve conduction. III. General factors affecting nerve conduction. IV. Nerve stimulation. V. H wave. VI. F wave. VII. Entrapment syndromes. a) Carpel tunnel syndrome. b) EMG studies in Myasthenia gravis. c) EMG studies in Decremental studies Lambert myasthenia syndrome. d) Electro diagnosis in Radiculopathy. e) Peripheral neuropathies. - Nerve conduction changes in peripheral neuropathy. - EMG changes in peripheral neuropathy.					
8	Radiological investigation. 1) X – ray. 2) CT / MRI Scan. 3) Blood investigation (routine)	20 hrs	20 hrs	MK		

### **BASIC THERAPEUTICS - RECOMMENDED BOOKS:**

1. Exercise Physiology, energy, nutrition and human performance – McArdle, Katch & Katch, Lippincott Williams.
2. Illustrated principles of exercise physiology – Axen. K, Kathleen. V, Prentice Hall.
3. Essentials of Exercise Physiology – Shaver Larry. G, Surjeet Publications.
4. Physiology of Sports and Exercise – Majumdar. P, New Central Book.
5. Exercise and the Heart – Frolicher, Victor. F, Elsevier.
6. Textbook of Work Physiology – Astrand and Rodahl, McGraw Hill.
7. Kinanthropometry and Exercise Physiology Laboratory manual tests, procedures and data - Erston, Reilly, F & FN Spon.

### **REFERENCE BOOKS:**

1. Communication Skills in Clinical Practice – Sethuraman K. R.
2. Handbook of Educational Technology – Elington Henry, Kogan Page.
3. Physical Therapy Administration & Management – Hickok, Robert J, Williams & Wilkins.
4. Clinical Decision making in Rehabilitation – Basmajian, John V, Churchill Livingstone.
5. Handbook of Clinical Teaching – Watts Nancy, Churchill Livingstone.
6. Physical Therapy Ethics by Gabard and Martin (Sep 2, 2010)
7. Management in Physical Therapy Practices by Catherine G. Page (Sep 23, 2009)
8. Physical Rehabilitation: Evidence-Based Examination, Evaluation, and Intervention by Michelle H. Cameron and Linda Monroe (Apr 5, 2007)
9. Physical Therapy Management by Ronald W. Scott and Christopher L Petrosino (Sep 1, 2007)



**MPT<sub>h</sub> – I: SEMESTER: II**

**COURSE: MPT<sub>H</sub> IN ORTHOPEDIC MANUAL THERAPY**

**SUBJECT: BIOSTATISTICS AND RESEARCH METHODOLOGY**

<b>Sr No.</b>	<b>Contents</b>	<b>TEACHING HOURS Theory (100 Hrs)</b>	<b>Must Know</b>	<b>Desirable to Know</b>	<b>Nice to Know</b>
1	<b>Research methodology:</b> I. How to read critique research. II. Introduction to research: frame work: levels of measurement: variables III. Basic research concepts: validity and reliability. IV. Design, instrumentation and analysis for qualitative research. V. Design, instrumentation and analysis for quantitative research VI. Design, instrumentation and analysis for quasi-experimental research VII. How to write research proposal VIII. Ethics in research IX. Importance of software in research X. Importance of SPSS, PowerPoint, etc in research.	60 hrs	MK		

2	<b>Biostatistics:</b> Descriptive and inferential statistics II. Types of data qualitative and quantitative III. Frequency distributions IV. Describing data with graphs V. Describing data with averages mode median mean VI. Describing variability variance standard deviation etc VII. Normal distributions VIII. Interpretations of result IX. Hypothesis testing X. T tests XI. ANOVA XII. Probability XIII. Type I and type II errors XIV. Parametric and non-parametric tests XV. Simple statistical analysis using available software.	40 hrs	MK		
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**TEXT BOOKS FOR RESEARCH METHODOLOGY AND BIOSTATISTICS:**

1. Research Methodology .Methods and Techniques C.R. Kothari New Age International Publishers.2nd edition 2008
2. Rehabilitation Research: Principles And Applications By Elizabeth Domholdt(Elsevier Science Health Science Div, 2004)
3. Research Methods for clinical therapists by Hicks Carolyne, Churchill
4. Foundations of clinical Research by Portney & Watkins, Davis
5. Research methodology by Kothari New Age international
6. Research Methodology for health professionals by Goyal, Jaypee
7. Methods in Biostatistics By Mahajan, B.K Jaypee
8. Principles & practice of Biostatistics By Dixit ,J.V Bhanot

**TEACHING TECHNOLOGY:**

1. Public Power And Administration – Wilenski, Hale And Iremonger, 1986
2. Physical Therapy Administration And Management – Hickik Robert J

3. A Practical Guide for Medical Teachers : John A Dent& Ronald M Harden: ElsevierHealth Sciences: 2009
4. International Handbook of Medical Education : Abdul W Sajid, Christie H McGuire et al: Greenwood Press 1994
5. Principles Of Medical Education by. Tejinder Singh, Piyush Gupta, DaljitSingh.year: 2009. Edition: 3<sup>rd</sup> edition Publisher: Jaypee brothers.

**MPTb-I: SEMESTER: II**

**SUBJECT:**

**ADVANCED THERAPEUTICS IN ORTHOPEDIC MANUAL THERAPY**

Subject	Theory	Credit	Practical	Credit	Total Credit
ADVANCED THERAPEUTICS IN ORTHOPEDIC MANUAL THERAPY	100	7	150	5	12

S r n o.	Topic	Teaching hours (225 Hrs.)		Must know	Desir able to know	Nice to know
		Didacti c (100 Hrs)	Practic al's (150 Hrs)			
1	Introduction to Manual Therapy. History, Background and concepts of Manual therapy, comparing Grades of moments (Maitland, Cyriax & Kaltenborn)	3 h r	30 hrs	MK		
2	Clinical Reasoning. Surface anatomy, Palpation, Assessment, differential diagnosis and treatment planning	5 hrs	20 hrs	MK		
3	Orthopedic special tests and outcome measures	3 hrs	8 hrs	MK		
4	<b>Introduction and orientation to all manual therapy skills:</b> A. Principles and practice of Maitland manipulation, B. Principles and practice of Mulligan concept, C. Principles and practice of McKenzie's regime of exercises, D. Principles and practice of Kaltenborn,	50 hrs	50 hrs	MK		



	<p>E. Principles and practice of Cyriax manipulation,</p> <p>F. Principles and practice of MET,</p> <p>G. Principles and practice of PRT,</p> <p>H. Principles and practice of MFR,</p> <p>I. Principles and practice of Neural tissue mobilization, etc.</p>					
5	<p><b>Various tools used to assist Manual Therapy:</b></p> <p>Manual therapy tables, Instrument assisted manual therapy (IASTM tools), Graston Technique, Mulligan's belt, etc.</p>	10 hrs	10 hrs			
6	<p><b>Manual therapy skills applicable in Common Musculoskeletal Conditions:</b></p> <p><b>A. Fractures:</b></p> <p>General principles</p> <p>Fracture treatment – Past, Present &amp; Future.</p> <p>Stress shearing / shielding devices.</p> <p>Fracture healing (normal &amp; Pathological)</p> <p><b>Upper Quarter Fractures-</b></p> <p>Clavicle, Scapula, Humerus, Fore arm bones, Hand, Rib fracture, Vertebral fracture,</p> <p><b>Lower Quarter Fractures-</b></p> <p>Fracture Neck of femur, Fracture Acetabulum,</p> <p>Fracture Pelvis, Fracture trochanter, Shaft of femur, Patellar fracture, Intercondylar fracture of shaft of tibia, Pott's fracture, Calcaneal fracture, Metatarsal fracture, Phalanges fracture.</p> <p>(clinical presentation, evaluation &amp; general principles of rehabilitation management)</p> <p><b>B. Dislocation:</b></p> <p>Acromioclavicular joint., sternoclavicular</p>	20 hrs	26 hrs	MK		

<p>joint, Recurrent dislocation of shoulder, elbow, wrist &amp; phalanx. Recurrent dislocation of patella. – Hip, ankle, dislocation. (clinical presentation, evaluation &amp; general principles of rehabilitation management)</p> <p><b>C. Soft Tissue Injuries:</b> Injury &amp; repair (clinical presentation, evaluation &amp; general principles of rehabilitation management)</p> <p><b>Upper limb:</b> Sprains of shoulder, Bursitis, Tendonitis, Snapping &amp; winged scapula, Tennis elbow, Tenosynovitis, Carpel tunnel syndrome, Dupuytren’s contracture, VIC, Reflex Sympathetic Dystrophy, Periarthritis of shoulder, Thoracic outlet syndrome, Shoulder hand syndrome.</p> <p><b>Lower Limb:</b> Fat pad inflammation, Baker’s cyst, ACL, PCL, Meniscal injury, Chondromalacia patella. Deltoid Fibrosis, Trigger Finger &amp; Thumb, Quadriceps Fibrosis, Bursitis around the knee, Plantar Fasciitis, Calcaneal Spur, IT Syndrome, TMJ dysfunction.</p> <p><b>D. Spinal Deformities</b> – Scoliosis. Kyphosis. Traumatic deformities. Flat back.</p> <p><b>E. Arthritic &amp; Rheumatic Diseases</b> – Rheumatoid arthritis, Osteoarthritis, Ankylosing spondylitis.</p> <p><b>F. Spine</b> – Low Back Pain (mechanical), LBP (Pathological) Disc prolapse, Cord compression, Spondylosis, Ankylosing</p>					
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	spondylitis, Spinal injuries, Cranio Vertebral dysfunction, Sacralization, Lumbarization, Lumbar Canal Stenosis, Sciatica, Failed Back syndrome, SI joint dysfunction, Zygapophyseal Joint arthropathy, Thoraco-lumbar junction Dysfunction, Coccydynia.					
7	Current trends in orthopedic implants - designs, materials indications, post – operative physiotherapy.	4 hrs	2 hrs			
8	Self help in manual therapy	5 hrs	4 hrs			

### **TEXTBOOKS AND REFERENCE BOOKS: ORTHOPEDIC MANUAL THERAPY**

1. Black d and Dumbleton J. H. clinical Biomechanics 2nd edn. Churchill Livingstone 1987.
2. Sullivan P.D. and Minor M.A. An Integrated Approach to Therapeutic Exercises Resten 1982.
3. Donatelli R. ed. Physical Therapy of the Shoulder, 2nd edn Churchill, Livingston 1991.
4. Donatelli R. and wooden M.J. Ed Orthopaedic Physical Therapy Churchill, Livingston 1989.
5. Grant, R. (ed) Physical Therapy of the Cervical and Thoracic Spine, Churchill, Livingstone, 1987.
6. Grieve G. P. Common Vertebral Joint Problems, 2nd edn Churchill, Livingstone, 1988.
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11. Cruess, R.L. ed. The Musculoskeletal System: Embryology, Bio- Chemistry and Physiology, Churchill, Livingstone, 1982.
12. Vander, A. J. Human Physiology: The mechanisms of body Function, 5th edn. Mc. Graw-Hill, 1990.
13. Chaffin, D.B. and Anderson, G. Occupational Biomechanics, 2nd edn. Wiley, 1984.
14. Orthopaedic physical therapy – Donatelli, London Churchill Livingstone 1994.
15. Clinical biomechanics of spine – White A.A and Panjabi- J.B. Lippincot, Philadelphia 1978.
16. Vertebral manipulation- Maitland G.D. Boston, Butterworth & Co. Boston, 1997.
17. Peripheral manipulation - Maitland G.D. Boston, Butterworth & Co. Boston, 1997.
18. Maitlands Peripheral Manipulation – Elly Hengeveled
19. Benson, Fixsen and Macnicol (Ed) Children’s orthopaedics and fractures. Churchill Livingstone.

20. Cyriax James. Text book of Orthopaedic Medicine, diagnosis of soft Tissue Lesions 8th edn. Bailliere Tindall 1982.
21. Mobilization of the extremity joint – Kaltenbore, Harper and Row, Philadelphia, 1980.
22. Kisner C. & Colby L.A. (2002). Therapeutic Exercise: Foundations and Techniques, 4 th ed. Philadelphia, PA: F. A. Davis.
23. Lederman E. (1997): Fundamentals of Manual Therapy–Physiology, Neurology and Psychology. New York: Churchill-Livingstone.
24. Kaltenborn F.M., Evjenth O., Volowitz E., Kaltenborn T.B., and Morgan D. (2002) Manual Mobilization of the Extremity Joints, 6th ed. Oslo, Norway: Orthopedic Physical Therapy Products (OPTP).
25. Rich G.J. (2002, ed) Massage Therapy: The Evidence for Practice. New York, U.S.A.: Mosby. 24. Mulligan B. (2003) Manual Therapy: NAGS, SNAGS, MWMS etc., 4th ed. Wellington, New Zealand: Plane View Services
26. Chaitow L., Liebenson L., Murphy D.R. (2001) Muscle Energy Techniques. New York, U.S.A.: Elsevier Science.
27. Orthopedics – A Post Graduate Manual, Dr.(col)S.K.Biswas, Jaypee Publication, New Delhi 1st edition, 2012.
28. Manual of Combined Movement - Edwards
29. Manual Therapy in Children – Heiner
30. Essentials of Orthopedics for Physiotherapists by John Ebenezer – Jaypee Publications
31. Practical Fracture Treatment by Ronald McRae, Max Esser – Churchill Livingstone
32. Oxford Textbook of Orthopaedic & Trauma by Christopher Bulstrode, Joseph Buckwalter – Oxford University Press
33. Campbell's operative orthopedics. - By S. Terry Canale, James H. Beaty - Mosby
34. Fractures & joint injuries By Watson Jones – Churchill Livingstone
35. Clinical Orthopaedic Examination by Ronald McRae – Churchill Livingstone
36. Daniels and Worthingham's muscle testing: Techniques of manual examination by: Helen J Hislop, Jacqueline Montgomery Barbara – Elsevier
37. Muscles – Testing and Function by Florence Peterson Kendall – Lippincott
38. Joint Range of Motion and Muscle length testing By Nancy Berryman Reese - Saunders
39. Orthopedic Physical Assessment, By David J. Magee, PhD, BPT - Saunders
40. Illustrated Orthopedic Physical Assessment, 3e By Ronald C. Evans, - Mosby
41. Diagnostic Imaging for Physical Therapists by James Swain, Kenneth W. Bush, and Juliette Brosing – Elsevier
42. Differential Diagnosis for Physical Therapists: Screening for Referral, By Catherine C. Goodman, and Teresa Kelly Snyder – Saunders
43. Gait Analysis: Theory and Application By Rebecca Craik and Carol A Oatis

– Mosby

44. Orthotics and Prosthetics in Rehabilitation, By Michelle M. Lusardi, PhD, PT and Caroline C. Nielsen, PhD  
- Butterworth-Heinemann.

**MPT h - II: SEMESTER: III**

**COURSE: MPT h IN ORTHOPEDIC MANUAL THERAPY**

**SUBJECT:**

**GENERAL PHYSIOTHERAPY IN ORTHOPEDIC MANUAL THERAPY - PAPER 1**

Subject	Theory	Credit	Practical	Credit	Total Credit
General Physiotherapy In Orthopedic Manual Therapy <b>PAPER 1</b>	200	13	225	8	21

Sr.no	Content	Teaching hrs. (425 hrs)		Must know	Desirable to know	Nice to know
		Didactic (200Hrs)	Practical (225Hrs)			
1.	Biomechanics of different tissues and activities: Muscle, ligaments, tendons, fascia, articular cartilage, joints, gait, spinal cord and peripheral nerves, vessels and day to day activities.	35 hrs	35 hrs	MK		
2.	Patho-mechanics of various Orthopedic disorders a. Degenerative disorders b. Inflammatory conditions c. Infectious conditions d. Traumatic conditions e. Miscellaneous conditions	30 hrs	40 hrs	MK		
3.	Screening of Orthopedic problems based on Patho-mechanism. a. Extremities b. Spine	60hrs	80 hrs	MK		
4.	Classification of manual therapy and other related therapies:  Philosophies, historical aspects, types /	75 hrs	70 hrs	MK		

<p>classification, principles, indications &amp; contraindications of various manual therapy techniques such as:</p> <ul style="list-style-type: none"><li>a) Clinical Reasoning in Manual Therapy: Hypothesis generation, expert reasoning strategies, clinical reasoning error, pattern recognition, role of reassessment in reasoning, hypothesis categories in manual therapy.</li><li>b) McKenzie's school of thought</li><li>c) Neurodynamics and neural tissue mobilization</li><li>d) Maitland school of thought</li><li>e) Combined movements</li><li>f) Cyriax's school of thought</li><li>g) Mulligan's school of thought</li><li>h) Osteopathic and chiropractic schools of thought</li><li>i) Neuromuscular technique</li><li>j) Neuro-musculoskeletal taping techniques</li><li>k) Movement Impairment syndromes</li><li>l) Myofascial release therapy</li></ul>					
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## **TEXTBOOKS AND REFERENCEBOOKS: ORTHOPEDIC MANUAL THERAPY**

1. Black d and Dummbleton J. H. clinical Biomechanics 2nd edn. Churchill Livingstone 1987.
2. Sullivan P.D. and Minor M.A. An Integrated Approach to Therapeutic Exercises Resten 1982.
3. Donatelli R. ed. Physical Therapy of the Shoulder, 2nd edn Churchill, Livingston 1991.
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25. Rich G.J. (2002, ed) *Massage Therapy: The Evidence for Practice*. New York, U.S.A.: Mosby.
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26. Chaitow L., Liebenson L., Murphy D.R. (2001) *Muscle Energy Techniques*. New York, U.S.A.: Elsevier Science.
27. *Orthopedics – A Post Graduate Manual*, Dr.(col)S.K.Biswas, Jaypee Publication, New Delhi 1st edition, 2012.
28. *Manual of Combined Movement* - Edwards
29. *Manual Therapy in Children* – Heiner
30. *Essentials of Orthopedics for Physiotherapists* by John Ebenezer – Jaypee Publications
31. *Practical Fracture Treatment* by Ronald McRae, Max Esser – Churchill Livingstone
32. *Oxford Textbook of Orthopaedic & Trauma* by Christopher Bulstrode, Joseph Buckwalter – Oxford University Press
33. *Campbell's operative orthopedics*. - By S. Terry Canale, James H. Beaty - Mosby
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35. *Clinical Orthopaedic Examination* by Ronald McRae – Churchill Livingstone
36. *Daniels and Worthingham's muscle testing: Techniques of manual examination* by: Helen J Hislop, Jacqueline Montgomery Barbara – Elsevier
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– Mosby
44. *Orthotics and Prosthetics in Rehabilitation*, By Michelle M. Lusardi, PhD, PT and Caroline C. Nielsen, PhD - Butterworth-Heinemann.

## **JOURNALS:**

- 1) *Clinical Kinesiology*
- 2) *Journal of Biomechanics*

- 3) Journal of Pediatric Orthopedics
- 4) Journal of Orthopaedic & Sports Physical Therapy (JOSPT).
- 5) Journal of Manual Therapy
- 6) Journal of Manual & Manipulative Therapy
- 7) Spine
- 8) Journal of Hand Therapy

**MPT<sub>h</sub> - II: SEMESTER: III**

**COURSE: MPT<sub>h</sub> IN ORTHOPEDIC MANUAL THERAPY**

**SUBJECT: ADVANCES IN ORTHOPEDIC MANUAL THERAPY- PAPER**

1

Subject	Theory	Credit	Practical	Credit	Total Credit
Advanced Physiotherapy In Orthopedic Manual Therapy <b>PAPER 1</b>	200	13	255	8	21

Sr no	Contents	Teaching hours (425 hrs)		Must Know	Desir able to know	Nice To know
		Didactic (200 hrs.)	Practical (250 hrs.)			
1	<u>MAITLAND'S Concept.</u> <ul style="list-style-type: none"><li>• Basics of Subjective and Physical Examination</li><li>• Movement diagram</li><li>• VBI testing</li><li>• Quadrant testing.</li><li>• Instability Testing. Maitland's Concepts for Various Joints.</li><li>• Cervical, Thoracic, Lumbar, SI.</li><li>• Disc pathologies.</li><li>• Peripheral Joints.</li><li>• Home Programme</li><li>• HVL T</li></ul>	15 hrs	20 hrs	MK		
2	<u>Combined Movements</u> <ul style="list-style-type: none"><li>• Regular and Irregular pattern in Cervical, thoracic, and Lumbar region.</li><li>• Importance of Combined Movements in spinal dysfunction diagnosis and treatment.</li></ul>	10 hrs	20 hrs	MK		

	<ul style="list-style-type: none"> <li>• Home Programme.</li> </ul>					
3	<u>Mulligan's concept.</u> <ul style="list-style-type: none"> <li>• Concept of NAG, SNAGS, RNAGS, MWM</li> <li>• Mechanical Basis of SNAGS.</li> <li>• Application of concepts in spinal and peripheral dysfunction.</li> <li>• Current trends in Mulligan concept</li> <li>• Home program</li> </ul>	10 hrs	20 hrs	MK		
4	<u>McKenzie concepts.</u> <ul style="list-style-type: none"> <li>• Concepts</li> <li>• Postural Syndrome, Dysfunction Syndrome and Derangement Syndromes.</li> <li>• Approaches to Cervical, Thoracic and Lumbar spine.</li> <li>• Home program.</li> </ul>	10 hrs	20 hrs	MK		
5	<u>Muscle Energy Technique.</u> <ul style="list-style-type: none"> <li>• Fryette's Laws of physiological spinal motion</li> <li>• Segmented vertebral dysfunction</li> <li>• NRS, ERS, FRS</li> <li>• Technique and its application</li> <li>• Home program</li> </ul>	10 hrs	20 hrs	MK		
6	<u>CYRIAX.</u> <ul style="list-style-type: none"> <li>• Selective Tissue Tension Test.</li> <li>• Indication, Technique and Application of Deep Friction Massage.</li> <li>• Indication, Assessment and Management Soft Tissue Lesions.</li> <li>• Merits and Demerits of Cyriax concepts in the management &amp; soft tissue lesions.</li> <li>• Home program.</li> </ul>	15 hrs	20 hrs	MK		
7	<u>Myo Fascial Release.</u> <ul style="list-style-type: none"> <li>• Concept</li> </ul>	10 hrs	20 hrs	MK		

	<ul style="list-style-type: none"> <li>• Indications</li> <li>• Application techniques</li> </ul>					
8	<u>Neural Mobilization.</u> <ul style="list-style-type: none"> <li>• Basics, Neuro Anatomy/Neuro dynamics</li> <li>• Indications and contraindication</li> <li>• Adverse neural testing</li> <li>• Home program</li> </ul>	10 hrs	20 hrs	MK		
9	Positional Release Technique.	10 hrs	20 hrs	MK		
10	Trigger Point Therapy.	10 hrs	10 hrs	MK		
11	Taping Techniques	10 hrs	10 hrs	MK		
12	Recent Advances in manual therapy. <ul style="list-style-type: none"> <li>• Integrated Approaches in Manual Therapy.</li> <li>• Adjunct therapy to manual therapy.</li> <li>• Ethical Issue in Manual Therapy Practice.</li> <li>• Clinical Record Maintenance in Manual Therapy.</li> <li>• Evidence Based Practice in Manual Therapy.</li> <li>• Scope of Manual therapy in Veterinary</li> <li>• Scope of Manual therapy in Dentistry.</li> </ul>	20 hrs	15 hrs	MK		
13	EBP and Recent advances in clinical assessment, laboratory investigations and diagnosis of musculoskeletal disorders.	20 hrs	10 hrs	MK		
14	EBP In Management of pain in musculoskeletal disorders.	20 hrs	15 hrs	MK		
15	Recent Advances in management of orthopedic conditions (Medical and Surgical)	20 hrs	10 hrs	MK		

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1. Black d and Dumbleton J. H. clinical Biomechanics 2nd edn. Churchill Livingstone 1987.
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35. Clinical Orthopaedic Examination by Ronald McRae – Churchill Livingstone
36. Daniels and Worthingham's muscle testing: Techniques of manual examination by: Helen J Hislop, Jacqueline Montgomery Barbara – Elsevier

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- 4) Journal of Orthopedic & Sports Physical Therapy (JOSPT).
- 5) Journal of Manual Therapy
- 6) Journal of Manual & Manipulative Therapy
- 7) Spine
- 8) Journal of Hand Therapy

**MPT h - II: SEMESTER: IV**

**COURSE: MPT h IN ORTHOPEDIC MANUAL THERAPY**

**SUBJECT:**

**GENERAL PHYSIOTHERAPY IN ORTHOPEDIC MANUAL THERAPY - PAPER 2**

<b>Subject</b>	<b>Theory</b>	<b>Credit</b>	<b>Practical</b>	<b>Credit</b>	<b>Total Credit</b>
General Physiotherapy In Orthopedic Manual Therapy <b>PAPER 1</b>	200	13	225	8	21

<b>Sr.no</b>	<b>Content</b>	<b>Teaching hrs. (425 hrs)</b>		<b>Must know</b>	<b>Desirable to know</b>	<b>Nice to know</b>
		<b>Didactic (200Hrs)</b>	<b>Practical (225Hrs)</b>			
1	Classification of manual therapy and other related therapies:  Philosophies, historical aspects, types / classification, principles, indications & contraindications of various manual therapy techniques such as:  a) Positional release therapy or counter strain therapy b) Muscle energy technique c) Stretching d) Pilates School of Thought	20 hrs	35 hrs	MK		
2	Physiological basis of manual therapy techniques.	30 hrs	40 hrs	MK		
3	Basis for Therapeutic decision making: Planning and implementation of Physiotherapy treatment for various musculoskeletal problems	60 hrs	35 hrs	MK		



	<ul style="list-style-type: none"> <li>a. Degenerative disorders</li> <li>b. Inflammatory conditions</li> <li>c. Infectious conditions</li> <li>d. Traumatic conditions</li> <li>e. Miscellaneous conditions</li> </ul>					
4	<p>Long term consequences of chronic orthopedic disorders on various systems</p> <ul style="list-style-type: none"> <li>a. Muscle weakness</li> <li>b. Movement dysfunction</li> <li>c. Impaired functional disability</li> <li>d. Changes in the Neuro-physiological functions &amp; Cardio respiratory status.</li> <li>e. Women's specific &amp; age induced</li> </ul>	55 hrs	40 hrs	MK		
5	National & International health programs for Orthopedic Manual Therapy interventions.	5 hrs	-	MK		
6	<p>Professional marketing strategies – Entrepreneurship</p> <ul style="list-style-type: none"> <li>a. Specialty clinics</li> <li>b. Independent Practice</li> <li>c. Joining organizations</li> <li>d. Groups</li> <li>e. NGO</li> <li>f. Specialty references</li> </ul>	5 hrs	-		DK	
7	Preventative physiotherapy in orthopedic disorders and team approach.	7 hrs	25 hrs	MK		
8	Muscle imbalances leading to dysfunction with corrective measures	10 hrs	40 hrs	MK		

9	Psychosocial effects and illness behavior in chronic pain.	2 hrs	2 hrs	MK		
10	Exercise planning and Exercise Prescription	2 hrs	2 hrs	MK		
11	Orthopedic implants - designs, materials indications, post – operative assessment and training.	2 hrs	2 hrs		DK	
12	Home program and counseling for care givers.	1 hr	2 hrs	MK		
13	Ergonomics in musculoskeletal dysfunction	1 hr	2 hrs			NK

### **TEXTBOOKS AND REFERENCEBOOKS: ORTHOPEDIC MANUAL THERAPY**

1. Black d and Dummbleton J. H. clinical Biomechanics 2nd edn. Churchill Livingstone 1987.
2. Sullivan P.D. and Minor M.A. An Integrated Approach to Therapeutic Exercises Resten 1982.
3. Donatelli R. ed. Physical Therapy of the Shoulder, 2nd edn Churchill, Livingston 1991.
4. Donatelli R. and wooden M.J. Ed Orthopaedic Physical Therapy Churchill, Livingston 1989.
5. Grant, R. (ed) Physical Therapy of the Cervical and Thoracic Spine, Churchill, Livingstone, 1987.
6. Grieve G. P. Common Vertebral Joint Problems, 2nd edn Churchill, Livingstone, 1988.
7. Manual Therapy Masterclass – Karem S Beeton
8. Jayson M.I.V. (ed) The Lumber Spine and Back Pain, 3rd edn Churchill, Livingstone, 1987.
9. Kirkaldy- Willis W. H. (ed) Managing low back pain, 2nd edn Churchill, Livingstone, 1988.
10. Traveil J. G. and Simons, D.G. Myofascial pain and Dysfuncton. The Trigger Point manual, Williams and Willkins, 1983.
11. Cruess, R.L. ed. The Musculoskeletal System: Embryology, Bio- Chemistry and Physiology, Churchill, Livingstone, 1982.
12. Vander, A. J. Human Physiology: The mechanisms of body Function, 5th edn. Mc. Graw-Hill, 1990.
13. Chaffin, D.B. and Anderson, G. Occupational Biomechanics, 2nd edn. Wiley, 1984.
14. Orthopaedic physical therapy – Donatelli, London Churchill Livingstone 1994.
15. Clinical biomechanics of spine – White A.A and Panjabi- J.B. Lippincot, Philadelphia 1978.

16. Vertebral manipulation- Maitland G.D. Boston, Butterworth & Co. Boston, 1997.
17. Peripheral manipulation - Maitland G.D. Boston, Butterworth & Co. Boston, 1997.
18. Maitlands Peripheral Manipulation – Elly Hengeveled
19. Benson, Fixsen and Macnicol (Ed) Children’s orthopaedics and fractures. Churchill Livingstone.
20. Cyriax James. Text book of Orthopaedic Medicine, diagnosis of soft Tissue Lesions 8th edn. Bailliere Tindall1982.
21. Mobilization of the extremity joint – Kaltenbore, Harper and Row, Philadelphia, 1980.
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24. Kaltenborn F.M., Evjenth O., Volowitz E., Kaltenborn T.B., and Morgan D. (2002) Manual Mobilization of the Extremity Joints, 6th ed. Oslo, Norway: Orthopedic Physical Therapy Products (OPTP).
25. Rich G.J. (2002, ed) Massage Therapy: The Evidence for Practice. New York, U.S.A.: Mosby. 24. Mulligan B. (2003) Manual Therapy: NAGS, SNAGS, MWMS etc., 4th ed. Wellington, New Zealand: Plane View Services
26. Chaitow L., Liebenson L., Murphy D.R. (2001) Muscle Energy Techniques. New York, U.S.A.: Elsevier Science.
27. Orthopedics – A Post Graduate Manual, Dr.(col)S.K.Biswas, Jaypee Publication,New Delhi 1st edition, 2012.
28. Manual of Combined Movement - Edwards
29. Manual Therapy in Children – Heiner
30. Essentials of Orthopedics for Physiotherapists by John Ebenezer – Jaypee Publications
31. Practical Fracture Treatment by Ronald McRae, Max Esser – Churchill Livingston
32. Oxford Textbook of Orthopaedic& Trauma by Christopher Bulstrode, Joseph Buckwalter – Oxford University Press
33. Campbell's operative orthopedics. - By S. Terry Can ale, James H. Beaty - Mosby
34. Fractures & joint injuries By Watson Jones – Churchill Livingston
35. Clinical Orthopaedic Examination by Ronald McRae – Churchill Livingstone
36. Daniels and Worthingham’s muscle testing: Techniques of manual examination by: Helen J Hislop, Jacqueline Montgomery Barbara – Elsevier
37. Muscles – Testing and Function by Florence Peterson Kendall – Lippincott
38. Joint Range of Motion and Muscle length testing By Nancy Berryman Reese - Saunders
39. Orthopedic Physical Assessment, By David J. Magee, PhD, BPT - Saunders
40. Illustrated Orthopedic Physical Assessment, 3e By Ronald C. Evans, - Mosby

41. Diagnostic Imaging for Physical Therapists by James Swain, Kenneth W. Bush, and Juliette

Brosing – Elsevier

42. Differential Diagnosis for Physical Therapists: Screening for Referral, By Catherine C. Goodman, and Teresa Kelly Snyder – Saunders

43. Gait Analysis: Theory And Application By Rebecca Craik and Carol A Oatis

– Mosby

44. Orthotics and Prosthetics in Rehabilitation, By Michelle M. Lusardi, PhD, PT and Caroline C. Nielsen, PhD - Butterworth-Heinemann.

### **JOURNALS:**

- 1) ClinicalKinesiology
- 2) Journalofbiomechanics
- 3) Journalofpediatric Orthopedics
- 4) JournalofOrthopaedic&SportsPhysicalTherapy(JOSPT).
- 5) JournalofManual Therapy
- 6) JournalofManual&ManipulativeTherapy
- 7) Spine
- 8) JournalofHand Therapy

**MPT<sub>h</sub> - II: SEMESTER: IV**

**COURSE: MPT<sub>h</sub> IN ORTHOPEDIC MANUAL THERAPY**

**SUBJECT: ADVANCES IN ORTHOPEDIC MANUAL THERAPY - PAPER 2**

Subject	Theory	Credit	Practical	Credit	Total Credit
Advanced Physiotherapy In Orthopedic Manual Therapy <b>PAPER 2</b>	200	13	250	8	21

Sr no	Contents	Teaching hours (450 hrs)		Must Know	Desirable to know	Nice To know
		Didactic (200 hrs.)	Practical (250 hrs.)			
1	Recent Advances in Manual Therapy management for spinal disorders	30 hrs	50 hrs	MK		
2	Recent Advances in Manual Therapy management in arthritis and allied conditions.	20 hrs	20 hrs	MK		
3	Recent Advances and Controversies in Electrotherapy.	10 hrs	10 hrs	MK		
4	Recent advances in Kinematic & kinetic analysis	20 hrs	30 hrs	MK		
5	Current trends and EBP in Taping techniques	20 hrs	20 hrs	MK		
6	Evidence Based physiotherapy in management of metabolic and hormonal, neoplastic and infective conditions of bones and joints.	10 hrs	10 hrs	MK		
7	Recent Advances in Physiotherapy following arthroplasty, implants and soft tissue repairs	10 hrs	20 hrs	MK		

8	EBP and recent advances in physiotherapy after tendon transfer, Electrical stimulation and biofeedback procedures.	10 hrs	15 hrs	MK		
9	EBP in Rehabilitation of congenital conditions and malformation of musculoskeletal disorders	20 hrs	20 hrs	MK		
10	Recent Advances and Controversies in Manual Therapy.	10 hrs	20 hrs	MK		
11	Evidence based physiotherapy practice in orthopedic manual therapy.  I. Medico legal issues  II. Effective documental  III. Effective communication	30 hrs	20 hrs	MK		
12	Current trends in Fractures, joint instabilities, soft tissue disorders, deformities, nerve injuries and physiotherapy.	10 hrs	15 hrs	MK		

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