



MAHATMA GANDHI UNIVERSITY
of
MEDICAL SCIENCES & TECHNOLOGY
JAIPUR

Syllabus

MASTER OF PHYSIOTHERAPY (MPT) ORTHOPEDICS

(4 SEMESTERS P.G. DEGREE PROGRAM)

2025-26

NOTICE

- 1. The university reserves the right to make changes in the syllabus /books/ guidelines, fee-structure, or any other information at any time without prior notice the decision of the university shall be binding on all.**
- 2. The jurisdiction of all court cases shall be Jaipur Bench of Hon'ble Rajasthan High Court only.**

RULES & REGULATIONS
MASTER OF PHYSIOTHERAPY (MPT) Orthopedics
PROGRAM CODE: - MPT0323
(2 Years Postgraduate Degree Program)

1.Introduction:

Objectives/aims of the course:

The course is designed to acquire sufficient knowledge of the patient's condition and how to treat in a holistic manner; students will get thorough knowledge of their specialization and full exposure of patients. Students will also be able to learn administration & management skills as well. In this 4-semester course student will participate and do their own research by understanding the principles of Research Methodology. MPT course also offers the students a chance to learn about pedagogy, teaching skills for as they wish to pursue their career in academics.

Program Outcome:

At the end of the completion of Master of Physiotherapy, the Postgraduate will be able to:

1. Apply advanced knowledge of clinical skills in problem solving.
2. Gather and interpret information within a holistic framework pertaining to health.
3. Design, implement and monitor appropriate therapeutic interventions.
4. Apply scientific principles to the concepts of health, illness and disability.
5. Promote health.
6. Appraise the social and political context of health care.
7. Undertake independent research projects.
8. Promote Physiotherapy education.
9. Appraise action and social skills of self and others.

2. TITLE OF THE COURSE:

Master of Physiotherapy (MPT) Orthopedics

3. DURATION OF THE COURSE:

Duration of the course: 2 Years (4 Semesters)

4. MEDIUM OF INSTRUCTION:

English shall be the medium of instruction for all the subjects of study and for examination of the course.

5. ELIGIBILITY FOR ADMISSION:

Candidates who have passed B.Sc. (PT) or BPT degree from recognized institutions where the mode of study is a full-time program, with minimum 3½ years / 4 ½ years duration in India or abroad as equivalent with not less than 50% of marks in aggregate and have completed 6 months of compulsory rotatory internship in Physiotherapy.

OR

Candidates who have passed BPT through Bridge Course or through Lateral Entry after completing their Diploma in Physiotherapy from recognized institutions where the mode of study is a full-time program in India or abroad as equivalent with not less than 50% of marks in aggregate and have completed 6 months of compulsory rotating internship in Physiotherapy.

6. PROCESS OF ADMISSION:

- Admission to Master of Physiotherapy (MPT) Orthopedics Program shall be made on the basis of written entrance examination conducted for the purpose
- The intake of students to the course shall be in accordance with the availability of the Guide. The guide student ratio shall be 1:5.

7. RESERVATION POLICY:

Reservation in admissions shall be applicable as per policy of the State Government.

8. ENROLLMENT:

Every candidate who is admitted to Master of Physiotherapy (MPT) Orthopedics Degree Program in Mahatma Gandhi College of Physiotherapy shall be required to get himself/herself enrolled with the Mahatma Gandhi University of Medical Sciences & Technology (MGUMST) after paying the prescribed eligibility and enrolment fees.

A candidate shall deposit enrolment fees along with tuition fees at the time of his/her admission to the course. Such a candidate who fails to submit, to the college Principal, duly filled enrolment form along with original documents including migration certificate required for enrolment within prescribed period then after he/she shall pay late fee applicable at that time. No student will be allowed to appear in the university examination without his/her enrollment.

9. ATTENDANCE:

Minimum 75 % attendance is required in each year, both for theory and practical classes separately, student with deficient attendance will not be permitted to appear in university examination.

10. WORKING DAYS:

Each semester shall consist of not less than 120 working days including examination.

11. CONDUCTION OF THE UNIVERSITY EXAMINATION:

University semester examination shall be conducted twice in a year with an interval of six months. Even Semester examination shall be conducted after 6 months of odd semester examination

12. ELIGIBILITY TO APPEAR FOR UNIVERSITY EXAMINATION

Student is required to have minimum 75% attendance (in theory and practical separately) /to make him/her eligible to appear at the EoSE, Candidates failing in one or more subject in a semester will be required to appear in their failing subject in the next examination of the same semester next year.

A candidate will have to clear all the subjects of First to Third semester before appearing at Fourth semester university examination.

13. APPOINTMENT OF EXAMINER & PAPER SETTER

- All the examiners - Paper setters, Theory examination answer books evaluators, External and internal Examiners for Practical examinations shall be appointed by the president of the University from the panel submitted by HOD/Convener of the respective COC through concerned dean of faculty.
- Paper setters shall be external. He shall also evaluate answers sheets of his paper.

- Practical examiner can be appointed to evaluate answers sheets.
- Eligibility for MPT Examiner and Paper setter- MPT possessing Assistant Professor and above with at least 3 years of working experience (Academic)

14. SCHEME OF EXAMINATION

The University Examination (End of Semester Examination or EOSE) for the Course shall be conducted semester wise at the end of every semester.

i. Theory

- There shall be five Theory papers in each semester of the study of study.
- Each Theory paper examination shall be of 3 hours duration and of maximum 70 marks.
- Continuous assessment (CA) shall be of 30 marks for each Theory Paper.
- The Paper Setter shall set the questions within the prescribed course of study of the concerned paper. There will be a set pattern of question papers duly approved by Academic Council.
Pattern of question papers (Annexure 1)
- Passing Marks: A candidate will have to obtain at least 50% marks including internal assessment in each theory paper to pass.

II. Practical and Viva-Voce Examination

- At the end of each semester there shall be practical and viva-voce examination of 100 marks. It shall be conducted after the Theory examination is over. A candidate will have to obtain at least 50% marks in practical and viva-voce examination
- University practical and viva-voce examination shall be of 70 marks and internal assessment of 30 marks.
- The pattern of practical examination shall be as follows

Question Type	CA (30 marks)	EOSE (70 Marks)	Practical Examiners
Case Demonstration on Patient / Model (1 Long Case & 1 Short Case)	10	20	One Internal & one External Examiner
Practical Record Book + Record of Seminar Presentation	10	20	
Viva	10	30	

Total Marks	100 (30+70)	
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III Result

1. A candidate will have to obtain at least 50% marks separately in each Theory paper including internal assessment and a minimum of 50% marks in the practical examination including viva-voce for him to be declared pass.

1. A Candidate who has failed in a Paper (s) will reappear in respective paper(s) in next examination of the same semester next year.
2. Candidate who has failed in Practical examination will reappear in practical examination only in next practical examination of the same semester.

IV. Supplementary/Remanded Examination

V. Supplementary/Remanded Examination

- (a) A supplementary examination shall be conducted preferably within 45 days of the declaration of the result of **third semester** main examination. Candidates having back papers of first, second and /or third semester examination will be allowed to appear at this supplementary examination. Candidates passing all the papers (theory as well as practical) of First, Second and Third Semester examination will be allowed to appear at the Fourth semester university examination, if otherwise eligible.
- (b) A supplementary examination shall be conducted preferably within 45 days of the declaration of the result of **fourth semester** main examination. All the candidates having back papers of only fourth semester examination will be allowed to appear at this supplementary examination.
- (c) Internal assessment marks obtained in main examination in the concerned failed paper(s)/practical shall be carried forward for working out the result of next Theory paper(s) and/or practical examination.
- (d) A failing candidate, if opt for improvement his/her internal assessment marks shall be allow to do so. In case he does appear for improvement or gets lesser marks in internal assessment, his earlier marks will be considered for working out the result of the failing subject.

V. Promotion to Next Semester

1. The minimum required aggregate attendance for appearing at the EoSE/promotion to next higher semester shall be 75%
2. A candidate who has passed or failed in one or more subjects shall be promoted to respective next semester, subject to fulfilment of other eligibility criteria.
3. A candidate will be allowed to appear for the IV semester examination only when the backlog of all papers (theory papers and practical) of I semester to III semester exams including elective papers (if any) is cleared.
4. The student is required to clear all the University examination within 4 years from the joining of the course.
5. Students failing to meet the minimum aggregate attendance requirement in a semester will not be promoted to the next semester, regardless of other academic performance. They will have to repeat with next year batch

Master Of Physiotherapy (MPT) Orthopaedics Marks Distribution of Semester – I Examination

Course/Paper Name	Course/Paper Code	Credits	Theory/ Practical/Viva			
CORE COURSES			EOSE	CA	Total	Pass Marks
Review of human sciences	MPT0323S101T	4	70	30	100	50 % aggregate including continuous assessment marks separately in theory and practical.
Physical and Functional Diagnosis I	MPT0323S102T	4	70	30	100	
Research Methodology	MPT0323S103T	4	70	30	100	
ELECTIVE COURSES (ANY TWO)						
Biostatistics	MPT0323S104T	2	70	30	100	
Constitution of India	MPT0323S105T	2	70	30	100	
Diagnostic Radiology	MPT0323S106T	2	70	30	100	
PRACTICAL COURSES						
Evaluative Clinical Training- I	MPT0323S107P	12	70	30	100	
TOTAL	06 (05 Theory Paper 01 Practical)	28	420	180	600	

Master Of Physiotherapy (MPT) Orthopaedics Marks Distribution of Semester – II Examination

Course/Paper Name	Course/Paper Code	Credits	Theory/ Practical/Viva			
CORE COURSES			EOSE	CA	Total	Pass Marks
Biomechanics	MPT0323S201T	4	70	30	100	50 % aggregate including continuous assessment marks separately in theory
Physical and Functional Diagnosis II	MPT0323S202T	4	70	30	100	
Legal Issues and Professional Ethics	MPT0323S203T	4	70	30	100	
ELECTIVE COURSES (ANY TWO)						

Exercise Psychology	MPT0323S204T	2	70	30	100	and practical.
Physiotherapy in Oncology	MPT0323S205T	2	70	30	100	
Physiotherapy in Lymphatic Drainage	MPT0323S206T	2	70	30	100	
PRACTICAL COURSES						
Evaluative Clinical Training- II	MPT0323S207P	12	70	30	100	
TOTAL	06 (05 Theory Paper 01 Practical)	28	420	180	600	

Master Of Physiotherapy (MPT) Orthopaedics Marks Distribution of Semester – III Examination

Course/Paper Name	Course/Paper Code	Credits	Theory/ Practical/Viva			
CORE COURSES			EOSE	CA	Total	Pass Marks
Administration Management and ethical issues	MPT0323S301T	4	70	30	100	50 % aggregate including continuous assessment marks separately in theory and practical.
Physiotherapy in General Orthopaedic Condition I	MPT0323S302T	4	70	30	100	
Vertebral disorder Rehabilitation	MPT0323S303T	4	70	30	100	
ELECTIVE COURSES (ANY TWO)						
Basic Life Support	MPT0323S304T	2	70	30	100	
Muscle Energy Techniques	MPT0323S305T	2	70	30	100	
Maitland Techniques	MPT0323S306T	2	70	30	100	
PRACTICAL COURSES						
Evaluative Clinical Training- III	MPT0323S307P	12	70	30	100	
TOTAL	06 (05 Theory Paper 01 Practical)	28	420	180	600	

Master Of Physiotherapy (MPT) Orthopaedics Marks Distribution of Semester – IV Examination

Course/Paper Name	Course/Paper Code	Credits	Theory/ Practical/Viva			
CORE COURSES			EOSE	CA	Total	Pass Marks
Teaching Methodology in Physiotherapy	MPT0323S401T	3	70	30	100	50 % aggregate including continuous assessment marks separately in theory and practical.
Physiotherapy in General Orthopaedic Condition II	MPT0323S402T	3	70	30	100	
Hand Rehabilitation	MPT0323S403T	3	70	30	100	
ELECTIVE COURSES (ANY TWO)						
Intellectual property rights and publication ethics	MPT0323S404T	2	70	30	100	
Scientific Writing	MPT0323S405T	2	70	30	100	
Medical Device Innovation	MPT0323S406T	2	70	30	100	
PRACTICAL COURSES						
Evaluative Clinical Training- IV	MPT0323S407P	12	70	30	100	
Research Dissertation	MPT0323S408P	3	140	60	200	
TOTAL	07 (05 Theory Paper 02 Practical)	28	560	240	800	

15. REVALUATION / SCRUTINY:

Revaluation of answer books is not permissible. Scrutiny of marks in any number of papers/subjects shall be permissible as per University Rules.

16. TEACHING HOURS:

Teaching hours shall be not less than 400 hours in every semester.

17. AWARD OF DEGREE:

The degree shall be awarded by the University only after receipt of Course completion certificate and NO dues from the Head of Institution. (Principal of the college).

18. LETTER GRADES AND GRADE POINTS

LETTER GRADE	GRADE	PERCENTAGE OF MARKS
O (Outstanding)	10	100 %
A+(Excellent)	9	90-99.99 %
A (Very Good)	8	80-89.99 %

B+(Good)	7	70-79.99 %
B (Above Average)	6	60-69.99 %
C(Average)	5	50-59.99 %
F(Fail)	0	0 Less than 50 %
Ab (Absent)	0	0 Absent

19.Grades Qualifying for Pass:

Theory and Practical Examination

- 1. Minimum 5 Grade** in the university examination and **5 Grade** in internal assessment evaluated by the department are required to pass **who fails to obtain 5 Grade shall be declared failed.**
- A student obtaining **Grade F** shall be considered **failed** and will be required to reappear in the examination.
- Letter Grade **Ab (Absent)** will be showing the absent of the candidate in examination and will be required to reappear in the examination.

Continuous Assessment

Internal assessments will be conducted two times in a semester. Internal assessments will consist of departmental examinations, assignments, departmental posting, and evaluations. The objective is to allow students to have hands on experience. It would also help students to develop and formulate the data collection process and data analysis.

End of Semester Evaluation

- Each theory paper examination shall be of 3 hours duration.
- There will be Five papers of theory in Each Semester as following-

20. Credit Weightage Distribution (%)

Item	Credit Weight (%)
1.Internal Assessment	30%
2.University Exam	70%
Total	100%

21. Authority to issue transcript

The Controller of Examination of the University shall be the authority for issuing transcript after receiving the described fee from the candidate.

22. Working Hours/Days

Duration	3 Years (6 Semesters)
Working Days	6 Days in A Week
Working Hours	36 Hours in A Week

23. Distribution of Courses Semester-Wise

Semester	Core Course Component (CCC)	Elective Course Component (ECC)	Practical	Total No. Of Courses/Papers
Semester I	3	2	1	6
Semester II	3	2	1	6
Semester III	3	2	1	6
Semester IV	3	2	2	7
Total	12	8	5	25

24. Distribution of Courses in Each Semester

Sr. No.	Type of Course	Numbers
1	Core Course	3
2	Elective Course	2
Total		05 (Five)

25. Types of Courses in MPT Master of Physiotherapy: -

1. Core Course-course designed under this category aim to cover the basics that a student is expected to imbibe in the discipline of Master of Physiotherapy. A course, which should compulsorily be studied by a candidate as a core requirement is termed as a Core course.

2. Elective Course-it is a course which can be chosen from a pool of courses it is specific or specialized or advanced or supportive to the discipline of Master of Physiotherapy. Students must **CHOOSE ANY TWO COURSE IN EACH SEMSTER** from the pool of course given to that semester.

3. Practical: practical are the courses based upon the content that leads to Knowledge enhancement. They are skill-based and are aimed at providing hands-on-training, competencies, skills, etc

Research Dissertation: Every candidate pursuing an MPT Postgraduate degree course must carry out research on a selected project under the supervision of an assigned supervisor. The outcome of such research work shall be submitted in the form of a dissertation.

The research dissertation aims to train a graduate student in substantial, sustained, independent exercise in research methods and techniques. It includes identifying a problem, formulating a hypothesis, searching and reviewing the literature, getting acquainted with recent advances, designing a research study, collecting data, critically analyzing, comparing results, and drawing conclusions.

1. Dissertation Synopsis:
 - i. Every candidate must prepare a synopsis on a selected topic detailing the proposed dissertation work in the prescribed format. The synopsis must be submitted at the end of the 1st Semester before filling out the End of Semester Examination (EOSE) form or on the dates notified by the University.
 - ii. The synopsis submission process must follow the proper channel, i.e., it should be submitted to the Principal of the College, who will forward it to the Departmental Research Committee (DRC). Before sending it to the University, the Principal of the College must ensure that the Institutional Ethical Committee (IEC), MGUMST, has approved it. The University will register the dissertation topic. Any changes or correction in the dissertation topic or guide shall be made after approval from the DRC.
2. The Supervisor will be only a facilitator, advisor of the concept and responsible in correctly directing the candidate in the methodology, not accountable for the outcome and results.
3. The written text of dissertation shall not be less than 100 pages and shall not exceed 120 pages, excluding references, tables, questionnaires, and other annexures. It should be neatly typed in double line spacing on one side of the paper (A4 size, 8.27" x 11.69") and bound properly.
4. The spiral-bind of dissertation copy will not be accepted. The Guide and Principal of the College must certify the dissertation before submission.
5. Dissertation submission:
 - i. The candidate must prepare four copies of the dissertation duly signed by the candidate and the guide. These copies must be submitted to the Registrar through Principal within three months from the commencement of 4th semester.
 - ii. Late submission of dissertation will incur a late fee as per notification issued by the Principal's Office. Candidates who fail to submit their dissertation on time will not be eligible to fill out the University's End of Semester Examination form (4th Semester)
 - iii. The Principal's Office will send all the four copies of the dissertation to the University Registrar for evaluation process.
6. Research Dissertation Evaluation:

- i. The President of the University will appoint external and internal examiners for evaluation of the research dissertation.
- ii. Each dissertation will be evaluated by a minimum of two examiners- one Internal Examiner and one External Examiner. No examiner will be given more than five dissertations per specialty to maintain quality assessment.
- iii. Submission and Evaluation: - Research Dissertation (Maximum of 5 candidates) will be sent separately to one External Examiner and one Internal Examiner for evaluation. Each examiner will review the dissertation and provide a remark of “Approved” or “Not Approved” based on the evaluation criteria given by university.
- iv. Approval Process: If both examiners approve the dissertation, the candidate becomes eligible to appear at the EOS University Main Examination. If either of the two examiners does not approve the dissertation, it will be sent to the third Examiner (External Examiner) for evaluation. However, if the third examiner still does not approve the dissertation, the candidate is not eligible to fill out the 4th semester examination form. In such a case, the candidate will be required to revise and resubmit the dissertation, as per the comments and feedback provided by the examiners.

Practical cum Viva-Voce Examination for Research Dissertation

The appointed Internal and External examiners for the “Practical Research Dissertation” of MPT (Orthopedics/Neurology/Cardiopulmonary/Sports) in the 4th Semester will give a Practical cum Viva-Voce Examination to evaluate the candidate’s depth of knowledge, logical reasoning, confidence & oral communication skill based on his research dissertation.

7. Passing Criteria and Marks Distribution for Research Dissertation Viva-Voce

- i. A candidate must secure a minimum of 50% marks (i.e. 100 out of 200) to pass the Practical-cum-Viva Voce Examination of the Research Dissertation.
- ii. If a candidate fails in the Theory or Practical University Examination, his dissertation marks will still be carried forward to subsequent examinations.
- iii. Marks distribution for the Practical cum Viva Voce Examination of Research Dissertation will be based on Assessment Format A and B.

Assessment Format (A) for Practical Examination of Research Dissertation (Marks=100)

S.No.	Parameter	Internal (30)	External (70)
1	Layout & Content	5	15
2	Quality of Presentation	5	15
3	Detailed Methodology	10	20
4	Publication Record	10	20

Assessment Format (B) for Viva Voce of Research Dissertation (Marks=100)

S.No.	Parameter	Internal (30)	External (70)
1	Quality of work and Novelty up to the mark?	5	15
2	Are the queries appropriately handled?	10	20
3	Clinical and Social Impact of the Research	10	20

4	Future implication	5	15
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Criteria for recognition of MPT teacher / guide:

- Guide should be Associate Professor and above with MPT Degree and post PG five years teaching experience.
- The guide student ratio should be 1:5

Change of Guide:

In the event of registered guide leaving the college for any reason or in the event of death of guide, guide may be changed with prior permission from the University.

26.Computation of SGPA and CGPA

The UGC recommends the following procedure to compute the Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA):

The SGPA is the ratio of sum of the product of the number of credits with the grade points scored by a student in all the courses taken by a student and the sum of the number of credits of all the

- courses undergone by a student, i.e

$$\text{SGPA (Si)} = \sum(C_i \times G_i) / \sum C_i$$

where C_i is the number of credits of the i th course and G_i is the grade point scored by the student in the i th course.

- The CGPA is also calculated in the same manner taking into account all the courses undergone by a student over all the semesters of a program, i.e.

$$\text{CGPA} = \sum(C_i \times S_i) / \sum C_i$$

where S_i is the SGPA of the semester and C_i is the total number of credits in that semester.

- The SGPA and CGPA shall be rounded off to 2 decimal points and reported in the transcripts.

Illustration of Computation of SGPA and CGPA and Format for Transcripts

- Computation of SGPA and CGPA
Illustration for SGPA

Course	Credit	Grade letter	Grade point	Credit Point (Credit x Grade
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Course 1	3	A	8	$3 \times 8 = 24$
Course 2	4	B+	7	$4 \times 7 = 28$
Course 3	3	B	6	$3 \times 6 = 18$
Course 4	3	O	10	$3 \times 10 = 30$
Course 5	3	C	5	$3 \times 5 = 15$
Course 6	4	B	6	$4 \times 6 = 24$
	20			139

Thus, **SGPA = $139/20 = 6.95$**

Illustration for **CGPA**

Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6
Credit: 20 SGPA: 6.9	Credit: 22 SGPA: 7.8	Credit: 25 SGPA: 5.6	Credit: 26 SGPA: 6.0	Credit: 26 SGPA: 6.3	Credit: 25 SGPA: 8.0

Thus, **CGPA = $20 \times 6.9 + 22 \times 7.8 + 25 \times 5.6 + 26 \times 6.0 + 26 \times 6.3 + 25 \times 8.0$**

$\frac{\quad}{\quad} = 6.73$

Name of the program- Master of Physiotherapy (MPT) Orthopedics

Placement of the course MPT Orthopedics Semester 1

Name of course	Review of Human sciences
Course Code	MPT0323S101T
Course Description	Core Theory
Credit per Semester	4
Hours per Semester	60 hours

Course Learning Outcomes: The student will be able to	
CO1	To comprehend the structure and function of parts of musculoskeletal system in relevance to physiotherapy
CO2	To gain knowledge about the structure and function of parts of nervous system in relevance to physiotherapy
CO3	To understand about the structure and function of parts of cardiothoracic system in relevance to physiotherapy
CO4	To comprehend the knowledge of various dysfunctions of human body

Course Content

Unit 1: Human Anatomy

Outline of general anatomy.

1. Introduction to upper limb & lower limb.
 - a) Bones & Joints
 - b) Muscles.
 - c) Nerves, roots, plexus.
 - d) Pectoral, Axilla, Scapular, Arm, Forearm, Cubital fossa, Hand.
 - e) Vascular structure.
 - f) Thigh, Gluteal region, popliteal fossa.
 - g) Leg, foot.
2. Introduction of thoracic bones & Joints.
3. Introduction of vertebral column.
 - a) Cervical, thoracic, lumbar, sacral spine
 - b) Anatomy of spinal cord.
4. Introduction of Head & Neck:
 - a) Neck: Side of neck; Back of neck; Triangle of neck.
 - b) Temporomandibular joint
6. Introduction of Brain & Spinal Cord
 - a) Meninges, CSF.

- b) Blood supply of brain & spinal cord.
- c) Outline of ventricles.
- d) Outline of brain stem.

Unit II: Human Physiology

1. Cardiovascular system
 - a) Structure & Properties of heart
 - b) Cardiac Cycle
 - c) The regulation of heart's performance.
 - d) Cardiac output.
 - e) The arterial blood pressure
 - f) The physiology of vascular system.
 - g) Lymphatic circulation
2. Respiratory system
 - a) Functional anatomy
 - b) Ventilation & control of ventilation
 - c) Alveolar air
 - d) Regulation of the breathing.
 - e) Pulmonary function test.
3. Nervous system
 - a) Elementary neuroanatomy
 - b) Neurons & Neuroglia
 - c) Properties of nerve fibres, synapse
 - d) Spinal cord
 - e) Cerebral cortex
 - f) Pyramidal & extra-pyramidal system
 - g) The cerebellum
 - h) Automatic nervous systems
 - i) Cerebrospinal fluid
 - j) Cranial nerves.

Name of the program- Master of Physiotherapy (MPT) Orthopedics

Placement of the course MPT Orthopedics Semester 1

Name of course	Physical and Functional Diagnosis I
Course Code	MPT0323S102T
Course Description	Core Theory
Credit per Semester	4
Hours per Semester	60 hours

Course learning Outcomes: The student will be able to	
CO1	Understand Evaluation, assessment, and treatment planning strategies for musculoskeletal, neurological, cardiopulmonary conditions
CO2	Understand the concepts of health status impairment; functional limitations; disability and handicap; definition of functional activity and the purposes and components of the functional assessment
CO3	Various forms of functional tests; physical function test and multi-dimensional functional assessment instrument, identification of instrument for testing functional assessment.
CO4	Clinical Decision Making – Planning Effective Treatment. Clinical decision-making models, Team approach, Foundation for clinical decision making
CO5	Vital Signs. Identification of reasons for monitoring vital signs; importance of monitoring vital signs; common techniques of monitoring vital signs; identification and analysis of normal values with that of abnormal values.

Course Content

1. Clinical Decision Making - Planning Effective Treatment. Collection and documentation of data, Analysis of data and identifying the problems, setting goals, Formulation and implementation of treatment plan including evaluation of treatment outcome, Clinical decision-making models, Foundation for clinical decision making
2. Review of General assessment – patients' history, observation, palpation, examination
3. Vital Signs. Identification of reasons for monitoring vital signs; importance of monitoring vital signs; common techniques of monitoring vital signs; identification and analysis of normal values with that of abnormal values.
4. Pain assessment and scales for evaluation in acute and chronic pain

5. Anthropometric and other measurements. Limb Length, Girth Measurement, ROM, tone, Muscle length.
6. Evaluation Methods, Special tests used in Musculoskeletal, Neurological and Cardiopulmonary disorders.
7. Reflex testing
8. Postural assessment methods and common deviations from the normal
9. Gait Analysis. Overview of normal gait analysis: kinetic and kinematic analysis; the reliability and validity of gait analysis; Description of some of the most commonly used types of observational gait analysis; Advantages and disadvantages of kinematic qualitative and kinematic quantitative gait analysis.
10. Gait Training. Pre ambulation program; assistive devices and gait patterns.
11. Evaluation and management of amputee; overview of amputation surgery which includes concepts, pre operative, post operative, pre fitting, post fitting physiotherapy. Prosthetic assessment and management: Prosthetic assessment including dynamic and static checkouts, components with recent advancements and management.
12. Orthotic Evaluation and Management. Types of orthoses; footwear modifications; lower limb orthoses, components.
13. Spinal Orthosis: Types and components; Physiotherapy management including orthotic gait analysis and gait training.
14. Wheel Chair: Components of wheel chair; assessment of wheel chair; measurement for wheel chair; features of sports wheel chair.
15. Bio-feedback: Principles of bio-feedback in physiotherapy; limitations electromyographic feedback for motor relearning: Equipment and technical specifications. Kinematic feedback: Standing feedback; kinetic feedback; New concepts of bio-feedback.

Name of the program- Master of Physiotherapy (MPT) Orthopedics

Placement of the course MPT Orthopedics Semester 1

Name of course	Research Methodology
Course Code	MPT0323S103T
Course Description	Core Theory
Credit per Semester	4
Hours per Semester	60 hours

Course Learning Outcomes: The student will be able to	
CO1	To understand the steps in Physiotherapy research process
CO2	To acquire skills of reviewing literature
CO3	To formulate a hypothesis
CO4	To develop a research proposal and collect data

Course Content

Introduction

1. Terminology in research, Ethical issues in research, Research process
2. Review of literature.
 - Importance, sources & steps in reviewing the literature.
3. Research design
 - Type of research – qualitative & quantitative.
 - Experimental & non experimental, survey – advantages & disadvantages
4. Research process
 - Research question, Aim & objectives, Assumptions, Limitations & Delimitations, Variables
 - Hypothesis – formation & testing.
5. Sampling
 - Sampling technique
 - Population, sample,
 - Sample size & determination
 - Sampling methods

- Sampling error
6. Data collection and analysis
 - Data sources, technique of data collection, tools
 - Reliability & validity
 - Process of data collection
 - Pilot study-method, need
 7. Interpretation & presentation of data
 - Quantitative & qualitative analysis
 - Graphical representation of data
 - Conclusion & discussion
 8. Writing a dissertation, research paper
 9. Critical appraisal of research
 10. Presentation and Publication of research – Steps and process.

Name of the program- Master of Physiotherapy (MPT) Orthopedics

Placement of the course MPT Orthopedics Semester 1

Name of the Course	Biostatistics
Course Description	Elective
Course Code	MPT0323S104T
Credit per Semester	2
Hours per Semester	30 hours

Course learning Outcomes: The student will be able to	
CO1	Develop the ability to apply the methods while working on a research project work
CO2	Describe the appropriate statistical methods required for a particular research design
CO3	Choose the appropriate research design and develop appropriate research hypothesis for a research project
CO4	Develop appropriate framework for research studies
CO5	Demonstrate a good understanding of measures of correlations

Course Content

BIOSTATISTICS

1. Biostatistics

- Introduction
- Definition
- Types
- Application in Physiotherapy

2. Data

- Definition
- Types
- Presentation
- Collection methods

3. Measures of central value

- Arithmetic, mean, median, mode. Relationship between them
- Graphical determination

4. Measures of Dispersion

- Range
- Mean Deviation
- Standard Deviation

5. Normal Distribution Curve

- Properties of normal distribution
- Standard normal distribution
- Transformation of normal random variables.

6. Correlation analysis

- Bivariate distribution
- Scatter Diagram
- Coefficient of correlation
- Calculation & interpretation of correlation coefficient
- T-test, Z-test, P-value

7. Regression analysis

- Lines of regression
- Calculation of Regression coefficient

8. Sampling

- Methods of Sampling
- Sampling distribution
- Standard error
- Types I & II error

9. Probability (in Brief)

10. Hypothesis Testing

- Null Hypothesis
- Alternative hypothesis
- Acceptance & rejection of null Hypothesis
- Level of significance

11. Parametric & non parametric tests

- Chi square test
- Mann-Whitney U test
- Wilcoxon Signed test
- Kruskal-Wallis's test
- Friedman's test
- T-test/student T test
- Analysis of variance

Name of the program- Master of Physiotherapy (MPT) Orthopedics

Placement of the course MPT Orthopedics Semester 1

Name of the Course	Constitution of India
Course Description	Elective
Course Code	MPT0323S105T
Credit per Semester	2
Hours per Semester	30 hours

Course Learning Outcomes: The student will be able to	
CO1	To understand the making of constitution
CO2	To understand fundamental rights and duties of citizen
CO3	To learn about sustainable development in India

Course Content

- Meaning of the term 'Constitution'. Making of the Indian Constitution 1946- 1950.
- The democratic institutions created by the constitution bicameral system of Legislature at the Centre and in the States.
- Fundamental Rights and Duties their content and significance.
- Directive Principles of States Policies the need to balance Fundamental Rights with Directive Principles.
- Special Rights created in the Constitution for: Dalits, Backwards, Women and Children and the Religious and Linguistic Minorities.
- Doctrine of Separation of Powers legislative, Executive and Judicial and their functioning in India.
- The Election Commission and State Public Service commissions.
- Method of amending the Constitution.
- Enforcing rights through Writs:
- Constitution and Sustainable Development in India

Name of the program- Master of Physiotherapy (MPT) Orthopedics

Placement of the course MPT Orthopedics Semester 1

Name of the Course	Diagnostic Radiology
Course Description	Elective
Course Code	MPT0323S106T
Credit per Semester	2
Hours per Semester	30 hours

Course Learning Outcomes: The student will be able to	
CO1	Describe various modalities in the field of radiology and applications in the management of patients.
CO2	Outline findings of MRI, CT scans and correlate the findings to functional impairments
CO3	identify abnormalities in radiographs

Course Content

Unit-I-Radiological studies in musculoskeletal, neurological, cardiovascular and respiratory conditions.

Unit-II-Basic principles of X-rays, instrumentation, observations related to musculoskeletal, neurological and cardiovascular and respiratory conditions

Unit-III-Ultrasonography- Principles, instrumentation, observations in vascular disorders, gynaecological conditions, recent advances in musculoskeletal ultrasonograph.

Unit-IV-CT scan and MRI- Principles, instrumentation and observations related to musculoskeletal, neurological, and cardiovascular and respiratory conditions.

Unit-V-Interventional Radiology

Unit-VI-Practical: Observation and interpretation of radiological investigations related to musculoskeletal, neurological, and cardiovascular and respiratory conditions.

Name of the program- Master of Physiotherapy (MPT) Orthopedics

Placement of the course MPT Orthopedics Semester 1

Name of course	Evaluative Clinical Training- I
Course Code	MPT0323S107P
Course Description	Practical
Credit per Semester	12
Hours per Semester	360 hours

Course Learning Outcomes: The student will be able to	
CO1	To interpret and differentiate between various diagnostic tools used for therapeutic plan, take history and condition of patients.
CO2	To acquire knowledge of all the physiotherapeutic interventions pertaining to the patients.
CO3	To evaluate and plan physiotherapeutic treatment; its presentation and documentation of all the conditions

Course Content

- Long case assessment & Short case assessment including application of Physiotherapy techniques in the Treatment of all conditions studied in Semester 1 MPT first year
- Mode
 - Long case & short case assessment
 - Demonstration, Investigations & Viva
 - Practical record book (record of 4 Case report/presentation)
 - Record of Seminar Presentation (4 seminar presentation)
- Examiner 02 (One internal and one external from the panel of examiners from university.
- Practical Examination- Based on Viva- Long case & short case assessment, Practical Record book of Case presentation and Record of Seminar Presentation.

Name of the program- Master of Physiotherapy (MPT) Orthopedics

Placement of the course MPT Orthopedic Semester 2

Name of the Course	Biomechanics
Course Description	Core Theory
Course Code	MPT0323S201T
Credit per Semester	4
Hours per Semester	60 hours

Course learning Outcomes: The student will be able to	
CO1	To understand principles of biomechanics and theories of movements control and loading.
CO2	To understand the role of muscles activity for performing movement with its applied anatomy.
CO3	To be able to integrate and apply the above to analyses movement problems encountered. To evaluate the gait pattern and posture.
CO4	To understand the basic methodology of movement analysis and biomechanics of individual joints.
CO5	To understand the kinetics and kinematics of all joints of human body.

Course Content

Biomechanics

1. Kinematics

Types of motion (accessory and joint play of axial and peripheral skeletal) Location of motion (instantaneous axis of movement, shifting axis of movement)

- a) Magnitude of motion (factors determining it)
- b) Direction of motion
- c) Angular motion and its various parameters
- d) Linear motion and its various parameters

2.Kinetics

- a) Definition of forces
- b) Force vectors (composition, resolution, magnitude)
- c) Naming of Force (gravity and anti-gravity force, GRF (Ground reaction Force of gravity and Centre of Gravity
- d) Stability
- e) Reaction forces
- f) Equilibrium & Balance

- g) Linear forces system
- h) Friction and its various parameters
- i) Parallel force systems
- j) Concurrent force systems
- k) Work power and energy
- l) Moment arms of force & its application
- m) Force components
- n) Equilibrium of force

3 Mechanical energy, work, and power

- a) Definitions
- b) Positive and Negative work of muscles
- c) Muscle mechanical power
- d) Causes of inefficient movement
 - Co-contractions
 - Isometric contraction against gravity jerky movement
 - Energy generation at one joint and absorption at another
 - Energy flow and Energy system used by the body
 - Energy storage

4. Muscle Mechanics

Structure and composition of muscle. Physiology of musculoskeletal systems Fiber length and cross section area

- a) Mechanical properties of various muscles.
- b) EMG changes during fatigue and contraction.
- c) Changes in mechanical and physiological properties because of ageing, exercise and immobilization, dystrophies and pathological conditions

5. Ligament & Tendon mechanics

- a) Structure and composition
- b) Mechanical properties and physiological properties.
- c) Cross sectional area measurements
- d) Muscle tendon properties
- e) Temperature sensitivity
- f) Changes in physical and mechanical properties because of aging, exercise and Immobilization and position Mechanoreceptors, its types, distribution with respect to joint, structure and function.
- g) Clinical applications.

6. Joint mechanics

- a) Joint design
- b) Joint categories
- c) Joint function
 - Arthrokinematics
 - Osteokinematics
 - Kinematic chains Open & Closed

Joint forces, equilibrium and distribution of these forces

Degenerative changes in weight bearing joints and compensatory actions

Joint stability and its mechanics

Clinical applications

7. Kinematics and Kinetics Concepts of following joints

- a) Upper Extremity:

- Scapulo-shoulder Joint
 - Elbow Joint
 - Wrist Joint & Hand
- b) Lower Extremity:
- Hip & pelvis
 - Knee joint
 - Patello femoral joint
 - Ankle and foot

8 Biomechanics of vertebral column

9 Posture:

- a) Anatomical aspects of posture
- b) Types of Posture
- c) Assessment of Posture
- d) Factors affecting posture
- e) Postural deviation

10. Gait

- a) Normal Gait and its determinants
- b) Gait parameter
 - Kinetic
 - Kinematics
 - Time-Space

Pathological gait with emphasis on polio, cerebral palsy, dystrophies, hemi paresis, Para paresis

- c) Running
- d) Stair climbing
- e) Changes in gait following various surgeries/ diseases/ disorders.
 - Basic wheelchair skills and assessment training.
 - Transfer skill training

Name of the program- Master of Physiotherapy (MPT) Orthopedics

Placement of the course MPT Orthopedics Semester 2

Name of the Course	Physical Functional and Diagnosis II
Course Description	Core Theory
Course Code	MPT0323S202T
Credit per Semester	4
Hours per Semester	60 hours

Course Learning Outcomes: The student will be able to	
CO1	To Perform thorough physiotherapy assessment & list deficiencies
CO2	To design individualized goal for the patients
CO3	To rationalize the outcome of the assessment
CO4	To document systematic, meaningful, accurate written records of the patient

Course Content

1 Sensory evaluation and assessment: Purposes of sensory evaluation and assessment;

2 Classification and function: -Of receptor mechanisms, involving the perception of sensation; identification of spinal pathways that mediate sensation; guidelines for completing sensory evaluation; description for testing protocol for assessment of each sensory modality. Cranial nerve testing

3 Assessment of higher mental functions

- **Coordination evaluation and assessment: Purpose;** common coordination defects associated with lesions of cerebellum, basal ganglia and dorsal columns. Testing procedures. Non-equilibrium coordination test; equilibrium coordination tests.
- Assessment of cognitive, perceptual dysfunctions and vestibular dysfunction.
- Neuro developmental screening, motor learning. Motor assessment, Balance assessment and scales for assessment. Balance Outcome measures and their administration.

4.Motor control assessment: Purposes and components, identification description of CNS controls mechanism associated with motor control mechanism, description of motor control defects with specific procedures and tests used to assess motor control defects, the factors which influences the result of motor control assessment.

5 Functional evaluation: The concepts of health status impairment; functional limitations ;disability and handicap; definition of functional activity and the purposes and components of the functional assessment; selection of activity and roles for an individual based on his or her capabilities and functional limitations, various forms of functional tests; physical test and multi-dimensional functional assessment instrument, identification of Instrument for testing function; various scoring methods used in functional assessment.

6 Reliability and validity of various functional assessments, Physical Disability evaluation Function in detail. ICF classification

- Pulmonary function tests.
- Methods of Kinetic and kinematic investigation for joints.
- Physical fitness assessment. - Agility, speed, flexibility, endurance, strength.
- Evaluation of aging
- Auscultation.
- ECG, Echo cardiography
- cardiac catheterization, Radionuclide scanning, stress testing, ABG, Labs, Holter monitoring etc. CT scan, MRI, NCV, EMG

Name of the program- Master of Physiotherapy (MPT) Orthopedics

Placement of the course MPT Orthopedics Semester 2

Name of the Course	Legal Issues and Professional Ethics
Course Description	Core Theory
Course Code	MPT0323S203T
Credit per Semester	4
Hours per Semester	60 hours

Course Learning Outcomes: The student will be able to	
CO1	To provide the basis for participation in clinical risk management, risk management and patient safety committees and for further training as a risk / patient safety
CO2	To ensure improvement of patient safety and care, to the prevention and management of legal claims and to healthcare delivery in general

Course Content

1 Healthcare Delivery System in India

- Healthcare delivery system in India at Primary, Secondary and Tertiary level
- Community participation in healthcare delivery system
- Health system in Private Sector
- National Health Mission
- National Health Policy
- National Five-year plans
- Issues in Health Care Delivery System in India

2 Professional Issues

- Registration and the Role of the Statutory Bodies (WCPT, State Council, IAP)
- Professional Conduct and Ethics
- Education and the Physiotherapist

3 Patient-Centered Care

- Rights of Patients
- Consent and Information Giving
- Confidentiality and Privacy
- Access to Records and Information

4 Professional Accountability

- Direction and supervision

- Liability, Negligence, Malpractice

5 Legal Framework

- Definition and approach to Medicolegal case
- Medical Litigation Issues: Plaintiff and Defendant perspectives
- Professional Indemnity for Physiotherapy Practitioners

Name of the program- Master of Physiotherapy (MPT) Orthopedics

Placement of the course MPT Orthopedics Semester 2

Name of course	Exercise Psychology
Course Code	MPT0323S204T
Course Description	Elective
Credit per Semester	2
Hours per Semester	30 Hours

Course Learning Outcomes: The student will be able to	
CO 1	Discuss psychological aspects concerned with promotion of physical activity and exercise; psychological and emotional benefits linked with physical activity, exercise and sport and consequences of lack of exercise on behaviour, interpersonal skills and mental wellbeing, discuss how psychological factors that influence exercise behaviour.
CO 2	Describe factors influencing and serving as barriers to sustaining positive health behaviour - self-esteem, depression, body image, anxiety, motivation, social support, and perceived control influence exercise behaviour.

Course Content

- Introduction to exercise psychology
- Psychological issues affecting performance: anxiety, depression, self-esteem, motivation, body image
- Barriers and facilitators for adherence to positive health behavior: social factors, cultural factors
- Group dynamics
- Psychological skills training – relaxation, yoga, positive reinforcement, mental imagery

Name of the program- Master of Physiotherapy (MPT) Orthopedics

Placement of the course MPT Orthopedics Semester 2

Name of course	Physiotherapy in Oncology
Course Code	MPT0323S205T
Course Description	Elective
Credit per Semester	2
Hours per Semester	30 hours

Course Learning Outcomes: The student will be able to	
CO1	Understand the basics of all cancer disease affecting the community
CO2	Learn and practice rehabilitation techniques in different cancerous condition

Course Content

- Cancer – Pathophysiology, Medical and surgical management, Staging of cancer, various investigations, and tumor markers.
- Foundation of oncology rehabilitation
- Head and neck cancer rehabilitation
- Breast cancer – surgeries, management, and complications
- Post operative care for oncology patients
- Physiotherapy management of shoulder and scapulothoracic dysfunction in the breast cancer population
- Pelvic, GI and digestive system cancer rehabilitation
- Chemo induced cognitive impairment
- Chemotoxicity and cancer exercise management

Name of the program- Master of Physiotherapy (MPT) Orthopedics

Placement of the course MPT Orthopedics Semester 2

Name of course	Physiotherapy in Lymphatic Drainage
Course Code	MPT0323S206T
Course Description	Elective
Credit per Semester	2
Hours per Semester	30 hours

Course Learning Outcomes: The student will be able to	
CO1	Understand the signs and symptoms and clinical features of lymphedema
CO2	Learn and practice lymphatic drainage exercises, bandaging compression therapy to treat lymphedema

Course Content

- Lymphatic system – Anatomy and Physiology
- Primary Lymphatic disorders – Pathophysiology, medical and surgical management.
- Secondary Lymphatic disorders – Pathophysiology, medical and surgical management
- Factors that lead to edema/lymphedema formation
- Lymphedema management - Compression bandages and garments, Skin care, Lymphatic drainage exercises, Specialized massage techniques
- Decongestive Lymphatic Therapy (DLT) - Compression bandages and garments, Skin care and Manual Lymphatic drainage techniques
- Chronic edema of Lower Limb (COLL)
- Physiotherapy management of lymphedema
- Home programme for lymphedema

Name of the program- Master of Physiotherapy (MPT) Orthopedics

Placement of the course MPT Orthopedics Semester 2

Name of the Program	Master of Physiotherapy (MPT)
Name of course	Evaluative Clinical Training- II
Course Code	MPT0323S207P
Course Description	Practical
Credit per Semester	12
Hours per Semester	360 hours

Course Learning Outcomes: The student will be able to	
CO1	To interpret and differentiate between various diagnostic tools used for therapeutic plan, take history and condition of patients.
CO2	To acquire knowledge of all the physiotherapeutic interventions pertaining to the patients.
CO3	To evaluate and plan physiotherapeutic treatment; its presentation and documentation of all the conditions

Course Content

- Long case assessment & Short case assessment including application of Physiotherapy techniques in the Treatment of all conditions studied in Semester 2 MPT first year
- Mode
 - Long case & short case assessment
 - Demonstration, Investigations & Viva
 - Practical record book (record of 4 Case report/presentation)
 - Record of Seminar Presentation (4 seminar presentation)
- Examiner 02 (One internal and one external from the panel of examiners from university.
- Practical Examination- Based on Viva- Long case & short case assessment, Practical Record book of Case presentation and Record of Seminar Presentation.

Name of the program-Master of Physiotherapy (MPT) Orthopedics

Placement of the course MPT Orthopedics Semester 3

Name of course	Administration Management and Ethical Issues
Course Code	MPT0323S301T
Course Description	Core Theory
Credit per Semester	4
Hours per Semester	60 hours

Course Learning Outcomes: The student will be able to	
CO1	To understand the basic issues of management and administration
CO2	To practice as an informed professionals on legal and ethical issues
CO3	To comprehend the skills in physiotherapy ethics
CO4	To acquire adequate knowledge about clinical administration

Course Content

Management:

1. Introduction

- Evolution of management
- Functions of management
- Management process – planning, organization, direction, controlling decision making

2. Personnel management:

- Staffing
- Recruitment selection
- Performance appraisal
- Collective bargaining
- Job satisfaction

3. Marketing:

- Market segmentation
- Channels of distribution
- Promotion
- Consumer behavior

4. Physical Therapy & Law

- Medicolegal aspect of physical therapy, liability, negligence eco practice licensure, workmen compensation. Maintaining the medical Register.

5. Physiotherapy Department Management

- Policies and procedures.
- Recruitment, interview, probation, salary, hours of working, leave facilities, retirement, referred policy.
- Maintenance of records, equipment's, statistics.
- Planning, design construction, expansion plan.

Name of the program- Master of Physiotherapy (MPT) Orthopedics

Placement of the course MPT Orthopedics Semester 3

Name of course	Physiotherapy in General Orthopedics Condition I
Course Code	MPT0323S302T
Course Description	Core Theory
Credit per Semester	4
Hours per Semester	60 hours

Course Learning Outcomes: The student will be able to	
CO1	Analyze effects, advantages disadvantages of various strengthening exercise and manipulative skills
CO2	To formulate rationalized treatment plan and should know how to implement physiotherapy treatment in various orthopedics condition
CO3	To evaluate and make clinical assessment of general orthopedics conditions
CO4	To understand the surgical management of fractures and joint replacements, ligament injuries

Course Content

Unit I: General Orthopedics

1. Methods of diagnosis
2. Infections in bones and joints
3. Rheumatic disorders.
4. Generalized affections of bone and joints (metabolic & endocrinal).
5. Developmental disorders. (Cartilaginous dysplasia, bony dysplasia's disorders & Chromosomal abnormalities etc.)
6. Congenital disorders.
7. Degenerative disorders.
8. Tumors of bones.
9. Osteonecrosis and Osteochondritis

Unit II: Regional Orthopedics

Bony & soft tissue disorders of: -

1. Shoulder and arm
2. Elbow and forearm
3. Wrist
4. Hip and thigh
5. Knee and leg.
6. Ankle and foot.

Unit III – Traumatology

1. Incidence, etiology, clinical features, complications, assessment, investigations and physiotherapy management of the following: -

- a) Fractures and dislocations of upper limb.
- b) Fractures and dislocations of lower limb.
- c) Fractures and dislocations of pelvis.
- d) Stress fractures.
- e) Burns

Name of the program- Master of Physiotherapy (MPT) Orthopedics

Placement of the course MPT Orthopedics Semester 3

Name of course	Vertebral disorder Rehabilitation
Course Code	MPT0323S303T
Course Description	Core Theory
Credit per Semester	4
Hours per Semester	60 hours

Course Learning Outcomes: The student will be able to	
CO1	Understand the mechanism of pain and dysfunction
CO2	Formulate clinical decision-making skills to assess and manage all vertebral disorders
CO3	Know evidence-based practice and advances in clinical practice
CO4	Use clinical based knowledge, appropriate physiotherapy techniques and methods to ensure continuous improvement for patient

Course Content

Unit I:

Review of anatomy and biomechanics of vertebral column.
Advance technique like Mait land, Cyriax, PNF etc. apply according to the necessary cases.
Classification, pathophysiology, causes, clinical features, complication examinations,
Management, physiotherapy treatment

Unit II:

Congenital disorders of vertebral column & vertebral deformities.

Unit III:

Inflammatory disorders of vertebrae, vertebral joints, soft tissues.

Unit IV:

Disease of the vertebral joints, segmental instability.

Unit V:

Disorders of structural changes, changes of alignment of bone, joint of vertebral column

Unit VI:

Low Back pain, pain in vertebral column & program stiffness disorders.

Regional

1. Cervical 2. Lumbar 3. Thoracic 4 Sacral, etc.

Unit VII:

1. Soft tissue injuries, tightness, structural changes.
2. Bone injuries (fractures & dislocation of spine)
3. Pelvic injuries.

Unit VIII:

Spinal cord injuries

1. Types, classification.
2. Pathology
3. Level
4. Examination.
5. Management & rehabilitation
6. Orthopaedic surgeries.
7. Bio engineering appliances & support devices.
8. Pre &post- operative rehabilitation

Name of the program- Master of Physiotherapy (MPT) Orthopedics

Placement of the course MPT Orthopedics Semester 3

Name of the Course	Basic Life Support
Course Description	Elective
Course Code	MPT0323S304T
Credit per Semester	2
Hours per Semester	30 hours

Course Learning Outcomes: The student will be able to	
CO1	To describe the importance of high-quality CPR and its impact on survival
CO2	To Describe all steps of chain of survival
CO3	To apply BLS concepts of chain of survival
CO4	To Recognize signs of someone needing CPR

Course Content

1 Course Introduction

2 Adult BLS, Adult chain of survival Scene safety and assessment adult compressions, AED, and Bag Mask Device

3 Successful Resuscitation teams

4 Infant and Child BLS, Pediatric chain of survival, AED for Infants, and children less than 8 years age 6, Special considerations: Mouth to mouth breaths Breath with an advanced airway Opioid associated life- threatening emergency

5 Adult, infant and child choking Relief of choking in a responsive adult or child Relief of choking in an unresponsive adult or child

6 Practical demonstration of CPR, AED in adults and pediatric patients

Name of the program- Master of Physiotherapy (MPT) Orthopedics

Placement of the course MPT Orthopedics Semester 3

Name of course	Muscle Energy Techniques
Course Code	MPT0323S305T
Course Description	Elective
Credit per Semester	2
Hours per Semester	45 hours

Course learning Outcomes: The student will be able to	
CO 1	Acquire knowledge and practical experience necessary to identify, assess and treat specific dysfunction within the Musculo-skeletal framework and perform a variety of Muscle Energy Techniques that will help restore function.
CO 2	Learn to identify specific soft tissue dysfunction and weakness within Musculo skeletal system
CO 3	Recognize components of Muscle Energy Technique (MET)

Course Content.

- 1** Introduction to Muscle Energy Technique
- 2** How to use MET
- 3** Sequential Assessment and MET treatment of main postural muscles
- 4** MET and treatment of joints
- 5** Muscle Energy Techniques in cases of spinal injury or pathology
- 6** Manual resistance techniques in rehabilitation
- 7** MET in post –surgical rehabilitation
- 8** MET in physical therapy setting
- 9** MET in treatment of athletic injuries
- 10** Integrated neuromuscular technique and myofasical pain

Name of the program- Master of Physiotherapy (MPT) Orthopedics

Placement of the course MPT Orthopedics Semester 3

Name of course	Maitland Technique
Course Code	MPT0323S306T
Course Description	Elective
Credit per Semester	2
Hours per Semester	45 hours

Course Outcomes Students will be able to	
CO 1	Learn the Maitland techniques, conditions that they treat, and how to incorporate them into clinical practice
CO 2	The students should focus on effective assessment and treatment of musculoskeletal disorders of the Upper and Lower Limbs. The student should have knowledge about Maitland Principles
CO 3	Learn the art of performing treatment technique means to know how and when to use which technique

Course Content:

1 Introduction

Manipulation, Mobilization, Techniques, Examination and Assessment

2 Communication

3 Assessment

4 Prognosis

Diagnosis, Effect of treatment on prognosis, predisposing factor which influence prognosis, international classification of impairments, disabilities, and handicaps (ICIDH).

5 Examinations

- Subjective Information
- History
- Physical Examination
 - Subjective Examination
 - Radio diagnosis

6 Principles of technique

- Release pain
- Latent pain response
- Treating muscle spasm
- Treating end range of motion

- Manipulation

7 Selection of technique

- The manner of the technique
- Duration of Treatment
- Selection (related to diagnosis and presenting symptoms)
- Mechanical Blocking
- Progression

8 Application of techniques

- Treatment Assessment
- Depth of mobilization
- Duration and frequency of treatment
- Mobilization v manipulation
- Movement Pattern
- Contraindication
- Recording

9 Application of technique on Cervical, Thoracic, Lumbar spine, sacroiliac joint, symphysis pubic, sacrococcygeal and intercoccygeal regions.

Name of the program- Master of Physiotherapy (MPT) Orthopedics

Placement of the course MPT Orthopedics Semester 3

Name of course	Evaluative Clinical Training- III
Course Code	MPT0323S307P
Course Description	Practical
Credit per Semester	12
Hours per Semester	360 hours

Course Learning Outcomes: The student will be able to	
CO1	To interpret and differentiate between various diagnostic tools used for therapeutic plan, take history and condition of patients.
CO2	To acquire knowledge of all the physiotherapeutic interventions pertaining to the patients.
CO3	To evaluate and plan physiotherapeutic treatment; its presentation and documentation of all the conditions

Course Content

- Long case assessment & Short case assessment including application of Physiotherapy techniques in the Treatment of all conditions studied in Semester 3 MPT second year
- Mode
 - Long case & short case assessment
 - Demonstration, Investigations & Viva
 - Practical record book (record of 4 Case report/presentation)
 - Record of Seminar Presentation (4 seminar presentation)
- Examiner 02 (One internal and one external from the panel of examiners from university.
- Practical Examination- Based on Viva- Long case & short case assessment, Practical Record book of Case presentation and Record of Seminar Presentation.

Name of the program- Master of Physiotherapy (MPT) Orthopedics

Placement of the course MPT Orthopedics Semester 4

Name of the Course	Teaching Methodology in Physiotherapy
Course Code	MPT0323S401T
Course Description	Theory
Credit per Semester	3
Hours per Semester	45 hours

Course learning Outcomes: The student will be able to	
CO1	Acquire the knowledge of concepts of Educational Objectives, various methods of teaching & learning, various evaluation methods & Principles of curriculum planning.
CO2	Acquire the skill in communication, teaching skills in classroom, laboratory & clinical teaching including bed-side teaching
CO3	To acquire managerial & Management skills in Planning, implementation, and administration in clinical practice & academic activities.
CO4	Identify and address the issues related to the organization and administration of the physiotherapy department.

Course Content

1. Physiotherapy Education Technology

Aims, philosophy and trends and issues: -

- a) educational aims.
 - b) Agencies of education.
 - c) Formal and informal education
 - d) Major philosophies of education (naturalism, idealism, profanation, realism).
- Physiotherapy of education in India (past, present and future) current issues and trends in educations.

2. Concepts of teaching and learning.

- a) Theories of teaching
- b) Relationship between teaching and learning.
- c) Psychology of education.
- d) Dynamics of behavior, motivational process of learning perception, individual differences, intelligence personality.

3. Curriculum:

- a) Curriculum committee.
- b) Development of a curriculum for physiotherapy.
- c) Types of curriculums
- d) Placing, courses placement, time allotment.
- e) Correlation of theory and practice.
- f) Hospital and community areas for clinical instructions.
- g) Clinical assignments.

4. Principles and methods of teaching:

- a) Strategies of teaching.
- b) Planning of teaching.
- c) Organization, writing lesson plan.
- d) A.V. aids.
- e) Teaching methods – socialized teaching methods.

5. Measurement and evaluation.

- a) Natures of measurement of Educations, meaning, process personnel standardized.
Non standardized.
- b) Standardized tools, important tests of intelligences, aptitude, instrument, personality, achievements, and status scale.
- c) Program evaluation
- d) Cumulative evaluation

6. Guidance and counseling:

- A Philosophy, principles and concepts, guidance, and counselling services
- b) Faculty development and development of personnel for physiotherapy services

Name of the program- Master of Physiotherapy (MPT) Orthopedics

Placement of the course MPT Orthopedics Semester 4

Name of course	Physiotherapy in General Orthopedic Condition II
Course Code	MPT0323S402T
Course Description	Theory
Credit per Semester	3
Hours per Semester	60 hours

Course learning Outcomes: The student will be able to	
CO1	To know evidence-based practice and advances in clinical reasoning
CO2	To have knowledge of basic sciences pertaining to musculoskeletal system with sound clinical reasoning
CO3	To evaluate and make clinical assessment of general orthopaedics condition
CO4	To have detailed knowledge of musculoskeletal injury rehabilitation

Course Content

Unit I Management & Rehabilitation of: -

- a) Fractures and dislocations of upper limb.
- b) Fractures and dislocations of lower limb.
- c) Fractures and dislocations of pelvis
- d) Stress fractures

Unit II: Some Common Orthopedic surgeries

Methodology of different types of some common 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.

Unit III: Amputation

- 1. Types, Levels and procedures.
- 2. Pre and postoperative rehabilitation.
- 3. Prosthesis and stump care

Unit V: Vascular and Neural Injuries and Disorders with physiotherapy management

1. Thoracic outlet/ inlet syndrome.
2. Volkmann's ischaemic contractures.
3. Compartment syndrome.
4. Neuropathies.
5. Peripheral nerve injuries.

Unit VI: Miscellaneous with physiotherapy management

Leprosy, cerebral palsy, poliomyelitis, principles of geriatric rehabilitation and some Common conditions of geriatric patients.

Unit VII: Bioengineering

Orthosis and splints: Their types, applications, care & uses

Name of the program- Master of Physiotherapy (MPT) Orthopedics

Placement of the course MPT Orthopedics Semester 4

Name of course	Hand Rehabilitation
Course Code	MPT0323S403T
Course Description	Theory
Credit per Semester	3
Hours per Semester	60 hours

Course learning Outcomes: The student will be able to	
CO1	Assess and cover Hand Anatomy and Commonly Treated conditions and use physiotherapy I therapy methods in the assessment and treatment of hand injuries
CO2	Demonstrate an individualized evaluation, physical assessment and hand manual therapy.
CO3	Plan different exercises methods for treating hand injuries.
CO4	Discuss the latest evidence on non-surgical treatment of hand injuries.

Course Content

Unit I

Functions of hand as motor and sensory organ with advanced bio and patho -mechanics of hand. Classification of hand injuries and principles of hand Rehabilitation (Functional and Vocational Training).

Unit II

1. Tendon injuries
 2. Nerve injuries
 3. Crush injuries
- a) Incision and their effects on later rehabilitation, fractures, joint injuries and correction of Deformities.

Unit III

1. Burns
2. Spastic hand
3. Rheumatoid hand

4. Hand in Hansen's disease
5. Reflex sympathetic dystrophy

Unit IV

1. Phantom hand pain
2. Prosthetic hand
3. Orthosis of hand and their uses.

Name of the program- Master of Physiotherapy (MPT) Orthopedics

Placement of the course MPT Orthopedics Semester 4

Name of the Course	Intellectual property rights and publication ethics
Course Description	Elective
Course Code	MPT0323S404T
Credit per Semester	2
Hours per Semester	30 hours

Course Learning Outcomes: The student will be able to	
CO1	Describe types of intellectual property, copyrights, patent, laws and rights based on intellectual property,
CO2	Apply ethics of publication in journals, different methods of misconduct carried out during

Course Content

- 1 Introduction to Intellectual property rights
- 2 Patents and Trademarks
- 3 Copyright and related laws
- 4 Introduction to Publication ethics – Aim and Scope
- 5 Categories of publication / scientific misconduct – Falsification, Fabrication of data, Plagiarism, Unjustified authorship, Duplicate publication, Redundant publication. (Salami publication), Sanctions
- 6 Research ethics in journal articles – Human rights, privacy & confidentiality, Cultural heritage, Biosecurity
- 7 Ethical Standards and Process – Authorship, authorship disputes, Funding, Peer review, Conflicts of interest
- 8 Appeals and corrections

Name of the program- Master of Physiotherapy (MPT) Orthopedics

Placement of the course MPT Orthopedics Semester 4

Name of course	Scientific Writing
Course Code	MPT0323S405T
Course Description	Elective
Credit per Semester	2
Hours per Semester	30 Hours

Course Outcomes Students will be able to	
CO 1	Understand scientific writing process, components of a research paper, formulation of research problem
CO 2	Methods of literature search
CO 3	Attain skills of organizing and composing a scientific paper
CO4	Analyse and review scientific papers

Course Content

1. Introduction to medical writing
2. Overview of types of articles
3. Methods of literature search and PubMed search
4. Concept of understanding research problem, article writing and editorial process
5. Journal Selection
6. Reviewing, Editing and Publishing
7. Software used in medical writing a. Referencing software b. Plagiarism Software
8. Guidelines for scientific writing Duties of Author, Authorship dispute, Editor, Reviewer, etc.
9. Publication Ethics, Journal quality and impact assessment of article
10. Documents in Clinical Research Clinical study report Grant proposal writing

Name of the program- Master of Physiotherapy (MPT) Orthopedics

Placement of the course MPT Orthopedics Semester 4

Name of course	Medical Device Innovation
Course Code	MPT0323S406T
Course Description	Elective
Credit per Semester	2
Hours per Semester	30 hours

Course Outcomes Students will be able to	
CO 1	Understand phases of device innovation
CO 2	Understand unmet health needs, inventing and evaluating a new technology
CO 3	Understand risks and challenges that are unique to medical device innovation

Course Content

- Introduction to Medical Device Innovation: Orientation to the curriculum, Approaches in Device Innovation, Future scope
- Clinical Foundations of Medical Device Innovation: Identifying need for device innovation, A problem-solution based approach to understand unmet healthcare needs
- Product Innovation and Development Management: Concept of prototype and design development, Framework for conceptualization, design, development, and the commercialization process for medical products, with a survey of key steps in innovation from an engineering and business perspective.
- Quality, Regulatory, and Manufacturing Management: Examine process validations, Good Laboratory Practice (GLP), Good Manufacturing Practice (GMP), appropriate management of Standard Operating Procedures (SOPs) and knowledge sharing across the value chain.
- Role of IPR in device innovation: Understanding various policies and steps for safeguarding newly designed devices through filing of copyright and patent
- Technical Writing: Develop the professional skills required to communicate technical information to a broad audience in an effective manner
- Interviews, Surveys among clinicians to identify problem, Visit to Macro environment of Technology incubation centers: Understanding basics of mechanics, availability, functioning and cost of resources
- Development of Product design: multi-disciplinary team building to develop prototype, work on fabrication, making of final product and plan for commercialization

Name of the program- Master of Physiotherapy (MPT) Orthopedics

Placement of the course MPT Orthopedics Semester 4

Name of course	Evaluative Clinical Training- IV
Course Code	MPT0323S407P
Course Description	Core Practical
Credit per Semester	12
Hours per Semester	360 hours

Course Learning Outcomes: The student will be able to	
CO1	To interpret and differentiate between various diagnostic tools used for therapeutic plan, take history and condition of patients.
CO2	To acquire knowledge of all the physiotherapeutic interventions pertaining to the patients.
CO3	To evaluate and plan physiotherapeutic treatment; its presentation and documentation of all the conditions

Course Content

- Long case assessment & Short case assessment including application of Physiotherapy techniques in the Treatment of all conditions studied in Semester 4 MPT second year
- Mode
 - Long case & short case assessment
 - Demonstration, Investigations & Viva
 - Practical record book (record of 4 Case report/presentation)
 - Record of Seminar Presentation (4 seminar presentation)
- Examiner 02 (One internal and one external from the panel of examiners from university.
- Practical Examination- Based on Viva- Long case & short case assessment, Practical Record book of Case presentation and Record of Seminar Presentation.

Name of the program- Master of Physiotherapy (MPT) Orthopedics

Placement of the course MPT Orthopedics Semester 4

Name of course	Research Dissertation
Course Code	MPT0323S408P
Course Description	Core Practical
Credit per Semester	3
Hours per Semester	90hours

Course Learning Outcomes: The student will be able to	
CO1	To gain knowledge to document methodology, data collection, statistical analysis, result, discussion, conclusion, limitation and reference writing.
CO2	To enable student to acquire in-depth knowledge and skill in independent dissertation writing in Physiotherapy.

COURSE CONTENT

DISSERTATION

8. The dissertation should be written under the following headings:

- 1.Introduction
- 2.Purpose of study
3. Aims or objectives of study
- 4.Hypothesis
5. Review of literature
6. Material and methods
7. Results
8. Discussion
9. Conclusion
- 10.Limitations of study
11. References

12. Appendices: Patient consent form, data collection form and Master chart.

9. The written text of dissertation shall not be less than 100 pages and shall not exceed 120 pages including references, tables, questionnaires, and other annexures. It should be neatly typed in double line spacing on one side of paper (A4 size, 8.27" x 11.69") and bound properly.
10. Spiral binding should be avoided. The Guide and Principal of the College shall certify the dissertation.

Practical Evaluation of Research Dissertation:

Practical cum Viva-Voce Examination for Research Dissertation

The appointed Internal and External examiners for the "Practical Research Dissertation" of MPT (Orthopedics/Neurology/Cardiopulmonary/Sports) in the 4th Semester will give a Practical cum Viva-Voce Examination to evaluate the candidate's depth of knowledge, logical reasoning, confidence & oral communication skill based on his research dissertation.

Passing Criteria and Marks Distribution for Research Dissertation Viva-Voce

- iv. A candidate must secure a minimum of 50% marks (i.e. 100 out of 200) to pass the Practical-cum-Viva Voce Examination of the Research Dissertation.
- v. If a candidate fails in the Theory or Practical University Examination, his dissertation marks will still be carried forward to subsequent examinations.
- vi. Marks distribution for the Practical cum Viva Voce Examination of Research Dissertation will be based on Assessment Format A and B.

Assessment Format (A) for Practical Examination of Research Dissertation (Marks=100)

S.No.	Parameter	Internal (30)	External (70)
1	Layout & Content	5	15
2	Quality of Presentation	5	15
3	Detailed Methodology	10	20
4	Publication Record	10	20

Assessment Format (B) for Viva Voce of Research Dissertation (Marks=100)

S.No.	Parameter	Internal (30)	External (70)
1	Quality of work and Novelty up to the mark?	5	15
2	Are the queries appropriately handled?	10	20
3	Clinical and Social Impact of the Research	10	20
4	Future implication	5	15

ANNEXURE 1

MODEL PAPER

MPT Orthopedics Sem 1

RoHS (MPT0323S101T)

Master of Physiotherapy (MPT) Orthopedics Semester I

End of Semester Evaluation (Month/Year)

Paper-I

Review of Human Sciences

Time: Three Hour

Maximum Marks :70

Attempt all Questions

All the parts of one question should be answered at one place

Only one Supplementary Copy along with one main answer book is allowed

Long Answer (Attempt any Two)

2x15

= 30

Q1. Write in detail about the regulation of pulmonary system.

Q2. Write down different phases of BP regulation.

Q3. Write down the basic anatomy and physiology of cardiovascular system.

Short Essay (Attempt any Two)

2x10 =

20

Q4. Write about the Origin, Insertion, nerve supply and Action of deltoid muscle

Q5. Explain in detail blood supply of brain.

Q6. Write in detail about popliteal fossa.

Short Notes (Attempt any Four)

4x5 =

20

Q7. Add a short note on flexor retinaculum of hand and its clinical implications.

Q8. Elaborate in detail all the cranial nerves and their function.

Q9. Describe Cardiac Cycle in detail.

Q10. Explain neo cerebellum in detail with its clinical implication.

Q11. What is Erb's paralysis. Add a note on winging of scapula.

MODEL PAPER

MPT Orthopedics Sem 1

P&FD-I (MPT0323S102T)

Master of Physiotherapy (MPT) Orthopedics Semester I
End of Semester Evaluation (Month/Year)
Paper-II
Physical & Functional Diagnosis- I

Time: Three Hour
Maximum Marks: 70

Attempt all Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer (Attempt any Two) **2x15 = 30**

- Q1 Write down the detail of Clinical Decision Making.
- Q2. Write in detail about all the anthropometric measurements.
- Q3. Define pain. Discuss various functional scales for evaluation of pain.

Short Essay (Attempt any Two) **2x10 = 20**

- Q4 Explain in detail all the vital signs.
- Q5. Elaborate in detail Ankle Foot Orthosis.
- Q6. What is optimum posture? How to assess postural deviation.

Short Notes (Attempt any Four) **4x5 = 20**

- Q7. Write in detail about the postural deviations.
- Q8. Methods of limb length testing and its clinical significance.
- Q9. Explain in detail GAIT analysis.
- Q10. Write in detail about spinal orthosis.
- Q11. What is Deep tendon Reflex and explain their testing.

MODEL PAPER

MPT Orthopedics Sem 1

RM (MPT0323S103T)

Master of Physiotherapy (MPT) Orthopedics Semester I

End of Semester Evaluation (Month/Year)

Paper-III

Research Methodology

Time: Three Hour

Maximum Marks :70

Attempt all Questions

All the parts of one question should be answered at one place

Only one Supplementary Copy along with one main answer book is allowed

Long Answer (Attempt any Two)

2x15 = 30

Q1 Define and describe validity and its types in research and add a note on reliability.

Q2. Describe experimental research. How many types of experimental research designs are there? Describe any experimental research designs with example from physiotherapy

Q3. Discuss in detail about types of data, their presentation, and their collection methods.

Short Essay (Attempt any Two)

2x10 = 20

Q4. Describe the various components of ethically informed consent for physiotherapy research

Q5. Enumerate the principle of research design.

Q6. Describe the difference between qualitative and quantitative research.

Short Notes (Attempt any Four)

4x5 = 20

Q7. Short Note on Ethics in research

Q8. Write in detail about Critical appraisal of research.

Q9. Explain in detail Steps and process of Presentation and Publication of research.

Q10. Write in detail different types of sampling.

Q11. What is Hypothesis its formation & testing.

MODEL PAPER

MPT Orthopedics Sem 1

Bs (MPT0323S104T)

Master of Physiotherapy (MPT) Orthopedics Semester I
End of Semester Evaluation (Month/Year)
Paper-IV
Biostatistics

Time: Three Hour
Maximum Marks :70

Attempt all Questions

All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer (Attempt any Two) **2x15 = 30**

- Q1 Define and describe Arithmetic mean, median, mode. Relationship between them.
Q2. Describe Methods of sampling. Add a note on Type 1 and Type 2 Error
Q3. Discuss in detail about types of data, their presentation and their collection methods.

Short Essay (Attempt any Two) **2x10 = 20**

- Q4. Describe in detail Z test.
Q5. What is T test.
Q6. Short Note on Coefficient of correlation.

Short Notes (Attempt any Four) **4x5 = 20**

- Q7. Describe standard deviation.
Q8. Describe mean and median & mode.
Q9. Short note on Bivariate distribution.
Q10. Describe in detail regression analysis.
Q11. Write in detail chi square test.

MODEL PAPER

MPT Orthopedics Sem 1

CoI (MPT0323S105T)

Master of Physiotherapy (MPT) Orthopedics Semester I
End of Semester Evaluation (Month/Year)
Paper-V
Constitution of India

Time: Three Hour
Maximum Marks :70

Attempt all Questions

All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer (Attempt any Two)
= 30

2x15

- Q1. Write in detail about the making of Indian Constitution.
- Q2. Write down the Fundamental Rights of Citizen.
- Q3. Write down about the Election Commission and State Public Service Commission.

Short Essay (Attempt any Two)

2x10 = 20

- Q4. Write about enforcing rights through writs
- Q5. Explain Executive and Judicial and their functioning in India.
- Q6. Write in detail about the Special Rights created in the Constitution.

Short Notes (Attempt any Four)

4x5 = 20

- Q7. Add a short note on Doctrine of Separation of Powers legislative.
- Q8. Elaborate in detail about the rights of women and children.
- Q9. Describe special rights of the Religious and Linguistic Minorities.
- Q10. Explain in detail the significance of Fundamental Rights and Duties.
- Q11. What are the methods of amending constitution.

MODEL PAPER

MPT Orthopedics Sem 1

DR (MPT0323S106T)

Master of Physiotherapy (MPT) Orthopedics Semester I
End of Semester Evaluation (Month/Year)
Paper-VI
Diagnostic Radiology

Time: Three Hour
Maximum Marks :70

Attempt all Questions

All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer (Attempt any Two)

2x15 = 30

- Q1. Write in detail about basic principles of X-Ray.
- Q2. Write down the principles of CT-Scan and MRI.
- Q3. Write down in detail Interventional Radiology.

Short Essay (Attempt any Two)

2x10 = 20

- Q4. Write about the Ultrasonography and its machine.
- Q5. Explain about chest X-Ray.
- Q6. Write in detail about MRI of Brain.

Short Notes (Attempt any Four)

4x5 = 20

- Q7. Add a short note on CT scan of Thorax.
- Q8. Elaborate in detail advancement in Ultrasonography.
- Q9. Describe Ultrasonography in Gynecological conditions.
- Q10. Explain X-Ray in detail for fractures.
- Q11. Explain in detail MRI machine.

MODEL PAPER

MPT Orthopedics Sem 2

Bm (MPT0323S201T)

Master of Physiotherapy (MPT) Orthopedics Semester II

End of Semester Evaluation (Month/Year)

Paper-I

Biomechanics

Time: Three Hour

Maximum Marks :70

Attempt all Questions

All the parts of one question should be answered at one place

Only one Supplementary Copy along with one main answer book is allowed

Long Answer (Attempt any Two)

2x15 = 30

- Q1. Arthrokinematics and osteokinematics of hip joint. Discuss about angle of inclination and torsional angle.
- Q2. Discuss the kinematics and kinetics of gait. Discuss five pathological gaits.
- Q3. Write in detail optimum posture and postural deviation in AP posture view.

Short Essay (Attempt any Two)

2x10 = 20

- Q4. What are the mechanical properties of various muscles
- Q5. Explain projectile motions with examples
- Q6. EMG changes during fatigue and contraction

Short Notes (Attempt any Four)

4x5 = 20

- Q7. Bio-mechanical properties of bone
- Q8. Kinematics and kinetics of glenohumeral joint
- Q9. Describe equilibrium & balance
- Q10. Add a note on prehension grip
- Q11. Write in detail supination and pronation twist.

MODEL PAPER

MPT Orthopedics Sem 2

P&FD- II (MPT0323S202T)

Master of Physiotherapy (MPT) Orthopedics Semester II
End of Semester Evaluation (Month/Year)
Paper-II
Physical & Functional Diagnosis- II

Time: Three Hour
Maximum Marks :70

Attempt all Questions

All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer (Attempt any Two)

2x15 = 30

- Q1 Write down the basic SOAP assessment for Neuromusculoskeletal disorders
- Q2. Write in detail about exercise testing and exercise prescription of ischaemic heart disease
- Q3. Define Coordination. Discuss its various assessment and evaluation.

Short Essay (Attempt any Two)

2x10 = 20

- Q4. Pulmonary Function Tests
- Q5. ICF Classification of disability
- Q6. Functional scales for assessment of balance

Short Notes (Attempt any Four)

4x5 = 20

- Q7. GCS for comatose patient
- Q8. Methods of Balance evaluation
- Q9. Disability evaluation of upper limb
- Q10. Write in detail about CT Scan & MRI.
- Q11. Discuss in detail Higher Mental Function

MODEL PAPER

MPT Orthopedics Sem 2

LlaPE (MPT0323S203T)

Master of Physiotherapy (MPT) Orthopedics Semester II

End of Semester Evaluation (Month/Year)

Paper-III

Legal Issues and Professional Ethics

Time: Three Hour

Maximum Marks :70

Attempt all Questions

All the parts of one question should be answered at one place

Only one Supplementary Copy along with one main answer book is allowed

Long Answer (Attempt any Two)

2x15

= 30

Q1. Write in detail about the health care delivery system in India.

Q2. Write down about the role and registration of Statutory Bodies WCPT & IAP.

Q3. Write in Detail about the legal rights of patient.

Short Essay (Attempt any Two)

2x10 = 20

Q4. Write about the Issues in Indian Health Care Delivery system.

Q5. Explain about Confidentiality and privacy of patient's information.

Q6. Write in detail about National health Policy.

Short Notes (Attempt any Four)

4x5 = 20

Q7. Add a short note on National Health Mission.

Q8. Elaborate in detail Malpractice & negligence.

Q9. Describe in detail access to record and information.

Q10. Explain Professional Indemnity for Physiotherapy Practitioners

Q11. What are professional ethics and conduct.

MODEL PAPER

MPT Orthopedics Sem 2

EP (MPT0323S204T)

Master of Physiotherapy (MPT) Orthopedics Semester II

End of Semester Evaluation (Month/Year)

Paper-IV

Exercise Psychology

Time: Three Hour

Maximum Marks :70

Attempt all Questions

All the parts of one question should be answered at one place

Only one Supplementary Copy along with one main answer book is allowed

Long Answer (Attempt any Two)

2x15 = 30

Q1. Explain in detail about Exercise Psychology

Q2. Discuss about Group Dynamics.

Q3. Write in detail about Psychological Skill Training.

Short Essay (Attempt any Two)

2x10 = 20

Q4. Elaborate in detail about anxiety.

Q5. Explain complications of depression.

Q6. Explain positive reinforcement.

Short Notes (Attempt any Four)

4x5 = 20

Q7. Explain impact of social factors in positive health behavior.

Q8. Write a short note on self-esteem.

Q9. Describe Mental Imagery.

Q10. Add a note on psychological impact on exercise.

Q11. Write in detail about body image.

MODEL PAPER

MPT Orthopedics Sem 2

PiO(MPT0323S205T)

Master of Physiotherapy (MPT) Orthopedics Semester II
End of Semester Evaluation (Month/Year)
Paper-V
Physiotherapy in Oncology

Time: Three Hour
Maximum Marks :70

Attempt all Questions

All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer (Attempt any Two)

2x15 = 30

- Q1. What is Cancer its Pathophysiology, Medical and surgical management.
- Q2. Discuss the foundation of oncology rehabilitation.
- Q3. Write in detail about breast cancer and its rehabilitation.

Short Essay (Attempt any Two)

2x10 = 20

- Q4. Write in detail about the neck cancer rehabilitation
- Q5. Explain commando surgery and its physiotherapy management
- Q6. What are the complications of breast cancer.

Short Notes (Attempt any Four)

4x5 = 20

- Q7. Write in short, the Digestive tract cancer Rehabilitation
- Q8. Explain in detail chemo induced cognitive impairment
- Q9. Describe chemotoxicity
- Q10. Add a note on cancer exercise management
- Q11. Write in detail about ovarian cancer.

MODEL PAPER

MPT Orthopedics Sem 2

PiLD (MPT0323S206T)

Master of Physiotherapy (MPT) Orthopedics Semester II
End of Semester Evaluation (Month/Year)
Paper-VI
Physiotherapy in Lymphatic Drainage

Time: Three Hour
Maximum Marks :70

Attempt all Questions

All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer (Attempt any Two) **2x15 = 30**

- Q1. Explain in detail about the Primary lymphatic disorders and their Management.
- Q2. Discuss in detail about Lymphoedema and its medical and physiotherapy management.
- Q3. Write in detail Decongestive Lymphatic Drainage therapy.

Short Essay (Attempt any Two) **2x10 = 20**

- Q4. Explain in detail about the lymphatic system of body
- Q5. Explain secondary lymphatic disorders and their management
- Q6. What is Chronic edema of Lower Limb

Short Notes (Attempt any Four) **4x5 = 20**

- Q7. Write in detail Home Program for lymphedema
- Q8. Explain Lymphatic Drainage exercises
- Q9. Describe the technique to apply lymphatic bandaging
- Q10. Add a note on Manual Lymphatic Drainage
- Q11. Write in detail about compression garments.

MODEL PAPER

MPT Orthopedics Sem 3

AM&EI (MPT0323S301T)

Master of Physiotherapy (MPT) Orthopedics Semester III
End of Semester Evaluation (Month/Year)
Paper-I
Administration Management and ethical issues

Time: Three Hour
Maximum Marks :70

Attempt all Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer (Attempt any Two) **2x15 = 30**

- Q1. Write in detail about the legal ethical issues in hospital and legal responsibility of physical therapist.
- Q2. Describe about evolution of management Also write about management process
- Q3. What is performance appraisal? How it is done? Also write briefly about job satisfaction.

Short Essay (Attempt any Two) **2x10 = 20**

- Q4. Code of ethics.
- Q5. Briefly explain Collective Bargaining.
- Q6. Write in detail about staffing.

Short Notes (Attempt any Four) **4x5 = 20**

- Q7. Briefly explained Market segmentation.
- Q8. What are Standards of practice for physiotherapists and Liability and obligations in the case of medical legal action
- Q9. Give in detail about Physiotherapy associations/councils in India and write a short note on WCPT and its Functions
- Q10. Write in detail about Recruitment and selection.
- Q11. Elaborate the concept of performance appraisal.

MODEL PAPER

MPT Orthopedics Sem 3

PGOC-I (MPT0323S302T)

Master of Physiotherapy (MPT) Orthopaedics Semester III
End of Semester Evaluation (Month/Year)
Physiotherapy in General Orthopedic Conditions- I

Time: Three Hour
Maximum Marks :70

Attempt all Questions

All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer (Attempt any Two) **2x15 = 30**

Q1 Write down in detail about the classification of bone tumors and its PT management

Q2 Write down in detail about osteomyelitis with its PT management

Q3 Write about various soft tissue injury around shoulder complex and common PT management

Short Essay (Attempt any Two) **2x10 = 20**

Q4 Write in detail about neck of femur fracture with its surgical and PT management

Q5 Write down in detail about PCL injury and its special test

Q6 Explain the role of splint and cast in musculoskeletal rehabilitation

Short Notes (Attempt any Four) **4x5 = 20**

Q7 Write down in detail about degenerative diseases

Q8 Explain about Colles Fracture with its complications'

Q9 Explain CDH with PT management

Q10 Explain genu valgum and genu varum.

Q11 What is trigger finger.

MODEL PAPER

MPT Orthopedics Sem 3

VD (MPT0323S303T)

Master of Physiotherapy (MPT) Orthopaedics Semester III
End of Semester Evaluation (Month/Year)
Vertebral Disorder

Time: Three Hour
Maximum Marks :70

Attempt all Questions

All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer (Attempt any Two) **2x15 = 30**

- Q1 Write in details of congenital disorders of vertebral column & vertebral deformities
- Q2 Write down the PT management in POTTs spine
- Q3 Write about PT management in whiplash injury

Short Essay (Attempt any Two) **2x10 = 20**

- Q4 Explain about PIVD and PT management
- Q5 Explain pathophysiology, complication and PT management in Hansen's disease
- Q6 Write about Rheumatoid hand and its PT management

Short Notes (Attempt any Four) **4x5 = 20**

- Q7 Describe about scoliosis
- Q8 Write in detail about spinal stenosis and PT management
- Q9 Write down the PT management of lumbar lordosis
- Q10 Explain Sacroiliacitis and its PT and medical management
- Q11 Explain unstable cervical spine fracture

MODEL PAPER

MPT Orthopedics Sem 3

BLS (MPT0323S304T)

Master of Physiotherapy (MPT) Orthopedics Semester III
End of Semester Evaluation (Month/Year)
Paper-IV
Basic Life Support
Time: Three Hour
Maximum Marks :70

Attempt all Questions

All the parts of one question should be answered at one place

Only one Supplementary Copy along with one main answer book is allowed

Long Answer (Attempt any Two)

2x15 = 30

- Q1. What is BLS and write the steps involved in BLS.
- Q2. Write down the procedure for Pediatric BLS.
- Q3. What is AED, Describe in detail its procedure of application.

Short Essay (Attempt any Two)

2x10 = 20

- Q4. What is successful resuscitation team.
- Q5. What is pediatric chain of survival.
- Q6. What is Bag Mask device.

Short Notes (Attempt any Four)

4x5 = 20

- Q7. Write in detail about CAB.
- Q8. Write down the Heimlich maneuver.
- Q9. Write down adult chain of survival.
- Q10. Write down the difference between adult & pediatric compression.
- Q11. Write in detail about infant CPR.

MODEL PAPER

MPT Orthopedics Sem 3

MET (MPT0323S305T)

Master of Physiotherapy (MPT) Orthopedics Semester III
End of Semester Evaluation (Month/Year)
Paper Time: Three Hour
Maximum Marks: 70
Muscle Energy Technique (Elective)

Attempt all Questions

All the parts of one question should be answered at one place

Only one Supplementary Copy along with one main answer book is allowed

Long Answer (Attempt any Two)

2x15 = 30

Q1 Introduction to Muscle Energy Technique

Q2 What is the clinical use of MET in physiotherapy

Q3 Explain Sequential Assessment and MET treatment of main postural muscles

Short Essay (Attempt any Two)

2x10 = 20

Q4 What are the contraindications of MET

Q5 Muscle Energy Techniques in cases of spinal injury or pathology

Q6 Muscle Energy Technique Principles

Short Notes (Attempt any Four)

4x5 = 20

Q7 MET in post –surgical rehabilitation

Q8 What is the risk of MET

Q9 MET in treatment of athletic injuries

Q10 Integrated neuromuscular technique and myofascial pain

Q11 What is the pathophysiology MET

MODEL PAPER

MPT Orthopedics Sem 3

MT (MPT0323S306T)

Master of Physiotherapy (MPT) Orthopedics Semester III
End of Semester Evaluation (Month/Year)

Paper Time: Three Hour

Maximum Marks :70

Maitland Technique

Attempt all Questions

All the parts of one question should be answered at one place

Only one Supplementary Copy along with one main answer book is allowed

Long Answer (Attempt any Two)

2x15 = 30

- Q 1 Explain about Manipulation Mobilization, Techniques, Examination and Assessment
- Q2 Classification of impairments, disabilities, and handicaps (ICIDH).
- Q3 Principles of technique of Maitland

Short Essay (Attempt any Two)

2x10 = 20

- Q4 Explain difference between Mobilization v manipulation
- Q5 What is Release pain and Latent pain response
- Q6 Treating muscle spasm

Short Notes (Attempt any Four)

4x5 = 20

- Q7 Treating end range of motion
- Q8 What is the Manipulation
- Q9 Selection of technique of Maitland
- Q10 The manner of the technique
- Q11 What is the Selection to diagnosis and presenting symptoms

MODEL PAPER

MPT Orthopedics Sem 4

TMiP (MPT0323S401T)

Master of Physiotherapy (MPT) Orthopedics Semester IV
End of Semester Evaluation (Month/Year)

Paper-I
Teaching Methodology in Physiotherapy

Time: Three Hour
Maximum Marks :70

Attempt all Questions

All the parts of one question should be answered at one place

Only one Supplementary Copy along with one main answer book is allowed

Long Answer (Attempt any Two)

2x15 = 30

- Q1. Write in detail about the major philosophies of education.
- Q2. Write about development of a curriculum for physiotherapy, types of curriculums
- Q3. Write about strategies of teaching, planning of teaching and teaching method

Short Essay (Attempt any Two)

2x10 = 20

- Q4. Write about the Major philosophies of education
- Q5. Explain about writing lesson plan.
- Q6. Write in detail about teaching methods.

Short Notes (Attempt any Four)

4x5 = 20

- Q7. Add a short note on psychology of education.
- Q8. Elaborate in detail all the cranial nerves and their function.
- Q9. Describe about development of a curriculum for physiotherapy.
- Q10. Explain about important tests of intelligences and aptitude.
- Q11. Explain about natures of measurement of educations.

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MPT Orthopedics Sem 4

PGOC-II (MPT0323S402T)

Master of Physiotherapy (MPT) Orthopedics Semester IV
End of Semester Evaluation (Month/Year)

Paper Time: Three Hour

Maximum Marks :70

Physiotherapy in General Orthopaedic Condition II

Attempt all Questions

All the parts of one question should be answered at one place

Only one Supplementary Copy along with one main answer book is allowed

Long Answer (Attempt any Two)

2x15 = 30

- Q1 Write in detail about meniscectomy and PT management
- Q2 Explain in detail about fracture shaft of tibia and its PT management
- Q3 Explain about below knee amputation and its PT management

Short Essay (Attempt any Two)

2x10 = 20

- Q4 Explain about complications of elbow fracture
- Q5 Write in detail about spinal stenosis
- Q6 Explain about laminectomy and PT management after laminectomy

Short Notes (Attempt any Four)

4x5 = 20

- Q7 Principles of Tendon Transfer
- Q8 Write about Volkmann's Ischemic Contracture with its PT management
- Q9 Give details about prosthesis given in above knee amputation
- Q10 Explain about Olecranon fracture with its PT management
- Q11 Thoracic Outlet Syndrome with its special test

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MPT Orthopedics Sem IV

HR (MPT0323S403T)

Master of Physiotherapy (MPT) Orthopaedics Semester IV
End of Semester Evaluation (Month/Year)
Paper Time: Three Hour
Maximum Marks :70
Hand Rehabilitation

Attempt all Questions

All the parts of one question should be answered at one place

Only one Supplementary Copy along with one main answer book is allowed

Long Answer (Attempt any Two)

2x15 = 30

- Q1 Explain the bio and patho mechanics of hand with the function of hand
- Q2 Write in detail about the crush injuries of hand and PT Management
- Q3 Explain rheumatic hand and its functional training in detail

Short Essay (Attempt any Two)

2x10 = 20

- Q4 Explain the principle of tendon transfer with PT management of flexor tendon injuries
- Q5 Explain Reflex sympathetic dystrophy and its PT management
- Q6 Describe the role of Functional and Vocational Training in hand surgeries

Short Notes (Attempt any Four)

4x5 = 20

- Q7 Spastic hand with the role of orthosis
- Q8 Explain swan neck deformity with its surgical correction
- Q9 Burns in hand with its splinting
- Q10 Boutonniere Deformity
- Q11 Vocational training of hand

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MPT Orthopedics Sem 4

IPRaPE (MPT0323S404T)

Master of Physiotherapy (MPT) Orthopedics Semester IV
End of Semester Evaluation (Month/Year)
Paper-IV
Intellectual Property Rights and Publication Ethics
Time: Three Hour
Maximum Marks :70

Attempt all Questions

All the parts of one question should be answered at one place

Only one Supplementary Copy along with one main answer book is allowed

Long Answer (Attempt any Two)

2x15 = 30

- Q1. What is Intellectual Property Rights.
- Q2. Write in detail about copyrights and patent laws.
- Q3. Explain about Research Ethics in Journal Articles.

Short Essay (Attempt any Two)

2x10 = 20

- Q4. What is authorship and authorship disputes.
- Q5. Explain Peer Review in detail
- Q6. Elaborate publication ethics.

Short Notes (Attempt any Four)

4x5 = 20

- Q7. What is appeals and correction.
- Q8. Write down about fabrication of Data
- Q9. Write in detail about plagiarism.
- Q10. Explain scientific misconduct.
- Q11. What is redundant publication.

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MPT Orthopedics Sem 4

SW(MPT0323S405T)

Master of Physiotherapy (MPT) Orthopedics Semester IV
End of Semester Evaluation (Month/Year)

Paper-V
Scientific Writing

Time: Three Hour
Maximum Marks :70

Attempt all Questions

All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer (Attempt any Two)

2x15 = 30

- Q1. Write down the methods of literature search and its review.
- Q2. Write in detail Guidelines for medical writing.
- Q3. Explain about Reviewing, Editing and Publishing

Short Essay (Attempt any Two)

2x10 = 20

- Q4. Explain in detail about Plagiarism Software
- Q5. Explain Concept of understanding research problem, article writing and editorial process
- Q6. Write down the procedure of publication.

Short Notes (Attempt any Four)

4x5 = 20

- Q7. What Publication Ethics
- Q9. Write down impact of Journal quality and impact assessment of article
- Q8. Write in detail Grant proposal writing.
- Q10. Explain Duties of Author
- Q11. What are the different Software used in medical writing

MODEL PAPER

MPT Orthopedics Sem 4

MDI (MPT0323S406T)

Master of Physiotherapy (MPT) Orthopedics Semester IV
End of Semester Evaluation (Month/Year)
Paper-VI
Medical Device Innovation
Time: Three Hour
Maximum Marks :70

Attempt all Questions

All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer (Attempt any Two)

2x15 = 30

- Q1. Write down about the Framework for conceptualization.
- Q2. Write in detail about Identifying need for device innovation
- Q3. Explain Development of Product design

Short Essay (Attempt any Two)

2x10 = 20

- Q4. Explain the role of IPR in device innovation
- Q5. Explain Quality, Regulatory, and Manufacturing Management
- Q6. What is Good Manufacturing Practice.

Short Notes (Attempt any Four)

4x5 = 20

- Q7. What is Technical Writing
- Q8. Write down the Standard Operating Procedures
- Q9. Write about Approaches in Device Innovation.
- Q10. Explain Good Laboratory Practice
- Q11. What is commercialization process for medical products