MAHATMA GANDHI UNIVERSITY
of
MEDICAL SCIENCES & TECHNOLOGY
JAIPUR

Syllabus

MASTER OF PHYSIOTHERAPY (MPT) NEUROLOGY

(4 SEMESTERS P.G. DEGREE PROGRAM)

2023-24

Recommended by BOS in Physiotherapy at its meeting held on 20/04/2023 and approved by Academic Council at its meeting held on 28/04/2023.

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 OF

MASTER OF PHYSIOTHERAPY (MPT) NEUROLOGY

PROGRAM CODE: - **MPT0223**

(4 SEMESTERS P.G. 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) Neurology

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) Neurology Program shall be made on the basis of written entrance examination conducted for the purpose

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) Neurology 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 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

(a) There shall be five Theory papers in each semester of the study of study.

(b) Each Theory paper examination shall be of 3 hours duration and of maximum 70 marks.

(c) Continuous assessment (CA) shall be of 30 marks for each Theory Paper.

(d) 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)

(g) 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

(a) 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

(b) University practical and viva-voce examination shall be of 70 marks and internal assessment of 30 marks.

(c) 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)**		

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.
2. A Candidate who has failed in a Paper (s) will reappear in respective paper(s) in next examination of the same semester next year.
3. 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

(a) There shall be a supplementary examination of IV semester only within two months of the declaration of the result of the main examination of IV Semester.

(b) 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.

(c) 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. A candidate who has passed or failed in one or more subjects shall be promoted to respective next semester.
2. 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.
3. The student is required to clear all the University examination within 4 years from the joining of the course.

Master Of Physiotherapy (MPT) Neurology 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	MPT0223S101T	4	70	30	100	50 % aggregate including continuous assessment marks separately in theory and practical.
Physical and Functional Diagnosis I	MPT0223S102T	4	70	30	100	
Research Methodology	MPT0223S103T	4	70	30	100	
ELECTIVE COURSES (ANY TWO)						
Biostatistics	MPT0223S104T	2	70	30	100	
Constitution of India	MPT0223S105T	2	70	30	100	
Diagnostic Radiology	MPT0223S106T	2	70	30	100	
PRACTICAL COURSES						
Evaluative Clinical Training- I	MPT0223S101P	12	70	30	100	
TOTAL	**06** **(05 Theory Paper 01 Practical)**	**28**	**420**	**180**	**600**	

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

Course/Paper Name	Course/Paper Code	Credits	Theory/ Practical/Viva			
CORE COURSES			EOSE	CA	Total	Pass Marks
Biomechanics	MPT0223S201T	4	70	30	100	50 % aggregate including continuous assessment marks separately in theory and practical.
Physical and Functional Diagnosis II	MPT0223S202T	4	70	30	100	
Legal Issues and Professional Ethics	MPT0223S203T	4	70	30	100	
ELECTIVE COURSES (ANY TWO)						
Exercise Psychology	MPT0223S204T	2	70	30	100	
Physiotherapy in Oncology	MPT0223S205T	2	70	30	100	
Physiotherapy in Lymphatic Drainage	MPT0223S206T	2	70	30	100	
PRACTICAL COURSES						
Evaluative Clinical Training- II	MPT0223S201P	12	70	30	100	
TOTAL	**06** **(05 Theory Paper 01 Practical)**	**28**	**420**	**180**	**600**	

Master Of Physiotherapy (MPT) Neurology 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	MPT0223S301T	4	70	30	100	50 % aggregate including continuous assessment marks separately in theory and
Medical Management of Neurological & Paediatric Disorders	MPT0223S302T	4	70	30	100	
Physiotherapy Management of Neurological & Paediatric	MPT0223S303T	4	70	30	100	

Disorders						practical.
ELECTIVE COURSES (ANY TWO)						
Basic Life Support	MPT0223S304T	2	70	30	100	
Introduction to Palliative Care	MPT0223S305T	2	70	30	100	
Vestibular Rehabilitation	MPT0223S306T	2	70	30	100	
PRACTICAL COURSES						
Evaluative Clinical Training- III	MPT0223S301P	12	70	30	100	
TOTAL	**06** **(05 Theory Paper 01 Practical)**	**28**	**420**	**180**	**600**	

Master Of Physiotherapy (MPT) Neurology 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	MPT0223S401T	3	70	30	100	50 % aggregate including continuous assessment marks separately in theory and practical.
Medical and Surgical Management of Neurosurgical Disorders	MPT0223S402T	3	70	30	100	
Physiotherapy Management of Neurosurgical Disorders	MPT0223S403T	3	70	30	100	
ELECTIVE COURSES (ANY TWO)						
Intellectual property rights and publication ethics	MPT0223S404T	2	70	30	100	
Scientific Writing	MPT0223S405T	2	70	30	100	
Medical Device Innovation	MPT0223S406T	2	70	30	100	
PRACTICAL COURSES						
Evaluative Clinical Training- IV	MPT0223S401P	12	70	30	100	
Research Dissertation	MPT0223S402P	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.**

2. A student obtaining **Grade F** shall be considered **failed** and will be required to reappear in the examination.

3. 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

a. Each theory paper examination shall be of 3 hours duration.

b. 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	2 Years (4 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.

Dissertation: Every candidate pursuing MPT degree course is required to carry out work on a selected research project under the guidance of a recognized postgraduate teacher. The results of such a work shall be submitted in the form of dissertation.

- The dissertation is aimed to train a graduate student in research methods and techniques. It includes identification of a problem, formulation of a hypothesis search and review of literature getting acquainted with recent advances, designing of a research study, collection of data, critical analysis, and comparison of results and drawing conclusions.

- Every candidate shall prepare synopsis in the prescribed Performa, a synopsis containing particulars of proposed dissertation work and submit at the end of 1st semester before filling the EOSE examination form or the dates notified by the university.
- The synopsis shall be submitted through the proper channel i.e. to Principal of the College & then to Departmental Research Committee (DRC). Before submitting the synopsis to the University, it shall be ensured by the Principal of the College that it has been cleared by the Institutional Ethical Committee, MGUMST. The university will register the dissertation topic. No change in the dissertation topic or guide shall be made without prior approval of the university.
- Guide will be only a facilitator, advisor of the concept and responsible in correctly directing the candidate in the methodology and not responsible for the outcome and results.
- 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.
- Spiral binding should be avoided. The Guide and Principal of the College shall certify the dissertation.
- Four copies of dissertation thus prepared shall be signed by the candidate and the guide and then submitted to the principal office, two months before the filling of the form of End of Semester Evaluation of 3rd Semester Examination. Late fees will be applied to candidates in case of late submission of thesis as per notified by the Principal Office. Candidates who will not submit their thesis on time will not be eligible to fill university end of semester evaluation form.
- Principal Office will send the dissertation to the Registrar of University for Evaluation.
- The dissertation shall be examined by minimum of two examiners one Internal and one External for 5 theses.
- Evaluation of the dissertation would be done jointly by the external and internal examiners, who will be appointed by the President of University.
- The examiners appointed for the practical of Dissertation of MPT Cardio/Neuro/Ortho/Sports in 4th Semester will take Presentation and take viva voce based on the dissertation of the candidate to assessing depth of knowledge, logical reasoning, confidence & oral communication skill.

S. No.	Evaluation Criteria of Dissertation		CA Practical (60 marks)	EOSE Practical (140 marks)
1.	Dissertation Evaluation		30	70
2.	Practical of Dissertation	Presentation of dissertation	15	30
3.		Viva-voce	10	30
4.		Weightage of marks on One Paper Publication	5	10
	Total (200)		60	140

- A candidate will be required to secure minimum 50% marks to pass viva-voce examination of dissertation.
- Even if the candidate fails in the Theory/Practical University Examination his / her
- Dissertation marks shall still be carried over to the subsequent examinations.

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 PointAverage (SGPA) and Cumulative Grade Point Average (CGPA):

i. 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

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

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

ii. 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.

CGPA = $\sum(Ci \times Si) / \sum Ci$

where Si is the SGPA of the semester and Ci is the total number of credits in that semester.

iii. 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

i. Computation of SGPA and CGPA

Illustration for **SGPA**

Course	**Credit**	**Grade letter**	**Grade point**	**Credit Point** (Credit x Grade
Course 1	3	A	8	3 X 8 = 24
Course 2	4	B+	7	4 X 7 = 28
Course 3	3	B	6	3 X 6 = 18
Course 4	3	O	10	3 X 10 = 30
Course 5	3	C	5	3 X 5 = 15
Course 6	4	B	6	4 X 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 x 6.9 + 22 x 7.8 + 25 x 5.6 + 26 x 6.0 + 26 x 6.3 + 25 x 8.0

_____ = **6.73**

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

Placement of the course MPT Neurology Semester 1

Name of course	**Review of Human sciences**
Course Code	**MPT0223S101T**
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) Neurology

Placement of the course MPT Neurology Semester 1

Name of course	**Physical and Functional Diagnosis I**
Course Code	**MPT0223S102T**
Course Description	**Core Theory**
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. 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) Neurology

Placement of the course MPT Neurology Semester 1

Name of course	**Research Methodology**
Course Code	**MPT0223S103T**
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) Neurology

Placement of the course MPT Neurology Semester 1

Name of the Course	**Biostatistics**
Course Description	**Elective**
Course Code	**MPT0223S104T**
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-Walli's test
- Friednams test
- T-test/student T test
- Analysis of variance

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

Placement of the course MPT Neurology Semester 1

Name of the Course	**Constitution of India**
Course Description	**Elective**
Course Code	**MPT0223S105T**
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) Neurology

Placement of the course MPT Neurology Semester 1

Name of the Course	**Diagnostic Radiology**
Course Description	**Elective**
Course Code	**MPT0223S106T**
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, gynecological 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) Neurology

Placement of the course MPT Neurology Semester 1

Name of course	**Evaluative Clinical Training- I**
Course Code	**MPT0223S101P**
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) Neurology

Placement of the course MPT Neurology Semester 2

Name of the Course	**Biomechanics**
Course Description	**Core Theory**
Course Code	**MPT0223S201T**
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 lengthand 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) Neurology

Placement of the course MPT Neurology Semester 2

Name of the Course	**Physical Functional and Diagnosis II**
Course Description	**Core Theory**
Course Code	**MPT0223S202T**
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 maki
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 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 n 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) Neurology

Placement of the course MPT Neurology Semester 2

Name of the Course	**Legal Issues and Professional Ethics**
Course Description	**Core Theory**
Course Code	**MPT0223S203T**
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) Neurology

Placement of the course MPT Neurology Semester 2

Name of course	**Exercise Psychology**
Course Code	**MPT0223S204T**
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, inter personal 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

- 1 Introduction to exercise psychology
- 2 Psychological issues affecting performance: anxiety, depression, self-esteem, motivation, body image
- 3 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) Neurology

Placement of the course MPT Neurology Semester 2

Name of course	**Physiotherapy in Oncology**
Course Code	**MPT0223S205T**
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) Neurology

Placement of the course MPT Neurology Semester 2

Name of course	**Physiotherapy in Lymphatic Drainage**
Course Code	**MPT0223S206T**
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 lymphoedema
CO2	Learn and practice lymphatic drainage exercises, bandaging compression therapy to treat lymphoedema

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) Neurology

Placement of the course MPT Neurology Semester 2

Name of the Program	**Master of Physiotherapy (MPT)**
Name of course	**Evaluative Clinical Training- II**
Course Code	**MPT0223S201P**
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) Neurology

Placement of the course MPT Neurology Semester 3

Name of course	**Administration Management and Ethical Issues**
Course Code	**MPT0223S301T**
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) Neurology

Placement of the course MPT Neurology Semester 3

Name of course	**Medical Management of Neurological & Paediatric Disorders**
Course Code	**MPT0223S302T**
Course Description	**Core Theory**
Credit per Semester	**4**
Hours per Semester	**60 hours**

Course Learning Outcomes: The student will be able to	
CO1	Understand about various brain insults and lesion and their impact on patient
CO2	Gain knowledge about spinal cord disorders and their clinical features
CO3	Learn about Diagnosis of various neurological conditions
CO4	Gain knowledge about the medical management of various brain and spinal cord disorders

Course Content
Medical Management of the following Neurological Disorders

Unit 1: Cranial Nerves
1. Testing of cranial nerves
2. Disorders of cranial nerves, cranial neuropathy

Unit 2: Stupor and Coma
1. The neural basis of consciousness
2. Lesions responsible for stupor and coma
3. The assessment and investigation of the unconscious patient and management of unconscious patient

Unit 3: Disorders of the Cerebral circulation
1. Epidemiology of the stroke
2. Causes, types, pathophysiology
3. Clinical features and investigation and Treatment of different types of stroke

Unit 4: Infectious disorders

1. Meningitis
2. Encephalitis
3. Brain abscess
4. Syphilis
5. Herpes Simplex
6. Chorea

Classification, causes, pathophysiology, clinical features, complications management and rehabilitation

Unit 5: Demyelinating diseases of the nervous system
1. Classification of demyelinating diseases
2. Multiple sclerosis
3. Diffuse sclerosis

Unit 6: Movement disorders
1. Akinetic- rigidity syndromes disorders
2. Dyskinesia's disorders

Unit 7: Degenerative diseases of the spinal cord and cerebellum
1. Ataxia
2. Motor neurone disease

Unit 8: Disorders of the spinal cord & cauda equine
1. Acute traumatic injuries of the spinal cord
2. Haematomyelia and Acute central cervical cord injuries
3. Slow progressive compression of the spinal cord
4. Syringomyelia
5. Ischaemia and infarction of the spinal cord and cauda equine
6. Spina Bifida

Unit 9: Deficiency and nutritional disorders
1. Deficiency of vitamins & related disorders
2. Other nutritional neuropathies

Unit 10: Disorders of peripheral nerves
1. Clinical diagnosis of peripheral neuropathy
2. All types and level of peripheral and brachial plexus neuropathy
3. Peripheral nerve tumours and irradiation neuropathy
4. Reflex sympathetic dystrophy
5. Traumatic, compressive, and ischaemic neuropathy
6. Spinal radiculitis and radiculopathy
7. Hereditary motor and sensory neuropathy
8. Neuropathy due to infection
9. Vasculomotor neuropathy
10. Neuropathy due to systemic medical disorders
11. Drug induce neuropathy
12. Metal poisoning chemical neuropathies

Unit 11: Disorders of Muscle
1. Muscular dystrophies

2. The myotonic disorders
3. Inflammatory disorder of muscle
4. Myasthenia gravis
5. Endocrine and metabolic myopathies

Unit 12: Autonomic Nervous disorders
1. Disorders of autonomic function after lesions of the spinal cord

Unit 13: Disorders of higher cerebral cortical function
1. Disorders of different lobes
a) Frontal lobes
b) Temporal lobes
c) Parietal lobes
d) Occipital lobes
e) Sub cortical lesions

Unit 14: Paediatric Disorders
a) CP types, aetiology, clinical features, management of various types
b) Neurological affection of childhood, poliomyelitis, spina bifida, hydrocephalus, aetiology, clinical features and management.

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

Placement of the course MPT Neurology Semester 3

Name of course	**Physiotherapy Management of Neurological & paediatric Disorders**
Course Code	**MPT0223S303T**
Course Description	**Core Theory**
Credit per Semester	**4**
Hours per Semester	**75 hours**

Course Learning Outcomes: The student will be able to	
CO1	To understand concepts of physiotherapy assessment in neurological disorders
CO2	Understand about PT management of various brain insults and lesion
CO3	Gain knowledge about PT management of spinal cord disorders
CO4	Learn different Advance Therapeutic Approaches in Neuro Rehabilitation

Course Content

Unit 1: Introduction

1. Assessment & investigation of the patient with neurological test such as EMG, EEG, Nerve conduction test, radiology, X-ray, CT, MRI etc.
2. Physiotherapy assessment & rehabilitation
   (Advanced therapeutic techniques like Bobath, motor re-learning, NDT, Rood etc.)
   Physiotherapy Management of the following Neurological Disorders

Unit 2: Cranial Nerves

1. Testing of cranial nerves
2. Disorders of cranial nerves, cranial neuropathy
3. Rehabilitation protocol

Unit 3: Stupor and Coma

1. The neural basis of consciousness
2. Lesions responsible for stupor and coma
3. The assessment and investigation of the unconscious patient and management of unconscious patient

Unit 4: Disorders of the Cerebral circulation
1. Epidemiology of the stroke
2. Causes, types, pathophysiology
3. Clinical features and investigation and Treatment of different types of strokes

Unit 5: Infectious disorders
1. Meningitis
2. Encephalitis
3. Brain abscess
4. Syphilis
5. Herpes Simplex
6. Chorea

Classification, causes, pathophysiology, clinical features, complications management and rehabilitation

Unit 6: Demyelinating diseases of the nervous system
1. Classification of demyelinating diseases
2. Multiple sclerosis
3. Diffuse sclerosis

Unit 7: Movement disorders
1. Akinetic- rigidity syndromes disorders
2. Dyskinesia's disorders

Unit 8: Degenerative diseases of the spinal cord and cerebellum
1. Ataxia
2. Motor neurone disease

Unit 9: Disorders/ Rehabilitation of the spinal cord & cauda equine
1. Acute traumatic injuries of the spinal cord
2. Haematomyelia and Acute central cervical cord injuries
3. Slow progressive compression of the spinal cord
4. Syringomyelia
5. Ischaemia and infarction of the spinal cord and cauda equine
6. Spina Bifida

Unit 10: Deficiency and nutritional disorders
1. Deficiency of vitamins & related disorders
2. Other nutritional neuropathies

Unit 11: Disorders of peripheral nerves
1. Clinical diagnosis of peripheral neuropathy
2. All types and level of peripheral and brachial plexus neuropathy
3. Peripheral nerve tumours and irradiation neuropathy
4. Reflex sympathetic dystrophy
5. Traumatic, compressive and ischaemic neuropathy
6. Spinal radiculitis and radiculopathy
7. Hereditary motor and sensory neuropathy
8. Neuropathy due to infection
9. Vasculomotor neuropathy
10. Neuropathy due to systemic medical disorders
11. Drug induce neuropathy
12. Metal poisoning chemical neuropathies

Unit 12: Disorders of Muscle

1. Muscular dystrophies
2. The myotonic disorders
3. Inflammatory disorder of muscle
4. Myasthenia gravis
5. Endocrine and metabolic myopathies

Unit 13: Autonomic Nervous disorders

1. Disorders of autonomic function after lesions of the spinal cord

Unit 14: Disorders of higher cerebral cortical function

1. Disorders of different lobes

a) Frontal lobes
b) Temporal lobes
c) Parietal lobes
d) Occipital lobes
e) Sub cortical lesions

Unit 15: Paediatric Disorders

a) CP types, aetiology, clinical features, management of various types
b) Neurological affection of childhood, poliomyelitis, spina bifida, hydrocephalus, aetiology, clinical features and rehabilitation, birth injuries of brachial plexus

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

Placement of the course MPT Neurology Semester 3

Name of the Course	**Basic Life Support**
Course Description	**Elective**
Course Code	**MPT0223S304T**
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) Neurology

Placement of the course MPT Neurology Semester 3

Name of course	**Introduction to palliative care**
Course Code	**MPT0223S305T**
Course Description	**Elective**
Credit per Semester	**2**
Hours per Semester	**45 hours**

Course learning Outcomes: The student will be able to	
CO 1	Describe the philosophy and principles of hospice and palliative care that can be integrated across settings to affect quality care at the end of life.
CO 2	Apply the Palliative Care approach to all patients with Neurological terminal illnesses
CO 3	Accurately and clearly convey needed information and explanations to patients, families, and colleagues

Course Content.

1. Introduction to Palliative Care
2. Professionalism and Multidisciplinary team approach
3. Palliative care in life limiting neurological conditions: End of life care in progressive adult and paediatric neurological conditions aspects in palliative care
4. Communication regarding end-of-life care
5. Holistic Care: Psychological, Physical, Spiritual
6. Management of Pain and other Symptoms

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

Placement of the course MPT Neurology Semester 3

Name of course	**Vestibular Rehabilitation**
Course Code	**MPT0223S306T**
Course Description	**Core Elective**
Credit per Semester	**2**
Hours per Semester	**45 hours**

Course Outcomes Students will be able to	
CO 1	Explain the anatomy and physiology of the vestibular system, recognize and state the clinical significance of diagnostic studies and lab data.
CO 2	Identify the signs, symptoms, and co-existing problems of the client.
CO 3	Based on evaluation findings and medical records, formulate, and give rationale for plan of care.

Course Content:

1 Anatomy & Physiology of the Vestibular System

2 Role of vestibular system in postural control

3 Assessment of Balance and vestibular ocular reflex

4 Balance and Gait Assessment

5 Oculomotor Exam

6 Vestibular Function Tests

7 BPPV – assessment and treatment

8 Treatment theory, goals, development of plan of care

9 Treatment progression and decision making

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

Placement of the course MPT Neurology Semester 3

Name of course	**Evaluative Clinical Training- III**
Course Code	**MPT0223S301P**
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) Neurology

Placement of the course MPT Neurology Semester 4

Name of the Course	**Teaching Methodology in Physiotherapy**
Course Code	**MPT0223S401T**
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) Neurology

Placement of the course MPT Neurology Semester 4

Name of course	**Medical and Surgical Management of Neurosurgical Disorders**
Course Code	**MPT0223S402T**
Course Description	**Theory**
Credit per Semester	**3**
Hours per Semester	**45 hours**

Course learning Outcomes: The student will be able to	
CO1	Understand about various brain surgeries and its complications
CO2	Gain knowledge about spinal and peripheral nerve surgeries and their complications
CO3	Learn about Management of various neurosurgical patients pre and post Op.
CO4	Gain knowledge about the medical management of various Spinal surgeries and their procedure.

Course Content

Unit 1:
Techniques, types of skulls, brain & spine surgeries & their complication, pre and post treatment

Unit 2:
1. Cranio cerebral injury (Head and Brain injury)
2. Epidemiology, pathophysiology, symptoms, signs, investigation, management
   - Closed skull fractures
   - Haematomas, epidural, subdural intracerebral
   - Open cranio cerebral injuries
   - Re construction operation in head injuries

Unit 3: Tumours
1. Pathophysiology, classification effects of mass lesion, symptoms and sign, examination management

- Tumours of cranial bones
- Meningioma
- Tumours in spinal cord
- Intra cranial tumours
- Other condition related to raised intra cranial pressure
  a) Hydrocephalus
  b) Intracranial abscess
  c) Central oedema
- Vascular disease of the brain
  a) Aneurysms
  b) Thrombosis
- Decompression surgery of spinal cord
  a) Disc operation (cervical lumbar)
  b) Stenosis
  c) Oedema abscess
  d) Lumbar puncture
  e) Spinal cord injury at various level
- Peripheral nerves
  a) De-compression
  b) Nerve suture
  c) Nerve grafting

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

Placement of the course MPT Neurology Semester 4

Name of course	**Physiotherapy Management of Neurosurgical Disorders**
Course Code	**MPT0223S403T**
Course Description	**Theory**
Credit per Semester	**3**
Hours per Semester	**60 hours**

Course learning Outcomes: The student will be able to	
CO1	Apply manual techniques of mobilization in patient with neurological dysfunction
CO2	Understand the physiotherapy treatment protocol for neurosurgical patients
CO3	To introduce the students to the concepts related to Neuro Surgical Assessment, task analysis and advances in treatment techniques and approaches for various surgeries, outcome measures, disability evaluation and evaluation
CO4	Study objective improvement in mobility following intervention.

Course Content

Unit 1:
Techniques, types of skull, brain & spine surgeries & their complication, pre and post physiotherapy assessment and treatment

Unit 2:
1. Cranio cerebral injury (Head and Brain injury)
2. Epidemiology, pathophysiology, symptoms, signs, investigation, management, pre and post-operative physiotherapy complication

- Closed skull fractures
- Haematomas, epidural, subdural intracerebral
- Open cranio cerebral injuries
- Re construction operation in head injuries

Unit 3: Tumours

1. Pathophysiology, classification effects of mass lesion, symptoms and sign, examination management pre- and post-operative rehabilitation protocol

- Tumours of cranial bones
- Meningioma
- Tumours in spinal cord
- Intra cranial tumours
- Other condition related to raised intra cranial pressure
  a) Hydrocephalus
  b) Intracranial abscess
  c) Central oedema
- Vascular disease of the brain
  a) Aneurysms
  b) Thrombosis
- Decompression surgery of spinal cord
  a) Disc operation (cervical lumbar)
  b) Stenosis
  c) Oedema abscess
  d) Lumbar puncture
  e) Spinal cord injury at various level

- Peripheral nerves
  a) De-compression
  b) Nerve suture
  c) Nerve grafting

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

Placement of the course MPT Neurology Semester 4

Name of the Course	**Intellectual property rights and publication ethics**
Course Description	**Elective**
Course Code	**MPT0223S404T**
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) Neurology

Placement of the course MPT Neurology Semester 4

Name of the Program	**Master of Physiotherapy (MPT)**
Name of course	**Scientific Writing**
Course Code	**MPT0223S405T**
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) Neurology

Placement of the course MPT Neurology Semester 4

Name of course	**Medical Device Innovation**
Course Code	**MPT0223S406T**
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) Neurology

Placement of the course MPT Neurology Semester 4

Name of course	**Evaluative Clinical Training- IV**
Course Code	**MPT0223S401P**
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) Neurology

Placement of the course MPT Neurology Semester 4

Name of course	**Research Dissertation**
Course Code	**MPT0223S402P**
Course Description	**Core Theory**
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

- 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.

- 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.
- Spiral binding should be avoided. The Guide and Principal of the College shall certify the dissertation.

Practical Evaluation of Research Dissertation:

- The Research Dissertation shall be prepared under the guidance of concerned specialty Guide.

Practical Evaluation of Research Dissertation will be based on following criteria:

S. No.	**Practical Evaluation Criteria of Dissertation**		**CA Practical (30 marks)**	**EOSE Practical (70 marks)**
1	Practical of Dissertation	Presentation of dissertation	15	30
2		Viva-voce	10	30
3		Weightage of marks on One Paper Publication	5	10
	Total (100)		30	70

MODEL PAPER

MPT Neurology Sem 1 RoHS
(MPT0223S101T)

Master of Physiotherapy (MPT) Neurology 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 Neurology Sem 1 P&FD-I
(MPT0223S102T)

Master of Physiotherapy (MPT) Neurology 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 Neurology Sem 1 RM
(MPT0223S103T)

Master of Physiotherapy (MPT) Neurology 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 Neurology Sem 1 Bs
(MPT0223S104T)

Master of Physiotherapy (MPT) Neurology Semester II
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 Neurology Sem 1 CoI
(MPT0223S105T)

Master of Physiotherapy (MPT) Neurology 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) 2x15 = 30

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 Neurology Sem 1 DR
(MPT0223S106T)

Master of Physiotherapy (MPT) Neurology 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 Neurology Sem 2 Bm
(MPT0223S201T)

Master of Physiotherapy (MPT) Neurology 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 Neurology Sem 2 P&FD- II
(MPT0223S202T)

Master of Physiotherapy (MPT) Neurology 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 Neurology Sem 2 LIaPE
(MPT0223S203T)

Master of Physiotherapy (MPT) Neurology Semester I
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 Neurology Sem 2 EP
(MPT0223S204T)

Master of Physiotherapy (MPT) Neurology 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 Neurology Sem 2 PiO
(MPT0223S205T)

Master of Physiotherapy (MPT) Neurology 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 Neurology Sem 2 PiLD
(MPT0223S206T)

Master of Physiotherapy (MPT) Neurology 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 Neurology Sem 3 AM&EI
(MPT0223S301T)

Master of Physiotherapy (MPT) Neurology 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 Neurology Sem 3 MMoN&PD
(MPT0223S302T)

Master of Physiotherapy (MPT) Neurology Semester III
End of Semester Evaluation (Month/Year)
Paper-II
Medical Management of Neurological & Paediatric Disorders
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 Stroke, its types, clinical features, and medical management.
Q2. Write down about CP with its types and medical management.
Q3. What is DMD it causes, symptoms and its management.

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

Q4. Write in detail radial nerve palsy.
Q5. What is Bells palsy write in detail its medical management.
Q6. What is brain abscess.

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

Q7. Write in detail about movement disorder.
Q8. Write down the medical management of meningitis.
Q9. Write down in detail about extrapyramidal disorders.
Q10. Write down assessment and investigation of the unconscious patient and management of unconscious patient
Q11. Write in detail about chorea.

MODEL PAPER

MPT Neurology Sem 3 PMoN&PD
(MPT0223S303T)

Master of Physiotherapy (MPT) Neurology Semester III
End of Semester Evaluation (Month/Year)
Paper-III
Physiotherapy Management of Neurological
& Paediatric Disorders
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 Stroke, its types, clinical features, and Physiotherapy management.
Q2. Write down about CP with its types and Physiotherapy management.
Q3. What is DMD it causes, symptoms and its PT management.

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

Q4. Write in detail radial nerve palsy and its PT management.
Q5. What is Bell's palsy write in detail its PT management.
Q6. What is brain Herniation and its PT management.

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

Q7. Write in detail about movement disorder.
Q8. Write down the PT management of meningitis.
Q9. Write down in detail about extrapyramidal disorders.
Q10. Write down the PT management of Parkinson.
Q11. Write in detail about chorea.

MODEL PAPER

MPT Neurology Sem 3 BLS
(MPT0223S304T)

Master of Physiotherapy (MPT) Neurology 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 Neurology Sem 3 ItPC
(MPT0223S305T)

Master of Physiotherapy (MPT) Neurology Semester III
End of Semester Evaluation (Month/Year)
Paper- V
Introduction to Palliative Care
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 Palliative Care its need and significance.
Q2. Write down about end-of-life care in pediatric neurological condition.
Q3. Explain communication about end of life care.

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

Q4. Write in detail about psychological palliative care.
Q5. What is Bell's palsy write in detail its PT management.
Q6. Explain in detail pain management and symptoms.

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

Q7. What is DNR, Explain its significance.
Q8. Write down about holistic care approach.
Q9. Write down different life limiting neurological condition.
Q10. Write in detail about palliative care in adult patients.
Q11. Write in detail about professionalism and multidisciplinary team approach.

MODEL PAPER

MPT Neurology Sem 3 VR
(MPT0223S306T)

Master of Physiotherapy (MPT) Neurology Semester III
End of Semester Evaluation (Month/Year)
Paper-VI
Vestibular Rehabilitation
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 vestibular function test.
Q2. Explain BPPV, its causes, assessment, and treatment.
Q3. Write in detail about the vestibular rehabilitation plan for BPPV patients.

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

Q4. Explain in detail Balance assessment.
Q5. What is Oculomotor examination.
Q6. What is GAIT and write in detail its assessment.

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

Q7. Describe in detail about vestibular system in body.
Q8. Write down berg balance scale.
Q9. Write down in detail role of vestibular system in postural control.
Q10. Explain clinical decision making for patients.
Q11. Write in detail plan of care for Vertigo patients.

MODEL PAPER

MPT Neurology Sem 4 TMiP
(MPT0223S401T)

Master of Physiotherapy (MPT) Neurology 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.

MODEL PAPER

MPT Neurology Sem 4 M&SMoND
(MPT0223S402T)

Master of Physiotherapy (MPT) Neurology Semester IV
End of Semester Evaluation (Month/Year)
Paper-II
Medical and Surgical Management of
Neurosurgical Disorders
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 classification, sign and symptoms of intracranial tumor and its Surgical management.
Q2. Write in detail the procedure of decompressive craniotomy
Q3. Explain about classification of peripheral nerve injuries and Surgical management for all types of injuries

Short Essay (Attempt any Two) 2x10 = 20

Q4. What are tumors in spinal cord
Q5. Explain causes of vascular diseases of brain and its signs, symptoms, and Treatment plan
Q6. Pre and post management of open craniocereberal injuries.

Short Notes (Attempt any Four) 4x5 = 20

Q7. What is aneurysm.
Q8. How Lumbar Puncture procedure is done.
Q9. Write in detail about VP shunting.
Q10. Decompression surgery for stenosis
Q11. Write in detail nerve grafting & nerve suturing.

MODEL PAPER

MPT Neurology Sem 4 PMoND
(MPT0223S403T)

Master of Physiotherapy (MPT) Neurology Semester IV
End of Semester Evaluation (Month/Year)
Paper-III
Physiotherapy Management of
Neurosurgical Disorders
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 classification, sign and symptoms of intracranial tumor and its PT management.
Q2. Write in detail PT management after decompressive craniotomy
Q3. Explain about classification of peripheral nerve injuries and PT management for all types of injuries

Short Essay (Attempt any Two) 2x10 = 20

Q4. PT management of tumors in spinal cord
Q5. Explain causes of vascular diseases of brain and its signs, symptoms, and PT Treatment plan
Q6. Pre and post PT management of open craniocereberal injuries.

Short Notes (Attempt any Four) 4x5 = 20

Q7. What is aneurysm & its PT management
Q8. Write down the Pt management of Head Injury
Q9. Write in detail post VP shunting Physiotherapy.
Q10. Decompression surgery for stenosis & its rehab
Q11. Post nerve grafting & nerve suturing PT management

MODEL PAPER

MPT Neurology Sem 4 IPRaPE
(MPT0223S404T)

Master of Physiotherapy (MPT) Neurology 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.

MODEL PAPER

MPT Neurology Sem 4 SW
(MPT0223S405T)

Master of Physiotherapy (MPT) Neurology 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 Neurology Sem 4 MDI
(MPT0223S406T)

Master of Physiotherapy (MPT) Neurology 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