

**DATTA MEGHE INSTITUTE OF HIGHER EDUCATION AND
RESEARCH**

(DEEMED TO BE UNIVERSITY)

RAVI NAIR PHYSIOTHERAPY COLLEGE,

SAWANGI(MEGHE), WARDHA

POSTGRADUATE COMPETENCY BASED CURRICULUM

**DATTA MEGHE INSTITUTE OF MEDICAL SCIENCES (DEEMED TO BE UNIVERSITY)
RAVI NAIR PHYSIOTHERAPY COLLEGE, SALOD (HIRAPUR), WARDHA**

**POST GRADUATE CURRICULUM
SUBJECT CODE – MPT/RESEARCH METHODS AND BIOETHICS/2022 -2023 to 2026-2027**

RESEARCH METHODS AND BIOETHICS

MPT II YEAR

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1. Preamble

The Ministry of Human Resource Development, Government of India presented The National Education Policy (NEP) 2020. The global education development agenda reflected in the Goal 4 (Sustainable Development Goal 4) of the 2030 Agenda for Sustainable Development, adopted by India in 2015 - seeks to 'ensure inclusive and equitable quality education and promote lifelong learning opportunities for all' by 2030. Such a huge task demand reworking and rearrangement of the complete education arrangement to be backing and promoting education, with the aim to fulfilling the set out targets and objectives. With this focus there seem to be a need for key reforms to abridge the lacunae in the present programs and course outcomes to highlight the main features, equality and veracity into the structure.

The NEP 2020 rests precise importance on the growth of the innovative talent of every educator. It emphasizes upon the fundamental capabilities and also advanced order intellectual capabilities, such as critical thinking and reasoning, problem solving, social ethical, and emotional capacities. The policy also emphasis that the education system brings out noble individuals with capability of balanced behavior, having kindness and compassion, bravery and flexibility, technical soundness and inventive mind, with thorough moral jetties and standards. The policy recognizes the need to change curriculum at the undergraduate and graduate levels in light of changing demands, technology, and novel developing illness patterns. The strategy also advises that current institutional systems for regulating and ensuring the quality of training and education should be reviewed urgently. The policy suggests that the debate over re-creating a regulatory structure for health professional education be revisited in order to address new needs and challenges, and it calls for Professional Education Regulation reforms

Competency in speciality, keeping abreast of contemporary advances and development of one's discipline, scientific inquisitiveness, know how regarding basic principles of research methodology, epidemiology and modes of consulting library, basic skills in teaching Physiotherapy students should be the basic parameters to judge and evaluate postgraduate training and teaching. Ability to address therapeutic, rehabilitative, preventive and promotive dimensions of one's speciality, sensitiveness and responsiveness to health needs of community and national health programmes, demonstration of empathy and human approach to patient in accordance with social norms and expectation should form the basic structure on which postgraduate training should be based.

2. Goals

- ❖ Practice his speciality ethically.
- ❖ Demonstrate sufficient understanding of basic sciences related to his speciality.
- ❖ Diagnose and manage majority of conditions in his specialty (Clinically and with the help of relevant investigations)
- ❖ Plan and advice measures for the prevention and rehabilitation of patient pertaining to his speciality.
- ❖ Play the assigned role in the implementation of National Health programs.
- ❖ Demonstrate competence in basic concepts of research methodology.
- ❖ Develop good teaching skills.

Program Outcomes		Statement
PO 1	Clinician	Clinician- who understands and provides preventive, promotive, curative, palliative and holistic care with compassion as per Local, National and Global healthcare needs
PO 2	Leader and member of the health care team and system:	Leader and member of the health care team and system providing services to Local, Regional, National, and International stakeholders.
PO 3	Communicator:	Communicator with patients, families, colleagues, and the community as per national and international healthcare standards.
PO 4	Lifelong learner:	Lifelong learner committed to the constant advancement of knowledge and skills in accordance with healthcare needs.
PO 5	Professional	Professional committed to ethical, responsive, and accountable service to the patients, the community, and the profession as per Global standards of health professions.
PO 6	Critical Thinker	Critical thinker, able to think rationally and generate logical connections between concepts in accordance with global healthcare requirements.
PO 7	Researcher	Researcher who can gather, evaluate, and enrich scholarly literature, thereby enabling evidence-based healthcare practice which is Globally relevant

Subject wise PSOs and Courses Outcome (COs)

Subject 1: Research Methods and Bioethics (Paper I)

Program Specific Outcomes (PSOs)

PSOs	Statement
PSO 1	Integrate and practice the concept of Physiotherapy and Ethical codes practice as well as moral and legal aspects.
PSO 2	Acquire research related acumen and design effectively to undertake a research and analysis of research data. Course outcomes of Research Methods and Bioethics

CO 1	Explain Helsinki Declaration, Ethics, Education & Administration, rehabilitation assessment and management using International Classification of Functioning Disability and Health (ICF) and Future challenges in physiotherapy as per health care needs.
CO 2	Apply Research, Types, Qualitative and Quantitative Study, Delphi process, Bias, Study design, Sampling design, measurement, methods, outcome measures, communicating research globally.
CO3	Illustrate scientific writing of –Research paper, Review paper, Book, Reviews, Thesis, Conference and project reports and significance of report writing.
CO 4	Analyze Biostatistics, Measures of Location and Variability, Normal distribution and Curve, sampling and significance of difference.
CO5	Evaluate statistical inference, tests of significance, correlation and regression, analysis of frequencies, statistical measure of reliability, Power analysis, Measures of Population.

3. Learning objectives

- Theoretical Knowledge: -A student should have fair knowledge in the basic sciences as applied to his speciality. He /She should acquire in depth knowledge of his subject including recent advances. He should be fully conversant with the bedside procedures and having knowledge of latest diagnostics and therapeutics available.
- Clinical/Practical skills: -A student should be expert in good history taking, physical examination, screening for Physiotherapy treatment, ICF application and applying the advanced Physiotherapy treatment techniques.
- Acquire the in-depth knowledge of structure & function of human body related to the respective branch of specialty.

- Acquire the in-depth knowledge of movement dysfunction of human body, cause there of, & of principles underlying the use of physiotherapeutic interventions, for restoring movement dysfunction towards normalcy.
- Demonstrate ability to critically appraise recent physiotherapeutic & related medical literature from journals & adopt diagnostic & therapeutic procedures based on it.
- Demonstrate skill in physical & functional diagnosis pertaining to patient under care.
- Demonstrate ability to make clinical decision & select appropriate outcome measures based on the comprehensive knowledge of theoretical aspects of specialty.
- Demonstrate an expertise in evidence-based skill in the management of movement dysfunction.
- Demonstrate an expertise in health promotion & quality restoration of functional movement pertaining to specialty.
- Planning & implementation of treatment programme adequately and appropriately for all clinical conditions relate to respective specialty in acute & chronic stage, in intensive care , indoor & outdoor institutional care, independent practice ,on fields of sports & community & during disaster or natural calamities.
- Demonstrate proficiency in planning & executing physiotherapy services & teaching technology skills.
- Demonstrate managerial & administrative skills
- Demonstrate the knowledge of legislation applicable to compensation for functional disability & appropriate certification.
- Able to execute all routine physiotherapeutic procedures with evidence based practice.
- Able to be a prominent member of the multidisciplinary physiotherapy team and treat all the conditions which need physiotherapeutic procedures.
- Able to provide adequate knowledge about the treatment procedures and its benefit.
- Able to transfer knowledge and skills to students as well young professionals.
- Able to perform independent physiotherapy assessment and treatment for patients.
- Able to undertake independent research in the field of physiotherapy.
- Learn multidisciplinary practice skills.
- Able to practice and assess patient independently

Course content
Paper I: Research Methods and Bioethics

SN	Co.no	Competency	Paper	Domain	Level	Suggested Teaching Method	Suggested Assessment method
Bioethics & Professional Practice I:							
1	RMB1.1.1	Discuss Helsinki Declaration, Knowledge of Ethical Issues in practice of physiotherapy- Clinical, Research and Academics. Ethics in Physiotherapy practice, clinical and research, code of Conduct for safe Disciplined practice- Legal aspect.	I	K	KH	Small Group Discussion/ Seminar/Didactic Lecture	LAQ/SAQ
	RMB1.1.2	Explain Rights and Responsibility of Physiotherapist and Client, PWD Act. Rules and regulations governing physiotherapy practice-National & International Administration, legislation, rules and Regulations governing physiotherapy practice-National & International (MSOTPT Council, IAP & WCPT).	I	K	KH	Discussion/ Seminar/Didactic Lecture	LAQ/SAQ
	RMB1.1.3	Discuss Roles of the Physiotherapist as per WCPT/WHO. Standards for practice For Physiotherapist And the criteria as	I	K	KH	Small Group Discussion/ Seminar/Didactic Lecture	LAQ/SAQ

		Competency statements					
2	RMB 1.2	Discuss Administration & Management in Physiotherapy, Hospital, community & Industry. Planning, organization, budget, policy procedures and quality assurance. Communication skills, leadership quality & teamwork.	I	K,C	KH	Seminar/Communication Skill workshop/Didactic Lecture	LAQ/SAQ / Workplace based assessment
3	RMB 1.3	Discuss Education – Formal and non-formal – Philosophy of health education, curricular planning. Teaching technology – teaching learning methods, interactive learning, methods to facilitate learning, use of audio-visual aids, clinical teaching, methods of Assessment of student competencies.	I	K, A,S, C	KH	Seminar /Workshop/Didactic Lecture	LAQ/SAQ

Bioethics & Professional Practice II:

4	RMB 2.1.	Discuss Documentation of rehabilitation assessment and management using International Classification of Functioning Disability and Health(ICF). Future challenges in physiotherapy.	I	K,S	KH	Didactic Lecture/Seminar /Workshop	LAQ/SAQ Workplace based assessment
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RESEARCH METHODOLOGY AND BIostatISTICS**RESEARCH METHODOLOGY I**

1	RMB 3.1.	Introduction to research	I	K	KH	Small Group Discussion / Seminar/workshop/Lecture	SAQ
2	RMB3.2.	Discuss types of research and Define a research question	I	K	KH	Small Group Discussion / Seminar/workshop/Lecture	LAQ/SAQ
3	RMB3.3.	Discuss qualitative study designs Grounded theory and Phenomenological methods	I	K	KH	Small Group Discussion/Seminar/workshop/Lecture	LAQ/SAQ
4	RMB3.4.	Discuss use of Delphi process	I	K	KH	Small Group Discussion / Seminar/workshop/Lecture	LAQ/SAQ
5	RMB3.5.	Discuss quantitative study	I	K	KH	Small Group Discussion / Seminar/workshop/Lecture	LAQ/SAQ
6	RMB3.6.	Discuss Type I and type II bias	I	K	KH	Small Group Discussion / Seminar/workshop/Lecture	SAQ

RESEARCH METHODOLOGY II

7	RM B 4.1.	Discuss study design: types, Case study, Case series, longitudinal cohort, Pre- post design, Time series design, repeated measures design, Randomized control design.	I	K	KH	Small Group Discussion/Seminar/workshop/Lecture	LAQ/SA Q
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8	RMB 4.2.	Discuss sampling design, calculating minimum Sample size based on design.	I	K	KH	Small Group Discussion/ Seminar/workshop/ Lecture	LAQ/ SAQ
9	RMB 4.3.	Discuss measurement: Properties of measurement: reliability, validity, responsiveness, Minimally Clinically Important Difference(MCID).	I	K	KH	Small Group Discussion/Seminar /workshop/Lecture	LAQ/ SAQ
10	R M B 4 .4 .	Discuss outcome measures: Use of outcome measures in Rehabilitation research	I	K	KH	Small Group Discussion/Seminar /workshop/Lecture	LAQ/ SAQ
11	RMB 4.5.	Discuss research methods: Designing methodology, Reporting results.	I	K	KH	Small Group Discussion/ Seminar/workshop/ Lecture	LAQ/S AQ
12	R M B 4 .6 .	Discuss Communicating research.	I	K	KH	Small Group Discussion/Seminar /workshop/Lecture	SAQ

Research Methodology III

13	M B 5 .1 .1 .	SCIENTIFIC WRITING: Discuss definition and kinds of scientific documents–Research paper, Review paper, Book, Reviews, Thesis, Conference and project reports(for the scientific community and for funding agencies). Publication–Role of author, Guide, Co-authors. Structure, Style and contents; Style manuals(APA,MLA); Citation styles: Foot notes, References Evaluation of research.	I	K	KH	Small Group Discussion (SGD)/workshop/Lecture	SAQ Paper presentation
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	RMB 5.1.2.	Discuss significance of Report writing; Different steps in Report writing; Mechanic and precautions of writing research reports Oral and poster presentation of research papers in conferences/symposia; Preparation of abstracts.	I	K	KH	Small Group Discussion(SGD)/workshop/Lecture	SAQ/paper presentation
BIOSTATISTICS I							
1	RMB 6.1.	Introduction to Biostatistics. Discuss Sources and Presentation of Data.	I	K	KH	Small Group Discussion(SGD)/workshop/Lecture	LAQ/SAQ
2	RMB 6.2.	Discuss measures of Location and Variability & its Measures. Normal distribution and Curve.	I	K	KH	Small Group Discussion(SGD)/workshop/Lecture	LAQ/SAQ
3	RMB 6.3.	Discuss Sampling, Probability, Sampling variability And Significance.	I	K	KH	Small Group Discussion(SGD)/workshop/Lecture	Paper presentation
4	RMB 6.4.	Discuss Significance of deference in Means, for small Sample and Large sample.	I	K	KH	Small Group Discussion(SGD)/workshop/Lecture	LAQ/SAQ
BIOSTATISTICS II							
5	RMB 7.1.	Discuss Statistical inference. Comparison of group means:T-test.	I	K	KH	Small Group Discussion(SGD)/workshop	LAQ/SAQ
6	RMB 7.2.	Discuss analysis of variance.	I	K	KH	Small Group Discussion(SGD)/workshop/Lecture	SAQ
7	RMB 7.3.	Discuss multiple comparison tests. Non parametric tests.	I	K	KH	Small Group Discussion(SGD)/workshop/Lecture	LAQ/SAQ
8	RMB 7.4.	Discuss Correlations and Regression.	I	K	KH	Small Group Discussion(SGD)/workshop/Lecture	LAQ/SAQ
9	RMB 7.5.	Discuss Analysis of frequencies: Chi square.	I	K	KH	Small Group Discussion(SGD)/workshop/Lecture	SAQ

BIOSTATISTICS III

10	RMB 8.1.	Discuss Statistical measure of reliability.	I	K	KH	Small Group Discussion (SGD)/workshop	SAQ
11	RMB 8.2.	Discuss Power analysis– Determining sample size.	I	K	KH	Small Group Discussion(SGD)/workshop/Lecture	SAQ
12	RMB 8.3.	Discuss Measures of Population – Rate, Ratio, Proportion, Incidence and prevalence, Relative risk, Risk ratio,Odds ratio.	I	K	KH	Small Group Discussion(SGD)/workshop /Lecture	LAQ/SAQ

SCHEME OF EXAMINATION
Formative and Summative Examination

Theory: There will be four papers of 100 marks each of three hours duration details are as follows

Que.No.	Type of Question	Out Of	Total Questions	Marks
Q.1	Short Answer Questions	All Compulsory	10M X6	60Marks
Q.2	Long Answer Question	All Compulsory	20M X2	40Marks

Theory Paper setting format

PAPER – I

Time: 3 Hours]

[Max. Marks: 100

Instructions :---

- (1) All questions are compulsory
- (2) Numbers to the right indicates full marks.
- (3) Draw neat diagrams, wherever necessary
- (4) Use single answer book for answering both sections.

SECTION – A

Q1. S.A.Q. – Short Answer Questions

10 M X 6 = 60

- (a) _____
- (b) _____
- (c) _____
- (d) _____
- (e) _____
- (f) _____

SECTION – B

Q2. L.A.Q. – Long Answer Questions

20 M X 2 = 40

- (a) Describe _____ under the following heads - 20 M
 - Level I - Knowledge (5 M)
 - Level II - Comprehension (5 M)
 - Level III - Application (5 M)
 - Level IV – Analysis (5 M)
- (b) Describe _____ under the following heads - 20 M
 - Level I - Knowledge (5 M)
 - Level II - Comprehension (5 M)
 - Level III - Application (5 M)
 - Level IV – Analysis (5 M)

Primary Question Paper Template:

MPT/RESEACH METHODS AND BIOETHICS/2022 -2023 to 2026-2027

Template - Table of specification

(2- LAQ, 6 -SAQ)

Question type	Maximum Marks
LAQ 2/2	20 M X 2 = 40 M
SAQ 6/6	10 M X 6 = 60 M
Total	100 M

**LIST OF REFERENCE BOOKS AND JOURNALS FIRST YEAR M.P.T
BOOKS&JOURNALS PHYSIOTHERAPY**

Sr. No	Name of Books
1)	American Physical Therapy Association: Guide To Physical Therapy Practice, 2nd Edition 2001.
2)	Physical Rehabilitation (4&5th Edition) By Susan B O Sullivan and Thomas J Schmitz. (Jaypee Publication)
3)	International Classification of Functioning, Disability and Health: Short Version. (IT'S Publication)
4)	Professionalism In Physical Therapy: History, Practice and Development by Laura Lee Swisher and Catherine G. Page, (Elsevier Publication 2005)
5)	Effective Documentation For Physical Therapy Professionals, By Eric Shamus And Debra (Mcgraw Hill Company 2004)
6)	Physical Therapy Documentation: From Examination To Outcome By Mia Erickson, Ralph Utzman (Slack Incorporated 2008)
7)	Writing SOAP Notes With Patient / Client Management Formats By Ginge Kettenbach, Ph. D., PT, 3rd Edition, 2004, F.A. DAVIS COMPANY. Philadelphia
8)	Practical Evidence-Based Physiotherapy Rob Herbert, Gro Jamtvedt, Judy Mead, Kare Birger Hagen Elsevier Butter Worth Heinemann; Oxford UK (2005)
9)	Guide To Evidence-Based Physical Therapy Practice By Dianne V. Jewell, PT, Phd, Virginia Commonwealth University, Virginia
10)	Concern Specialty Books For Physical Therapy Assessment And Outcome Measures
11)	Electromyography In Clinical Practice By Michael J. Aminoff, 3rd Edition (Churchill Livingstone)
12)	Clinical Neurophysiology By UK Misra And Kalita, 2nd Edition (Churchill Livingstone)
13)	Electro Diagnosis In Diseases Of Nerve And Muscle: Principles And Practice By Jun Kimura (Oxford University Press)
14)	The ABC Of EMG: A Practical Introduction To Kinesiological Electromyography By Peter Conrad (Noroxon Inc. USA 2005)
15)	Integrating Physical Agents In Rehabilitation By Bernadette Hecox And John Sanko, 2nd Edition (Pearson Prentice Hall 2006)
16)	Integrating Physical Agents In Rehabilitation By Bernadette Hecox And John Sanko, 2nd Edition (Pearson Prentice Hall 2006)
17)	Physicals Agents In Rehabilitation: From Research To Practical By Michell H. Cameron, 2nd Edition (Saunders And Elsevier, 2003)
18)	Therapeutic Modalities For Allied Health Professionals By William E. Prentice And Frank Underwood (Mcgraw-Hill, 1998)
19)	Therapeutic Exercise: Treatment Planning For Progression By Francis E. Huber, Christly. Wells (W.B. Saunders Company, 2006)

20)	Therapeutic Exercise: Foundations And Techniques By Carolyn Kisner And Lynn Allen Colby (W.B. Saunders Company, 2007)
21)	Therapeutic Exercise, Moving Towards Function By Carrie M. Hall And Lori Thein Brody (Lippincott Williams & Wilkins, 2004)
22)	Grieve's Modern Manual Therapy: The Vertebral Column By Jeffrey Boyling And Grad Dip Man Ther (Churchill Livingstone)
23)	Exercise Physiology By Mc Ardle, Katch & Katch (Lippincott Williams And Wilkins, 2000)
24)	Exercise Physiology: Exercise, Performance, And Clinical Applications By Robert A. Roberts And Scott O Roberts William C Brown, 1997)
25)	Clinical Exercise Testing and Prescription Theory And Applications By Scott O. Roberts, Peter Hanson (C RC Press, 1997)
26)	Basic Biomechanics of The Musculoskeletal System By Margareta Nordin And Victor H. Frankle, 2nd Edition (Lea And Febiger)
27)	Kinesiology of The Human Body: Under Normal And Pathological Condition By Arthur Steindler, 5th Edition (Charles C Thomas, 1977)
28)	Joint Structure & Function :A Comprehensive Analysis By Cynthia C Norkin, Pamela K Levangie (Jaypee Brothers, 2006)
29)	Brunnstrom's Clinical Kinesiology By Laura K. Smith & Don Lehmkueh, 5th Edition (F A Davis, 1996)
30)	The Physiology Of The Joints By Kapandji & Matthew J Kendel (Churchill Livingstone, 2008)
31)	Clinical Biomechanics Of The Spine By Augustus A White & Manohar M Panjabi, 2nd Edition (Lippincott Williams & Wilkins; 1990)
32)	Kinesiology :The Mechanics And Pathomechanics of Human Movement By Carol Oatis (Lippincott Williams & Wilkins; 2008)
33)	Kinesiology: Application to Pathological Motion By Soderberg, 2nd Edition (Williams & Wilkins, 1997)

Research Methodology and Biostatics

Sr. No	Name of Books
1)	Research Methodology. Methods and Techniques C.R. Kothari New Age International Publishers. 2nd edition on 2008
2)	Rehabilitation Research: Principles and Applications by Elizabeth Domholdt (Elsevier Science Health Science Div, 2004)
3)	Research Methods for clinical therapists by Hicks Carolyne, Churchill
4)	Foundations of clinical Research by Portney & Watkins, Davis
5)	Research methodology by Kothari New Age international
6)	Research Methodology for health professionals by Goyal, Jaypee
7)	Methods in Biostatistics by Mahajan, B.K Jaypee
8)	Principles & practice of Biostatistics by Dixit, J.V Bhanot

Teaching Technology

Sr. No	Name of Books
1)	Public Power And Administration – Wilenski, Hale And Iremonger, 1986
2)	Physical Therapy Administration And Management – Hickik Robert J
3)	Management Principles For Physiotherapists – Nosse Lorry J.
4)	Medical Education: Principles and Practice: Published by the National teacher Training Center, JIPMER, Pondicherry: latest Edition
5)	Medical Education: Trainer's Manual : Published by the National teacher Training Center, JIPMER, Pondicherry: latest Edition
6)	Basics in Medical Education : Zubair Amin & Hoon Eng Khoo: World Scientific: 2009
7)	A Practical Guide for Medical Teachers : John A Dent & Ronald M Harden: Elsevier Health Sciences: 2009
8)	International Handbook of Medical Education : Abdul W Sajid, Christie H McGuire et al: Greenwood Press 1994

9)	PRINCIPLES OF MEDICAL EDUCATION, Tejinder Singh, Piyush Gupta, DaljitSingh.year: 2009. Edition: 3 r deditionPublisher: JAYPEE brothers
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Journals

Sr. No	Name of Journals
1	Journal Of Indian Association Of Physiotherapy
2	Physical Therapy (APTA, America)
3	Physiotherapy (CSP, London)
4	American Journal Of Physical Medicine And Rehabilitation
5	Physiotherapy (Canada)
6	Physiotherapy – Theory And Practice
7	Australian Journal Of Physiotherapy
8	Physiotherapy (Canada).
9	Clinical Rehabilitation.
10	Journal Of Exercise Science & Physiotherapy

Paper I: Research Methods and Bioethics

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APPLIED PHYSIOTHERAPEUTICS

MPT II YEAR

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PREAMBLE:The Ministry of Human Resource Development, Government of India presented The National Education Policy (NEP) 2020. The global education development agenda reflected in the Goal 4 (Sustainable Development Goal 4) of the 2030 Agenda for Sustainable Development,

adopted by India in 2015 - seeks to ‘ensure inclusive and equitable quality education and promote lifelong learning opportunities for all’ by 2030. Such a huge task demand reworking and rearrangement of the complete education arrangement to be backing and promoting education, with the aim to fulfilling the set out targets and objectives. With this focus there seem to be a need for key reforms to abridge the lacunae in the present programs and course outcomes to highlight the main features, equality and veracity into the structure.

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Applied Physiotherapeutic covers the concept of exercise physiology in health and disease, Biomechanics of posture and movement patterns and Gait analysis, Biomechanical, Neuro-anatomical and Neuro-physiological basis of therapeutic exercises, fitness and health promotion, electrodiagnosis and electrophysiological investigations, pain assessment, pain management, Physiotherapy modalities , techniques and approaches.

GOALS :The broad goal of teaching of post graduate students in Applied Physiotherapeutics is to gain knowledge about Exercise Physiology in relation to Physiotherapy ,Diagnostic procedures used in Physiotherapy and application of Physiotherapy modalities and techniques.

Program Outcome		Statement
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PO 1	Clinician	Clinician- who understands and provides preventive, promotive, curative, palliative and holistic care with compassion as per Local, National and Global healthcare needs
PO 2	Leader and member of the health care team and system:	Leader and member of the health care team and system providing services to Local, Regional, National, and International stakeholders.
PO 3	Communicator:	Communicator with patients, families, colleagues, and the community as per national and international healthcare standards.
PO 4	Lifelong learner:	Lifelong learner committed to the constant advancement of knowledge and skills in accordance with healthcare needs.
PO 5	Professional	Professional committed to ethical, responsive, and accountable service to the patients, the community, and the profession as per Global standards of health professions.
PO 6	Critical Thinker	Critical thinker, able to think rationally and generate logical connections between concepts in accordance with global healthcare requirements.
PO 7	Researcher	Researcher who can gather, evaluate, and enrich scholarly literature, thereby enabling evidence-based healthcare practice which is Globally relevant

Program Specific Outcomes (PSOs)

PSOs	Statement
PSO 1	Acquire knowledge about Physiology of Exercise and Nutrition.
PSO 2	Develop a reasoned rationale for diagnostic procedures of Musculoskeletal, Neurological, Cardiovascular and Respiratory conditions and applied Physiotherapeutics.

CO 1	Explain Body Composition, Nutrition, Energy transfer, responses and adaptations to various systems, assessment of strength and endurance ,environmental influence of exercise and Fatigue.
CO 2	Demonstrate Assessment of strength ,endurance and fatigue.
CO3	Interpret application of Investigations in Musculoskeletal,Neurological,Cardiocascular and Respiratory conditions
CO 4	Apply Clinical reasoning related to posture, disability,pain,aging,effect of medications on activity performance and application of modalities relevant to health care needs.
CO 5	Devise a Plan for Physiotherapy management in stress management, disaster management, health promotion and aquatic therapy as per global health care needs.

Learning Objectives:

1. Acquire the updated knowledge of production / biophysics as well as the Physiological /therapeutics effects (at the cellular levels) of

various electrical currents, Thermal agents,ultrasound &electro–magnetic forces & potential risk factors on prolonged exposure.

2. AcquiretheknowledgeaboutvariousPharmacoTherapeuticagentstobeusedincombinationwithvariouselectro–therapeuticmodes, with appropriate clinical decision & reasoning in the management of pain / tissue healing / Wound care & skin condition conditions.
3. Acquire the updated knowledge of the Patho-mechanics of the human movement.
4. Be able to apply the principles of Biomechanics in functional analysis of movement Ergonomic analysis / advice & prostheses / Orthotics.
5. Be able to prescribe, check out & training the application of lower limb upper prostheses, Spinal/ lower / upper extremity Orthoses used as mobility aids.
6. Be able to prescribe the Ergonomic alternations at the work place &industry.
7. Be able to fabricate, temporary hand splints and functional splints for gait training.
8. Acquires skill in disability evaluation &will be able to CERTIFY the same
9. Acquired the updated knowledge of Physiology and Physical exercise & will be able to interpret the physiological effects of the vital parameters of simple laboratory tests, such as “StressTest”
10. Acquire the skill of using Bicycle –Ergometry & Treadmill for the purpose of General Fitness &Exercise tolerance for Healthy persons.
11. Be able to prescribe &train for general fitness& health promotion for children, pregnant/lactating females, Obese & elderly subjects.

COURSECONTENT

Exercise Physiology and Nutrition

SR NO	Com P.No	TOPIC	Paper	Domain	Level	Suggested Teaching Method	Suggested Assessment method
1	PAP 1.1	Introduction to Exercise Physiology: Body composition, nutrition and caloric balance and performance	II	K,	KH	Didactic Lecture/Seminar /Small Group Discussion	LAQ/SAQ/ OSCE
2	PAP 1.2	Sources of Energy, Energy Transfer and Energy Expenditure at rest and various physical activities.	II	K	KH	Didactic Lecture/Seminar /Small Group Discussion	LAQ/SAQ/ OSCE
3	PAP 1.3	Physiologic Support system and Physical Activity: Cardio-Pulmonary, Neuromuscular &Hormones.	II	K	KH	Didactic Lecture/Seminar /Small Group Discussion	LAQ/SAQ/ OSCE
4	PAP 1.4	Responses and Adaptations of various Systems to Exercise and training.	II	K	KH	Didactic Lecture/Seminar /Small Group Discussion	LAQ/SAQ/ OSCE
5	PAP 1.5	Assessment and training for endurance and strength (Anaerobic and aerobic power)	II	K, S, A, C	KH, SH	Didactic Lecture/Seminar /Small Group Discussion	LAQ/SAQ/ OSCE
6	PAP 1.6	Environmental influence on Performance.	II	K	KH	Didactic Lecture/Seminar	LAQ/SAQ/ OSCE
7	PAP 1.7	Exercise prescription for health and fitness. Considerations of age and Sex in exercise and training.	II	K, S, A, C,	SH	Didactic Lecture/Seminar /Small Group Discussion	LAQ/SAQ/ OSCE

8	PAP 1.8	Fatigue: Assessment and management.	II	K, S, A, C,	SH	Didactic Lecture/Seminar /Small Group Discussion	LAQ/SAQ/ OSCE
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Physiotherapy Diagnosis

1	PAP 2.1	Radiological investigations and its interpretation including Imaging techniques 1. MRI & X-ray in Musculoskeletal conditions. 2. MRI & X-ray in Neurological conditions. 3. MRI & X-ray in cardiorespiratory conditions. 4. MRI & X-ray in community Physiotherapy conditions.	II	K	KH	Seminar/Didactic Lecture, Guest lectures, Workshop	LAQ/SAQ
2	PAP 2.2	ECG and Pulmonary Function test.	II	K,S,A,C	KH/SH	Didactic Lecture, Guest lectures, Workshop.	SAQ/OSPE
3	PAP 2.3	Anthropometric measurements.	II	K, S, A	SH	Seminar/Didactic Lecture.	SAQ/OSPE/DOPS
4	PAP 2.4	Physical fitness assessment - Bodycomposition,ETT,FieldTest,6 Minute walktestetc.,Flexibility,Musclestrength,endurance,Skills,Testing of agility-balance,co-ordination. Effect of aerobic, anaerobic, Isometric, Isotonic and Isokinetic exercises on muscle and cardio-pulmonary function.	II	K, S, A, C	SH	Seminar/Didactic Lecture, Guest lectures, Workshop.	LAQ/SAQ Workplace based assessment /DOPS/OSPE/MiniCEX

5	PAP 2.5	S-D Curve, EMG, NCV interpretation and Biofeedback.	II	K, S	K H , S H	Seminar/Didactic Lecture, Guest lectures, Workshop, video.	LAQ/SAQ/ OSPE/DO PS
6	PAP 2.6	Physical disability evaluation and disability diagnosis.	II	K, S, A	S H	Seminar/Didactic Lecture, Guest lectures, Workshop.	LAQ/SAQ/ OSPE/DO PS/ MiniCEX
7	PAP 2.7	Posture and Gait analysis.	II	K, S, A, C	K H , S H	Seminar /Didactic Lecture, Guest lectures, Workshop, video,	LAQ/SAQ/ OSPE/DO PS

Advance Physiotherapeutics

1	PAP 3.1	Pain (neurobiology, various theories, assessment, modulation and management of pain)	II	K, S, A, C	S H	Seminar/Small Group Discussion (SGD)/ Workshop/Case-Based studies	LAQ/SAQ Workplace-based assessment
2	PAP 3.2	Effect of medications on activity performance. a) Anti-depressants, b) Narcotics, c) Dopamine (L-dopa, C-dopa) d) BetaBlockers, e) ACEInhibitors, f) Diuretics, g) Statins. h) OralHypoglycemics, i) Other:Bronchodilators,Nicotine andThyroidreplacementdrugs. j) NSAID&Steroids Amphetamines	II	K	K H	Seminar/Small Group Discussion (SGD)/ Workshop/Case-Based studies	SAQ

3	PAP 3.3	Physiotherapy for health and stress management.	II	K, S, A, C	S H	Seminar/Small Group Discussion(SGD)/ Workshop/Case-Based studies	LAQ/SAQ Workplace-based assessment
4	PAP 3.4	CPR, monitoring systems and defibrillators and artificial respirators.	II	K, S, A, C	S H	Seminar/Small Group Discussion (SGD)/ Workshop/Case-Based studies	LAQ/SAQ Workplace-based assessment
5	PAP 3.5	Physiotherapy modalities, techniques and approaches.	II	K,S,A	S H	Seminar/Didactic Lecture,	LAQ/SAQ/ OSPE
6	PAP 3.6	Aging: Physiological changes and Physiotherapy management.	II	K,S,A,C	K H , S H	Seminar/Didactic Lecture, Guest lectures, Workshop.	LAQ/SAQ/ OSCE/MiniCEX
7	PAP 3.7	Aids and appliances, adaptive functional Devices to improve movement dysfunction.	II	K,S,A	S H	Seminar/Didactic Lecture, Guest lectures, Workshop.	LAQ/SAQ/ OSPE/DOPS
8	PAP 3.8	Physiotherapy in Disaster management.	II	K,S,A,C	K H	Seminar/Small Group Discussion(SGD)/ Workshop/Case-Basedstudies	LAQ/SAQ
9	PAP 3.9	Integration of Yoga in Physiotherapy for Health promotion and Dysfunction.	II	K,S,A,C	S H	Seminar/Small Group Discussion(SGD)/ Workshop/Case-Based studies	LAQ/SAQ/ OSPE/DOPS Workplace based assessment
10	PAP 3.10	Aquatic Therapy Definition, Properties of water, Hydrodynamic principles, Physiological changes of immersion,	II	K, S, A, C	K H	Seminar/Lecture/Small Group Discussion	LAQ/SAQ

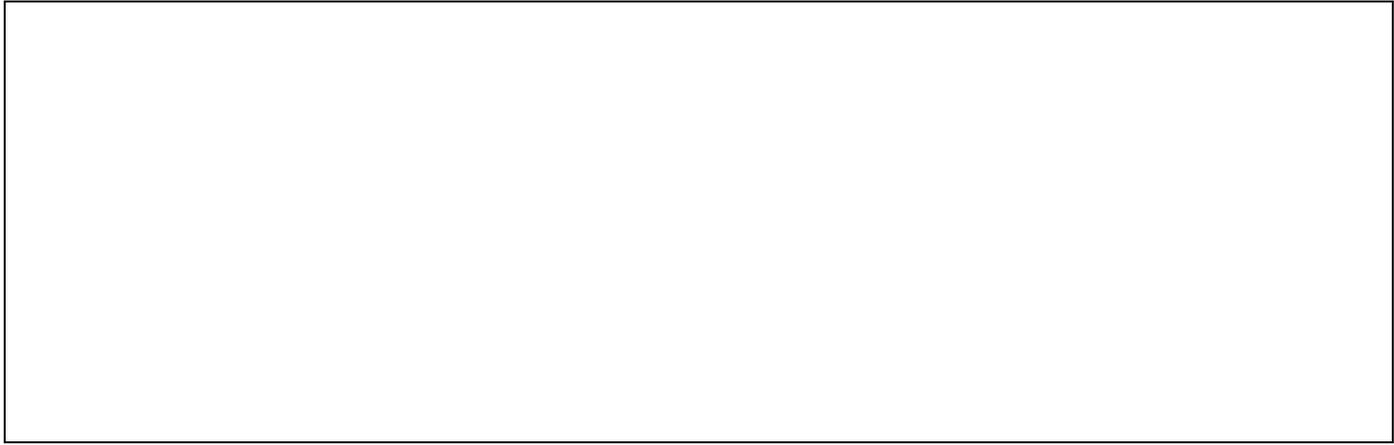
		Therapeutic Benefits, Safety, Indications & contraindications, Aquatic therapy vs land., Various concepts in Aquatic therapy				(SGD)/ Workshop/Case-Based studies	
11	PAP 3.11	Clinical decision making in Physiotherapeutics.	II	K, S, A	KH	Seminar/Small Group Discussion	SAQ Workplace based assessment

PRACTICAL						
1	Introduction to Screening and Evaluation for Referral in Physiotherapy a. Reasons for Referral and Screening and Evaluation b. Screening and Evaluations and Surveillance c. Diagnosis by the Physiotherapist d. Differential Diagnosis versus Screening and Evaluation e. Decision-Making Process Case Examples and Case Studies.	I & II	K, S, A, C	KH	Seminar/ Small Group Discussion	LAQ/SAQ OSPE
2	Introduction to the interviewing process a. Concepts in Communication b. Cultural Competence c. The Screening and Evaluation Interview d. Subjective Examination e. Core Interview f. Hospital Inpatient Information.	I & II	K, S, A, C	KH	Seminar/ Small Group Discussion	SAQ Quiz, OSPE
3	Evaluation of pain: Subjective and Objective assessment. Various Pain Measurement Scales	I & II	K,S,A, C	KH	Seminar/ Small Group Discussion	LAQ/SAQ Quiz, OSPE

4	Physical assessment as a Screening and Evaluation tool a. General Survey b. Techniques of Physical Examination c. Integumentary Screening and Evaluation Examination d. Nail Bed Assessment e. Lymph Node Palpation f. Musculoskeletal Screening and Evaluation Examination g. Neurologic Screening and Evaluation Examination h. Regional Screening and Evaluation Examination i. Systems Review.	I & II	K,S,A, C	KH	Seminar/ Small Group Discussion	SAQ Quiz, OSCE/ OSPE
6	Screening and Evaluation for Cardiovascular and Respiratory disease: Inspection, Palpation, Percussion Auscultation.	I & II	K,S,A, C	KH	Seminar/ Small Group Discussion	SAQ Quiz, OSPE
8	Screening and Evaluation for Cancer.	I & II	K, S, A, C	KH	Seminar/ Small Group Discussion	Quiz, OSPE
9	Screening and Evaluation of the Head, Cervical, Thoracic and Lumbo-sacral region.	I& II	K, S, A, C	KH	Seminar/ Small Group Discussion	Quiz, OSPE
10	Screening and Evaluation the Upper and Lower Quadrant:	I& II	K, S, A, C	KH	Seminar/ Small Group Discussion	LAQ/SAQ Quiz, OSPE
11	Establishment of Physiotherapy dept. in a a. hospital b. Multi-specialty Hospital c. Private Clinic d. Tertiary care Hospital e. Institute for teaching and learning	I	K, S	SH	Didactic Lecture/ Seminar / Workshop	Work place-based assessment

	Planning, organization, budget, policy procedures and quality assurance. Communication skills, leadership quality & teamwork					
12	Teaching technology –interactive learning, use of a. Facilitation Teaching- Tutorials, ITP, Micro teaching, PBL b. teaching learning methods- audio-visual aids	I	K, S, C	SH	Didactic Lecture/ Seminar / Workshop	Work place-based assessment
13.	Documentation of rehabilitation assessment and management using International Classification of Functioning Disability and Health (ICF). Future challenges in physiotherapy.	I	K, S	SH	Didactic Lecture/ Seminar / Workshop	Work place-based assessment
14.	Assessment and training for endurance and strength (Anaerobic and aerobic power) : Sprint test, Field test, 6 min. walk test, step test, ergo cycle testing (Astrand Rhymes Protocol), Bruce protocol etc.	II	K , S, A, C	KH, SH	Didactic Lecture/Seminar/Small Group Discussion	Work place based assessment
15.	Exercise prescription for health and fitness. Considerations of age and sex in exercise and training.	II	K, S, A, C	SH	Didactic Lecture/Seminar/Small Group Discussion	Work place based assessment
16.	Pathological & Radiological investigations and its interpretation including imaging techniques.	II	K	SH	Seminar/Didactic Lecture, Guest lectures, Workshop	Work place based assessment
17.	ECG and Pulmonary Function test.	II	K, S, A, C	KH/ SH	Didactic Lecture, Guest lectures, Workshop.	Work place based assessment

18.	Anthropometric measurements.	II	K, S, A	SH	Seminar/Didactic Lecture.	Work place based assessment
19.	A) Physical fitness assessment - Body composition, ETT, Field Test, 6 Minute walk test etc., Flexibility, Muscle strength, endurance, Skills, Testing of agility- balance, co-ordination. B) Effect of aerobic, anaerobic, Isometric, Isotonic and Iso kinetic exercises on muscle and cardio-pulmonary function.	II	K, S, A, C	SH	Seminar/Didactic Lecture, Guest lectures, Workshop.	Work place based assessment
20.	S-D Curve, EMG, NCV interpretation and Biofeedback.	II	K, S	KH, SH	Seminar/Didactic Lecture, Guest lectures, Workshop, video.	Work place based assessment
21.	Posture and Gait analysis.	II	K, S, A, C	KH, SH	Seminar /Didactic Lecture, Guest lectures, Workshop, video.	Work place based assessment
22.	Pain (assessment, modulation and management of pain)	II	K,S,A, C	SH	Seminar/Small Group Discussion (SGD)/ Workshop/Case -Based studies	Work place based assessment
23.	Aids and appliances, adaptive functional devices to improve movement dysfunction.	II	K,S,A, C	SH	Seminar/Small Group Discussion (SGD)/ Workshop/Case -Based studies	Work place based assessment



SCHEME OF EXAMINATION

Formative and Summative Examination

Theory: There will be four papers of 100 marks each of three hours duration details are as follows

Que. No.	Type of Question	Out Of	Total Questions	Marks
Q.1	Short Answer Questions	All Compulsory	10M X6	60Marks
Q.2	Long Answer Question	All Compulsory	20M X2	40Marks

Theory Paper setting format

PAPER – II

[Max. Marks: 100

Time:3 Hours]

Instructions :---

- (5) All questions are compulsory
- (6) Numbers to the right indicates full marks.
- (7) Draw neat diagrams, wherever necessary
- (8) Use single answer book for answering both sections.

SECTION – A

10 M X 6 =60

Q1. S.A.Q. – Short Answer Questions

- (g) _____
(h) _____
(i) _____
(j) _____
(k) _____
(l) _____

SECTION – B

20 M X 2 =40

Q2. L.A.Q. – Long Answer Questions

- (c) Describe _____ under the following heads - 20 M
Level I - Knowledge (5 M)
Level II - Comprehension (5 M)
Level III - Application (5 M)
Level IV – Analysis (5 M)
- (d) Describe _____ under the following heads - 20 M
Level I - Knowledge (5 M)
Level II - Comprehension (5 M)

Level III - Application (5 M)
Level IV – Analysis (5 M)

Primary Question Paper Template:

MPT/APPLIED PHYSIOTHERAPEUTICS/2022 -2023 to 2026-2027

Template - Table of specification

(2- LAQ, 6 -SAQ)

Question type	Maximum Marks
LAQ 2/2	20 M X 2 = 40 M
SAQ 6/6	10 M X 6 = 60 M
Total	100 M

LIST OF REFERENCE BOOKS AND JOURNALS FIRST YEAR M.P.T BOOKS & JOURNALS PHYSIOTHERAPY

Sr. No	Name of Books
1)	American Physical Therapy Association: Guide To Physical Therapy Practice, 2nd Edition 2001.
2)	Physical Rehabilitation (4 & 5th Edition) By Susan B O Sullivan And Thomas J Schmitz. (Jaypee Publication)
3)	International Classification Of Functioning, Disability And Health: Short Version. (IT'S Publication)
4)	Professionalism In Physical Therapy: History, Practice And Development By Laura Lee Swisher And Catherine G. Page, (Elsevier Publication 2005)
5)	Effective Documentation For Physical Therapy Professionals, By Eric Shamus And Debra (McGrawHill Company 2004)
6)	Physical Therapy Documentation: From Examination To Outcome By Mia Erickson, Ralph Utzman (Slack Incorporated 2008)
7)	Writing SOAP Notes With Patient / Client Management Formats By Ginge Kettenbach, Ph. D., PT, 3rd Edition, 2004, F.A. DAVIS COMPANY. Philadelphia
8)	Practical Evidence-Based Physiotherapy Rob Herbert, Gro Jamtvedt, Judy Mead, Kare Birger Hagen Elsevier Butter Worth Heinemann; Oxford UK (2005)
9)	Guide To Evidence-Based Physical Therapy Practice By Dianne V. Jewell, PT, Phd, Virginia Commonwealth University, Virginia
10)	Concern Specialty Books For Physical Therapy Assessment And Outcome Measures
11)	Electromyography In Clinical Practice By Michael J. Aminoff, 3rd Edition (Churchill Livingstone)
12)	Clinical Neurophysiology By UK Misra And Kalita, 2nd Edition (Churchill Livingstone)
13)	Electro Diagnosis In Diseases Of Nerve And Muscle: Principles And Practice By Jun Kimura (Oxford University Press)
14)	The ABC Of EMG: A Practical Introduction To Kinesiological Electromyography By Peter Conrad (Noroxon Inc. USA 2005)
15)	Integrating Physical Agents In Rehabilitation By Bernadette Hecox And John Sanko, 2nd Edition (Pearson Prentice Hall 2006)

16)	Integrating Physical Agents In Rehabilitation By Bernadette Hecox And John Sanko, 2nd Edition (Pearson Prentice Hall 2006)
17)	Physicals Agents In Rehabilitation: From Research To Practical By Michell H. Cameron, 2nd Edition (Saunders And Elsevier, 2003)
18)	Therapeutic Modalities For Allied Health Professionals By William E. Prentice And Frank Underwood (Mcgraw-Hill, 1998)
19)	Therapeutic Exercise: Treatment Planning For Progression By Francis E. Huber, Christly. Wells (W.B. Saunders Company, 2006)
20)	Therapeutic Exercise: Foundations And Techniques By Carolyn Kisner And Lynn Allen Colby (W.B. Saunders Company, 2007)
21)	Therapeutic Exercise, Moving Towards Function By Carrie M. Hall And Lori Thein Brody (Lippincott Williams & Wilkins, 2004)
22)	Grieve's Modern Manual Therapy: The Vertebral Column By Jeffrey Boyling And Grad Dip Man Ther (Churchill Livingstone)
23)	Exercise Physiology By Mc Ardle, Katch & Katch (Lippincott Williams And Wilkins, 2000)
24)	Exercise Physiology: Exercise, Performance, And Clinical Applications By Robert A. Roberts And Scott O Roberts William C Brown, 1997)
25)	Clinical Exercise Testing And Prescription Theory And Applications By Scott O. Roberts, Peter Hanson (C RC Press, 1997)
26)	Basic Biomechanics Of The Musculoskeletal System By Margareta Nordin And Victor H. Frankle, 2nd Edition (Lea And Febiger)
27)	Kinesiology Of The Human Body: Under Normal And Pathological Condition By Arthur Steindler, 5th Edition (Charles C Thomas, 1977)
28)	Joint Structure & Function : A Comprehensive Analysis By Cynthia C Norkin, Pamela K Levangie (Jaypee Brothers, 2006)
29)	Brunnstrom's Clinical Kinesiology By Laura K. Smith & Don Lehmkuh, 5th Edition (F A Davis, 1996)
30)	The Physiology Of The Joints By Kapandji & Matthew J Kendel (Churchill Livingstone, 2008)
31)	Clinical Biomechanics Of The Spine By Augustus A White & Manohar M Panjabi, 2nd Edition (Lippincott Williams & Wilkins; 1990)
32)	Kinesiology : The Mechanics And Pathomechanics Of Human Movement By Carol Oatis (Lippincott Williams & Wilkins; 2008)

33)	Kinesiology: Application To Pathological Motion By Soderberg, 2nd Edition (Williams&Wilkins, 1997)
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PAPER II	CO	PO1 Clinician	PO2 Leadership and Team worker	PO3 Communicator	PO4 Lifelong Learner	PO5 Professional	PO6 Critical Thinker	PO7 Researcher	PSO1	PSO2
APPLIED PHYSIOTHERAPEUTICS	CO1: Explain Body Composition, Nutrition, Energy transfer, responses and adaptations to various systems, assessment of strength and endurance ,environmental influence of exercise and Fatigue.	3	3	2	3	3	2	2	3	
	CO2: Demonstrate Assessment of strength ,endurance and fatigue.	3	3	3	3	3	3	2		
	CO3: Interpret application of Investigations in Musculoskeletal, Neurological, Cardiovascular and Respiratory conditions	3	3	3	3	3	3	3		3
	CO4: Apply Clinical reasoning related to posture, disability, pain, aging, effect of medications on activity performance and application of modalities relevant to health care needs.	3	3	3	3	3	3	3		3

**DATTA MEGHE INSTITUTE OF MEDICAL SCIENCES (DEEMED TO BE UNIVERSITY)
RAVI NAIR PHYSIOTHERAPY COLLEGE, SALOD (HIRAPUR), WARDHA**

**POST GRADUATE CURRICULUM
SUBJECT CODE – MPT/MUSCULOSKELETAL PHYSIOTHERAPY/2022 -2023 to 2026-2027**

MUSCULOSKELETAL PHYSIOTHERAPY

MPT II YEAR

INDEX

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PREAMBLE: The Ministry of Human Resource Development, Government of India presented The National Education Policy (NEP) 2020. The global education development agenda reflected in the Goal 4 (Sustainable Development Goal 4) of the 2030 Agenda for Sustainable Development, adopted by India in 2015 - seeks to 'ensure inclusive and equitable quality education and promote lifelong learning opportunities for all' by 2030. Such a huge task demand reworking and rearrangement of the complete education arrangement to be backing and promoting education, with the aim to fulfilling the set out targets and objectives. With this focus there seem to be a need for key reforms to abridge the lacunae in the present programs and course outcomes to highlight the main features, equality and veracity into the structure.

The NEP 2020 rests precise importance on the growth of the innovative talent of every educator. It emphasizes upon the fundamental capabilities and also advanced order intellectual capabilities, such as critical thinking and reasoning, problem solving, social ethical, and emotional capacities. The policy also emphasis that the education system brings out noble individuals with capability of balanced behaviour, having kindness and compassion, bravery and flexibility, technical soundness and inventive mind, with thorough moral jetties and standards. The policy recognizes the need to change curriculum at the undergraduate and graduate levels in light of changing demands, technology, and novel developing illness patterns. The strategy also advises that current institutional systems for regulating and ensuring the quality of training and education should be reviewed urgently. The policy suggests that the debate over re-creating a regulatory structure for health professional education be revisited in order to address new needs and challenges, and it calls for Professional Education Regulation reforms.

Knowledge of Musculoskeletal Physiotherapy is vital to the understanding of both therapeutic techniques and its effects. Musculoskeletal Physiotherapy is the study of therapeutic techniques in the Physiotherapy department. Musculoskeletal Physiotherapy plays an important role in relieving pain, swelling, stiffness etc. Aim of teaching Musculoskeletal Physiotherapy to post graduate students is to help them understand the scientific basis of biomechanics and improving body functions and orient them towards the application of knowledge acquired in solving clinical problems.

GOAL : The post graduate student will be able to identify disability due to musculoskeletal dysfunction, set treatment goals and apply their skills gained in exercise therapy, electrotherapy and massage in clinical situations to restore musculoskeletal function.

Program Outcome		Statement
PO 1	Clinician	Clinician- who understands and provides preventive, promotive, curative, palliative and holistic care with compassion as per Local, National and Global healthcare needs
PO 2	Leader and member of the health care team and system:	Leader and member of the health care team and system providing services to Local, Regional, National, and International stakeholders.
PO 3	Communicator:	Communicator with patients, families, colleagues, and the community as per national and international healthcare standards.
PO 4	Lifelong learner:	Lifelong learner committed to the constant advancement of knowledge and skills in accordance with healthcare needs.
PO 5	Professional	Professional committed to ethical, responsive, and accountable service to the patients, the community, and the profession as per Global standards of health professions.
PO 6	Critical Thinker	Critical thinker, able to think rationally and generate logical connections between concepts in accordance with global healthcare requirements.
PO 7	Researcher	Researcher who can gather, evaluate, and enrich scholarly literature, thereby enabling evidence-based healthcare practice which is Globally relevant

Program Specific Outcomes (PSOs)

PSOs	Statement
PSO 1	Integrate knowledge and application of physiotherapy assessment in Musculoskeletal conditions.
PSO 2	Develop a reasoned rationale for evidence-based physiotherapy intervention by utilizing recent advances of physiotherapy techniques of Musculoskeletal conditions.

CO 1	Explain structure, biomechanics, function, pathomechanics, and pathophysiology of upper quadrant and lower quadrant
CO 2	Demonstrate assessment and functional diagnostic procedure in musculoskeletal dysfunction, integumentary impairments of upper quadrant and lower quadrant
CO3	Apply clinical decision making, medical and physiotherapy management, and evidenced based practice of upper quadrant and lower quadrant relevant regional and national health care needs.
CO 4	Evaluate Physiotherapy management in surgical procedures related to upper quadrant and lower quadrant
CO 5	Plan manual therapy techniques using recent advances for Upper Quadrant, rehabilitation of soft tissue injuries of hand, Lower quadrant, sports injuries and gait rehabilitation as per global health care needs.

Objectives:

1. Be able to identify, discuss & analyse, the Musculoskeletal dysfunction in terms of Biomechanical, Kinesiological and Biophysical basis & co-relate the same with the provisional diagnosis, routine radiological & Electro-physiological investigations and arrive at appropriate functional diagnosis with clinical reasoning.
2. Use the anatomical rationale for the clinical tests used in differential diagnosis.
3. Learn the ability to perform an appropriate subjective and physical examination, with development of suitable analytical skills to evaluate data obtained.
4. Further develop clinical reasoning that incorporates theoretical concept with evidence-based practice in the field of musculoskeletal physiotherapy.
5. Recognize the implication of dysfunction on the Musculoskeletal system and the student's clinical decision making.
6. Document patients with scale, outcome measures and assess the progression.
7. Use recent Technique/approaches to treat & train patients with musculo-skeletal deficit in children, adults & geriatrics.
8. Be able to impart knowledge for training the undergraduate students.

AETCOM IN ADVANCES IN MUSCULOSKELETAL PHYSIOTHERAPY

Subject	Competency
Advances in Musculoskeletal Physiotherapy	The physiotherapy postgraduate student should know to treat the patient with an acceptable level of behaviour, attitude & empathy while delivering evidence-informed musculoskeletal physiotherapy care.
	The physiotherapy post-graduate student should maintain the principles of confidentiality, rationality and ethical practice during patient care for musculoskeletal conditions

DEPARTMENT OF MUSCULOSKELETAL PHYSIOTHERAPY

Course content

Speciality subjects

Musculoskeletal Physiotherapy

Advances in Musculoskeletal Physiotherapy (Part I).

Paper III:(Musculo-skeletal Dysfunctions of the Upper Quadrant)

(Upper Quadrant includes occiput, cervical spine, thoracic spine, shoulder girdle and upper extremities)

SN	No.	Competency	Paper	Domain	Level	Suggested Teaching Method	Suggested Assessment method
1	PMU 1.1	Structure, function, Biomechanics & Pathomechanics of musculoskeletal dysfunctions of Shoulder complex	III	K,S	KH	Seminar/ Small Group Discussion(SGD)	LAQ/SAQ DOPS, Workplace based assessment
	PMU 1.2	Structure, function, Biomechanics & Pathomechanics of musculoskeletal dysfunctions of Elbow complex	III	K,S	KH	Seminar/ Small Group Discussion(SGD)	LAQ/SAQ DOPS, Workplace based assessment
	PMU 1.3	Structure, function, Biomechanics & Pathomechanics of musculoskeletal dysfunctions of Wrist complex	III	K,S	KH	Seminar/ Small Group Discussion(SGD)	LAQ/SAQ DOPS, Workplace based assessment
	PMU 1.4	Structure, function, Biomechanics & Pathomechanics of musculoskeletal dysfunctions of Cervical and thoracic complex	III	K,S	KH	Seminar/ Small Group Discussion(SGD)	LAQ/SAQ DOPS, Workplace based assessment
2	PMU 2.1	Patho-physiology and clinical features of musculoskeletal dysfunctions of the Shoulder complex	III	K,S, A,C	SH	Demonstration+ Hands On Training	LAQ/SAQ DOPS/OSCE

	PMU 2.2	Patho-physiology and clinical features of musculoskeletal dysfunctions of Elbow and wrist complex	III	K,S, A,C	SH	Demonstration+ Hands On Training	LAQ/SAQDO PS/OSCE
	PMU 2.3	Patho-physiology and clinical features of musculoskeletal dysfunctions of Cervical and thoracic complex	III	K,S, A,C	SH	Demonstration+ Hands On Training	LAQ/SAQDO PS/OSCE
3	PMU 3.1	Assessment & Advances in functional diagnostic procedures of musculoskeletal dysfunctions of the upper quadrant for eg: Special test, Proforma Scales, Questionnaire etc. for Shoulder Complex.	III	K,S, A,C	KH, SH	Seminar/Small Group Discussion (SGD)	LAQ/SAQDO PS/OSCE Work place based assessment
	PMU 3.2	Assessment & Advances in functional diagnostic procedures of musculoskeletal dysfunctions of the upper quadrant for elbow complex.	III	K,S, A,C	KH, SH	Seminar/Small Group Discussion(SGD)	LAQ/SAQDO PS/OSCE Work placebased assessment
	PMU 3.3	Assessment & Advances in functional diagnostic procedures of musculoskeletal dysfunctions of the upper quadrant for wrist complex.	III	K,S, A,C	KH, SH	Seminar/Small Group Discussion(SGD)	LAQ/SAQDO PS/OSCE Work placebased assessment
	PMU 3.4	Assessment & Advances in functional diagnostic procedures of musculoskeletal dysfunctions of the upper quadrant for cervical and thoracic complex.	III	K,S, A,C	KH, SH	Seminar/Small Group Discussion(SGD)	LAQ/SAQDO PS/OSCE Work placebased assessment
4	PMU 4.1	Clinical decision making skill & medical and physiotherapy management of all pediatric musculoskeletal dysfunctions of the upper quadrant.	III	K,S, A,	SH	Small Group Discussion(SGD)	LAQ/SAQOS LER/DOP S/OSCE/Mini CEX

	PMU 4.2	Clinical decision making skill & medical and physiotherapy management of all adult musculoskeletal dysfunctions of the upper quadrant.	III	K,S,A,	SH	Small Group Discussion(SGD)	LAQ/SAQOSLER/DOPS/OSCE/MiniCEX
	PMU 4.3	Clinical decision making skill & medical and physiotherapy management of all geriatric musculoskeletal dysfunctions of the upper quadrant.	III	K,S,A,	SH	Small Group Discussion(SGD)	LAQ/SAQOSLER/DOPS/OSCE/MiniCEX
5	PMU 5.1	Surgical procedures related to Traumatic musculoskeletal conditions of the upper quadrant including recent advances and its pre-operative and post-operative physiotherapy management.	III	K,S,A,C	KH,SH	Seminar/Lecture Small Group Discussion(SGD)	LAQ/SAQDOPS/OSCE Work placebased assessment
	PMU 5.2	Surgical procedures related to Non-traumatic musculoskeletal conditions of the upper quadrant including recent advances and its pre-operative and post-operative physiotherapy management.	III	K,S,A,C	KH,SH	Seminar/Lecture Small Group Discussion(SGD)	LAQ/SAQDOPS/OSCE Work placebased assessment
6	PMU 6.1	Manual Therapy techniques Clinical reasoning in manual therapy McKenzie's, Maitland's, Cyriax's Mulligan's, Kaltenborn's-peripheral & spinal joint dysfunction, - Recent advances with respect to upper quadrant.	III	K,A,S,C	SH,KH	Small Group Discussion(SGD)/Workshop/ Video presentations	LAQ/SAQOSCE/DOPS/MiniCEX
	PMU 6.2	Manual Therapy techniques Clinical reasoning in manual therapy Myofascial release techniques, Muscle energy techniques Neurodynamics & neural tissue mobilizations, Taping techniques(Kinesio and McCollel)-Recent advances with respect to upper	III	K,A,S,C	SH,KH	Small Group Discussion(SGD)/Workshop/ Video presentations	LAQ/SAQOSCE/DOPS/MiniCEX

		quadrant.					
7	PMU 7.1	Assistive Devices used for stability and mobility to enhance function.	III	K,S, A	K,S H	Small Group Discussion(SGD)	OSPE/DOPS/ MiniCEX
8	PMU 8.1	Evidence based practice to formulate effective musculoskeletal assessment and treatment program in upper quadrant.	III	K, S,A	SH	Case based studies	LAQ/SAQ OSCE/mini-CEX/DOPS, Work place based assessment,
9	PMU 9.1	Assessment and management of Integumentary impairments due to musculoskeletal dysfunction in upper quadrant	III	K,A, S	K,S H	Seminar	LAQ/SAQ/ OSCE/Mini CEX
10	PMU 10.1	Clinical decision making for lower quadrant function in presence of upper quadrant dysfunction.	III	K	KH	Seminar/ Small group discussion	Mini-CEX,DOPS
11	PMU 11.1	HANDREHABILITATION Soft tissue injuries of hand. Traumatic & non-traumatic conditions affecting hand, Sensory and motor re-education of hand.	III	K,S	KH, SH	Seminar/Sma ll group discussion	LAQ/SAQ Mini-CEX,DOPS/O SCE
	PMU 11.2	HANDREHABILITATION Congenital & acquired deformities of hand, Prescription of orthotic devices for hand and Recent advances in hand rehabilitation	III	K,S	KH, SH	Seminar/Sma ll group discussion	LAQ/SAQ Mini-CEX,DOPS/O SCE

Advances in Musculoskeletal Physiotherapy (Part II).

Paper IV: Musculo-skeletal Dysfunctions of the Lower Quadrant and Sports (Lower Quadrant includes lumbar spine, sacrum, pelvis and lower extremities)

SN	No.	Competency	Paper	Domain	Level	Suggested Teaching Method	Suggested Assessment method
1	PML 1.1	Structure,function,Biomechanics&Pathomechanics of musculoskeletal dysfunctions of the Hip complex	IV	K,S	KH	Small Group Discussion (SGD)/ Seminar	LAQ/SAQDO PS/OSCE
	PML 1.2	Structure,function,Biomechanics& Pathomechanics of musculoskeletal dysfunctions of Knee complex	IV	K,S	KH	Small Group Discussion (SGD)/ Seminar	LAQ/SAQDO PS/OSCE
	PML 1.3	Structure,function,Biomechanics& Pathomechanics of musculoskeletal dysfunctions of Ankle complex	IV	K,S	KH	Small Group Discussion (SGD)/ Seminar	LAQ/SAQDO PS/OSCE
	PML 1.4	Structure,function,Biomechanics& Pathomechanics of musculoskeletal dysfunctions of Lumbo-sacral complex	IV	K,S	KH	Small Group Discussion (SGD)/ Seminar	LAQ/SAQDO PS/OSCE
2	PML 2.1	Patho-physiology and clinical features of musculoskeletal dysfunctions of the Hip complex	IV	K,S,	K	FGD	LAQ/SAQ
	PML 2.2	Patho-physiology and clinical features of musculoskeletal dysfunctions of the Knee and ankle complex	IV	K,S,	K	FGD	LAQ/SAQ
	PML 2.3	Patho-physiology and clinical features of musculoskeletal dysfunctions of the Lumbo-sacral complex	IV	K,S,	K	FGD	LAQ/SAQ
3	PML 3.1	Assessment & Advances in functional diagnostic procedures of musculoskeletal dysfunctions of the lower quadrant for eg: Special test, Proforma Scales, Questionnaire etc. for Hip complex.	IV	K,S, A,C	KH, SH	Seminar/Small Group Discussion (SGD)	LAQ/SAQDO PS/OSCE Workplace based assessment

	PML 3.2	Assessment & Advances in functional diagnostic procedures of musculoskeletal dysfunctions of the lower quadrant for Knee Complex.	IV	K,S, A,C	KH, SH	Seminar/Small Group Discussion (SGD)	LAQ/SAQDO PS/OSCE Workplace based assessment
	PML 3.3	Assessment & Advances in functional diagnostic procedures of musculoskeletal dysfunctions of the lower quadrant for Ankle Complex.	IV	K,S, A,C	KH, SH	Seminar/Small Group Discussion (SGD)	LAQ/SAQDO PS/OSCE Workplace based assessment
	PML 3.4	Assessment & Advances in functional diagnostic procedures of musculoskeletal dysfunctions of the lower quadrant for Lumbo-sacral Complex.	IV	K,S, A,C	KH, SH	Seminar/Small Group Discussion (SGD)	LAQ/SAQDO PS/OSCE Workplace based assessment
4	PML 4.1	Clinical decision making skill & medical and physiotherapy management of all pediatric musculoskeletal dysfunctions of the lower quadrant.	IV	K,S, A,C	KH, SH	FGD	LAQ/SAQ DOPS/Workplace based assessment OSCE/MiniCEX
	PML 4.2	Clinical decision making skill & medical and physiotherapy management of all adult musculoskeletal dysfunctions of the lower quadrant.	IV	K,S, A,C	KH, SH	FGD	LAQ/SAQ DOPS/Workplace based assessment OSCE/MiniCEX
	PML 4.3	Clinical decision making skill & medical and physiotherapy management of all geriatric musculoskeletal dysfunctions of the lower quadrant.	IV	K,S, A,C	KH, SH	FGD	LAQ/SAQ DOPS/Workplace based assessment OSCE/MiniCEX

5	PML 5.1	Surgical procedures related to Traumatic musculoskeletal conditions of the lower quadrant including recent advances and its pre-operative and post-operative physiotherapy management.	IV	K,S, A,C	KH, SH	Seminar/Lecture Small Group Discussion (SGD)	LAQ/SAQ DOPS/OSCE Workplace based assessment
	PML 5.2	Surgical procedures related to Non-traumatic musculoskeletal conditions of the lower quadrant including recent advances and its pre-operative and post-operative physiotherapy management.	IV	K,S, A,C	KH, SH	Seminar/Lecture Small Group Discussion (SGD)	LAQ/SAQ DOPS/OSCE Workplace based assessment
6	PML 6.1	Manual Therapy techniques Clinical reasoning in manual therapy McKenzie's, Maitland's, Cyriax's Mulligan's, Kaltenborn's - peripheral & spinal joint dysfunction, - Recent advances with respect to lower quadrant.	IV	K,S	SH	SGD/ Case Based Discussion/ Workshop/ Video Presentation	LAQ/SAQ OSLER/DOPS/ Workplace based assessment
	PML 6.2	Manual Therapy techniques Clinical reasoning in manual therapy Myofascial release techniques, Muscle energy techniques, Neurodynamics & neural tissue mobilizations, Taping techniques (Kinesio and McCollel)- Recent advances with respect to lower quadrant.	IV	K,S	SH	SGD/ Case Based Discussion/ Workshop/ Video Presentation	LAQ/SAQ OSLER/DOPS/ Workplace based assessment
7	PML 7.1	Assistive Devices used for stability and mobility to enhance function.	IV	K,S	SH	Seminar/ FGD	LAQ/SAQ OSLER/DOPS/ Workplace based assessment

8	PML 8.1	Evidencebasedpracticetoformulate effective musculoskeletal assessmentand treatmentprogram in lower quadrant.	IV	K,S, A,C	KH	Small GroupDiscu sion(SGD)/S emi nar	LAQ/SAQ Mini CEX/Work placebased assessment
9	PML 9.1	AssessmentandmanagementofInte gumentaryimpairmentsdueto musculoskeletaldysfunction in lower quadrant.	IV	K, S,A, C	SH	Seminar/Cas e BasedDiscu ssion	LAQ/SAQ OSCE/Mini CEX/DOPS
10	PML 10.1	Clinical decisions for upper quadrantfunctioninpresenceoflowerqu adrantdysfunction.	IV	K, S,A, C	SH	Seminar/Cas e BasedDiscu ssion	LAQ/SAQ OSCE/Mini CEX/DOPS
11	PML 11.1	Sports philosophy, physiology, psychology and pharmacology	IV	K, S,A, C	SH	Seminar/Cas e BasedDiscu ssion	LAQ/SAQ OSCE/ MiniCEX/D OPS
	PML 11.2	Biomechanics and Pathomechanics of common sports and sport injuries.	IV	K, S,A, C	SH	Seminar/Cas e BasedDiscu ssion	LAQ/SAQ OSCE/ MiniCEX/D OPS
	PML 11.3	Sport injury-Principles of injury prevention, diagnosis, treatment and rehabilitation.	IV	K, S,A, C	SH	Seminar/Cas e BasedDiscu ssion	LAQ/SAQ OSCE/ MiniCEX/D OPS
12	PML 12.1	Gaitrehabilitation	IV	K, S,A, C	SH	Seminar/Cas e BasedDiscu ssion	LAQ/SAQ OSCE/ MiniCEX/D OPS

CLINICALPOSTING

Second year

Acute care & Rehabilitation in Musculoskeletal dysfunctions: Indoor and Outdoorpatients

Competencies(ForAssessmentandManagement)

Sr.No.	Competencies	MinimumCases/ExperimentsforachievementslevelofCompetencies			
		Observed	Assisted	Independently performed	Verified withfaculty signatureand Name
1.	Musculoskeletal Assessment.				
2.	Responsesofvariousystems to Exercise andtraining.				
3.	Anthropometric measurements.				

4.	Physical fitness assessment Flexibility, Muscle strength, endurance, Testing of agility-balance, co-ordination				
5.	Evaluation Methods, Special tests used in Musculoskeletal				
6.	Physiotherapy modalities, techniques and approaches				
7.	Aids and appliances, adaptive functional devices to improve movement dysfunction.				
8.	Posture and Gait analysis and diagnosis.				
9.	Differential Diagnosis versus Screening.				
10.	Assessment of Pain and Symptoms.				
11.	Exercise planning and prescription.				
12.	Use of Exercise therapy techniques and application on various types of cases.				

13.	Pathological investigations and imaging techniques related to Musculoskeletal disorders with interpretation.				
14.	Mobilization and Manipulation Manual therapy – different schools of thought.				

SCHEME OF EXAMINATION
Formative and Summative Examination

Theory: There will be four papers of 100 marks each of three hours duration details are as follows

Que.No.	Type of Question	Out Of	Total Questions	Marks
Q.1	Short Answer Questions	All Compulsory	10 M X 6	60 Marks
Q.2	Long Answer Question	All Compulsory	20 M X 2	40 Marks

Theory Paper setting format

PAPER – III & IV

Time: 3 Hours]

[Max. Marks: 100

Instructions :---

- (9) All questions are compulsory
- (10) Numbers to the right indicates full marks.
- (11) Draw neat diagrams, wherever necessary
- (12) Use single answer book for answering both sections.

SECTION – A

Q1. S.A.Q. – Short Answer Questions

10 M X 6 = 60

- (m) _____
 (n) _____
 (o) _____
 (p) _____
 (q) _____
 (r) _____

SECTION – B

Q2. L.A.Q. – Long Answer Questions

20 M X 2 = 40

- (e) Describe _____ under the following heads - 20 M
- Level I - Knowledge (5 M)
 Level II - Comprehension (5 M)
 Level III - Application (5 M)
 Level IV – Analysis (5 M)
- (f) Describe _____ under the following heads - 20 M
- Level I - Knowledge (5 M)
 Level II - Comprehension (5 M)
 Level III - Application (5 M)

Practical: Practical will be conducted in 2 days for 400 Marks.

S.R. No.	Type of Practical	Topics	Marks
1	Long Case I	Upper Quadrant includes occiput, cervical spine, thoracic spine, shoulder girdle and upper extremities.	100 Marks
2	Long Case II	Musculo-skeletal Dysfunctions of the Lower Quadrant and Sports. Lower Quadrant includes lumbar spine, sacrum, pelvis and lower extremities	100 Marks
3	Short Case I	Specialty- Hand injury/ Sports injury/Manual Therapy	50 Marks
4	Teaching Skills (Microteaching)		50 Marks
5	Dissertation + Viva Voce		100 Marks

Primary Question Paper Template:

MPT/MUSCULOSKELETAL PHYSIOTHERAPY PAPER III & PAPER IV/2022 -2023 to 2026-2027

Template - Table of specification

(2- LAQ, 6 -SAQ)

	Maximum Marks
LAQ 2/2	20 M X 2 = 40 M
SAQ 6/6	10 M X 6 = 60 M
Total	100 M

LIST OF REFERENCE BOOKS AND JOURNALS SECOND YEAR M.P.T BOOKS & JOURNALS FOR MUSCULOSKELETAL PHYSIOTHERAPY

Sr.No	Name of Books
1	Essentials of Orthopedics for Physiotherapists by John Ebenezer – Jaypee Publications
2	Practical Fracture Treatment by Ronald McRae, Max Esser – Churchill Livingstone
3	Oxford Textbook of Orthopaedic & Trauma by Christopher Bulstrode, Joseph Buckwalter – Oxford University Press
4	Campbell's Operative Orthopedics. - By S. Terry Canale, James H. Beaty - Mosby
5	Fractures & Joint Injuries by Watson Jones – Churchill Livingstone
6	Clinical Orthopaedic Examination by Ronald McRae – Churchill Livingstone
7	Daniels and Worthingham's Muscle Testing: Techniques of Manual Examination by Helen J Hislop, Jacqueline Montgomery Barbara – Elsevier
8	Muscles – Testing and Function by Florence Peterson Kendall – Lippincott
9	Joint Range of Motion and Muscle Length Testing by Nancy Berryman Reese - Saunders
10	Orthopedic Physical Assessment, By David J. Magee, PhD, BPT - Saunders
11	Illustrated Orthopedic Physical Assessment, 3e By Ronald C. Evans, - Mosby
12	Diagnostic Imaging for Physical Therapists by James Swain, Kenneth W. Bush, and Juliette Brosing – Elsevier
13	Differential Diagnosis for Physical Therapists: Screening for Referral, By Catherine C. Goodman, and Teresa Kelly Snyder – Saunders
14	Gait Analysis: Theory and Application by Rebecca Craik and Carol A Oatis – Mosby
15	Skeletal Growth and Development: Clinical Issues and Basic Science Advances. The Symposium Series by Joseph A Buckwalter – AAOS
16	Introduction to Physical Therapy, By Michael A. Pagliarulo - Mosby
17	Kinesiology: The mechanics and Pathomechanics of Human Movement by Carol A Oatis - Lippincott 4. Cash Text Book for Orthopedics and Rheumatology for Physiotherapist by John Elizabeth Cash & Patricia A Downie – Lippincott
18	Joint Mobilization/Manipulation: Extremity and Spinal Techniques by Susan Ledmond – Mosby
19	Foundations of Chiropractic by Meridel Gatterman – Mosby
20	Grieve's Modern Manual Therapy: The Vertebral Column, By Jeffrey Boyling and Gwendolen Jull – Churchill Livingstone

21	Kinesiology of the Musculoskeletal System: Foundations for Rehabilitation, By Donald A. Neumann, PhD, PT – Mosby
22	Maitland's Peripheral Manipulation, By Elly Hengeveld, and Kevin Banks, - Butterworth-Heinemann 10. Maitland's Vertebral Manipulation, By Geoff D. Maitland, - Butterworth-Heinemann
23	Hand and Upper Extremity Rehabilitation: A Practical Guide, By Susan L. Burke, - Churchill Livingstone Manual Therapy for the Peripheral Nerves By Jean-Pierre Barral, DO (UK) and Alain Croibier, Osteopathe DO, MRO (F) – Churchill Livingstone
24	Neuromuscular Rehabilitation in manual and physical therapies: Principles and Practice by Eyal Lederman – Churchill Livingstone
25	Orthopaedic Physical Therapy Secrets by Jeffrey D. Place – Elsevier
26	Principles and Practice of Orthopedics and Sports Medicine by Garret
27	A Physiotherapist's Guide to Clinical Measurement by John Edward Fox, and Richard Jasper Day – Elsevier
28	Orthotics and Prosthetics in Rehabilitation, By Michelle M. Lusardi, PhD, PT and Caroline C. Nielsen, PhD – Butterworth-Heinemann
29	Clinical Application of Neuromuscular Techniques: The Upper Body by Leon Chaitow, and Judith DeLany, - Elsevier
30	Handbook of Postsurgical Rehabilitation Guidelines for the Orthopedic Clinician By Hospital for Special Surgery – Mosby
31	An Illustrated Guide to Taping Techniques – Principles & Practice By Thomas John Hewetson – Mosby
32	Paraplegia & Tetraplegia A Guide for Physiotherapists by Ida Bromley – Churchill Livingstone
33	Therapeutic Exercises Using Swiss Ball By Caroline Corning Creager – Executive Physical Therapy
34	Manual Mobilization of the Joints – The Kaltenborn Method Volume I, II By Freddy Kaltenborn
35	Treat Your Own Back by Robin McKenzie
36	Treat Your Own Neck by Robin McKenzie
37	Cervical and Thoracic Spine: Mechanical Diagnosis & Therapy Vol I & II By Robin McKenzie
38	The Lumbar Spine: Mechanical Diagnosis & Therapy Vol I & II By Robin McKenzie

39	The Human Extremities: Mechanical Diagnosis & Therapy by Robin McKenzie
40	Manual Therapy by Brian R Mulligan
41	Documentation for Rehabilitation: A Guide to Clinical Decision Making, By Lori Quinn, and James Gordon-Saunders
42	Clinical Orthopaedic Rehabilitation by S Brent Brotzman
43	Treatment and rehabilitation fractures by Vasantha L Moorthy & Stanley Hoppenfield - Lippincott 33. Physiotherapy for Amputees: The Roehampton Approach by Barbara Engstrom - Churchill Livingstone
44	Textbook of orthopedic medicine Vol I & II by James Cyriax - Bailliere
45	Orthopedic & Sports Physiotherapy: Morris

Journals	
Name of Journals	
Clinical Kinesiology	
Journal of biomechanics	
Journal of pediatric Orthopedics	
Journal of Orthopaedic & Sports Physical Therapy (JOSPT).	
Journal of Manual Therapy	
Journal of Manual & Manipulative Therapy	
Spine	
Journal of Hand Therapy	

ADVANCES IN MUSCULOSKELETAL PHYSIOTHERAPY (Paper III & IV)	CO	PO1 Clinician	PO2 Leadership and Team worker	PO3 Communicator	PO4 Lifelong Learner	PO5 Professional	PO6 Critical Thinker	PO7 Researcher	PSO1	PSO2
	CO1: Understand structure, biomechanics, function, pathomechanics, and pathophysiology of upper quadrant and lower quadrant	3	2	3	3	3	2	2		
	CO2: Demonstrate assessment and functional diagnostic procedure in musculoskeletal dysfunction, integumentary impairments of upper quadrant and lower quadrant	3	3	3	3	3	2	2	3	
	CO3: Apply clinical decision making, medical and physiotherapy management, and evidenced based practice of upper quadrant and lower quadrant relevant to regional and national health care needs.	3	3	3	3	3	3	3	3	3
	CO4: Evaluate Physiotherapy management in surgical procedures related to upper quadrant and lower quadrant.	3	3	3	3	3	3	3		3

**DATTA MEGHE INSTITUTE OF MEDICAL SCIENCES (DEEMED TO BE UNIVERSITY)
RAVI NAIR PHYSIOTHERAPY COLLEGE, SALOD (HIRAPUR), WARDHA**

**POST GRADUATE CURRICULUM
SUBJECT CODE – MPT/NEURO PHYSIOTHERAPY/2022 -2023 to 2026-2027**

NEURO PHYSIOTHERAPY

MPT II YEAR

INDEX

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PREAMBLE: The Ministry of Human Resource Development, Government of India presented The National Education Policy (NEP) 2020. The global education development agenda reflected in the Goal 4 (Sustainable Development Goal 4) of the 2030 Agenda for Sustainable Development, adopted by India in 2015 - seeks to 'ensure inclusive and equitable quality education and promote lifelong learning opportunities for all' by 2030. Such a huge task demand reworking and rearrangement of the complete education arrangement to be backing and promoting education, with the aim to fulfilling the set out targets and objectives. With this focus there seem to be a need for key reforms to abridge the lacunae in the present programs and course outcomes to highlight the main features, equality and veracity into the structure.

The NEP 2020 rests precise importance on the growth of the innovative talent of every educator. It emphasizes upon the fundamental capabilities and also advanced order intellectual capabilities, such as critical thinking and reasoning, problem solving, social ethical, and emotional capacities. The policy also emphasis that the education system brings out noble individuals with capability of balanced behaviour, having kindness and compassion, bravery and flexibility, technical soundness and inventive mind, with thorough moral jetties and standards. The policy recognizes the need to change curriculum at the undergraduate and graduate levels in light of changing demands, technology, and novel developing illness patterns. The strategy also advises that current institutional systems for regulating and ensuring the quality of training and education should be reviewed urgently. The policy suggests that the debate over re-creating a regulatory structure for health professional education be revisited in order to address new needs and challenges, and it calls for Professional Education Regulation reforms

Knowledge of Neurophysiotherapy is vital to the understanding of both therapeutic techniques and its effects. Neurophysiotherapy is the study of therapeutic techniques in the Physiotherapy department. Neurophysiotherapy plays an important role in relieving pain, swelling, stiffness etc. Aim of teaching Neurophysiotherapy to postgraduate students is to help them understand the scientific basis of neurological and neurosurgical as well as pediatric conditions and orient them towards the application of knowledge acquired in solving clinical problems.

GOALS : To understand the goals of Physiotherapy related to neuro- surgery and to get acquainted with clinical reasoning and treatment of neurological conditions, through proper use of hands on skills required for neuro- Physiotherapy interventions

Program Outcome		Statement
PO 1	Clinician	Clinician- who understands and provides preventive, promotive, curative, palliative and holistic care with compassion as per Local, National and Global healthcare needs
PO 2	Leader and member of the health care team and system:	Leader and member of the health care team and system providing services to Local, Regional, National, and International stakeholders.
PO 3	Communicator:	Communicator with patients, families, colleagues, and the community as per national and international healthcare standards.
PO 4	Lifelong learner:	Lifelong learner committed to the constant advancement of knowledge and skills in accordance with healthcare needs.
PO 5	Professional	Professional committed to ethical, responsive, and accountable service to the patients, the community, and the profession as per Global standards of health professions.
PO 6	Critical Thinker	Critical thinker, able to think rationally and generate logical connections between concepts in accordance with global healthcare requirements.
PO 7	Researcher	Researcher who can gather, evaluate, and enrich scholarly literature, thereby enabling evidence-based healthcare practice which is Globally relevant

Program Specific Outcomes (PSOs)

PSOs	Statement
PSO 1	Integrate knowledge and application of physiotherapy assessment in Neurological conditions.
PSO 2	Develop a reasoned rationale for evidence-based physiotherapy intervention by utilizing recent advances of physiotherapy techniques of Neurological conditions.

CO 1	Explain Anatomy, Physiology, nervous system ,pathophysiology of pediatric neurological disorders, adult & geriatric neurological conditions.
CO 2	Demonstrate Assessment of neonatal, paediatric associated with developmental reflexes & adult patients.
CO3	Interpret application of Investigations in pediatric & adult neurological conditions and its relevance to physiotherapy as per global health care needs.
CO 4	Apply Clinical reasoning and perform physiotherapeutic management of paediatric, adult neuropsychological and neurosurgical conditions in intensive care units.
CO 5	Devise a Plan for Physiotherapy management in progressive and non-progressive neonatal ,paediatric & adult neurological conditions as per national and global health care needs.

Objectives:-

1. Assess and diagnose all possible findings on the patient to plan a Rehabilitation programme.
2. Document patients with scale, outcome measures and assess the progression.
3. Use recent Technique/approaches to treat & train patients with Neurological deficit in paediatrics and adults.
4. Be able to impart knowledge for training the undergraduate students.

AETCOM IN ADVANCES IN NEURO PHYSIOTHERAPY

Subject	Competency
Advances in Neuro Physiotherapy	The physiotherapy postgraduate student should know to treat the patient with an acceptable level of behaviour, attitude & empathy while delivering evidence-informed neuro physiotherapy care.
	The physiotherapy post-graduate student should maintain the principles of confidentiality, rationality and ethical practice during patient care for neurological conditions

**Second Year Residency in Speciality subjects Neuro physiotherapy
Advances in Neurophysiotherapy-(Part I)**

Paper III: Pediatric Neurology

SN	Competency No.	Competency	Paper	Domain	Level	Suggested Teaching Method	Suggested Assessment method
1	PPNP 1.1	Embryology - Intrauterine development of Nervous system - Principles of Human Development	III	K,S,A	KH	Lecture/Seminar/	LAQ/SAQ DOPS, Workplace based assessment
2	PPNP 2.1	Gross and fine motor development - Motor development in the normal child - Assessment and testing of infant and child development - Motor behaviour during early Childhood and adolescent	III	K,S,A	KH	Lecture/Seminar/	LAQ/SAQ DOPS, Workplace based assessment
3	PPNP 3.1	Developmental Reflexes - Primitive Reflexes - Spinal reflexes - Brainstem reflexes - Cortical reflexes/reaction	III	K,S,A,	KH,SH	Lecture/Seminar/	LAQ/SAQ DOPS, Workplace based assessment
4	PPNP 4.1	Theories: A) Theories of motor development of normal child, B) Theories of motor control	III	K	KH	Small Group Discussion (SGD)/ Lecture.	LAQ/SAQ
	PPNP 4.2	C) Theories of motor learning. D) Stages of Learning					
5	PPNP 5.1	Pediatric Neurological disorder: a) Early identification of pediatric neurological disorders and early intervention skill.	III	K	KH	Seminar/Small Group Discussion (SGD)	LAQ/SAQ OSCE
	PPNP 5.2	b) Infant at high risk for developmental delay					

	PPNP 5.3	c) Infant and child with Cerebral Palsy					
	PPNP 5.4	d) Spina bifida					
	PPNP 5.5	e) Traumatic Brain Injury f) Traumatic and traumatic spinal cord injuries in pediatrics					
	PPNP 5.6	g) Neuromuscular disorders in childhood: Muscular dystrophies, SMA, Polyneuropathy, meningitis, encephalitis etc					
	PPNP 5.7	h) Intellectual disabilities focus on Down Syndrome i) Autism Spectrum Disorder and Physical therapy					
6	PPNP 6.1	a) Parent education & counselling b) Providing family centered care in pediatric physiotherapy	III	K,S	SH	Seminar/Case based studies	SAQOSLER/OSCE
7	PPNP 7.1	Pathological and radiological investigations/interpretations and evoked potentials interpretations in Pediatric neurological conditions	III	K,S	SH	Seminar/Case based studies	SAQOSLER/OSCE

8	PPNP 8.1	Advanced skills in assessment of pediatric, neuropsychological and neurosurgical conditions. Neurological Scale-Glasgow coma scale, GMFM, Sensory profile, etc	III	K,S	SH	Seminar/Case based studies	LAQ/SAQOSLER/OSCE
9	PPNP 9.1	Surgical procedures related to Neuropediatric disorders including recent advances in Neurological surgeries. (Hydrocephalus, Spina bifida etc) and its preoperative and post operative complete physiotherapy management	III	K,S	SH	Seminar/Case based studies	LAQ/SAQOSLER/OSCE
10	PPNP 10.1	Advanced Physiotherapy approaches – Neurophysiological principles, e.g. PNF, NDT, Rood's Approach, Motor Relearning Programme, & Vojta	III	K, S,A	KH	Workshop/Seminar	LAQ/SAQOSCE//DOPS/miniCEX
11	PPNP 11.1	Clinical decision making and evidence based practice to formulate effective assessment and treatment program.	III	K,A	KH	Small Group Discussion (SGD)/Seminar	SAQ
12	PPNP 12.1	Assessment and management of posture and gait in pediatric neurological conditions	III	K,S,A,C	SH	Demonstration + Hands On Training	LAQ/SAQDOPS/OSCE

13	PPNP 13.1	Physiotherapy management in: a) Progressive and non-progressive pediatric neurological conditions, including terminally ill child. b) Perceptuomotor and sensory issues in children.	III	K,S,A, C	KH	Small Group Discussion (SGD)/Seminar	LAQ/SAQ, OSCE/OSCE
14	PPNP 14.1	Role of Physiotherapy in Neonatal & Pediatric intensive care units.	III	K,S,A, C	KH	Small Group Discussion (SGD)/Seminar	SAQ/OSCE/DOPS/MiniCEX
15	PPNP 15.1	Social integration of child in school and community – measures to ensure - attitudinal, environmental, manpower, assistive technology, legislation and support. - Adaptive equipment for physically challenged children. - Orthotics and Prosthetics.	III	K,S	SH	Seminar	SAQ
16	PPNP 16.1	Pharmacotherapeutics in neurological conditions and its relevance in physiotherapy.	III	S,A	KH	SGD/Case Based Discussion/Seminar	SAQ

Advances in Neurophysiotherapy (Part II).

Paper IV: Adult Neurology

SN	Competency No.	Competency	Paper	Domain	Level	Suggested Teaching Method	Suggested Assessment method
1.	PANP 1.1	Review of basic concepts of Nervous system, (Anatomical and Physiological)	IV	K,S,A	KH	Small Group Discussion (SGD)/ Seminar	SAQ/DOPS/OSCE/OSLER
2.	PANP 2.1	- Neural Plasticity Movement Plasticity	IV	K,S,A	KH	Small Group Discussion (SGD)/ Seminar	SAQ/DOPS/OSCE/OSLER
3.	PANP 3.1	Clinical decision making and evidence based practice to formulate effective assessment and treatment program.	IV	K	KH	Case Based Discussion	LAQ/SAQ/DOPS/ Workplace based assessment OSCE
4.	PANP 4.1	Advance skills in assessment of adult Neurological, Neurosurgical & Neuropsychological conditions.	IV	K,S,A,C	SH	Small Group Discussion/Seminar	LAQ/SAQ/DOPS/ Workplace based assessment
5.	PANP 5.1	Various outcome measures and assessment methods used in adult & geriatric neurological conditions e.g. GCS, MMSE, Berg Balance Scale, FuglMayer scale, Barthel index, ASIA Impairment scale, etc.	IV	K,S,C	KH	Small Group Discussion/Seminar	LAQ/SAQ/DOPS/ Workplace based assessment/ OSCE
6.	PANP 6.1	Advanced Neurotherapeutic	IV	K,S,A,C	KH	Seminar/Lecture.	LAQ/SAQ, Workplace based

		skillsformanagement.e.g .PNF,NDT,Rood’sApproach,MotorRelearning Programme,Brunnstro mapproach,taskorient edapproach					edassessment
7.	PANP 7.1	Pathophysiology, clinical featuresand Physiotherapy management ofCNS,ANS and Peipheral NervousSystem: <ul style="list-style-type: none"> • Cerebrovascular accidents, . 	IV	K,S,A, C	SH	FGD/CaseBas edDiscussion	LAQ/SAQOS LER/DOPS/ Workplacebas edassessment
	PANP 7.2	<ul style="list-style-type: none"> • Inflammatory, Degenerative Metabolic Traumatic Infectious and associatedconditionso fnervoussystem.(Diso rdersofCranialnerves 					

	PANP 7.3	<ul style="list-style-type: none"> Space Occupying Lesions in CNS, Traumatic brain injury, Traumatic spinal cord, Vestibular Disorders, & Myopathies) 					
8.	PANP 8.1	<p>Social integration of disabled person in community – measures to ensure – attitudinal, environmental, manpower, assistive technology, legislation and support.</p> <ul style="list-style-type: none"> - Adaptive equipment for physically challenged individuals. - Orthotics and Prosthetics. 	IV	K,S,A	SH	Small Group Discussion (SGD)/ Seminar	LAQ/SAQ DOPS/ Workplace based assessment
9.	PANP 9.1	Pharmacotherapeutics in neurological condition and its relevance in physiotherapy.	IV	K	SH	Small Group Discussion (SGD)	SAQ Workplace Based assessment
10	PANP	Recent	IV	K,S,A	KH	Small Group D	SAQ DOPS/OSC

	10.1	advances in the Technology, Physiotherapy management of Neurological condition				discussion (SGD)/ Seminar	E/OSLER
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CLINICAL POSTING

Second year

- 1 Neonatal and Acute care and Rehabilitation of Neuro medical and surgical disorders.
- 2 Adult Neuro-medical, neurosurgical and OPD,
- 3 Pediatrics Neuro-medical, neurosurgical and OPD,
- 4 Early intervention.

Competencies(ForAssessmentandManagement)

Sr.No	Competencies	MinimumCases/ExperimentsforachievementslevelofCompetencies			
		Observed	Assisted	Independentform	VerifiedwithfacultysignatureandName
1.	Responses of various systems to Exercise and training				
2.	Considerations of age and sex in exercise and training.				
3.	Anthropometric measurements & Physical fitness assessment- Body composition				
4.	Physical fitness assessment Flexibility, Muscle tone & strength, endurance, Testing of agility- balance, co-ordination				
5.	Physiotherapy modalities, techniques and approaches				
6.	Clinical Electro physiological testing and clinical interpretation.				
7.	Developmental screening, motor learning – motor control assessment.				

8.	Evaluation Methods, Special tests used in Neurological				
9.	EMG and Biofeedback.				
10.	Aids and appliances, adaptive functional devices to improve movement and function				
11.	Posture and Gait analysis and diagnosis				
12.	Pathological investigations and imaging techniques related to Neurological disorders with interpretation.				
13.	Manual therapy Principles of Neurological approaches & Facilitation and inhibition techniques.				

SCHEME OF EXAMINATION

Theory: There will be four papers of 100 marks each of three hours duration details are as follows

Que.No.	Type of Question	out of	Total Questions	Marks
Q.1	Short Answer Questions	All Compulsory	10M X6	60Marks
Q.2	Long Answer Question	All Compulsory	20M X2	40Marks

Theory Paper setting format **PAPER – III & IV**

Time: 3 Hours]

[Max. Marks: 100

Instructions :---

- (13) All questions are compulsory
- (14) Numbers to the right indicates full marks.
- (15) Draw neat diagrams, wherever necessary
- (16) Use single answer book for answering both sections.

SECTION – A

Q1. S.A.Q. – Short Answer Questions

10 M X 6 = 60

- (s) _____
- (t) _____
- (u) _____
- (v) _____
- (w) _____
- (x) _____

SECTION – B

Q2. L.A.Q. – Long Answer Questions

20 M X 2 = 40

- (g) Describe _____ under the following heads - 20 M
 - Level I - Knowledge (5 M)
 - Level II - Comprehension (5 M)
 - Level III - Application (5 M)
 - Level IV – Analysis (5 M)
 - (h) Describe _____ under the following heads - 20 M
 - Level I - Knowledge (5 M)
 - Level II - Comprehension (5 M)
 - Level III - Application (5 M)
 - Level IV – Analysis (5 M)
-

Practical: Practical will be conducted in 2 days for 400 Marks.

S.R. No.	Type of Practical	Topics	Marks
1	Long Case I	Paediatric Neurophysiotherapy	100 Marks
2	Long Case II	Adult Neurophysiotherapy	100 Marks
3	Short Case I	Specialty- Peripheral Nerve Injuries/Lower motor neurone diseases.	50 Marks
4	Teaching Skills (Microteaching)		50 Marks
5	Dissertation + Viva Voce		100 Marks

Primary Question Paper Template:

MPT/NEURO PHYSIOTHERAPY/2022 -2023 to 2026-2027

Template - Table of specification

(2- LAQ, 6 -SAQ)

	Maximum Marks
LAQ 2/2	20 M X 2 = 40 M
SAQ 6/6	10 M X 6 = 60 M
Total	100 M

**LIST OF REFERENCE BOOKS AND JOURNALS SECOND YEAR M.P.T
BOOKS & JOURNALS FOR NEUROPHYSIOTHERAPY**

Sr.No	Name of Books
1	Brain's diseases of the nervous system-michael donoghuy:oxford university press 2001.
2	Outline of orthopedics-longman group 1990.
3	Neurological rehabilitation-darcy umphred:mosby 2001.
4	Rehabilitation medicine-s.s.sunder,japee 1999.
5	Localisation of lesion-brazis.
6	Manual of physical medicine and rehabilitation-christopher.
7	A physiological approach to clinical neurology-james.w.Lance.British library cataloguing in publication dutta 1981.
8	Physiotherapy in pediatrics-robotashepherd.british library cataloguing in publication dutta 1995.
9	Neurological rehabilitation:optimizing motor performance:carr&shepherd:elsevier-2004.
10	Right in the middle-patricia.m.davies;springer verlag berlin heidelberg 1990.
11	Steps to follow- patricia davis.springer verlag berlin heidelberg.
12	Cerebral palsy-sophie eleuit
13	Motor control & motor learning-shummary cook.
14	Clinical neurodynamic-shacklock.
15	Adult hemiplegia, evaluation & treatment-bobath b.heinmann,london 1988.
16	Paraplegia & tetraplegia-brombley,churchill,livingstone, edingburg 1991.
17	Physiotherapy & growing child-burns.y.r.
18	Neuromuscular function & diseases,basic clinical-brown,w.f,bolton c.f.
19	Decision making in pediatrics & neurological physical therapy-compbell.s.
20	Handling the young child with cerebral palsy at home-finnie.n.r.
21	Neurological examination made easy-fuller 1999.
22	Hutchinson's clinical methods-swarsh m 1997.
23	Physical rehabilitation assessment and treatment-o'sullivan.s.b.&schmitz t.j.
24	Neuromusculoskeletal examination & assessment-pettynj & moore a p 2003.
25	Physical management in neurological rehabilitation-stokes 2004.
26	Pediatric physical therapy-tecklin j.s 1994.

27	Developmentoftheinfant& young child-illingworthrs2002.
28	PNFinpractical-anillustrated guide-adler ss&beckers2003.
29	Rehabilitationofstroke-carr&shepherd.
30	Advanceinneurologyinteractableepilepsies-blumew.t. 2006.
31	Clinicalneurophysiology-misrauk2005.
32	Principleofneuromusculoskeletaltreatment&management-nicholajpetty,gwendolenjell.
33	Mobilizationofnervoustissue-davidbutler.churchilllivingstone.
34	Guidetoclinicalneurology-jpmohr&jcgautier-churchilllivingstone.
35	Basicneuroscienceswithclinicalapplication-benarroch.
36	Neurorehabilitation-amitaggarwal-paraspublications.
37	Theneuronalenvironment-waltz-humana.
38	Advanceneurology-blume,carben-lww
39	Neurology&neurosurgeryillustrated-lindsay.
40	Localisationinclinicalneurology-brazis.
41	Quickreferenceneuroscienceforrehabilitationprofessional-sharonagutmann(slack)
42	RaisingachildwithNeuromuscular Disorder-thompsonoxford.
43	TextbookOfPediaticNeurology-geraldplenummedical.

**DATTA MEGHE INSTITUTE OF MEDICAL SCIENCES (DEEMED TO BE UNIVERSITY)
RAVI NAIR PHYSIOTHERAPY COLLEGE, SALOD (HIRAPUR), WARDHA**

**POST GRADUATE CURRICULUM
SUBJECT CODE – MPT/CARDIOVASCULAR & RESPIRATORY PHYSIOTHERAPY/2022 -2023 to 2026-2027**

CARDIOVASCULAR & RESPIRATORY PHYSIOTHERAPY

MPT II YEAR

INDEX

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PREAMBLE: The Ministry of Human Resource Development, Government of India presented The National Education Policy (NEP) 2020. The global education development agenda reflected in the Goal 4 (Sustainable Development Goal 4) of the 2030 Agenda for Sustainable Development, adopted by India in 2015 - seeks to 'ensure inclusive and equitable quality education and promote lifelong learning opportunities for all' by 2030. Such a huge task demand reworking and rearrangement of the complete education arrangement to be backing and promoting education, with the aim to fulfilling the set out targets and objectives. With this focus there seem to be a need for key reforms to abridge the lacunae in the present programs and course outcomes to highlight the main features, equality and veracity into the structure. The NEP 2020 rests precise importance on the growth of the innovative talent of every educator. It emphases upon the fundamental capabilities and also advanced order intellectual capabilities, such as critical thinking and reasoning, problem solving, social ethical, and emotional capacities. The policy also emphasis that the education system brings out noble individuals with capability of balanced behaviour, having kindness and compassion, bravery and flexibility, technical soundness and inventive mind, with thorough moral jetties and standards. The policy recognizes the need to change curriculum at the undergraduate and graduate levels in light of changing demands, technology, and novel developing illness patterns. The strategy also advises that current institutional systems for regulating and ensuring the quality of training and education should be reviewed urgently. The policy suggests that the debate over re-creating a regulatory structure for health professional education be revisited in order to address new needs and challenges, and it calls for Professional Education Regulation reforms

Cardiovascular and Respiratory Physiotherapy focuses on maximizing functional independence and well-being. This course uses a patient-centered model of care with multi-system assessment, evidence based interventions and a significant patient education component to promote healthy active lifestyle . The candidate will have a sound understanding of theory, scientific evidence and best practices in the

areas of the Cardio vascular and Respiratory System including critical care, Psychosocial Sciences, Movement Sciences and Physiotherapy.

GOAL :The broad goal of teaching postgraduate students Cardiovascular and Respiratory Physiotherapy is to provide comprehensive knowledge about the Physiotherapy interventions in various Cardiac, Pulmonary, vascular conditions and to teach skills to practice as a qualified Physiotherapist.

Program Outcome		Statement
PO 1	Clinician	Clinician- who understands and provides preventive, promotive, curative, palliative and holistic care with compassion as per Local, National and Global healthcare needs
PO 2	Leader and member of the health care team and system:	Leader and member of the health care team and system providing services to Local, Regional, National, and International stakeholders.
PO 3	Communicator:	Communicator with patients, families, colleagues, and the community as per national and international healthcare standards.
PO 4	Lifelong learner:	Lifelong learner committed to the constant advancement of knowledge and skills in accordance with healthcare needs.
PO 5	Professional	Professional committed to ethical, responsive, and accountable service to the patients, the community, and the profession as per Global standards of health professions.
PO 6	Critical Thinker	Critical thinker, able to think rationally and generate logical connections between concepts in accordance with global healthcare requirements.
PO 7	Researcher	Researcher who can gather, evaluate, and enrich scholarly literature, thereby enabling evidence-based healthcare practice which is Globally relevant

PSOs	Statement
PSO 1	Integrate knowledge and application of physiotherapy assessment in Cardiovascular and Respiratory conditions.
PSO 2	Develop a reasoned rationale for evidence-based physiotherapy intervention by utilizing recent advances of physiotherapy techniques of Cardiovascular and Respiratory conditions.

CO 1	Explain Anatomy, Physiology, Biomechanics, & Patho mechanics, Embryological development of the cardiovascular & respiratory system .
CO 2	Demonstrate assessment of neonatal, paediatric, adult, geriatric and Critically ill patients associated with dysfunctions of the cardiovascular & respiratory system.
CO3	Interpret application of Investigations related to Respiratory and Cardiovascular conditions and its relevance to physiotherapy.
CO 4	Apply clinical reasoning in physiotherapeutic evaluation & management of neonatal, paediatric, adult dysfunctions of the respiratory, cardiac conditions & intensive care units as per health care needs.
CO 5	Plan recent advances of physiotherapy techniques in post operative respiratory and cardiac conditions as per national and global health care needs.

Objectives

1. Be able to identify, discuss & analyse, the Various cardio-respiratory dysfunction & co-relate the same with the provisional diagnosis, routine radiological & Electro-physiological investigations and arrive at appropriate functional diagnosis with clinical reasoning.
2. Use the anatomical rationale for the clinical tests used in differential diagnosis.
3. Learn the ability to perform an appropriate subjective and physical examination, with development of suitable analytical skills to evaluate data obtained.
4. Further develop clinical reasoning that incorporate theoretical concept with evidence-based practice in the field of cardio-pulmonary physiotherapy.
5. Document patients with scale, out come measures and assess the progression.
6. Use recent Technique/approaches to treat & train patients with cardio-respiratory dysfunction in paediatrics and adults.
7. Be able to impart knowledge for training the undergraduate students.

AETCOM IN ADVANCES IN MUSCULOSKELETAL PHYSIOTHERAPY

Subject	Competency
Advances in Cardiovascular & Respiratory Physiotherapy	The physiotherapy postgraduate student should know to treat the patient with an acceptable level of behaviour, attitude & empathy while delivering evidence- informed cardiovascular & respiratory physiotherapy care.
	The physiotherapy postgraduate student should maintain the principles of confidentiality, rationality and ethical practice during patient care for cardiovascular & respiratory conditions.

Speciality subjects
Cardiovascular and Respiratory Physiotherapy
Advances in Cardiovascular and Respiratory Physiotherapy (Part I).
Paper III: (Respiratory Physiotherapy)

S. No	Comp. No	Topic	Paper	Domain	Level	Suggested Teaching Method	Suggested Teaching Method
1.	PRP 1.1	Anatomy and Physiology of the respiratory system and thorax.	III	K	KH	Small Group Discussion (SGD)/ Lecture/Seminar	LAQ/SAQ
	PRP 1.2	Biomechanics, Pathomechanics and Embryological development of Respiratory System.	III	K	KH	Small Group Discussion (SGD)/ Lecture/Seminar	LAQ/SAQ
2.	PRP 2.1	Assessment of neonatal, paediatric associated with dysfunction of the respiratory system and thorax.	III	K, S, C, A	KH, S, H, P	Small Group Discussion (SGD)/ Lecture/ Seminar	LAQ/SAQ DOPS/OSCE/OSPE
	PRP 2.2	Assessment of adult and critically ill patients associated with dysfunction of the respiratory system and thorax.	III	K, S, C, A	KH, S, H, P	Small Group Discussion (SGD)/ Lecture/ Seminar	LAQ/SAQ DOPS/OSCE/OSPE
3.	PRP 3.1	Patho physiology and clinical features of acute and chronic respiratory dysfunction and its medical (Pharmacotherapy) management.	III	K	KH	Small Group Discussion (SGD)/ Lecture/Seminar	LAQ/SAQ

4.	PRP 4.1	Interpretation and application of Investigations related to Respiratory and thoracic dysfunction and its relevance to physiotherapy. (X-Ray, PFT, ABG)	III	K,A, S	SH	Small Group Discussion (SGD)/ Lecture/Seminar	LAQ/SAQOSLER/ OSCE
	PRP 4.2	Interpretation and application of Investigations related to Respiratory and thoracic dysfunction and its relevance to physiotherapy. (Blood and Sputum, CT Scan & MRI etc)	III	K,A, S	SH	Small Group Discussion (SGD)/ Lecture/Seminar	LAQ/SAQOSLER/ OSCE
5.	PRP 5.1	Clinical reasoning in physiotherapeutic evaluation & management of neonatal and paediatric dysfunction of the respiratory system and thorax in acute care and in rehabilitation with recent advances.	III	K,S, A,C	SH,P	Demonstration + Hands On Training + Mockdrills	LAQ/SAQDOPS/ OSCE
	PRP 5.2	Clinical reasoning in physiotherapeutic evaluation & management of adult dysfunction of the respiratory system and thorax in acute care and in rehabilitation with recent advances.	III	K,S, A,C	SH,P	Demonstration + Hands On Training + Mockdrills	LAQ/SAQDOPS/ OSCE
6.	PRP 6.1	Recent advances of various outcome measures relevant to assess intervention of dysfunction of thorax and respiratory system.	III	K,S, A,	SH,P	Small Group Discussion (SGD)/ Lecture/Seminar	LAQ/SAQOSLER/ DOPS /OSCE
7.	PRP 7.1	Surgical procedures related to Respiratory disorders including recent advances in Pulmonary surgeries. (Thoracotomy, Thoracoplasty, Pleurodesis, ICT, Lobectomy, Pneumonectomy) and its preoperative and post-operative complete physiotherapy management	III	K	SH,P	Small Group Discussion (SGD)/ Lecture/Seminar	LAQ/SAQ

	PRP 7.2	Surgical procedures related to Respiratory disorders including recent advances in Pulmonary surgeries. (VATS, Lung Transplantation) and its preoperative and post-operative complete physiotherapy management.	III	K	SH,P	Small Group Discussion (SGD)/ Lecture/Seminar	LAQ/SAQ
8.	PRP 8.1	Physiotherapy management in RICU: Monitoring system in Respiratory Intensive Care Unit (RICU); Basics of Ventilator and Modes of Mechanical ventilator, Weaning criteria of Ventilator, Oxygen therapy	III	K,S, A	SH,P	Workshop/ Small Group Discussion (SGD)/ Lecture/Seminar	OSCE/OSPE/D OPS/ MiniCEX
	PRP 8.2	Physiotherapy management in RICU: Physiotherapeutic Management in Respiratory Intensive Care Unit (RICU) with recent advances.	III	K,S, A	SH,P	Workshop/ Small Group Discussion (SGD)/ Lecture/Seminar	OSCE/OSPE/D OPS/ MiniCEX
9.	PRP 9.1	Clinical decision making and Evidence based practice in management of Respiratory & Thoracic impairments & dysfunction.	III	K,S	SH	Small Group Discussion (SGD)	LAQ/SAQ OSLER/OSCE /DOPS
10.	PRP 10.1	Ergonomics and energy conservation in Respiratory dysfunction and use of assistive devices to enhance function and performance.	III	K,S	SH	Small Group Discussion (SGD)	LAQ/SAQ OSLER/OSCE /DOPS
11.	PRP 11.1	Recent advances of Airway clearance devices and Inspiratory Muscle training devices.	III	K, S,A, C	SH,P	Workshop/ Video presentation Small Group Discussion (SGD)/	LAQ/SAQ
12.	PRP 12.1	Physiotherapy management in COVID - 19 patients and its Recent Advances	III	K, S,A, C	SH,P	Workshop/ Video presentation Small Group Discussion (SGD))/ Case based studies	LAQ/SAQ

	PRP 12.2	Pulmonary Rehabilitation	III	K, S,A, C	SH,P	Small Group Discussion (SGD))/ Case based studies	LAQ/SAQ
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Advances in Cardiovascular and Respiratory Physiotherapy (Part

II). Paper IV: Cardiovascular Physiotherapy

S. No	Comp. No	Topic	Paper	Domain	Level	Suggested Teaching Method	Suggested Teaching Method
1.	PCVP 1.1	Anatomy and Physiology of the Cardiovascular system.	III	K	KH	Small Group Discussion (SGD)/Lecture/Seminar	LAQ/SAQ
	PCVP 1.2	Embryological development of Cardiovascular System.	III	K	KH	Small Group Discussion (SGD)/Lecture/Seminar	LAQ/SAQ
2.	PCVP 2.1	Assessment of neonatal and paediatric associated dysfunction of the Cardiovascular system and thorax.	III	K, S, C, A	KH, SH, P	Small Group Discussion (SGD)/Lecture/Seminar	LAQ/SAQ DOPS/OS CE/OSPE
	PCVP 2.2	Assessment of adult and critically ill patients associated dysfunction of the Cardiovascular system and thorax.	III	K, S, C, A	KH, SH, P	Small Group Discussion (SGD)/Lecture/Seminar	LAQ/SAQ DOPS/OS CE/OSPE

3.	PCV P 3.1	Patho physiology and clinical features of acute and chronic cardiovascular and peripheral vascular system and its medical (Pharmacotherapy)	III	K	KH	Small Group Discussion (SGD)/Lecture/Seminar	LAQ/SAQ
4.	PCV P 4.1	Interpretation and application of investigations related to cardiovascular including peripheral Vasculature system and mediastinum and its relevance to physiotherapy. (ECG, X Ray)	III	K, A, S	SH	Small Group Discussion (SGD)/Lecture/Seminar	LAQ/SAQ OSLER/O SCE
	PCV P 4.2	Interpretation and application of investigations related to cardiovascular including peripheral Vasculature system and mediastinum and its relevance to physiotherapy. (Blood Bio Markers, Doppler, Angiography)	III	K, A, S	SH	Small Group Discussion (SGD)/Lecture/Seminar	LAQ/SAQ OSLER/O SCE
5.	PCV P 5.1	Clinical reasoning in physiotherapeutic evaluation & management of neonatal, paediatric dysfunction of the cardiovascular system including peripheral Vasculature diseases in acute care and rehabilitation with recent advances.	III	K, S, A, C	SH, P	Demonstration + Hands On Training + Mockdrills	LAQ/SAQ DOPS/O SCE
	PCV P 5.2	Clinical reasoning in physiotherapeutic evaluation & management of adult dysfunction of the cardiovascular system including peripheral Vasculature diseases in acute care and rehabilitation with recent advances.	III	K, S, A, C	SH, P	Demonstration + Hands On Training + Mockdrills	LAQ/SAQ DOPS/O SCE
6.	PCV P 6.1	Recent advances of various outcome measures relevant to assess intervention of dysfunction of cardiovascular and peripheral vascular system.	III	K, S, A,	SH, P	Small Group Discussion (SGD)/Lecture/Seminar	LAQ/SA QOSLER /DOPS /OSCE
7.	PCV P 7.1	Surgical procedures related to cardiovascular and peripheral vascular system. Disorders including recent advances in Cardiothoracic surgeries. (CABG, MVR, AVR Heart Transplantation, Angioplasty, Robotics Surgery etc) and its preoperative and postoperative complete physiotherapy management	III	K	SH, P	Small Group Discussion (SGD)/Lecture/Seminar	LAQ/SA Q
	PCV P 7.2	Surgical procedures related to cardiovascular system Disorders including recent advances in Cardiothoracic surgeries (ASD, VSD, TOF) and its preoperative and postoperative complete physiotherapy management	III	K	SH, P	Small Group Discussion (SGD)/Lecture/Seminar	LAQ/SA Q

8.	PCV P 8.1	Physiotherapy management in ICCU:Monitoring system in Intensive Cardiac Care Unit (ICCU); Basics of Ventilator and Modes of Mechanical ventilator, Weaning criteria of Ventilator, HyperbaricOxygentherapy	III	K, S, A	SH, P	Workshop/ SmallGroupDiscussion(SGD)/Lecture/Semi Nar	OSCE/O SPE/DO PS/ MiniCEX
	PCV P 8.2	Physiotherapy management in ICCU: PhysiotherapeuticManagement in Intensive Cardiac Care Unit (ICCU) with recent advances.	III	K, S, A	SH, P	Workshop/ SmallGroupDiscussion(SGD)/Lecture/Semi Nar	OSCE/O SPE/DO PS/ MiniCEX
9.	PCV P 9.1	Clinical decision making and,Evidencebasedpracticeinmanagementofcardiovascularand peripheralvasculardysfunction.	III	K, S, A, C	SH	Workshop/Video Presentations	LAQ/SA QOSCE// DOPS/ miniCEX
10.	PCV P 10.1	CardiacRehabilitation (Phase I, Phase II, Phase III & Phase IV Cardiac Rehabilitation in Cardiovascular Condions.	IV	K, S, A, C	SH, P	Workshop/SmallGrou pDiscussion(SGD)/ Casebasedstudies	LAQ/SA Q
11.	PCV P 11.1	Exercise testing and exerciseprescription in Cardiac Conditions.	IV	K, S, A, C	SH, P	Workshop/SmallGrou pDiscussion(SGD)/Lec ture/Seminar	LAQ/SAQ Mini CEX/DO PS / OSCE
	PCV P 11.2	Exercise testing and exerciseprescription in Peripheral Vascular Diseases.	IV	K, S, A, C	SH, P	Workshop/SmallGrou pDiscussion(SGD)/Lec ture/Seminar	LAQ/SAQ Mini CEX/DO PS / OSCE
	PCV P 11.3	Exercise testing and exerciseprescription in Diabetes Mellitus.	IV	K, S, A, C	SH, P	Workshop/SmallGrou pDiscussion(SGD)/Lec ture/Seminar	LAQ/SAQ Mini CEX/DO PS / OSCE
12.	PCV P 12.1	Knowledgeand skillofBasic& Advancedlifesupport.	IV	K, S, A, C	SH, P	Workshop/SmallGrou pDiscussion(SGD)/Lec ture/Seminar	LAQ/SAQ Mini CEX/DOP S / OSCE

CLINICALPOSTING
Second year

Acutecare&RehabilitationinCardiovascular&Respiratorydysfunctions:Intensivecare
units,Cardiovascular&Respiratory (Indoor&OPD)

Competencies(For Assessment and Management)

Sr.No	Competencies	Minimum Cases/ Experiments for achievements of level of Competencies			
		Observed	Assisted	Independent form	Verified with faculty signature and Name
1.	Cardio-Vascular Assessment.				
2.	Respiratory Assessment.				
3	Responses of various systems to Exercise and training				
4.	Considerations of age and sex in exercise and training.				
5.	Pathological investigations and imaging techniques related to cardiopulmonary disorders with interpretation.				
6	Anthropometric measurements				
7.	Physical fitness assessment - Flexibility, Muscle strength, endurance, Cardio-respiratory endurance, balance, co-ordination				
8.	Exercise ECG testing and monitoring. Pulmonary function tests and Spirometry				

9.	Assessment & effect of aerobic, anaerobic, Isometric, Isotonic and Isokinetic exercises on muscle and cardio-pulmonary function				
10.	Ergonomic aspects of exercise on oxygen, energy consumption MET value of various exercises and activity				
11.	General Guidelines to be followed in Cardiac Rehabilitation, Pulmonary Rehabilitation				
12.	Exercise prescription for health and fitness with special emphasis to cardiovascular disease, Obesity and Diabetes.				

SCHEME OF EXAMINATION

Formative and Summative Examination

Formative Examination:

1. Annual Examination: For I year MPT

Theory: There will be two papers (Paper I & II) of 100 marks each of three hours duration details are as follows:

Que.No.	Type of Question	Out Of	Total Questions	Marks
Q.1	Short Answer Questions	All Compulsory	10M X 6	60 Marks
Q.2	Long Answer Question	All Compulsory	20M X 2	40 Marks

Theory Paper setting format

PAPER – III & IV

Time: 3 Hours]

[Max. Marks: 100

Instructions :---

- (17) All questions are compulsory
- (18) Numbers to the right indicates full marks.
- (19) Draw neat diagrams, wherever necessary
- (20) Use single answer book for answering both sections.

SECTION – A

Q1. S.A.Q. – Short Answer Questions

10 M X 6 = 60

- (y) _____
(z) _____
(aa) _____
(bb) _____
(cc) _____
(dd) _____

SECTION – B

Q2. L.A.Q. – Long Answer Questions

20 M X 2 = 40

- (i) Describe _____ under the following heads - 20 M
- Level I - Knowledge (5 M)
 - Level II - Comprehension (5 M)
 - Level III - Application (5 M)
 - Level IV - Analysis (5 M)
- (j) Describe _____ under the following heads - 20 M
- Level I - Knowledge (5 M)
 - Level II - Comprehension (5 M)
 - Level III - Application (5 M)

Practical: Practical will be conducted for 200 Marks.

S.R. No.	Type of Practical	Topics	Marks
1	Long Case I	As Per Speciality	100 Marks
2	Short Case I	As Per Speciality	50 Marks
3	Dissertation (Review) and Viva Voce		50 Marks

1. Preliminary Examination:

Theory: There will be four papers of 100 marks each of three hours duration details are as follows

Que.No.	Type of Question	Out Of	Total Questions	Marks
Q.1	Short Answer Questions	All Compulsory	10M X6	60 Marks
Q.2	Long Answer Question	All Compulsory	20M X2	40 Marks

Practical: Practical will be conducted in 2 days for 400 Marks.

S.R. No.	Type of Practical	Topics	Marks
1	Long Case I	Cardiovascular Conditions	100 Marks
2	Long Case II	Respiratory Conditions	100 Marks
3	Short Case I	Specialty- Peripheral Vascular Diseases/burns/chest trauma/surgical conditions.	50 Marks
4	Teaching Skills		50 Marks
5	Dissertation and Viva Voce		100 Marks

Summative Examination:

Theory: There will be four papers of 100 marks each of three hours duration details are as follows

Que.No.	Type of Question	Out Of	Total Questions	Marks
Q.1	Short Answer Questions	All Compulsory	10 M X 6	60 Marks
Q.2	Long Answer Question	All Compulsory	20 M X 2	40 Marks

Primary Question Paper Template:

MPT/CARDIOVASCULAR AND RESPIRATORY PHYSIOTHERAPY/2022 -2023 to 2026-2027

Template - Table of specification

(2- LAQ, 6 -SAQ)

	Maximum Marks
LAQ 2/2	20 M X 2 = 40 M
SAQ 6/6	10 M X 6 = 60 M
Total	100 M

**LIST OF REFERENCE BOOKS AND JOURNALS SECOND
YEAR M.P. T. BOOKS & JOURNALS
FOR CARDIOVASCULAR AND RESPIRATORY PHYSIOTHERAPY**

Sr.No	Name of Books
1	Human Physiology By Guyton
2	Physiology Of Human Joints By Kapandji
3	Hand Book Of Physiology In Aging- Masoro, C.R. C Press
4	Mechanical Ventilation By Irwin R.S. Bemers
5	Mechanical Ventilation By David W. Chang
6	ECG By Schamroth
7	Interpretation Of Pulmonary Function Tests: A Practical Guide By Hyatt, Robert E.; Scanlon, Paul D
8	Principles Of Exercise Testing And Interpretation: Including Pathophysiology And Clinical Applications By Kalman Wasserman
9	Baum's Text Book Of Pulmonary Diseases
10	Crofton And Douglas's Respiratory Diseases
11	Egan's Fundamentals Of Respiratory Care By Robert Wilkins
12	Harrison's Textbook Of Medicine
13	Brawnwald's Cardiology
14	API's Text Book Of Medicine
15	Cardio Pulmonary Physical Therapy By Scott Irwin
16	Cardio Pulmonary Physical Therapy By Donna Frownfelter
17	Principles Of Cardio Pulmonary Physical Therapy By Asbury & Petty
18	Cardio Pulmonary Physical Therapy By Helen Hillegas, (Saunders)
19	PT For RT & Cardiac Problems By Weber
20	Cardio Pulmonary Physical Therapy By Joanne Watchie
21	Physiotherapy For Respiratory And Cardiac Problems By Pryor JA; Prasad SA, Elsevier
22	Respiratory Care - A Guide To Clinical Practice By Burton G.G. & Hodgkin
23	Brompton's Chest Physiotherapy
24	Physiotherapy In Respiratory Care By Hough A Jaypee Publishers
25	Chest Physiotherapy In Intensive Care Unit By Mackenzie C F Williams And Wilkins
26	Cardiovascular And Pulmonary Physical Therapy By Felter D.F. Mosby
27	Exercise And The Heart By Froelicher V.F. Elsevier
28	Cardiovascular Health And Disease In Women By Douglas P.S. Saunders

29	AcuteCareHandbookForPhysicalTherapistBYJamieC.PazMichelP.West.ButterworthHeineMann
30	PhysicalTherapyFor ChildrenByCampbellSuzannK,W.BSaunders,Philadelphia
31	ChestPhysiotherapyInIntensiveCareUnitByMackenzie,Williams&Wilkins,Baltimore
32	CardiopulmonarySymptomsInPhysiotherapyByCohenM,Churchill,Livingstone,London
33	PhysicalRehabilitation:AssessmentAndTreatmentByO'Sullivan,F.ADavis,Philadelphia
34	ClinicalApplicationOfVentilatorySupportByKinkyChurchill,Livingstone,NewYork
35	PulmonaryRehabilitation:GuidelinesToSuccessByBodkins,Butterworth,Boston
36	CardiacRehabilitationByAmundsenLord, Churchill,Livingstone,London
37	PhysicalTherapyOfTheCancerPatientByMcgaryexCharles,Churchill,Livingstone,NewYork
38	MultidisciplinaryApproachToBreathingDisorderByLeon
39	ClinicalExerciseTestingByJones
40	PulmonaryRehabilitation. TheObstructiveAndParalyticConditionsByJohn
41	CoronaryArteryDiseaseEssentialsOfPreventionAndRehabilitationProgramByPeter
42	PulmonaryRehabilitationByJohnHodgkin(Elsevier)

Journals

Sr.No	NameofJournals
1	JournalofcardiovascularDisease&research
2	JournalofAmericanThoracicSociety-Thorax
3	AmericanHeart Association-Chest
4	IndianJournalofCriticalCare Medicine
5	Respiratorycare–EuropeanJournal

Advances in Cardiovascular & Respiratory Physiotherapy (Paper III & Paper IV)	CO	Competency no	PO1 Clinician	PO2 Leadership and Team worker	PO3 Communicator	PO4 Lifelong Learner	PO5 Professional	PO6 Critical Thinker	PO7 Researcher	PSO1	PSO2
	CO1: : Understand Anatomy, Physiology, Biomechanics, & Patho mechanics,Embryological development of the cardiovascular & respiratory system .	PRP 1.1,1.2, PCVP1.1,1.2 PRP 3.1,PCVP 3.1,	3	2	3	3	3	2	2		
	CO2: Demonstrate assessment of neonatal, paediatric, adult, geriatric and critically ill patients associated with dysfunctions of the cardiovascular & respiratory system.	PRP 2.1,2.2, PCVP 2.1,2.2	3	3	3	3	3	3	2	3	
	CO3: Interpret application of Investigations related to Respiratory and Cardiovascular conditions and its relevance to physiotherapy.	PRP 4.1,4.2,PCVP 4.1,4.2	3	2	3	3	3	3	3	3	
	CO4: Apply clinical reasoning in physiotherapeutic evaluation & management of neonatal, paediatric, adult dysfunctions of the respiratory, cardiac	PRP 5.1,PRP 5.2,PRP 6.1,PCVP 5.1,PCVP 5.2, PRP 8.1,PRP 8.2,PCVP 8.1,PCVP 8.2	3	3	3	3	3	3	3	3	

**DATTA MEGHE INSTITUTE OF MEDICAL SCIENCES (DEEMED TO BE UNIVERSITY)
RAVI NAIR PHYSIOTHERAPY COLLEGE, SALOD (HIRAPUR), WARDHA**

**POST GRADUATE CURRICULUM
SUBJECT CODE – MPT/COMMUNITY HEALTH PHYSIOTHERAPY/2022 -2023 to 2026-2027**

COMMUNITY HEALTH PHYSIOTHERAPY

MPT II YEAR

S. NO.	CONTENT	PAGE NO
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PREAMBLE:The Ministry of Human Resource Development, Government of India presented The National Education Policy (NEP) 2020. The global education development agenda reflected in the Goal 4 (Sustainable Development Goal 4) of the 2030 Agenda for Sustainable Development, adopted by India in 2015 - seeks to 'ensure inclusive and equitable quality education and promote lifelong learning opportunities for all' by 2030. Such a huge task demand reworking and rearrangement of the complete education arrangement to be backing and promoting education, with the aim to fulfilling the set out targets and objectives. With this focus there seem to be a need for key reforms to abridge the lacunae in the present programs and course outcomes to highlight the main features, equality and veracity into the structure.

The NEP 2020 rests precise importance on the growth of the innovative talent of every educator. It emphasizes upon the fundamental capabilities and also advanced order intellectual capabilities, such as critical thinking and reasoning, problem solving, social ethical, and emotional capacities. The policy also emphasis that the education system brings out noble individuals with capability of balanced behaviour, having kindness and compassion, bravery and flexibility, technical soundness and inventive mind, with thorough moral jetties and standards. The policy recognizes the need to change curriculum at the undergraduate and graduate levels in light of changing demands, technology, and novel developing illness patterns. The strategy also advises that current institutional systems for regulating and ensuring the quality of training and education should be reviewed urgently. The policy suggests that the debate over re-creating a regulatory structure for health professional education be revisited in order to address new needs and challenges, and it calls for Professional Education Regulation reforms

Knowledge of Community Health Physiotherapy is vital to the understanding of both therapeutic techniques and its effects. Community Health Physiotherapy is the study of therapeutic techniques in the Physiotherapy department. Community Health Physiotherapy plays an important role in relieving pain, swelling, stiffness etc. Aim of teaching Community Health Physiotherapy to postgraduate students is to help them understand the scientific basis of biomechanics and improving body functions and orient them towards the application of knowledge acquired in solving clinical problems.

GOALS: The goal of the postgraduate student should be able to understand prevalence & incidence of various conditions responsible for increasing morbidity in the specific community, role of physiotherapy in reducing morbidity, expected clinical

& functional recovery, reasons for non-compliance in specific community & environmental solution for the same.

Program Outcome		Statement
PO 1	Clinician	Clinician- who understands and provides preventive, promotive, curative, palliative and holistic care with compassion as per Local, National and Global healthcare needs
PO 2	Leader and member of the health care team and system:	Leader and member of the health care team and system providing services to Local, Regional, National, and International stakeholders.
PO 3	Communicator:	Communicator with patients, families, colleagues, and the community as per national and international healthcare standards.
PO 4	Lifelong learner:	Lifelong learner committed to the constant advancement of knowledge and skills in accordance with healthcare needs.
PO 5	Professional	Professional committed to ethical, responsive, and accountable service to the patients, the community, and the profession as per Global standards of health professions.
PO 6	Critical Thinker	Critical thinker, able to think rationally and generate logical connections between concepts in accordance with global healthcare requirements.
PO 7	Researcher	Researcher who can gather, evaluate, and enrich scholarly literature, thereby enabling evidence-based healthcare practice which is Globally relevant

Program Specific Outcomes (PSOs)

PSOs	Statement
PSO 1	Integrate knowledge and application of physiotherapy assessment in Community Health conditions.
PSO 2	Develop a reasoned rationale for evidence-based physiotherapy intervention by utilizing recent advances of physiotherapy techniques of Community Health conditions.

CO 1	Explain the Legal issues, Health delivery system in India, Basic Concepts of Rehabilitation, Community Based Rehabilitation, physiology of aging, physiology of pregnancy and occupational hazards in industry in the context of global healthcare conditions.
CO 2	Demonstrate assessment in geriatrics, women's health and industrial health, Disability and assistive devices.
CO3	Apply ICF and home exercise program for Musculoskeletal, Neurological and Cardio-respiratory conditions.
CO 4	Evaluate Physiotherapy management in in various conditions in geriatrics, women and industrial workers as per health care needs.
CO 5	Devise a plan for recent advances in geriatric physical therapy, women's health, industrial therapy and community physiotherapy as per national and global health care needs.

Objectives:

1. Acquire the in-depth understanding of the concept of Community Based Rehabilitation, Physiotherapy in community health and Institution Based Rehabilitation.
2. Be able to assist in planning and organization camps at community level.
3. Be able to organize events for health promotions as per various days as recommended by WHO.
4. Be able to impart services and training at the community level effectively with minimum resources.
5. Be able to plan and implement treatment programme adequately and appropriately for various conditions in community and during disaster or natural calamities.
6. This course shall enable the candidate to expertise in the Community health and function in the general setup as consultant.
7. As a consultant, work with the team of health professionals involved in various areas.

AETCOM IN ADVANCES IN COMMUNITY HEALTH PHYSIOTHERAPY

Subject	Competency
Advances in Community Health Physiotherapy	The physiotherapy postgraduate student should know to treat the patient with an acceptable level of behaviour, attitude & empathy while delivering evidence- informed community health physiotherapy care.
	The physiotherapy postgraduate student should maintain the principles of confidentiality, rationality and ethical practice during patient care for community health conditions.

Speciality subjects
Community Health Physiotherapy
Advances in Community Health Physiotherapy –Part I
Paper III: (Essentials of Community Physiotherapy)

SN	CO no	Topic	Pape r	Do ma in	Leve l	Suggested Teaching Method	Suggested Assessmen t method
1	PCP 1.1	Legal issues – National & International (WHO) Rehabilitation acts.	III	K	KH	Small Group Discussion /Seminar	SAQ
	PCP 1.2	Implementation of the Act.					
2	PCP 2.1	Health delivery system in India: Health and Illness.	III	K	KH	Small Group Discussion /Seminar	SAQ
	PCP 2.2	Levels of Healthcare.					
3	PCP 3.1	Principles and practice of fitness training for health promotion in community	III	K, S, A,	KH, SH	Small Group Discussion (SGD)	LAQ/SAQ DOPS/Wor k place

							based Assessment
4	PCP 4.1	Basic Concepts of Rehabilitation	III	K, S, A, C	KH, SH	Seminar/Lecture	LAQ/SAQ OSCE//DO PS/mini CEX
	PCP 4.2	Institute based rehabilitation services					
	PCP 4.3	Multi-disciplinary approach.					
5	PCP 5.1	Community Based Rehabilitation: Methodology of CBR with reference to National Health Delivery system and Spectrum of CBR	III	K	KH, SH	Small Group Discussion (SGD)/ Seminar/Lecture.	LAQ/SAQ
	PCP 5.2	Role of Government and Non-Government organizations in CBR.					
	PCP 5.3	Principles and practice of Rehabilitation and outreach services.					
	PCP 5.4	Role of Rehabilitation counselling, holistic approach, skills training in CBR.					
6	PCP 6.1	Role of Community Physiotherapist in National and State Institutes,	III	K, S,	KH, SH	Small Group Discussion	LAQ/SAQ

		District Rehabilitation Centre and Primary Health Centre.		A, C			
7	PCP 7.1	Legislation laws for persons with disability at National and UN (United Nations) level.	III	K	KH	Small Group Discussion (SGD)/Seminar	SAQ
	PCP 7.2	Public awareness to the various disabilities.	III	K	KH	Small Group Discussion (SGD)/Seminar	SAQ
8	PCP 8.1	Evaluation of Disability as per ICF for Musculoskeletal, Neurological and Cardio-respiratory	III	K, S, A, C	KH, SH	Small Group Discussion (SGD)/Seminar/ Case Based Study	OSCE/OSP E/DOPS/ Mini CEX
	PCP 8.2	Rehabilitation of disabled	III	K, S, A, C	KH, SH	Small Group Discussion (SGD)/Seminar/ Case Based Study	OSCE/OSP E/DOPS/ Mini CEX
9	PCP 9.1	Appropriate Technology, Assistive devices used for Stability & Mobility to enhance functional independence.	III	K, S, A, C	KH, SH	FGD/Seminar	LAQ/SAQ OSCE/DO PS

10	PCP 10.1	Home exercise programs for Musculoskeletal conditions. Arthritis, Chronic pain, Burn, Degenerative & progressive disorders etc.	III	K, S, A, C	KH, SH	Seminar	LAQ/SAQ OSCE/ DOPS, Work place based assessment,
	PCP 10.2	Home exercise programs for Neurological conditions. Examples: Spinal cord injury, Traumatic brain injury, Stroke, Parkinson's disease,					
	PCP 10.3	Home exercise programs for cardiorespiratory conditions. Examples: Amputations, Heart disease & pulmonary disease,					
11	PCP 11.1	Physical fitness, yoga and psychosomatic approaches (Meditation) for stress management.	III	K, S, A, C	KH, SH	FGD/ Case Based Discussion/Seminar	SAQ DOPS, Work place based assessment,

Advances in Community Health Physiotherapy – Part II
Paper IV: (Women’s Health, Industrial Health and Geriatric Health)

SN	CO No	Competency	Pap er	Dom ain	Lev el	Suggested Teaching Method	Suggested Assessment method
1	PCP 1.1	Geriatric Health: Physiology of Ageing. Factors affecting ageing.	IV	K,S, A,C	KH, SH	Small Group Discussion (SGD)/ Seminar	LAQ/SAQ DOPS/Mini CEX
	PCP 1.2	Theories of aging	IV	K,S, A,C	KH, SH	Small Group Discussion (SGD)/ Seminar	LAQ/SAQ DOPS/Mini CEX
2	PCP 2.1	Basic concepts of Geriatric Medicine and Geriatric surgery.	IV	K	KH	Small Group Discussion (SGD)/ Seminar	SAQ
	PCP 2.2	Common diseases affecting Elderly.	IV	K	KH	Small Group Discussion (SGD)/ Seminar	SAQ
3	PCP 3.1	Assessment of the Geriatric conditions.	IV	K,S, A,C	KH, SH	FGD/Seminar	LAQ/SAQ DOPS/Workplac e based assessment

4	PCP 4.1	Geriatric Rehabilitation: Exercise prescription.in geriatrics	IV	K,S, A, C	KH, SH	Seminar/Work shop/Lecture	LAQ/SAQ DOPS/ OSLER/ OSCE/Workplac e based assessment
	PCP 4.2	Nutrition in geriatric health.	IV	K,S, A, C	KH, SH	Seminar/Work shop/Lecture	LAQ/SAQ DOPS/ OSLER/ OSCE/Workplac e based assessment
	PCP 4.3	Fall in geriatrics and fall prevention programme. Issued related to incontinence, balance and co-ordination. Home, work place modification.	IV	K,S, A, C	KH, SH	Seminar/Work shop/Lecture	LAQ/SAQ DOPS/ OSLER/ OSCE/Workplac e based assessment
	PCP 4.4	Psychosocial and safety issues in elderly.	IV	K,S, A, C	KH, SH	Seminar/Work shop/Lecture	LAQ/SAQ DOPS/ OSLER/

							OSCE/Workplace based assessment
	PCP 4.5	Services for elderly.	IV	K,S, A, C	KH, SH	Seminar/Workshop/Lecture	LAQ/SAQ DOPS/ OSLER/ OSCE/Workplace based assessment
	PCP 4.6	Recent advances in geriatric physical therapy	IV	K,S, A, C	KH, SH	Seminar/Workshop/Lecture	LAQ/SAQ DOPS/ OSLER/ OSCE/Workplace based assessment
5	PCP 5.1	Posture and gait evaluation and management in elderly.	IV	K, S, A, C	KH, SH	Small Group Discussion (SGD)/ Case Based Discussion/Workshops.	LAQ/SAQ Mini CEX/ DOPS /peer review
	PCP 5.2	Successful aging	IV	K, S, A, C	KH, SH	Small Group Discussion (SGD)/ Case Based Discussion/Workshops.	LAQ/SAQ Mini CEX/ DOPS /peer review

	PCP 5.3	Holistic physiotherapy for elderly	IV	K, S, A, C	KH, SH	Small Group Discussion (SGD)/ Case Based Discussion/Workshops.	LAQ/SAQ Mini CEX/ DOPS /peer review
	PCP 5.4	Evidenced based practice in geriatrics	IV	K, S, A, C	KH, SH	Small Group Discussion (SGD)/ Case Based Discussion/Workshops.	LAQ/SAQ Mini CEX/ DOPS /peer review
6	PCP 6.1	Women's, Health: Women's reproductive health care. Physiology of Pregnancy Assessment of common discomforts in females	IV	K,S, A,C	KH, SH	Seminar/ Case Based Discussion/Lecture/Workshop	LAQ/SAQ OSLER/ DOPS / Workplace based assessment/OSCE/Mini CEX
	PCP 6.2	Ante- natal care and exercise prescription.	IV	K,S, A,C	KH, SH	Seminar/ Case Based	LAQ/SAQ OSLER/ DOPS / Workplace

						Discussion/Lecture/Workshop	based assessment/OSCE/Mini CEX
	PCP 6.3	Pregnancy induced complications Diagnosis and treatment of Cardiac diseases and disorders like Pregnancy induced hypertension, Vascular, Respiratory, Neurologic condition	IV	K,S, A,C	KH, SH	Seminar/ Case Based Discussion/Lecture/Workshop	SAQ OSLER/ DOPS / Workplace based assessment/OSCE/Mini CEX
7	PCP 7.1	Labour, Pain mechanism and relief during labour. Physical therapy for pain relid during labour	IV	K,S, A,C	KH, SH	Seminar/ Case Based Discussion/Lecture/Workshop	LAQ/SAQ OSLER/ DOPS / Workplace based assessment/OSCE/Mini CEX
	PCP 7.2	Post partum care: Anatomical and physiological changes, post- partum blues. Post natal exercises	IV	K,S, A,C	KH, SH	Seminar/ Case Based Discussion/Lecture/Workshop	LAQ/SAQ OSLER/ DOPS / Workplace based assessment/OSCE/Mini CEX
	PCP 7.3	Caesarean section and physiotherapy management after caesarean section.	IV	K,S, A,C	KH, SH	Seminar/ Case Based Discussion/Lecture/Workshop	LAQ/SAQ OSLER/ DOPS / Workplace based

							assessment/OSCE/Mini CEX
	PCP 7.4	Neonate handling Education: Kangaroo care etc.	IV	K,S, A,C	KH, SH	Seminar/ Case Based Discussion/Lecture/Workshop	SAQ OSLER/ DOPS / Workplace based assessment/OSCE/Mini CEX
8	PCP 8.1	Common gynaecologic conditions and Physiotherapy management (e.g. pelvic inflammatory diseases, , incontinence, uterovaginal prolapsed, infertility, PCOD, obesity etc).	IV	K,S, A,C	KH, SH	Seminar/ Case Based Discussion/Lecture/Workshop	LAQ/SAQ OSLER/ DOPS / Workplace based assessment/OSCE/Mini CEX
	PCP 8.2	Common Surgical Interventions: Hysterectomy, Laparotomy etc. and Physiotherapy management.	IV	K,S, A,C	KH, SH	Seminar/ Case Based Discussion/Lecture/Workshop	LAQ/SAQ OSLER/ DOPS / Workplace based assessment/OSCE/Mini CEX
9	PCP 9.1	Musculoskeletal pain and dysfunction in the childbearing year.	IV	K,S, A,C	KH, SH	Seminar/ Case Based Discussion/Lecture/Workshop	LAQ/SAQ OSLER/ DOPS / Workplace based

							assessment/OSCE/Mini CEX
10	PCP10.1	Recent Advances in women health.	IV	K,S,A,C	KH,SH	Seminar/ Case Based Discussion/Lecture/Workshop	LAQ/SAQ OSLER/ DOPS / Workplace based assessment/OSCE/Mini CEX
11	PCP11.1	Other issues related to Womens Health: The climacteric (Menopause) Anatomical, physiological, psychological, cardiovascular & other systemic changes among post menopausal	IV	K,S,A,C	KH,SH	Seminar/ Case Based Discussion/Lecture/Workshop	LAQ/SAQ OSLER/ DOPS / Workplace based assessment/OSCE/Mini CEX
	PCP11.2	Cancer rehabilitation (Breast and Reproductive Organs) Osteoporosis, falls and fractures in postmenopausal woman	IV	K,S,A,C	KH,SH	Seminar/ Case Based Discussion/Lecture/Workshop	LAQ/SAQ OSLER/ DOPS / Workplace based assessment/OSCE/Mini CEX
	PCP11.3	Exercise prescription for post menopausal women.	IV	K,S,A,C	KH,SH	Seminar/ Case Based Discussion/Lecture/Workshop	LAQ/SAQ OSLER/ DOPS / Workplace based

							assessment/OSCE/Mini CEX
12	PCP12.1	Exercise testing and prescription in female athletes.	IV	K,S, A,C	KH, SH	Seminar/ Case Based Discussion/Lecture/Workshop	LAQ/SAQ OSLER/ DOPS / Workplace based assessment/OSCE/Mini CEX
13	PCP13.1	Industrial Health: Occupational Health, Occupational Stress Occupational Hazards, Industrial Hygiene, Vulnerable workers group.	IV	K, S, A	KH, SH	Small Group Discussion (SGD)/Case based discussion/seminar	LAQ/SAQ Mini CEX/ DOPS / OSCE/OSLER A/workplace based assessment /360 feedback
	PCP13.2	Industrial therapy: traditional medical model v/s worker care spectrum and team approach. Assessment of worker in industrial therapy	IV	K, S, A	KH, SH	Small Group Discussion (SGD)/Case based discussion/seminar	SAQ Mini CEX/ DOPS / OSCE/OSLER A/workplace based assessment/360 feedback

PCP13.3	Injury prevention: ergonomics, job analysis, job placement assessment & pre employment screening. Employee fitness programme	IV	K, S, A	KH, SH	Small Group Discussion (SGD)/Case based discussion/seminar	SAQ Mini CEX/ DOPS / OSCE/OSLER A/workplace based assessment/360 feedback
PCP13.4	Returning to work Functional capacity evaluation Job simulation Work conditioning & hardening	IV	K, S, A	KH, SH	Small Group Discussion (SGD)/Case based discussion/seminar	LAQ /SAQ Mini CEX/ DOPS / OSCE/OSLER A/workplace based assessment/360 feedback
PCP13.5	Frequent types of injuries related to work place design, repetitive motion & cumulative trauma disorders	IV	K, S, A	KH, SH	Small Group Discussion (SGD)/Case based discussion/seminar	LAQ /SAQ Mini CEX/ DOPS / OSCE/OSLER A/workplace based assessment/360 feedback

PCP 13.6	Energy: - Principles, application of ergonomics to the design & /or redesign of jobs, manufacturing workstations, & other work environments to achieve increased profitability & reductions in injury illness	IV	K, S, A	KH, SH	Small Group Discussion (SGD)/Case based discussion/seminar	LAQ /SAQ Mini CEX/ DOPS / OSCE/OSLER A/workplace based assessment/360 feedback
PCP 13.7	Recent advances in industrial therapy	IV	K, S, A	KH, SH	Small Group Discussion (SGD)/Case based discussion/seminar	LAQ /SAQ Mini CEX/ DOPS / OSCE/OSLER A/workplace based assessment/360 feedback
PCP13.8	Frequent types of injuries related to work place design, repetitive motion & cumulative trauma disorders Physiotherapy role in industry – preventive, intervention, ergonomic and rehabilitative.	IV	K, S, A	KH, SH	Small Group Discussion (SGD)/Case based discussion/seminar	LAQ /SAQ Mini CEX/ DOPS / OSCE/OSLER A/workplace based assessment/360 feedback

	PCP13.9	Ergonomics, Principles, Issues related to hand tools, posture, material handling and lifting	IV	K, S, A, C	KH, SH	Small Group Discussion (SGD)/ Case Based Discussion/Workshops.	LAQ/SAQ Mini CEX/ DOPS /peer review
14	PCP14.1	Evidence Based Practice in Community Health.	IV	K	KH	Seminar/Workshop/Video Presentation.	SAQ

Clinical Posting:

Second year

Gynaecology and Obstetrics, antenatal postnatal OPD, geriatric OPD, PHC/CHC in Rural areas, Industry, Old Age Homes, Specially Abled School.

Competencies (For Assessment and Management)

Sr. No	Competencies	Minimum Cases/ Experiments for achievements of level of Competencies			
		Observed	Assisted	Independent form	Verified with faculty signature and Name
1.	Geriatric Assessment.				
2.	Gynaecological & Obstetric assessment.				
3	Workplace based assessment.				
4	Responses of various systems to Exercise and training.				
5.	Considerations of age and sex in exercise and training.				
6.	Anthropometric measurements				

7.	Physical fitness assessment Flexibility, Muscle strength, endurance, Testing of agility- balance, co-ordination.				
8.	Physiotherapy modalities, techniques and approaches.				
9.	Aids and appliances, adaptive functional devices to improve movement dysfunction.				
10.	Exercise prescription for health and fitness with special emphasis to Obesity and Diabetes.				
11.	Screening for Gynaecologic & Obstetric causes of Back Pain.				
12.	Exercise planning and prescription. And Use of Exercise therapy techniques and application on various types of Community cases.				
13.	Physiotherapy following Obstetric and Gynaecological Disorders.				
14.	Exercise prescription for health and fitness with special emphasis				

	to Industrial population.				
15.	Exercise prescription for health and fitness with special emphasis to Geriatric population.				

SCHEME OF EXAMINATION

Theory: There will be four papers of 100 marks each of three hours duration details are as follows

Que. No.	Type of Question	Out Of	Total Questions	Marks
Q. 1	Short Answer Questions	All Compulsory	10 M X 6	60 Marks
Q. 2	Long Answer Question	All Compulsory	20 M X 2	40 Marks

Theory Paper setting format

PAPER – III & IV

Time:3 Hours]

[Max. Marks: 100

Instructions :---

- (21) All questions are compulsory
- (22) Numbers to the right indicates full marks.
- (23) Draw neat diagrams, wherever necessary
- (24) Use single answer book for answering both sections.

SECTION – A

Q1. S.A.Q. – Short Answer Questions

10 M X 6 =60

- (ee) _____
(ff) _____
(gg) _____
(hh) _____
(ii) _____
(jj) _____

SECTION – B

Q2. L.A.Q. – Long Answer Questions

20 M X 2 =40

- (k) Describe _____ under the following heads - 20 M
- Level I - Knowledge (5 M)
 - Level II - Comprehension (5 M)
 - Level III - Application (5 M)
 - Level IV – Analysis (5 M)
- (l) Describe _____ under the following heads - 20 M
- Level I - Knowledge (5 M)
 - Level II - Comprehension (5 M)

Level III - Application (5 M)
Level IV – Analysis (5 M)

Practical: Practical will be conducted in 2 days for 400 Marks.

S.R. No.	Type of Practical	Topics	Marks
1	Long Case I	Geriatric	100 Marks
2	Long Case II	Women's Health	100 Marks
3	Short Case I	Specialty- Industrial Therapy/Occupational health Hazards	50 Marks
4	Teaching Skills (Microteaching)		50 Marks
5	Dissertation + Viva Voce		100 Marks

Primary Question Paper Template:

MPT/COMMUNITY HEALTH PHYSIOTHERAPY/2022 -2023 to 2026-2027

Template - Table of specification
(2- LAQ, 6 -SAQ)

	Maximum Marks
LAQ 2/2	20 M X 2 = 40 M
SAQ 6/6	10 M X 6 = 60 M
Total	100 M

**LIST OF REFERENCE BOOKS AND JOURNALS
SECOND YEAR M.P.T BOOKS & JOURNALS
FOR COMMUNITY HEALTH PHYSIOTHERAPY**

Sr. No	Name of Books
1	Geriatric Physical Therapy By Andrew A. Guccione, 2nd Edition (Mosby 2000)
2	Developing Cultural Competence In Physical Therapy Practice By Jill Black Lattanzi, Larry D. Purnell (F.A.Davis Company, Philadelphia 2006)
3	Rehabilitation Of The Aging And Elderly Patient By Gerald Felsenthal, Susan J. Garrison, Franz U. Steinberg (Williams &Wilkins 1994)
4	Physical Therapy Of The Geriatric Patient By Jackson Osa. Churchill Livingstone. New York.
5	Geriatric Physical Therapy: A Clinical Approach By Carole B. Lewis And Jennifer Bottomley (1993)
6	Geriatric Rehabilitation Manual By Timothy L. Kauffman (1999)
7	Manual Of Geriatric Rehabilitation By David X. Cifu (2003)
8	Functional Fitness For Older Adults By Patricia A. Brill (2004)
9	Epidemiology Of Aging – An Ecological Approach By William A. Satariano (Jones And Bartlett Publishers, 2006).
10	Little Black Book Of Geriatrics, By Karen Gershman, Mccullough Dennis 4th Edition (Jones And Bartlett Publishers, 2008).
11	Burnside’s Working With Older Adults, Group Process And Techniques By Barbara Haight, Faith Gibson; 4th Edition (Jones And Bartlett Publishers, 2005).
12	Developing Cultural Competence In Physical Therapy Practice, Jill Black Lattanzi, Larry D. Purnell (2006 F.A. Davis).
13	Industrial Therapy, Key.G.L. (1987 Mosby)
14	Physiotherapy In The Community , Gibson, Ann. 1988, Woodhead-Faulkner (Cambridge, Wolfeboro, N.H., USA)
15	Community Rehabilitation In Neurology, Michael P. Barnes, Harriet Radermacher, Cambridge University Press 2009
16	Community Care For Health Professionals, Ann Crompton And Mary Ashwin, (Butterworth – Heinemann 2000) Community Care For Health Professionals, Ann Crompton And Mary Ashwin, (Butterworth – Heinemann 2000)

17	Ruth Sapsford, Joanne Bullock Saxton, Sue Markwell, "Women's Health: A Textbook For Physiotherapists, 1998, Bailliere Tindall.
18	Physiotherapy In Obstetrics AndGynecology, Margaret Polden And Jill Mantle, Butterworth-Heinemann Publishers, Stoneham, MA, 1990
19	Obstetrics And GynecologicPhysiotherapy , Elaine Wilder, Churchill Hill Livingstone.
20	Rebecca G. Stephenson, Linda J. O' Connor, "Obstetric AndGynecologic Care In Physical Therapy", 2000, Slack Incorporated 2 Edition.
21	Carolyn Kisner, Colby Allen Iynn, "Therapeutic Exercise Foundations And Techniques, 5th Edition.
22	Bo, Kari; Berghmans, Bary, "Evidence-Based Physical Therapy For The Pelvic Floor: Bridging Science And Clinical Practice", 2007, Churchill Livingstone (London)
23	Irion, Jean M.; Irion, Glenn, " Women's Health In Physical Therapy: Principle And Practices For Rehabilitation Professional", 2009, Lippincott Williams And Wilkins (Philadelphia).
24	David Wise, Rodney U. Anderson, J. Laycock, "Therapeutic Management Of Incontinence And Pelvic Pain: Pelvic Organ Disorders", 2007, Springer; 2nd Ed. Edition.
25) Matthew Parsons, Linda Cardozo, "Female Urinary Incontinence In Practice", 2004, Royal Sociene Press.
26	John Cox And Jeni Holden, "Perinatal Mental Health - A Guide To The Edinburgh Postnatal Depression Scale", 2003, Gaskell Publisher.
27	Carrie Hall And Lori Thein Brody, "Therapeutic Exercise: Moving Towards Function, 2005, Lippincott Williams &Wilkins.
28	Padubidri Vg Shirish N Daftary, Shaw's Textbook OfGynecology, Elsevier India P Ltd 2008.
29	Gary Cunningham Et Al, Williams Obstetrics, Mcgraw Hill Professional, 2001
30	Kevin P Hanretty, Et Al, Obstetrics Illustrated, Churchill Livingstone; 6 Edition
31	David Makay Hart, Et Al Gynaecology Illustrated, Churchill Livingstone 2000.
32	1.Rehabilitation. 2.Disabled Persons. 3.Community Health Services. 4.Health Policy. 5. Human Rights.6.Social Justice. 7.Consumer Participation. 8.Guidelines. WHO Library Cataloguing-in-Publication Data
33	I. World Health Organization. II.UNESCO. III.International Labour Organisation. IV .International Disability Development Consortium IsBn 978 92 4 154805 2 (nlm classification: wB 320) © World Health Organization 2010

34	Prejudice & Dignity : An introduction to Community-Based Rehabilitation by Einar Helander United Nations Development Programme . Publication NO, E93-III-B.3, ISBN92-1-126032-9.
35	Training in the Community for People with Disabilities by E. Helander ,P.Mendis, G.Nelson, and A.Goerd. Published by WHO Geneva 1989. Finnie's Handling the Young Child with Cerebral Palsy at Home , 4th Edition 2008, Editor: Eva Bower
36	Principles and Practice of Geriatric Surgery by Ronnie Ann Rosenthal, Michael E. Zenilman, Mark R. Katlic. Second Edition. Springer International publication
37	Oxford American Handbook of Geriatric Medicine by Lesley K. Bowker, James D. Price, Sarah C. Smith. Oxford University Press.

Journals

Sr. No	Name of Journals
1	Journal Of Rehabilitation – Research And Development
2	Archives Of Physical Medicine And Rehabilitation
3	Geriatric Physical Therapy
4	Journal Of Geriatrics
5	Journal Of Indian Academy Of Geriatrics
6	
7	Journal Of Clinical Gerontology & Geriatrics
8	Geriatric Surgery- evolution of a clinical community- The American Journal of Surgery.

Advances in Community Health Physiotherapy (Paper III & Paper IV)	CO	PO1 Clinician	PO2 Leadership and Team worker	PO3 Communicator	PO4 Lifelong Learner	PO5 Professional	PO6 Critical Thinker	PO7 Researcher	PSO1	PSO2
	CO1: Explain the Legal issues, Health delivery system in India, Basic Concepts of Rehabilitation, Community Based Rehabilitation, physiology of aging, physiology of pregnancy and occupational hazards in industry.	3	2	3	3	3	2	2		
	CO2: Demonstrate assessment in geriatrics, women's health, industrial health and Disability.	3	3	3	3	3	3	2	3	
	CO3: Apply ICF for Musculoskeletal, Neurological and Cardio-respiratory conditions.	3	3	3	3	3	3	2	3	
	CO4: Evaluate Physiotherapy management in various conditions in geriatrics, women and industrial workers as per health care needs.	3	3	3	3	3	3	3		3

	CO 5: Devise a plan for recent advances in geriatric physical therapy, women's health, industrial therapy and community physiotherapy as per national and health care needs.	3	3	3	3	3	3	3		3
	Avg. Mapping	3	2.8	3	3	3	2.8	2.4	3	3
	Target Mapping Level	3	3	3	3	3	3	2	3	3

**DATTA MEGHE INSTITUTE OF MEDICAL SCIENCES (DEEMED TO BE UNIVERSITY)
RAVI NAIR PHYSIOTHERAPY COLLEGE, SALOD (HIRAPUR), WARDHA**

**POST GRADUATE CURRICULUM
SUBJECT CODE – MPT/SPORTS PHYSIOTHERAPY/2022 -2023 to 2026-2027**

SPORTS PHYSIOTHERAPY

MPT II YEAR

S. NO.	CONTENT	PAGE NO
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PREAMBLE:The Ministry of Human Resource Development, Government of India presented The National Education Policy (NEP) 2020. The global education development agenda reflected in the Goal 4 (Sustainable Development Goal 4) of the 2030 Agenda for Sustainable Development, adopted by India in 2015 - seeks to 'ensure inclusive and equitable quality education and promote lifelong learning opportunities for all' by 2030. Such a huge task demand reworking and rearrangement of the complete education arrangement to be backing and promoting education, with the aim to fulfilling the set out targets and objectives. With this focus there seem to be a need for key reforms to abridge the lacunae in the present programs and course outcomes to highlight the main features, equality and veracity into the structure.

The NEP 2020 rests precise importance on the growth of the innovative talent of every educator. It emphasizes upon the fundamental capabilities and also advanced order intellectual capabilities, such as critical thinking and reasoning, problem solving, social ethical, and emotional capacities. The policy also emphasis that the education system brings out noble individuals with capability of balanced behaviour, having kindness and compassion, bravery and flexibility, technical soundness and inventive mind, with thorough moral jetties and standards. The policy recognizes the need to change curriculum at the undergraduate and graduate levels in light of changing demands, technology, and novel developing illness patterns. The strategy also advises that current institutional systems for regulating and ensuring the quality of training and education should be reviewed urgently. The policy suggests that the debate over re-creating a regulatory structure for health professional education be revisited in order to address new needs and challenges, and it calls for Professional Education Regulation reforms

Knowledge of Sports Physiotherapy is vital to the understanding of both therapeutic techniques and its effects. Sports Physiotherapy is the study of therapeutic techniques in the Physiotherapy department. Aim of teaching Sports Physiotherapy to post graduate students is to help them to understand sport biomechanics, biomechanics of injuries, and biomechanics of sport activities and on-field assessment & decision making, Injury prevention in sports.

GOALS:The post graduate student will be able to understand psychological aspects in sports, doping and performance enhancing drugs, protective equipments and principles of investigations in sports injuries and principles of soft tissue healing of upper and lower extremity, common fractures and dislocation in sports.

Program Outcome		Statement
PO 1	Clinician	Clinician- who understands and provides preventive, promotive, curative, palliative and holistic care with compassion as per Local, National and Global healthcare needs
PO 2	Leader and member of the health care team and system:	Leader and member of the health care team and system providing services to Local, Regional, National, and International stakeholders.
PO 3	Communicator:	Communicator with patients, families, colleagues, and the community as per national and international healthcare standards.
PO 4	Lifelong learner:	Lifelong learner committed to the constant advancement of knowledge and skills in accordance with healthcare needs.
PO 5	Professional	Professional committed to ethical, responsive, and accountable service to the patients, the community, and the profession as per Global standards of health professions.
PO 6	Critical Thinker	Critical thinker, able to think rationally and generate logical connections between concepts in accordance with global healthcare requirements.
PO 7	Researcher	Researcher who can gather, evaluate, and enrich scholarly literature, thereby enabling evidence-based healthcare practice which is Globally relevant

Program Specific Outcomes (PSOs)

PSOs	Statement
PSO 1	Integrate knowledge and application of physiotherapy assessment in Sports injuries and conditions.
PSO 2	Develop a reasoned rationale for evidence-based physiotherapy intervention by utilizing recent advances of physiotherapy techniques of Sports injuries and conditions.

CO 1	Explain the sports science, exercise physiology, terminologies, methodology related to various sports, principles sports injury management, sports psychology management, acute sports management and demonstrate advanced sports assessment skills.
CO 2	Demonstrate assessment in various sport injuries and sports specific fitness, Exercise physiology, training and fitness, musculoskeletal screening of athletes pre-season, in season, post season. Sports management of special population geriatrics, physically challenged athletes.
CO3	Apply sport biomechanics, biomechanics of injuries, and biomechanics of sport activities, surgical management and rehabilitation in sports injuries, management in overuse injuries, and electrotherapy in sports rehabilitation, Doping and performance enhancing drugs, protective equipments and principles of investigations in sports injuries
CO 4	Evaluate Physiotherapy management in recent advances in McKenzie's, Maitland's, Cyriax's Mulligan's, Positional release technique, Myofascial release techniques, Muscle energy techniques, Neurodynamics & neural tissue mobilizations and taping techniques in sports physiotherapy.
CO 5	Devise a plan for recent advances in principles of soft tissue healing of upper and lower extremity, common fractures and dislocation in sports, overuse injuries sports, sports specific problems in females, paediatrics, elderly, On-field assessment & decision making, Injury prevention in sports, diets in sports, pre-season diet, pre-game diet, Evidenced based sports rehabilitation, return to sports criteria. Problems in female athletes, menstrual synchrony, and preventive strategies.

Course Objectives:

After completion of the course students should be able to -

1. Understand their role and responsibility in the sports medicine team as a Physiotherapist
2. Understand clinical manifestations and apply biomechanical analysis for suitable management based on recent trends in treating and managing various sports injuries
3. Plan and develop strategies for injury prevention and recurrence of a condition in an athlete
4. Handle situations like on field management during a game
5. Undertake independent research in Sports medicine

AETCOM IN ADVANCES IN SPORTS PHYSIOTHERAPY

Subject	Competency
Advances in Sports Physiotherapy	The physiotherapy postgraduate student should know to treat the patient with an acceptable level of behaviour, attitude & empathy while delivering evidence- informed sports physiotherapy care.
	The physiotherapy postgraduate student should maintain the principles of confidentiality, rationality and ethical practice during patient care for sports conditions.

Sports Physiotherapy
Paper III: Advances in Sports Physiotherapy (Part I).

SN	No.	Competency	Paper	Domain	Level	Suggested Teaching Method	Suggested Assessment method
1	PSP 1.1	Introduction to Sports sciences	III	K,S	KH	Seminar/ Small Group Discussion (SGD)	LAQ/SAQ DOPS, Work place based assessment
	PSP 1.2	Introduction to exercise physiology	III	K,S	KH	Seminar/ Small Group Discussion (SGD)	LAQ/SAQ DOPS, Work place based assessment
2	PSP 2.1	Terminology, methodology, rules, equipment, infrastructure of some common sports Cricket, Football, Basketball, Hockey.	III	K,S, A,C	SH	Demonstration+ Hands On Training	LAQ/SAQ DOPS/OSCE
	PSP 2.2	Terminology, methodology, rules, equipment, infrastructure of some common sports Tennis, Track & Field, Aquatic Sports.	III	K,S, A,C	SH	Demonstration+ Hands On Training	LAQ/SAQ DOPS/OSCE
3	PSP 3.1	Assessment & Diagnosis of various sports injuries.	III	K,S, A,C	KH,S H	Seminar/ Small Group Discussion (SGD)	LAQ/SAQ DOPS/OSCE Work place based assessment
	PSP 3.2	Sports specific fitness.(Cricket, Football, Track & field, aquatic sports)	III	K,S, A,C	KH,S H	Seminar/ Small Group Discussion (SGD)	LAQ/SAQ DOPS/OSCE Work place based assessment
4	PSP 4.1	Principles of Sports Biomechanics & Biomechanics of injury.	III	K,S, A,	SH	Small Group Discussion (SGD)	LAQ/SAQ OSLER/DOP S/OSCE/Mini CEX

	PSP 4.2	Physics in sports: Biomechanics Of Running, Throwing, Swimming, Jumping. Advances In Biomechanics assessment	III	K,S, A,	SH	Small Group Discussion (SGD)	LAQ/SAQ OSLER/DOPS/OSCE/Mini CEX
5	PSP 5.1	Advanced Cardio Respiratory Exercise Physiology, Principles of Strength training, Fitness & strength testing in sports.	III	K,S, A,C	KH,S H	Seminar/ Lecture Small Group Discussion (SGD)	LAQ/SAQ DOPS/OSCE Work place based assessment
	PSP 5.2	Sports specific conditioning, Sports specific Agility training, Sports equipments (including Gym equipments).	III	K,S, A,C	KH,S H	Seminar/ Lecture Small Group Discussion (SGD)	LAQ/SAQ DOPS/OSCE Work place based assessment
6	PSP 6.1	Psychological aspects in Sports (Kubler –Ross grief model, Peretz model of loss, Cognitive stress model, Cognitive emotional response).	III	K, A,S, C	SH,K H	Small Group Discussion (SGD)/Workshop/ Video presentations	LAQ/SAQ OSCE/DOPS/ mini CEX
	PSP 6.2	Doping & performance enhancing drugs.	III	K, A,S, C	SH,K H	Small Group Discussion (SGD)/Workshop/ Video presentations	LAQ/SAQ OSCE/DOPS/ mini CEX
	PSP 6.3	Protective equipments in Sports including Orthotics Sports Traumatology.	III	K, A,S, C	SH,K H	Small Group Discussion (SGD)/Workshop/ Video presentations	LAQ/SAQ OSCE/DOPS/ mini CEX
7	PSP 7.1	Principles of investigations and imaging techniques in Sports Injuries	III	K,S, A	K,SH	Small Group Discussion (SGD)	OSPE/DOPS/ MiniCEX

8	PSP 8.1	Principles of Tissue healing, Soft tissue injuries of Lower limb (Hip, thigh, Knee, leg, ankle)	III	K, S, A	SH	Case based studies	LAQ/SAQ OSCE/mini- CEX/DOPS, Work place based assessment,
	PSP 8.2	Principles of Tissue healing, Soft tissue injuries of Upper limb (Shoulder, elbow, forearm, wrist, hand)	III	K, S, A	SH	Case based studies	LAQ/SAQ OSCE/mini- CEX/DOPS, Work place based assessment,
9	PSP 9.1	Common Fractures & Dislocations, Spinal injuries in sports	III	K,A, S	K,SH	Seminar	LAQ/SAQ/ OSCE/Mini CEX
10	PSP 10. 1	Overuse injuries in Sports	III	K	KH	Seminar/ Small group discussion	Mini-CEX, DOPS
11	PSP 11. 1	Sports specific problems in Females, paediatric & elderly athletes.	III	K,S	KH,S H	Seminar/ Small group discussion	LAQ/SAQ Mini-CEX, DOPS/ OSCE
	PSP 11. 2	On-field assessment & decision making, Injury prevention in sports	III	K,S	KH,S H	Seminar/ Small group discussion	LAQ/SAQ Mini-CEX, DOPS/ OSCE

Sports Physiotherapy

Paper IV: Advances in Sports Physiotherapy (Part II).

SN	No.	Competency	Paper	Domain	Level	Suggested Teaching Method	Suggested Assessment method
1	PSA 1.2	Principles of Sports Injury Management	IV	K,S	KH	Small Group Discussion (SGD)/ Seminar	LAQ/SAQ DOPS/OSCE
2	PSA 2.1	Specific psychology management in sports, Sports specific training	IV	K,S,	K	FGD	LAQ/SAQ
3	PSA 3.1	Advanced sports assessment skills, Initial management of Acute sports injuries.	IV	K,S,A, C	KH,SH	Seminar/ Small Group Discussion (SGD)	LAQ/SAQ DOPS/OSCE Work place based assessment
4	PSA 4.1	Overview of Surgical management and rehabilitation (including Arthroscopic surgery) for Sports injuries.	IV	K,S, A, C	KH,SH	FGD	LAQ/SAQ DOPS/Workplace based assessment OSCE/Mini CEX
5	PSA 5.1	Injury & Sports specific management, Management of overuse injuries in sports.	IV	K,S,A, C	KH,SH	Seminar/ Lecture Small Group Discussion (SGD)	LAQ/SAQ DOPS/OSCE Work place based assessment
	PSA 5.2	Electrotherapy in sports rehabilitation, Rehabilitation of Sports injuries	IV	K,S,A, C	KH,SH	Seminar/ Lecture Small Group Discussion (SGD)	LAQ/SAQ DOPS/OSCE Work place based assessment
6	PSA 6.1	Manual Therapy Techniques in Sports Physiotherapy: McKenzie's, Maitland's, Cyriax's, Mulligan's mobilization, Positional release techniques– peripheral joints, Recent advances.	IV	K,S	SH	SGD/ Case Based Discussion/Workshop/Video Presentation	LAQ/SAQ OSLER/ DOPS / Workplace based assessment

	PSA 6.2	Manual Therapy Techniques in Sports Physiotherapy: Myofascial release techniques, Muscle energy techniques, Neurodynamics & neural tissue mobilizations, Recent advances	IV	K,S	SH	SGD/ Case Based Discussion/ Workshop/ Video Presentation	LAQ/SAQ OSLER/ DOPS / Workplace based assessment
7	PSA 7.1	Musculoskeletal screening of Athletes – Pre season, In-season & Post –season	IV	K,S	SH	Seminar/ FGD	LAQ/SAQ OSLER/ DOPS / Workplace based assessment
8	PSA 8.1	Sports Management of special population – geriatric, physically challenged athletes.	IV	K, S, A, C	KH	Small Group Discussion (SGD)/Seminar	LAQ/SAQ Mini CEX/ Workplace based assessment
9	PSA 9.1	Taping techniques and recent advances in sports rehabilitation	IV	K, S, A, C	SH	Seminar/ Case Based Discussion	LAQ/SAQ OSLER/ OSCE/ Mini CEX/ DOPS
10	PSA 10.1	Diet & sports- Pre-session diet, pre-game meal, carbohydrate loading, high fat diet, high protein diet.	IV	K, S, A, C	SH	Seminar/ Case Based Discussion	LAQ/SAQ OSLER/ OSCE/ Mini CEX/ DOPS
11	PSA 11.1	Evidenced based sports rehabilitation and return to sports criteria.	IV	K, S, A, C	SH	Seminar/ Case Based Discussion	LAQ/SAQ OSLER/ OSCE/ Mini CEX/ DOPS
12	PSA 12.1	Problems in female athletes, menstrual synchrony, and sports specific management, preventive strategies.	IV	K, S, A, C	SH	Seminar/ Case Based Discussion	LAQ/SAQ OSLER/ OSCE/ Mini CEX/ DOPS

Speciality subjects

CLINICAL POSTING

Second year

Acute care & Rehabilitation in Sports and Musculoskeletal conditions: Indoor and Outdoor patients

Competencies (For Assessment and Management)

Sr. No.	Competencies	Minimum Cases/ Experiments for achievements of level of Competencies			
		Observed	Assisted	Independently performed	Verified with faculty signature and Name
1.	Musculoskeletal Assessment.				
2.	Responses of various systems to Exercise and training.				
3.	Anthropometric measurements.				
4.	Physical fitness assessment Flexibility, Muscle strength, endurance, Testing of agility- balance, co-ordination				
5.	Evaluation Methods, fitness tests used in Musculoskeletal system and sports				
6.	Physiotherapy modalities, techniques and approaches				
7.	Aids and appliances, adaptive functional devices to improve movement dysfunction.				
8.	Posture and Gait analysis and diagnosis.				

9.	Differential Diagnosis versus Screening.				
10.	Assessment of Pain and Symptoms.				
11.	Exercise planning and prescription. Fitness training				
12.	Use of Exercise therapy techniques and application on various types of sports cases.				
13.	Pathological investigations and imaging techniques related to Musculoskeletal and sports injuries with interpretation.				
14.	Mobilization and Manipulation Manual therapy – different schools of thought.				

SCHEME OF EXAMINATION
Formative and Summative Examination

Formative Examination:

1. Annual Examination: For I year MPT

Theory: There will be two papers (Paper I & II) of 100 marks each of three hours duration details are as follows:

Que. No.	Type of Question	Out Of	Total Questions	Marks
Q. 1	Short Answer Questions	All Compulsory	10 M X 6	60 Marks
Q. 2	Long Answer Question	All Compulsory	20 M X 2	40 Marks

Primary Question Paper Template:

MPT/NEURO PHYSIOTHERAPY/2022 -2023 to 2026-2027

Template - Table of specification

(2- LAQ, 6 -SAQ)

	Maximum Marks
LAQ 2/2	20 M X 2 = 40 M
SAQ 6/6	10 M X 6 = 60 M
Total	100 M

Theory Paper setting format

PAPER – I TO III

[Max. Marks: 100

Time:3 Hours]

Instructions :---

- (25) All questions are compulsory
- (26) Numbers to the right indicates full marks.
- (27) Draw neat diagrams, wherever necessary
- (28) Use single answer book for answering both sections.

SECTION – A

10 M X 6 =60

Q1. S.A.Q. – Short Answer Questions

- (kk) _____
- (ll) _____
- (mm) _____
- (nn) _____
- (oo) _____
- (pp) _____

SECTION – B

20 M X 2 =40

Q2. L.A.Q. – Long Answer Questions

- (m) Describe _____ under the following heads - 20 M
 - Level I - Knowledge (5 M)
 - Level II - Comprehension (5 M)
 - Level III - Application (5 M)
 - Level IV – Analysis (5 M)
- (n) Describe _____ under the following heads - 20 M
 - Level I - Knowledge (5 M)
 - Level II - Comprehension (5 M)
 - Level III - Application (5 M)
 - Level IV – Analysis (5 M)

P.G. THEORY PAPER

PAPER –IV

[Max. Marks : 100

Time : 3 Hours]

Instructions :---

- (1) Numbers to the right indicates full marks.
- (2) Draw neat diagrams, wherever necessary
- (3) Use single answer book for answering both sections.

Solve any two long Answer Question

50 M X 2 = 100

1. Describe _____ under the following heads
 - (a) Introduction
 - (b) Application
 - (c) Analysis
 - (d) Synthesis
 - (e) Evaluation
 - (f) Summary
2. Describe _____ under the following heads
 - (a) Introduction
 - (b) Application
 - (c) Analysis
 - (d) Synthesis
 - (e) Evaluation
 - (f) Summary
3. Describe _____ under the following heads
 - (a) Introduction
 - (b) Application
 - (c) Analysis
 - (d) Synthesis
 - (e) Evaluation

Summary

Practical: Practical will be conducted for 200 Marks.

S.R. No.	Type of Practical	Topics	Marks
1	Long Case I	As Per Speciality	100 Marks
2	Short Case I	As Per Speciality	50 Marks
3	Dissertation (Review) and Viva Voce		50 Marks

2. Preliminary Examination:

Theory: There will be four papers of 100 marks each of three hours duration details are as follows

Que. No.	Type of Question	Out Of	Total Questions	Marks
Q. 1	Short Answer Questions	All Compulsory	10 M X 6	60 Marks
Q. 2	Long Answer Question	All Compulsory	20 M X 2	40 Marks

Theory Paper setting format

PAPER – III & IV

[Max. Marks: 100

Time:3 Hours]

Instructions :---

- (29) All questions are compulsory
- (30) Numbers to the right indicates full marks.
- (31) Draw neat diagrams, wherever necessary
- (32) Use single answer book for answering both sections.

SECTION – A

10 M X 6 =60

Q1. S.A.Q. – Short Answer Questions

(qq) _____

(rr) _____

(ss) _____

(tt) _____

(uu) _____

(vv) _____

SECTION – B

20 M X 2 =40

Q2. L.A.Q. – Long Answer Questions

(o) Describe _____ under the following heads - 20 M

Level I - Knowledge (5 M)

Level II - Comprehension (5 M)

Level III - Application (5 M)

Level IV – Analysis (5 M)

(p) Describe _____ under the following heads - 20 M

Level I - Knowledge (5 M)

Level II - Comprehension (5 M)

Level III - Application (5 M)

Level IV – Analysis (5 M)

Practical: Practical will be conducted in 2 days for 400 Marks.

S.R. No.	Type of Practical	Topics	Marks
1	Long Case I	Sports rehabilitation in injuries managed surgically	100 Marks
2	Long Case II	Common sports injuries	100 Marks

3	Short Case I	Specialty- Manual Therapy	50 Marks
4	Teaching Skills		50 Marks
5	Dissertation and Viva Voce		100 Marks

Summative Examination:

Theory: There will be four papers of 100 marks each of three hours duration details are as follows

Que. No.	Type of Question	Out Of	Total Questions	Marks
Q. 1	Short Answer Questions	All Compulsory	10 M X 6	60 Marks
Q. 2	Long Answer Question	All Compulsory	20 M X 2	40 Marks

Practical: Practical will be conducted in 2 days for 400 Marks.

S.R. No.	Type of Practical	Topics	Marks
1	Long Case I	Sports rehabilitation in injuries managed surgically	100 Marks
2	Long Case II	Common sports injuries	100 Marks
3	Short Case I	Specialty- Manual Therapy	50 Marks
4	Teaching Skills		50 Marks
5	Dissertation and Viva Voce		100 Marks

Primary Question Paper Template:

MPT/COMMUNITY HEALTH PHYSIOTHERAPY/2022 -2023 to 2026-2027

Template - Table of specification

(2- LAQ, 6 -SAQ)

	Maximum Marks
LAQ 2/2	20 M X 2 = 40 M
SAQ 6/6	10 M X 6 = 60 M
Total	100 M

**LIST OF REFERENCE BOOKS AND JOURNALS
SECOND YEAR M.P.T BOOKS & JOURNALS
FOR SPORTS PHYSIOTHERAPY**

Sr. No	Name of Books
1	Essentials of Orthopedics for Physiotherapists by John Ebenezer – Jaypee Publications
2	Practical Fracture Treatment by Ronald McRae, Max Esser – Churchill Livingston
3	Oxford Textbook of Orthopaedic & Trauma by Christopher Bulstrode, Joseph Buckwalter – Oxford University Press
4	Campbell's operative orthopedics. - By S. Terry Canale, James H. Beaty - Mosby
5	Fractures & joint injuries By Watson Jones – Churchill Livingston
6	Clinical Orthopaedic Examination by Ronald McRae – Churchill Livingstone
7	Daniels and Worthingham's muscle testing: Techniques of manual examination By Helen J Hislop, Jacqueline Montgomery Barbara – Elsevier
8	Muscles – Testing and Function by Florence Peterson Kendall – Lippincott
9	Joint Range of Motion and Muscle length testing By Nancy Berryman Reese - Saunders
10	Orthopedic Physical Assessment, By David J. Magee, PhD, BPT - Saunders
11	Illustrated Orthopedic Physical Assessment, 3e By Ronald C. Evans, - Mosby
12	Diagnostic Imaging for Physical Therapists by James Swain, Kenneth W. Bush, and Juliette Brosing – Elsevier
13	Differential Diagnosis for Physical Therapists: Screening for Referral, By Catherine C. Goodman, and Teresa Kelly Snyder – Saunders
14	Gait Analysis : Theory And Application By Rebecca Craik and Carol A Oatis – Mosby
15	Skeletal Growth and development: Clinical issues and basic science advances. The Symposium Series by Joseph A Buckwalter – AAOS
16	Introduction to Physical Therapy, By Michael A. Pagliarulo - Mosby
17	Kinesiology: The mechanics and Pathomechanics of Human Movement by Carol A Oatis - Lippincott 4. Cash Text Book for Orthopedics and rheumatology for physiotherapist by John Elizabeth Cash & Patricia A Downie – Lippincott
18	Joint Mobilization / Manipulation: Extremity and Spinal Techniques by Susan L Edmond – Mosby

19	Foundations of Chiropractic by Meridel I Gatterman – Mosby
20	Grieve's Modern Manual Therapy: The Vertebral Column, By Jeffrey Boyling and Gwendolen Jull – Churchill Livingston
21	Kinesiology of the Musculoskeletal System: Foundations for Rehabilitation, By Donald A. Neumann, PhD, PT – Mosby
22	Maitland's Peripheral Manipulation, By EllyHengeveld, and Kevin Banks, - Butterworth-Heinemann 10. Maitland's Vertebral Manipulation, By Geoff D. Maitland, - Butterworth-Heinemann
23	Hand and Upper Extremity Rehabilitation: A Practical Guide, By Susan L. Burke, - Churchill Livingston Manual Therapy for the Peripheral Nerves B y Jean-Pierre Barral, DO(UK) and Alain Croibier, Osteopathe DO, MRO (F) – Churchill Linvingston
24	Neuromuscular Rehabilitation in manual and physical therapies: Principles and Practice by Eyal Lederman – Churchill Livingston
25	Orthopaedic Physical therapy Secrets by Jeffrey D Place - Elsevier
26	Principles and Practice of orthopedics and sports medicine b y Garret
27	A Physiotherapist's Guide to Clinical Measurement by John Edward Fox, and Richard Jasper Day – Elsevier
28	Orthotics and Prosthetics in Rehabilitation, By Michelle M. Lusardi, PhD, PT and Caroline C. Nielsen, PhD - Butterworth-Heinemann
29	Clinical Application of Neuromuscular Techniques: The Upper Body by Leon Chaitow, and Judith DeLany, - Elsevier
30	Handbook of Postsurgical Rehabilitation Guidelines for the Orthopedic Clinician By Hospital for Special Surgery – Mosby
31	An Illustrated Guide to Taping Techniques – Principles & Practice By Thomas John Hewetson – Mosby
32	Paraplegia & Tetraplegia A Guide for Physiotherapists by Id a Bromley – Churchill Livingston
33	Therapeutic exercises using swiss ball By Caroline corning creager – Executive Physical therapy
34	Manual Mobilization of the Joints – The Kaltenborn Method Volume I, II By Freddy Kaltenborn
35	Treat your own Back by Robin Mckenzie
36	Treat your own Neck by Robin Mckenzie
37	Cervical and Thoracic spine : Mechanical Diagnosis & Therapy Vol I & II By Robin Mckenzie
38	The Lumbar Spine: Mechanical Diagnosis & Therapy Vol I & II By R obinMckenzie
39	The Human Extremities: Mechanical Diagnosis & Therapy by Robin Mckenzie
40	Manual Therapy by Brain R Mulligan

41	Documentation for Rehabilitation: A Guide to Clinical Decision Making, By Lori Quinn, and James Gordon - Saunders
42	Clinical Orthopaedic Rehabilitation by S Brent Brotzman
43	Treatment and rehabilitation fractures by Vasantha L Moorthy&StanleyHoppenfield - Lippincott 33. Physiotherapy for Amputees: The Roehampton Approach by Barbara Engstrom – Churchill Livingston
44	Textbook of orthopedic medicine Vol I & II by James Cyriax – Bailliere
45	Orthopedic& Sports Physiotherapy: Morris
46	Vol. I The Upper Extremity in Sports Medicine. Vol. II The Lower Extremity and Spine in Sports Medicine. Vol. III The Lower Extremity and Spine in Sports Medicine. Mosby.
47	Orthopedic Sports Medicine, DeleeDrez Miller, 3rd edition: 2009, Saunders Elsevier
48	Sports Physiotherapy, Maria Zuluaga, Christopher Briggs, John Carlisle.
49	Sports Injury Assessment and Management, David C Reid.
50	Post surgicalorthopedic sports rehabilitation knee and shoulder , Robert C. Maske: 2006: Mosby Elsevier.
51	Sports injuries diagnosis and management , Christopher N. Norris: 2nd & 3rd edition: 1998: BH.
52	Sports medicine secrets, Hanley and beltors, 2nd edition: 2001: jaypee
53	Sports injuries prevention and their treatment, Lass Peterson: 1st edition: 2001: Martin dunitz.
54	Sports medicine problem and practical management, Eugene sherry, 1st edition:1997: GMM.
55	Exercise and sports science, Garrett, Kirkendall: 2000: Lippincott Williams And Wilkins.
56	ACSM'S essentials of sports medicine, Robert E. salhi, fredymassimino: 1997: Mosby.
57	Sports medicine in primary care , Rob jonson M.D: 2000: saunders company.
58	Seidel, H. (110105). Mosby's guide to physical examination. St Louis, MO: C.V. Mosby.
59	Kuprian: Physical Therapy for Sports, W.B. Saunders
60	Malone: Orthopaedic and Sports Physical Therapy, C.V. Mosby.
61	Zulunga et al: Sports Physiotherapy, W.B. Saunders.
62	Reed: Sports Injuries – Assessment and Rehabilitation, W.B. Saunders.
63	Gould: Orthopaedic Sports Physical Therapy, Mosby.
64	C. Norris: Sports Injuries – Diagnosis and Management for Physiotherapists, Heinmann.
65	Mc Ardle, Katch, Katch: Exercise Physiology Edition IV.
66	Era Volinski: Nutrition and exercise in Sports - CRC Press, New York
67	Fox and Mathews - The Physiological Basis of Physical Education and athletics – Holt Saunders.

68	Clarke - Exercise Physiology - Prentice Hall.
69	Werner Kuprian: Physical Therapy for Sports, W.B. Saunders.
70	Kennedy: Mosby's Sports Therapy Taping Guide.
71	Malone: Orthopaedic and Sports Physical Therapy, C.V. Mosby.
72	William E. Prentice: Therapeutic Modalities in Sports Medicine - Mosby.
73	Kuprian: Physical Therapy for Sports, W.B. Saunders.
74	Suinn: Psychology in Sports: Methods and applications, Surjeet Publications.
75	Grafiti: Psychology in contemporary sports, Prentice Hall.
76	James G. Hay – The Biomechanics of Sports Techniques, Prentice Hall. Brunnstrom - Clinical Kinesiology, F.A. Davis.
77	Northrip et al: Analysis of Sports Motion: Anatomic and Biomechanic perspectives, W.C. Brown Co., IOWA.
78	Leveac B.F.: Basic Biomechanics in Sports and Orthopaedic Therapy, C.V. Mosby.
79	Morris B. Mellion: Office Sports Medicine, Hanley & Belfus.
80	Brukner and Khan: Clinical Sports Medicine, McGraw Hill.
81	Reed: Sports Injuries – Assessment and Rehabilitation, W.B. Saunders
82	Fu and Stone: Sports Injuries: Mechanism, Prevention and Treatment, Williams and Wilkins.
83	Albert: Eccentric Muscle Training in Sports and Orthopedics, W.B. Saunders.

Journals	
Sr. No	Name of Journals
1)	Clinical Kinesiology
2)	Journal of biomechanics
3)	Journal of pediatric Orthopedics
4)	Journal of Orthopaedic & Sports Physical Therapy (JOSPT).
5)	Journal of Manual Therapy
6)	Journal of Manual & Manipulative Therapy
7)	Spine
8)	Journal of Hand Therapy
9)	Journal Of Exercise Science & Physiotherapy
10)	Journal of Sports and Physical Therapy
11)	https://www.topendsports.com/

12)

<https://www.acsm.org>

Advances in Sports Physiotherapy (Paper III & Paper IV)	CO	PO1 Clinician	PO2 Leadership and Team worker	PO3 Communicator	PO4 Lifelong Learner	PO5 Professional	PO6 Critical Thinker	PO7 Researcher	PSO1	PSO2
	CO1:Explain the sports science, exercise physiology, terminologies, methodology related to various sports, principles sports injury management, sports psychology management, acute sports management and demonstrate advanced sports assessment skills.	3	2	3	3	3	2	2		
	CO2:Demonstrate assessment in various sport injuries and sports specific fitness, Exercise physiology, training and fitness, musculoskeletal screening of athletes pre-season, in season, post season. Sports management of special population geriatrics, physically challenged athletes.	3	3	3	3	3	3	2	3	
	CO3:Apply sport biomechanics, biomechanics of injuries, and biomechanics of sport activities, surgical management and rehabilitation in sports injuries, management in overuse injuries, and electrotherapy in sports rehabilitation,Doping and performance enhancing drugs, protective equipments and principles of investigations in sports injuries	3	3	3	3	3	3	2	3	

	CO4:Evaluate Physiotherapy management in recent advances in McKenzie's, Maitland's, Cyriax's Mulligan's, Positional release technique, Myofascial release techniques, Muscle energy techniques, Neurodynamics& neural tissue mobilizations and taping techniques in sports physiotherapy.	3	3	3	3	3	3	3		3
	CO5:Devise a plan for recent advances in principles of soft tissue healing of upper and lower extremity, common fractures and dislocation in sports, overuse injuries sports, sports specific problems in females, paediatrics, elderly, On-field assessment & decision making, Injury prevention in sports, diets in sports, pre-season diet, pre-game diet, Evidenced based sports rehabilitation, return to sports criteria. Problems in female athletes, menstrual synchrony, and preventive strategies.	3	3	3	3	3	3	3		3
	Avg. Mapping	3	2.8	3	3	3	2.8	2.4	3	3
	Target Mapping Level	3	3	3	3	3	3	2	3	3

