



MALLA REDDY VISHWAVIDYAPEETH

(Deemed to be University), Hyderabad

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Department of Higher Education, Ministry of Education, Government of India.**

DEPARTMENT OF PHYSIOTHERAPY

**Malla Reddy Vishwavidyapeeth, Venkatarama Colony,
Suraram, Hyderabad, Telangana 500055**

Web: <https://mrvv.edu.in/>

Program

MASTER OF PHYSIOTHERAPY (MPT)

COURSE STRUCTURE

(As per NCAHP Competency-Based Curriculum 2025)

2026



CHAPTER 1

ABOUT MALLA REDDY VISHWAVIDYAPEETH

1.1 ABOUT UNIVERSITY

Malla Reddy Vishwavidyapeeth (MRVV) is a multidisciplinary Deemed-to-be University committed to excellence in higher education, research, innovation, healthcare, and societal development. Established with the vision of nurturing competent professionals and future leaders, the University offers a dynamic academic ecosystem that integrates scientific knowledge, technological advancement, ethical values, interdisciplinary learning, and experiential education.

The University provides academic programmes across diverse disciplines including health sciences, medical sciences, engineering, management, pharmacy, allied health sciences, agriculture, law, humanities, and emerging technologies. Through learner-centric education, advanced infrastructure, highly qualified faculty, industry collaboration, and comprehensive clinical training facilities, MRVV strives to develop graduates who are professionally competent, socially responsible, ethically grounded, and globally competitive.

Committed to Outcome-Based Education (OBE), competency-based learning, and continuous quality improvement, the University aligns its academic programmes with national educational reforms, statutory regulatory frameworks, and global best practices. Research, innovation, entrepreneurship, digital transformation, interdisciplinary collaboration, and community engagement form the foundation of its educational philosophy.

The University continually promotes an academic environment that encourages critical thinking, lifelong learning, scientific inquiry, leadership, innovation, and professional excellence, preparing graduates capable of addressing evolving healthcare and societal needs at regional, national, and international levels.

1.2 VISION OF THE UNIVERSITY

To emerge as a globally respected multidisciplinary university committed to excellence in education, research, innovation, healthcare, and societal transformation by nurturing competent, ethical, and socially responsible professionals.

1.3 MISSION OF THE UNIVERSITY

Malla Reddy Vishwavidyapeeth is committed to:

1. Deliver quality education through competency-based, outcome-oriented, and learner-centric academic programmes.
2. Promote excellence in research, innovation, entrepreneurship, and interdisciplinary collaboration.
3. Develop graduates with strong professional competence, ethical values, leadership qualities, and lifelong learning abilities.
4. Integrate scientific knowledge, technology, and clinical practice to address contemporary healthcare and societal challenges.
5. Foster community engagement, sustainable development, and national service through education and research.
6. Create an inclusive academic environment that nurtures creativity, critical thinking, professionalism, and global citizenship.

1.4 CORE INSTITUTIONAL VALUES



The University upholds the following core values that guide all academic, research, clinical, and professional activities:

- Academic Excellence
- Integrity and Ethical Practice
- Student-Centred Learning
- Clinical Competence
- Innovation and Research
- Interdisciplinary Collaboration
- Compassionate Healthcare
- Social Responsibility
- Inclusivity and Diversity
- Continuous Quality Improvement
- Environmental Sustainability
- Lifelong Learning

1.5 ABOUT THE DEPARTMENT OF PHYSIOTHERAPY

The Department of Physiotherapy at Malla Reddy Vishwavidyapeeth is dedicated to advancing excellence in physiotherapy education, clinical practice, research, innovation, and community service. The Department prepares competent physiotherapy professionals capable of delivering evidence-based, patient-centred, ethical, and technologically enabled rehabilitation services across the continuum of healthcare.

The academic curriculum is designed in accordance with the Competency-Based Curriculum prescribed by the National Commission for Allied and Healthcare Professions (NCAHP), ensuring systematic development of knowledge, clinical reasoning, psychomotor skills, professional behaviour, research competence, and lifelong learning.

The Department integrates foundational sciences, advanced clinical education, supervised patient care, simulation-based learning, interdisciplinary collaboration, research methodology, and evidence-based practice to produce graduates who can contribute effectively to healthcare systems nationally and internationally.

Strong emphasis is placed on innovation, critical thinking, clinical decision-making, leadership, digital healthcare, and translational research while fostering compassion, professionalism, ethical practice, and social accountability. Through collaborations with teaching hospitals, rehabilitation centres, sports organizations, community health programmes, and research institutions, the Department strives to create future-ready physiotherapists capable of addressing evolving healthcare needs.

1.6 VISION OF THE DEPARTMENT OF PHYSIOTHERAPY

To be a nationally recognized centre of excellence in physiotherapy education, clinical practice, research, innovation, and rehabilitation sciences, producing competent, ethical, compassionate, and globally competitive physiotherapy professionals committed to improving human movement, functional independence, and quality of life.

1.7 MISSION OF THE DEPARTMENT OF PHYSIOTHERAPY

The Department of Physiotherapy is committed to:

1. Deliver competency-based physiotherapy education aligned with national and international standards.
2. Promote evidence-based clinical practice through comprehensive academic and supervised clinical training.



3. Foster excellence in research, innovation, digital health, and rehabilitation sciences.
4. Develop clinical leaders with professional ethics, communication skills, and lifelong learning attitudes.
5. Encourage interdisciplinary collaboration, community engagement, preventive healthcare, and public health initiatives.
6. Prepare graduates capable of addressing contemporary healthcare challenges through clinical excellence, scientific inquiry, leadership, entrepreneurship, and social responsibility.





CHAPTER 2

MASTER OF PHYSIOTHERAPY (MPT) PROGRAMME REGULATIONS

(Applicable to all MPT Specializations offered by Malla Reddy Vishwavidyalapeeth)

2.1 INTRODUCTION

The Master of Physiotherapy (MPT) programme is a postgraduate professional programme designed to prepare physiotherapists with advanced knowledge, specialized clinical competence, research aptitude, leadership qualities, and professional ethics required for contemporary rehabilitation practice. The programme emphasizes evidence-based clinical decision-making, critical thinking, interdisciplinary collaboration, advanced patient management, academic excellence, and lifelong professional development.

The curriculum has been developed in accordance with the Competency-Based Curriculum prescribed by the National Commission for Allied and Healthcare Professions (NCAHP) and is structured to provide advanced theoretical knowledge, extensive supervised clinical training, research competency, and professional skill development across various physiotherapy specialties.

2.2 PROGRAMME OBJECTIVES

The Master of Physiotherapy programme aims to:

1. Develop advanced clinical competence in the selected area of specialization.
2. Enhance clinical reasoning and evidence-based decision-making skills.
3. Promote independent professional practice based on scientific principles and ethical standards.
4. Develop competence in research methodology, scientific writing, and scholarly dissemination.
5. Foster leadership, communication, teaching, and interdisciplinary collaboration.
6. Promote innovation, lifelong learning, and continuous professional development.
7. Prepare graduates capable of contributing to education, research, clinical practice, healthcare administration, and policy development.

2.3 DEGREE AWARDED

Candidates who successfully complete all academic, clinical, research, and examination requirements prescribed by Malla Reddy Vishwavidyalapeeth shall be awarded the degree of:

Master of Physiotherapy (MPT) in the respective specialization.

2.4 SPECIALIZATIONS OFFERED

The University offer the following specializations in accordance with NCAHP regulations and subject to approval by the competent statutory authorities:

1. Master of Physiotherapy in Musculoskeletal Sciences
2. Master of Physiotherapy in Neurosciences
3. Master of Physiotherapy in Cardio-Pulmonary Sciences
4. Master of Physiotherapy in Sports Sciences
5. Master of Physiotherapy in Pediatrics and Neonatal Sciences
6. Master of Physiotherapy in Obstetrics and Gynaecology Sciences
7. Master of Physiotherapy in Oncology Sciences
8. Master of Physiotherapy in Community Rehabilitation



2.5 ELIGIBILITY FOR ADMISSION

A candidate seeking admission to the Master of Physiotherapy programme shall:

- Possess a Bachelor of Physiotherapy (BPT) degree by any recognized University.
- Have completed the compulsory clinical internship prescribed for the undergraduate programme.
- Fulfil the admission criteria prescribed by Malla Reddy Vishwavidyapeeth and applicable regulatory authorities.
- Satisfy all eligibility requirements notified by the University from time to time.

2.6 DURATION OF THE PROGRAMME

The duration of the Master of Physiotherapy programme shall be **two academic years**, conducted under the **annual pattern**, consisting of:

1. First Year
2. Second Year

The programme shall include:

- Theory instruction
- Practical training
- Clinical postings
- Seminars
- Journal clubs
- Case presentations
- Research methodology
- Dissertation
- Comprehensive clinical learning

2.7 MEDIUM OF INSTRUCTION

The medium of instruction, practical training, clinical teaching, dissertation, and examinations shall be **English**.

2.8 INTAKE CAPACITY

The total approved intake for the Master of Physiotherapy programme shall be:

24 seats distributed among various specializations as approved by the University and statutory regulatory authorities from time to time.

2.9 PROGRAMME STRUCTURE

The programme follows a competency-based educational framework integrating:

- Advanced theoretical instruction
- Speciality clinical education
- Supervised patient care
- Evidence-based practice
- Research methodology
- Scientific communication
- Dissertation
- Clinical seminars
- Journal clubs
- Case discussions
- Interdisciplinary learning



- Self-directed learning
- Professional development activities

2.10 CREDIT SYSTEM

The programme shall follow the **Credit-Based Competency Curriculum** prescribed by NCAHP. Credits shall be awarded based on successful completion of:

- Theory courses
- Practical courses
- Clinical postings
- Seminars
- Journal clubs
- Case presentations
- Dissertation
- Research activities
- Other academic requirements prescribed by the University.

2.11 TEACHING-LEARNING METHODS

The programme adopts learner-centred and competency-based teaching methodologies including:

- Interactive lectures
- Case-based learning
- Problem-based learning
- Clinical bedside teaching
- Demonstrations
- Simulation-based learning
- Journal clubs
- Seminars
- Case presentations
- Evidence appraisal sessions
- Skill laboratory training
- Self-directed learning
- E-learning and digital resources
- Interdisciplinary discussions
- Reflective learning
- Research activities

2.12 CLINICAL EDUCATION

Clinical education forms the core component of the Master of Physiotherapy programme.

Students shall undergo supervised clinical training in their respective specialization through rotations in:

- Teaching hospitals
- Specialty departments
- Intensive care units
- Rehabilitation centres
- Sports rehabilitation facilities
- Community healthcare settings
- Specialty clinics
- Outreach programmes



Clinical learning shall progressively develop advanced assessment skills, clinical reasoning, intervention planning, patient management, communication, documentation, professional behaviour, and interdisciplinary teamwork.

2.13 RESEARCH AND DISSERTATION

Every postgraduate student shall undertake an original research project under the guidance of an approved faculty supervisor.

The dissertation shall demonstrate:

- Identification of a relevant research problem
- Comprehensive literature review
- Appropriate research methodology
- Ethical conduct of research
- Statistical analysis
- Scientific interpretation
- Evidence-based conclusions
- Academic writing consistent with institutional and regulatory requirements

Prior approval from the Institutional Ethics Committee (IEC) shall be obtained before commencing any research involving human participants, in accordance with institutional research ethics procedures.

2.14 PROFESSIONAL CONDUCT

Students shall maintain the highest standards of:

- Professional ethics
- Patient confidentiality
- Respect for patient rights
- Compassionate care
- Academic integrity
- Respectful communication
- Cultural sensitivity
- Accountability
- Responsible use of technology
- Lifelong learning

2.15 COMPETENCY-BASED EDUCATION

The Master of Physiotherapy programme follows a competency-based educational framework emphasizing:

- Knowledge acquisition
- Clinical skills
- Clinical reasoning
- Professional behaviour
- Communication
- Research competency
- Leadership
- Evidence-based practice
- Ethical decision-making
- Patient-centred care
- Community engagement
- Lifelong professional development



CHAPTER 3

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs), GRADUATE ATTRIBUTES (GAs), PROGRAMME OUTCOMES (POs), AND PROGRAMME SPECIFIC OUTCOMES (PSOs)

3.1 OUTCOME-BASED EDUCATION (OBE)

The Master of Physiotherapy programme at Malla Reddy Vishwavidyapeeth follows the principles of Outcome-Based Education (OBE), wherein curriculum design, teaching-learning strategies, clinical training, assessment methods, and research activities are structured to achieve clearly defined learning outcomes. The competency-based curriculum prescribed by the National Commission for Allied and Healthcare Professions (NCAHP) emphasizes the development of competent physiotherapy professionals capable of delivering evidence-based, ethical, patient-centred, and socially accountable healthcare services.

The OBE framework ensures that graduates acquire advanced knowledge, specialized clinical competencies, research capabilities, leadership skills, professional ethics, and lifelong learning abilities required for contemporary physiotherapy practice.

3.2 PROGRAMME EDUCATIONAL OBJECTIVES (PEOS)

Within three to five years after graduation, Master of Physiotherapy graduates from Malla Reddy Vishwavidyapeeth are expected to:

PEO 1 – Advanced Clinical Excellence

Demonstrate advanced clinical competence in the selected area of specialization through evidence-based assessment, diagnosis, clinical reasoning, intervention planning, and outcome evaluation.

PEO 2 – Professional Leadership

Function as ethical, compassionate, accountable, and effective healthcare professionals capable of leading multidisciplinary rehabilitation teams and contributing to healthcare delivery systems.

PEO 3 – Research and Innovation

Conduct independent research, critically appraise scientific evidence, contribute to scholarly publications, and promote innovation in physiotherapy education and clinical practice.

PEO 4 – Education and Lifelong Learning

Serve as competent educators, mentors, and lifelong learners who continually upgrade professional knowledge and clinical skills through continuing education and reflective practice.

PEO 5 – Community and Global Health

Contribute to health promotion, disease prevention, rehabilitation, community engagement, policy development, and sustainable healthcare systems at regional, national, and global levels.

3.3 GRADUATE ATTRIBUTES (GAS)

Graduates of the Master of Physiotherapy programme shall possess the following attributes:

GA1 - Advanced disciplinary knowledge

GA2 - Clinical reasoning and decision-making



- GA3** - Evidence-based practice
- GA4** - Research competency
- GA5** - Innovation and problem-solving
- GA6** - Professional ethics and accountability
- GA7** - Effective communication
- GA8** - Leadership and teamwork
- GA9** - Digital literacy and health informatics
- GA10** - Social responsibility and community engagement
- GA11** - Interdisciplinary collaboration
- GA12** - Lifelong learning and professional development

3.4 PROGRAMME OUTCOMES (POS)

Upon successful completion of the Master of Physiotherapy programme, graduates shall be able to:

PO1 – Advanced Knowledge

Integrate advanced theoretical and scientific knowledge relevant to the selected physiotherapy specialization.

PO2 – Clinical Expertise

Perform comprehensive assessment, clinical reasoning, diagnosis, intervention planning, implementation, and outcome evaluation for patients with complex health conditions.

PO3 – Evidence-Based Practice

Critically evaluate scientific literature and integrate the best available evidence into clinical decision-making.

PO4 – Research Competence

Design, conduct, analyse, interpret, and disseminate high-quality research contributing to physiotherapy knowledge and healthcare improvement.

PO5 – Professional Ethics

Demonstrate integrity, ethical practice, legal responsibility, patient confidentiality, and professional accountability in all healthcare settings.

PO6 – Communication

Communicate effectively with patients, caregivers, healthcare professionals, students, researchers, administrators, and society.

PO7 – Leadership

Provide leadership in clinical practice, education, research, quality improvement, healthcare administration, and professional organizations.

PO8 – Interdisciplinary Collaboration

Collaborate effectively within multidisciplinary healthcare teams for comprehensive patient-centred rehabilitation.



PO9 – Health Promotion

Develop and implement preventive, promotive, rehabilitative, and community-based healthcare programmes.

PO10 – Digital Competency

Utilize digital technologies, healthcare informatics, tele-rehabilitation, artificial intelligence applications, and evidence resources appropriately within physiotherapy practice.

PO11 – Lifelong Learning

Engage in self-directed learning, reflective practice, continuing professional development, and scholarly activities throughout professional life.

PO12 – Innovation and Entrepreneurship

Apply innovation, quality improvement, healthcare management, and entrepreneurial principles for advancing physiotherapy practice and healthcare delivery.

3.5 PROGRAMME SPECIFIC OUTCOMES (PSOS)

Graduates of the Master of Physiotherapy programme shall be able to:

PSO1

Demonstrate advanced competency in the assessment, diagnosis, management, and rehabilitation of patients within their chosen physiotherapy specialization.

PSO2

Integrate contemporary scientific evidence, clinical expertise, patient values, and technological advancements for delivering personalized physiotherapy care.

PSO3

Plan, conduct, publish, and translate clinically relevant research that contributes to evidence-based physiotherapy practice and rehabilitation sciences.

PSO4

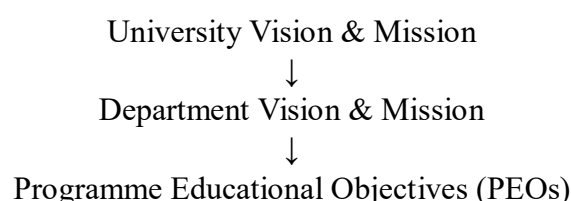
Function effectively as clinicians, educators, researchers, consultants, administrators, innovators, and leaders in national and international healthcare systems.

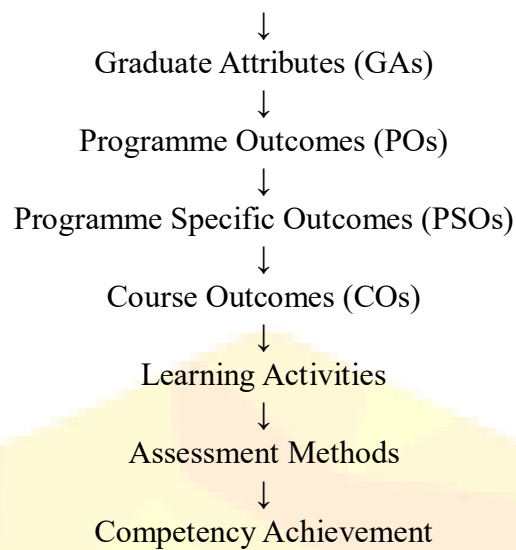
PSO5

Promote ethical practice, quality assurance, patient safety, professional excellence, community service, and lifelong professional development.

3.6 ALIGNMENT OF OBE FRAMEWORK

The educational framework of the Master of Physiotherapy programme follows a progressive hierarchy:





3.7 CONTINUOUS QUALITY IMPROVEMENT (CQI)

The curriculum shall undergo periodic review through:

- Board of Studies recommendations
- Academic Council approval
- Student feedback
- Faculty feedback
- Alumni feedback
- Employer feedback
- Clinical preceptor feedback
- Regulatory updates
- Advances in physiotherapy practice
- Emerging healthcare technologies
- National and international educational benchmarks

The Continuous Quality Improvement process ensures that the programme remains relevant, competency-based, research-oriented, and aligned with evolving healthcare needs and regulatory expectations.



CHAPTER 4

ACADEMIC REGULATIONS AND EXAMINATION SYSTEM

4.1 SHORT TITLE AND COMMENCEMENT

These regulations shall be known as the **Academic Regulations for the Master of Physiotherapy (MPT) Programme** of Malla Reddy Vishwavidyalapeeth.

These regulations shall apply to all students admitted to the Master of Physiotherapy programme from the academic year notified by the University and shall remain in force until revised by the competent academic authorities.

4.2 APPLICABILITY

These regulations shall apply to all approved MPT specializations offered by the Department of Physiotherapy, Malla Reddy Vishwavidyalapeeth.

4.3 GOVERNING FRAMEWORK

The programme shall be governed by:

- National Commission for Allied and Healthcare Professions (NCAHP) Act, 2021
- NCAHP Competency-Based Curriculum (Latest Version)
- University Grants Commission (UGC) Regulations
- Rules and regulations of Malla Reddy Vishwavidyalapeeth
- Decisions of the Board of Studies, Academic Council, and other statutory bodies of the University
- Applicable Government of India notifications issued from time to time

4.4 PROGRAMME DURATION

The duration of the Master of Physiotherapy programme shall be **two academic years** conducted under the **annual pattern**.

The programme shall include:

- Theory instruction
- Practical training
- Supervised clinical postings
- Journal clubs
- Seminars
- Case presentations
- Dissertation work
- Research methodology
- Comprehensive clinical competency development

4.5 MAXIMUM DURATION FOR COMPLETION

A student shall complete the programme within the maximum period prescribed by the University from the date of admission.

Any extension beyond the prescribed duration shall be subject to approval by the competent authority in accordance with university regulations.

4.6 Academic Calendar

The University shall notify the academic calendar before the commencement of each academic year specifying:

- Commencement of classes



- Clinical postings
- Internal assessments
- Seminars
- Journal clubs
- Dissertation milestones
- University examinations
- Vacation periods
- Academic activities

4.7 MEDIUM OF INSTRUCTION

The medium of instruction, clinical training, dissertation, seminars, and examinations shall be **English**.

4.8 ATTENDANCE REQUIREMENTS

Attendance is compulsory for all academic and clinical activities.

Every student shall maintain the minimum attendance prescribed by the University and NCAHP separately in:

- Theory
- Practicals
- Clinical postings

Students failing to satisfy the minimum attendance requirement shall not be eligible to appear for the University examinations unless otherwise permitted under applicable regulations.

4.9 CLINICAL TRAINING

Clinical education is an integral component of the programme.

Students shall undergo supervised clinical training in the respective speciality through structured rotations in:

- Teaching hospitals
- Speciality units
- Intensive Care Units
- Rehabilitation centres
- Sports medicine facilities
- Community healthcare settings
- Speciality clinics

Clinical competency shall be documented through logbooks, clinical records, and periodic faculty assessments.

4.10 ACADEMIC ACTIVITIES

Each postgraduate student shall actively participate in:

- Journal Clubs
- Seminars
- Case Presentations
- Clinical Demonstrations
- Interdisciplinary Discussions
- Research Meetings
- Evidence-Based Practice Sessions
- Continuing Professional Development Activities

Participation in these activities shall form part of continuous assessment.



4.11 Logbook

Every postgraduate student shall maintain an individual logbook documenting:

- Clinical postings
- Patient management
- Procedures performed
- Case presentations
- Journal clubs
- Seminars
- Academic activities
- Professional development programmes
- Faculty feedback

The logbook shall be reviewed periodically by the faculty and must be certified before the student becomes eligible for the University examination.

4.12 DISSERTATION

Every student shall undertake an original research project under the guidance of an approved faculty supervisor.

The dissertation shall include:

- Research proposal
- Ethics approval
- Literature review
- Methodology
- Data collection
- Statistical analysis
- Discussion
- Conclusions
- References

The research proposal shall receive approval from the Institutional Ethics Committee before commencement of the study, and students shall adhere to institutional procedures for protocol submission, ethical review, informed consent, and periodic reporting.

4.13 INTERNAL ASSESSMENT

Continuous internal assessment shall be conducted throughout the programme using multiple assessment methods such as:

- Written examinations
- Practical examinations
- Clinical performance
- Viva voce
- Seminars
- Journal clubs
- Case presentations
- Assignments
- Reflective learning
- Professional behaviour
- Attendance
- Logbook evaluation



4.14 UNIVERSITY EXAMINATION

University examinations shall be conducted at the end of each academic year in accordance with the approved examination scheme.

The examination shall assess:

- Cognitive competence
- Clinical reasoning
- Practical competence
- Communication
- Professional ethics
- Research understanding
- Evidence-based practice

4.15 PASSING CRITERIA

A student shall be declared to have passed a course only after successfully completing all prescribed theory, practical, clinical, and internal assessment requirements as specified by the University and the NCAHP framework.

4.16 PROMOTION

Promotion from the First Year to the Second Year shall be governed by the promotion regulations prescribed by the University in conformity with NCAHP requirements.

Students shall satisfy all academic and clinical requirements before being promoted to the subsequent academic year.

4.17 RE-EXAMINATION

Students who fail to satisfy the prescribed passing requirements shall be eligible to appear for supplementary examinations as per University regulations.

4.18 PROFESSIONAL CONDUCT

Every student shall:

- Maintain professional behaviour.
- Respect patient rights and dignity.
- Preserve patient confidentiality.
- Follow institutional rules.
- Adhere to ethical principles.
- Maintain academic integrity.
- Demonstrate respectful communication with patients, caregivers, faculty, staff, and peers.

Acts of academic misconduct, plagiarism, falsification of records, or professional misconduct shall be dealt with in accordance with University regulations.

4.19 ANTI-PLAGIARISM POLICY

The dissertation and all academic submissions shall comply with the University's plagiarism policy.

Students shall ensure originality of their work and acknowledge all sources appropriately using accepted scientific referencing styles.

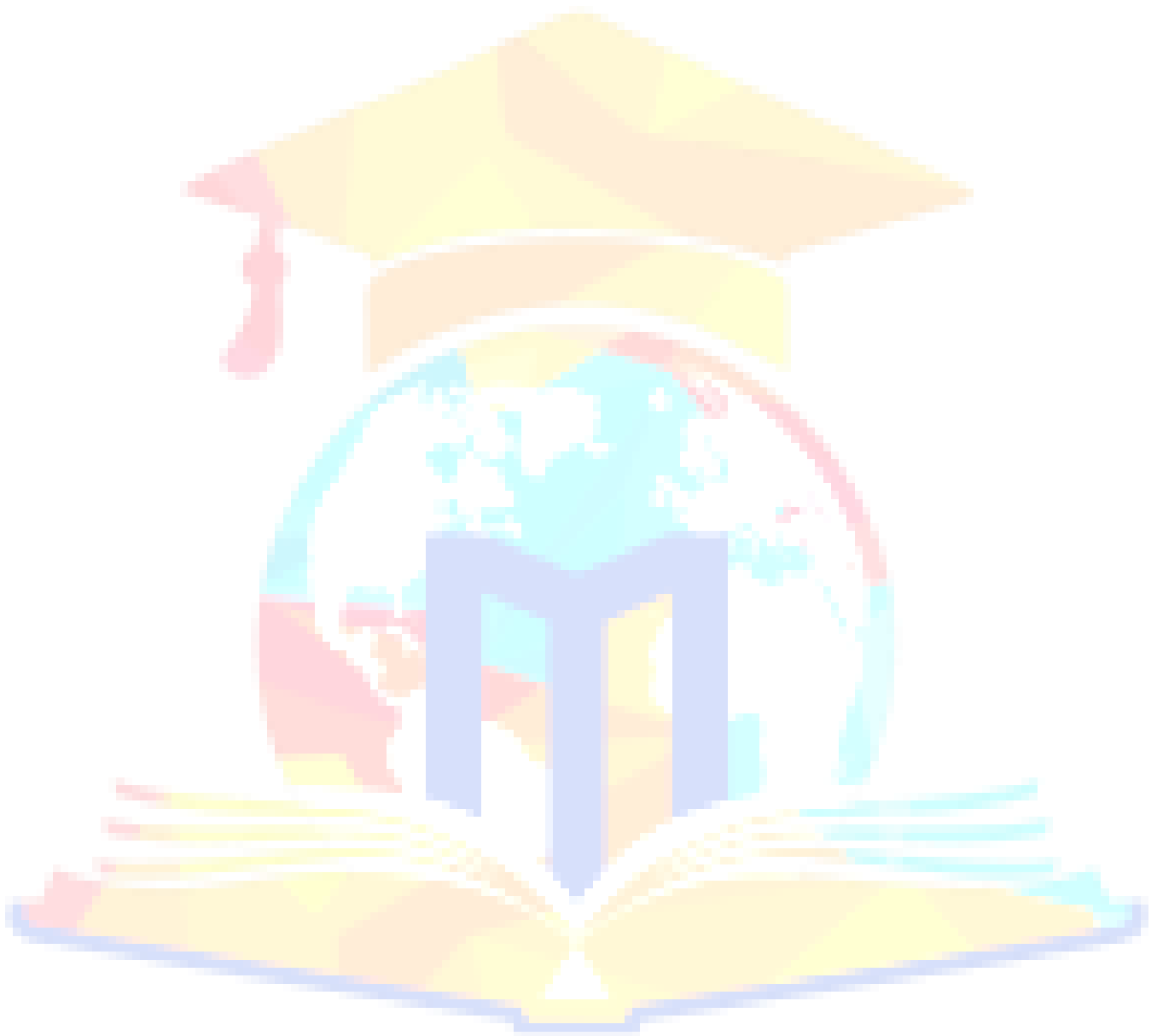


4.20 AWARD OF DEGREE

The degree of **Master of Physiotherapy (MPT)** shall be awarded to candidates who successfully complete all academic, clinical, research, dissertation, and examination requirements prescribed by the University.

4.21 AMENDMENTS

The University reserves the right to revise, amend, modify, or update these regulations in accordance with changes in statutory requirements, NCAHP regulations, academic policies, or institutional needs.





CHAPTER 5

TEACHING–LEARNING, ASSESSMENT AND CLINICAL COMPETENCY FRAMEWORK

5.1 INTRODUCTION

The Master of Physiotherapy (MPT) programme at Malla Reddy Vishwavidyapeeth adopts a competency-based, learner-centred, and outcome-oriented educational approach to prepare graduates capable of providing advanced physiotherapy services across clinical, academic, research, community, and healthcare management settings.

The teaching-learning process integrates theoretical knowledge, clinical reasoning, practical skill acquisition, evidence-based practice, research competency, professionalism, and lifelong learning to ensure comprehensive professional development.

5.2 EDUCATIONAL PHILOSOPHY

The programme is designed around the following educational principles:

- Competency-Based Education
- Outcome-Based Education
- Student-Centred Learning
- Evidence-Based Practice
- Experiential Learning
- Reflective Practice
- Clinical Reasoning
- Research-Oriented Learning
- Interdisciplinary Collaboration
- Lifelong Professional Development

5.3 TEACHING–LEARNING STRATEGIES

The programme utilizes multiple teaching-learning approaches to facilitate comprehensive competency development.

These include:

Classroom Teaching

- Interactive lectures
- Small group discussions
- Tutorials
- Flipped classroom sessions
- Integrated teaching

Clinical Teaching

- Bedside teaching
- Supervised patient management
- Clinical demonstrations
- Clinical reasoning sessions
- Ward rounds
- Outpatient teaching
- Specialty postings



Active Learning

- Problem-Based Learning (PBL)
- Case-Based Learning (CBL)
- Team-Based Learning (TBL)
- Inquiry-based learning
- Self-directed learning

Research-Based Learning

- Journal clubs
- Research methodology workshops
- Scientific writing
- Critical appraisal
- Dissertation work
- Research seminars

Technology-Enhanced Learning

- Learning Management Systems (LMS)
- Digital libraries
- Online databases
- Clinical simulation software
- Virtual case discussions
- Tele-rehabilitation demonstrations
- Healthcare informatics resources

5.4 CLINICAL COMPETENCY DEVELOPMENT

Clinical competency shall be developed progressively through supervised learning experiences in diverse healthcare settings.

Students shall acquire competencies in:

- Patient assessment
- Clinical examination
- Functional diagnosis
- Clinical reasoning
- Goal setting
- Treatment planning
- Therapeutic interventions
- Outcome evaluation
- Documentation
- Communication
- Professional behaviour
- Patient education

5.5 CLINICAL POSTING FRAMEWORK

Clinical education shall be organized through structured postings in relevant specialty departments.

Clinical learning shall include exposure to:

- Inpatient services
- Outpatient services
- Intensive care units



- Operation theatre observation (where applicable)
- Rehabilitation centres
- Sports rehabilitation facilities
- Community health programmes
- Specialty clinics
- Interdisciplinary healthcare teams

Each posting shall have clearly defined learning objectives, competencies, assessment criteria, and faculty supervision.

5.6 SELF-DIRECTED LEARNING (SDL)

Students shall actively participate in self-directed learning activities including:

- Independent literature review
- Clinical case analysis
- Evidence synthesis
- Reflective writing
- Portfolio development
- Online learning modules
- Clinical skill practice
- Research activities

Faculty members shall facilitate and mentor students throughout the learning process.

5.7 EVIDENCE-BASED PRACTICE

Evidence-Based Practice (EBP) forms an integral component of postgraduate physiotherapy education.

Students shall develop competence in:

- Clinical question formulation
- Literature searching
- Critical appraisal
- Interpretation of evidence
- Clinical application
- Outcome measurement
- Practice improvement

Evidence shall be integrated with clinical expertise and patient values to support high-quality physiotherapy care.

5.8 RESEARCH TRAINING

Research education shall be integrated throughout the programme.

Students shall receive structured training in:

- Research methodology
- Epidemiology
- Biostatistics
- Scientific writing
- Publication ethics
- Research ethics
- Grant proposal development
- Data management
- Reference management software



- Research dissemination

5.9 Professional Development

Professional development activities shall include:

- Ethics education
- Leadership development
- Healthcare management
- Communication skills
- Teaching skills
- Academic presentations
- Interprofessional education
- Community engagement
- Continuing Professional Development (CPD)

5.10 ASSESSMENT PHILOSOPHY

Assessment shall be:

- Continuous
- Competency-based
- Objective
- Transparent
- Fair
- Reliable
- Valid
- Constructive
- Outcome-oriented

Assessment shall evaluate knowledge, psychomotor skills, clinical competence, communication, professionalism, and research aptitude.

5.11 METHODS OF ASSESSMENT

The programme shall employ multiple assessment methods including:

Knowledge Assessment

- Written examinations
- Short answer questions
- Structured essay questions
- Problem-solving exercises

Clinical Assessment

- Long case examination
- Short case examination
- Practical examination
- Viva voce
- Clinical demonstrations

Workplace-Based Assessment

- Direct Observation of Clinical Skills
- Mini Clinical Evaluation Exercise (Mini-CEX)
- Case-Based Discussion (CBD)



- Procedure assessment
- Faculty observation

Academic Assessment

- Seminars
- Journal clubs
- Assignments
- Case presentations
- Research presentations
- Reflective portfolios

Professional Behaviour Assessment

Faculty shall evaluate:

- Professionalism
- Ethics
- Communication
- Teamwork
- Leadership
- Time management
- Responsibility
- Clinical documentation

5.12 FEEDBACK MECHANISM

Regular feedback shall be provided through:

- Individual mentoring
- Clinical supervision
- Case discussions
- Research meetings
- Academic counselling
- Performance review sessions

Feedback shall be timely, constructive, and aimed at continuous improvement.

5.13 Logbook and Portfolio

Each student shall maintain:

Clinical Logbook

Documenting:

- Clinical postings
- Procedures observed
- Procedures performed
- Case records
- Faculty certification

Academic Portfolio

Including:

- Seminars
- Journal clubs
- Research activities
- Continuing education programmes



- Conference participation
- Workshops
- Certifications
- Reflective learning

5.14 DIGITAL LEARNING RESOURCES

Students shall be encouraged to utilize:

- Institutional digital library
- National Digital Library
- Open educational resources
- Scientific databases
- Peer-reviewed journals
- Clinical practice guidelines
- Electronic books
- Artificial intelligence-assisted academic tools used responsibly in accordance with institutional academic integrity policies

5.15 CONTINUOUS QUALITY IMPROVEMENT (CQI)

The programme shall undergo periodic review through:

- Student feedback
- Faculty feedback
- Alumni feedback
- Employer feedback
- Clinical preceptor feedback
- Academic audits
- Curriculum review
- Board of Studies recommendations
- Academic Council approval
- Regulatory updates
- Benchmarking with national and international standards

The Continuous Quality Improvement process shall ensure that the curriculum remains contemporary, competency-based, evidence-informed, learner-centred, and responsive to the evolving needs of healthcare systems and society.



CHAPTER 6

PROGRAMME STRUCTURE AND SCHEME OF STUDY

6.1 PROGRAMME STRUCTURE

The Master of Physiotherapy (MPT) programme at Malla Reddy Vishwavidyapeeth is a two-year postgraduate programme conducted under the annual pattern and designed in accordance with the Competency-Based Curriculum prescribed by the National Commission for Allied and Healthcare Professions (NCAHP).

The curriculum integrates advanced theoretical instruction, specialty clinical education, supervised patient care, evidence-based practice, research, dissertation, professional development, and competency-based assessment to prepare graduates capable of independent clinical practice, academic leadership, research, and healthcare innovation.

6.2 DURATION

Particular	Details
Programme	Master of Physiotherapy (MPT)
Pattern	Annual
Duration	Two Academic Years
Academic Years	First Year and Second Year
Medium of Instruction	English

6.3 PROGRAMME COMPONENTS

The curriculum consists of the following academic components:

A. Advanced Theory Courses

Advanced specialty-specific theoretical knowledge.

B. Practical and Laboratory Training

Development of advanced assessment and intervention skills.

C. Clinical Education

Structured supervised clinical postings.

D. Journal Club

Critical appraisal of scientific literature.

E. Seminar

Presentation of contemporary scientific topics.

F. Case Presentation

Comprehensive patient evaluation and evidence-based management.

G. Dissertation

Original research conducted under faculty supervision.



H. Professional Development Activities

Academic, research, leadership, communication and professional skill enhancement.

6.4 CURRICULUM DESIGN PHILOSOPHY

The curriculum follows progressive competency development through:



6.5 LEARNING DOMAINS

The programme develops competencies across three major domains.

Domain	Focus
Cognitive	Advanced knowledge, clinical reasoning, evidence-based decision making
Psychomotor	Advanced assessment, intervention, manual therapy, procedural skills
Affective	Ethics, professionalism, leadership, communication, empathy

6.6 CURRICULUM COMPONENTS

The programme includes

- Advanced Theory
- Practical Training
- Clinical Posting
- Journal Club
- Seminar
- Case Presentation
- Dissertation
- Research Activities
- Self-Directed Learning
- Evidence-Based Practice
- Professional Development

6.7 CLINICAL COMPETENCY FRAMEWORK

Clinical competency shall be developed progressively through supervised learning experiences.

Students are expected to demonstrate competency in:

- Patient Interview



- Clinical Examination
- Functional Assessment
- Clinical Reasoning
- Physiotherapy Diagnosis
- Goal Setting
- Treatment Planning
- Intervention
- Outcome Measurement
- Documentation
- Patient Education
- Professional Communication

6.8 RESEARCH COMPETENCY FRAMEWORK

Every postgraduate student shall demonstrate competency in

- Literature Review
- Research Design
- Research Ethics
- Sample Size Estimation
- Outcome Measures
- Statistical Analysis
- Interpretation
- Scientific Writing
- Publication Ethics
- Research Presentation

6.9 PROFESSIONAL DEVELOPMENT FRAMEWORK

Professional growth shall be promoted through

- Ethics
- Leadership
- Teaching Skills
- Communication Skills
- Time Management
- Critical Thinking
- Healthcare Management
- Entrepreneurship
- Lifelong Learning

6.10 YEAR-WISE CURRICULUM FRAMEWORK

First Year

The first year emphasizes:

- Advanced specialty knowledge
- Clinical sciences
- Research methodology
- Evidence-based practice
- Clinical competency development
- Journal club
- Seminar



- Initial dissertation work

Second Year

The second year focuses on

- Advanced specialty practice
- Complex patient management
- Advanced clinical reasoning
- Independent clinical decision-making
- Dissertation completion
- Scientific publication
- Leadership
- Teaching competency

6.11 TEACHING HOURS

The programme shall include

- Theory Instruction
- Practical Sessions
- Clinical Postings
- Research Activities
- Self-directed Learning
- Academic Discussions

The detailed distribution of instructional hours shall be in accordance with the approved Scheme of Study prescribed by NCAHP and adopted by the University.

6.12 SCHEME OF STUDY

The detailed Scheme of Study for each specialization shall include:

- Course Code
- Course Title
- Theory Hours
- Practical Hours
- Clinical Hours
- Credits
- Internal Assessment
- University Examination
- Total Marks

The detailed year-wise scheme shall be presented separately for each specialization in the subsequent sections of this handbook.

6.13 SPECIALIZATIONS

The University offer the following Master of Physiotherapy specializations:

1. Master of Physiotherapy in Musculoskeletal Sciences
2. Master of Physiotherapy in Neurosciences
3. Master of Physiotherapy in Cardio-Pulmonary Sciences
4. Master of Physiotherapy in Sports Sciences
5. Master of Physiotherapy in Pediatrics and Neonatal Sciences
6. Master of Physiotherapy in Obstetrics and Gynaecology Sciences
7. Master of Physiotherapy in Oncology Sciences



8. Master of Physiotherapy in Community Rehabilitation

6.14 PROGRAMME COMPLETION REQUIREMENTS

A candidate shall successfully complete:

- All theory courses
- All practical courses
- Clinical competency requirements
- Journal clubs
- Seminars
- Case presentations
- Dissertation
- University examinations
- Internal assessments
- Professional conduct requirements

before being eligible for the award of the Master of Physiotherapy degree.



MALLA REDDY VISHWAVIDYAPEETH**(DEEMED TO BE UNIVERSITY)****DEPARTMENT OF PHYSIOTHERAPY****MASTER OF PHYSIOTHERAPY****COURSE STRUCTURE****First Year (Common to All MPT Specializations)**

S. No.	Subject	Internal Assessment Marks (Theory)	Internal Assessment Marks (Practical)	University Examination Marks (Theory)	University Examination Marks (Viva)	University Examination Marks (Practical)	Total Marks	Theory Hours	Practical Hours	Total Hours	Theory Credits	Practical Credits	Total Credits
1	M.P.T-101 Laws, Ethics, Administration in Educational Methodology (LEM)	20	-	80	-	-	100	90	-	90	6	-	6
2	M.P.T-102 Research Methodology and Biostatistics, EBP (RMB)	20	-	80	-	-	100	90	-	90	6	-	6
3	M.P.T-103 Biomechanics & Therapeutics (BCT)	20	-	80	-	-	100	90	-	90	6	-	6
4	M.P.T-104 Physical & Functional Diagnosis in the Specialty – Paper I	20	20	100	20	40	200	120	120	240	8	4	12

MPT		DEPARTMENT OF PHYSIOTHERAPY											
5	M.P.T-105 Skills Acquisition and Refinement (SAR-I)	Teaching Assignment, Seminars, Journal Club & Case Studies, etc.					-	-	240	240	-	8	8
6	M.P.T-106 Clinical Training (CT-I)	-	-	-	-	-	-	-	540	540	-	18	18
7	M.P.T-107 Dissertation (DSS-I)	-	-	-	-	-	-	-	240	240	-	8	8
Grand Total							500	390	1140	1530	26	38	64

Second Year (Specialization)

S. No.	Subject	Internal Assessment Marks (Theory)	Internal Assessment Marks (Practical)	University Examination Marks (Theory)	University Examination Marks (Viva)	University Examination Marks (Practical)	Total Marks	Theory Hours	Practical Hours	Total Hours	Theory Credits	Practical Credits	Total Credits
1	M.P.T-201 Exercise Physiology (EP)	20	-	80	-	-	100	90	-	90	6	0	6
2	M.P.T-202 Specialty Paper II	20	20	80	20	40	200	120	120	240	8	4	12
3	M.P.T-203 Specialty Paper III (Recent Advances in the Specialty)	20	20	80	20	40	200	120	120	240	8	4	12

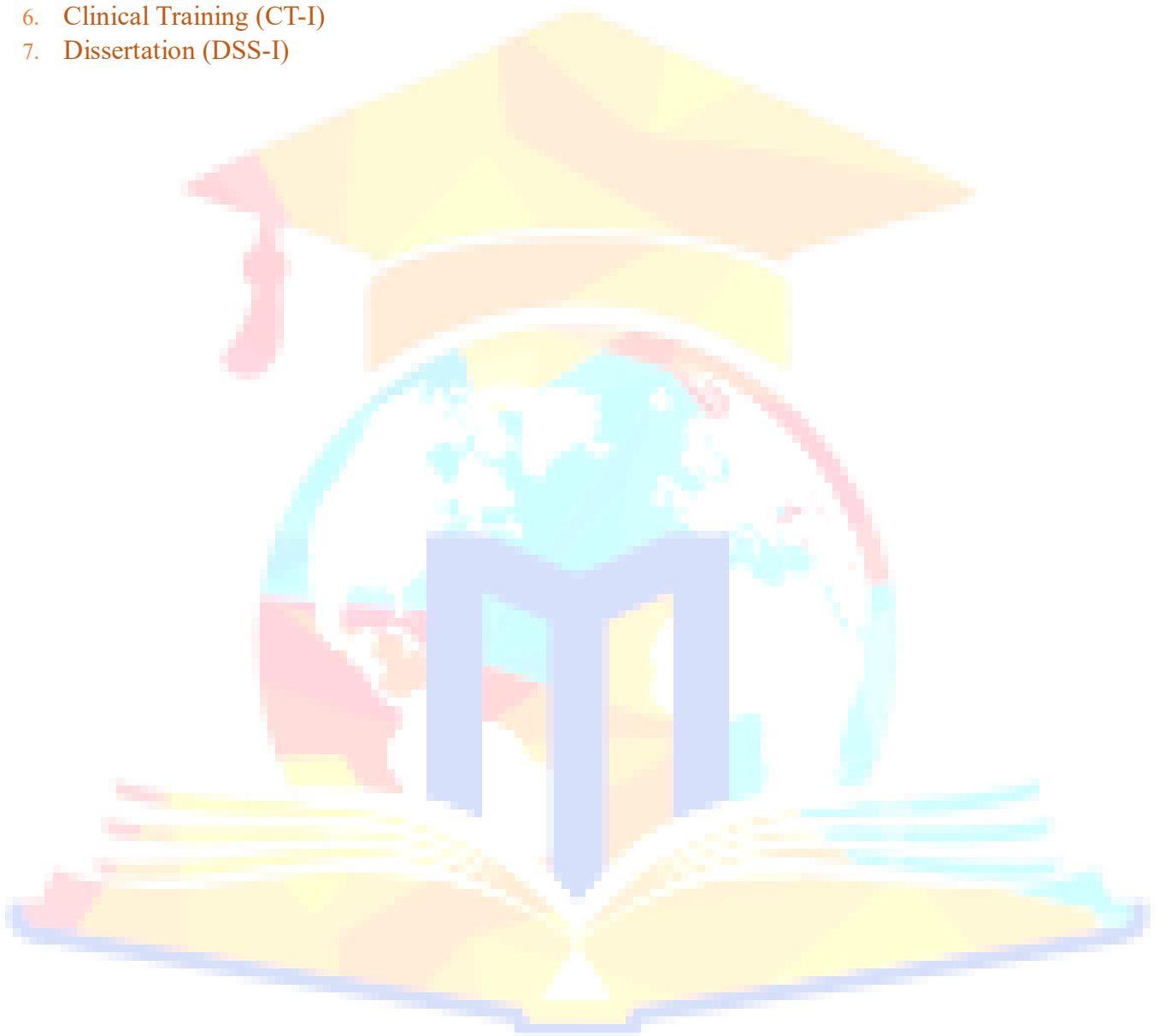
MPT DEPARTMENT OF PHYSIOTHERAPY													
4	M.P.T-204 Dissertation (Spread over a period of 18 months) (DSS-II)	-	-	-	100	-	100	-	720	720	-	24	24
5	M.P.T-205 Skills Acquisition and Refinement (SAR-II)	Teaching Assignment, Seminars, Journal Club & Case Studies, etc.							240	240	-	8	8
6	M.P.T-206 Clinical Training (CT-II)	-	-	-	-	-	-	-	540	540	-	18	18
Grand Total							600	330	1740	2070	22	58	80





COURSE TITLES

1. Laws, Ethics, Administration in Educational Methodology (LEM)
2. Research Methodology and Biostatistics, Evidence-Based Practice (RMB)
3. Biomechanics and Therapeutics (BCT)
4. Physical and Functional Diagnosis in the Speciality – Paper I
5. Skills Acquisition and Refinement (SAR-I)
6. Clinical Training (CT-I)
7. Dissertation (DSS-I)



LAWS, ETHICS & ADMINISTRATION AND EDUCATIONAL METHODOLOGY (LEM)

Course Code	M.P.T-101	L	P	C	Total sessions
Course Title	Laws, Ethics & Administration and Educational Methodology (LEM)	90	-	6	90
Pre-requisite	Basic knowledge of Physiotherapy Practice, Research Methodology, and Healthcare Systems.				
Co-requisites	NIL				

Course Objective:

1. Understand the ethical principles, legal regulations, and professional responsibilities governing physiotherapy practice and research.
2. Develop knowledge of healthcare management, administration, communication, and quality assurance systems applicable to physiotherapy services.
3. Apply ethical decision-making and legal frameworks in clinical practice, research, and academic environments.
4. Understand educational philosophies, adult learning principles, and effective teaching-learning methodologies used in physiotherapy education.
5. Develop competency in curriculum planning, educational assessment, formulation of learning outcomes, and instructional design.
6. Promote leadership, entrepreneurship, and professional excellence in physiotherapy education and healthcare management.

Course Learning Outcomes (CLOs): On completion of this course, the students will be able to:

CLO1: Explain the ethical principles, professional values, and legal regulations governing physiotherapy practice and research.

CLO2: Analyze ethical dilemmas and apply appropriate ethical decision-making in clinical, academic, and research settings.

CLO3: Apply principles of healthcare management, administration, communication, and quality assurance in physiotherapy organizations.

CLO4: Design effective teaching-learning strategies using educational theories, adult learning principles, and modern instructional methods.

CLO5: Formulate measurable learning outcomes and appropriate assessment strategies using educational taxonomies and competency-based education principles.

CLO6: Evaluate opportunities for leadership, administration, and entrepreneurship to strengthen physiotherapy practice and healthcare delivery.

Program Learning Outcomes (PLOs):

PLO1: Demonstrate advanced knowledge and evidence-based clinical reasoning in physiotherapy practice.

PLO2: Apply ethical, legal, and professional principles while delivering patient-centred care.

PLO3: Integrate research evidence into clinical practice, education, and professional decision-making.

PLO4: Demonstrate leadership, administration, communication, and interdisciplinary collaboration.

PLO5: Apply principles of education, mentorship, and lifelong learning in physiotherapy.

PLO6: Develop innovative approaches for healthcare management, entrepreneurship, and quality improvement.

PLO7: Uphold professional integrity, social accountability, and continuous professional development.

Program Specific Outcomes (PSOs):

PSO1: Apply ethical and legal principles in physiotherapy practice, education, and research.

PSO2: Demonstrate competency in healthcare management, administration, and quality improvement.

PSO3: Plan, deliver, and evaluate physiotherapy education using evidence-based educational methodologies.

PSO4: Exhibit leadership, communication, and entrepreneurial skills for professional growth and healthcare innovation.

Mapping:

CLO/PLO	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PSO1	PSO2	PSO3	PSO4
CLO1	2	3	2	2	2	1	3	3	2	1	1
CLO2	2	3	3	2	2	2	3	3	2	2	2
CLO3	2	2	2	3	2	3	2	2	3	2	3
CLO4	2	2	2	2	3	2	2	2	2	3	2
CLO5	2	2	3	2	3	2	2	2	2	3	2
CLO6	2	2	2	3	2	3	3	2	3	2	3

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Course Content**SECTION – A: ETHICS AND LAW**

LEM 1.1. Principles of ethics: History and evolution of ethics – Helsinki Declaration; Nuremberg Code; Principles of ethics and its importance – Autonomy, Beneficence, Nonmaleficence, Justice.

LEM 1.2. Professionalism.

LEM 1.3. Ethics in professional practice: Principles of practice in respective profession. Privacy, confidentiality, shared decision making, informed consent, equality and equity, justice.

LEM 1.4. ICMR Guidelines: General principles, Responsible conduct of research, Risk benefit assessment.

LEM 1.5. Informed Consent Process: Components of informed consent document, Procedure in obtaining informed consent, Special situations, waivers, and proxy consent.

LEM 1.6. Roles and Responsibilities of IEC: Ethical Review process, Classification of projects for review, Roles and responsibilities of members, Communications with investigators and authorities.

LEM 1.7. Ethics in Special and Vulnerable Populations: Types of Vulnerability and vulnerable population, Challenges for research in vulnerable population, Guidelines for research in special and vulnerable population.

LEM 1.8. Conflict of Interest: Definition and Types of Conflict of Interest, Identifying, mitigating and managing Conflict of Interest, Conflicts of interest in international collaborations.

LEM 1.9. Publication Ethics: Importance of publishing, Authorship guidelines according to ICMJE, Plagiarism.

LEM 1.10. Laws governing Physiotherapy practice: NCAHP Act, Consumer Protection Act, Rights of Persons with Disabilities Act, Ethical issues in practice of Physiotherapy – Clinical, Research and Academics.

SECTION – B: Management and Administration in Physiotherapy

LEM 2.1. Principles and applications of Management and Administration to Physiotherapy practice.

LEM 2.2. Management Process: Planning, organizing, staffing, finance, marketing, controlling, directing.

LEM 2.3. Quality Assurance: Total Quality Management; Basis of quality management; Quality assurance programme in hospitals; Medical audit and international quality system.

LEM 2.4. Communication: Process of communication; Barriers to communication; Types of communication; Written vs. Oral communication; Elements of good communication.

LEM 2.5. Hospital as an organization: Functions and types of hospitals; Management in hospital; Setting of a physiotherapy service unit.

SECTION – C: Management of Teaching Institution and Educational Methodology in Physiotherapy

LEM 3.1. Education: Definition, aims and objectives of education, Agencies of education, Formal and informal education, Brief introduction to the philosophies of education, Taxonomy of educational objectives, Essentials of Physiotherapy education, NEP.

LEM 3.2. Basics of Adult Learning Theories including Learning Styles and Motivation.

LEM 3.3. Concept of Teaching–Learning: Nature of learning, Types and stages of learning, Factors affecting learning, Laws of learning, Learning styles, Teaching–learning process, Role of teacher in teaching–learning process, Adult learning.

LEM 3.4. Teaching skills, Teaching methods in classroom setting, Clinical teaching methods, Planning of teaching: Lesson planning and unit planning, Teaching aids and educational technology.

LEM 3.5. Formulating Intended Learning Outcomes including Tyler's Principles, Bloom's Taxonomy, Miller's Pyramid, Clinical Competence, and Dreyfus' Model of Skill Acquisition.

LEM 3.6. Entrepreneurship in Physiotherapy Practice: Need, Advantages and Opportunities.

Recommended Books for LEM

1. Beauchamp and Childress. Principles of Biomedical Ethics. Fourth Edition. Oxford.
2. Patricia A. Marshall. Ethical Challenges in Study Design and Informed Consent for Health Research in Resource Poor Settings. World Health Organization. 2007.
3. National Ethical Guidelines for Biomedical and Health Research Involving Human Participants. Indian Council of Medical Research. 2017.
4. Cantillon P, Wood D, Yardley S (Editors). ABC of Learning and Teaching in Medicine. 3rd Edition.
5. Swanwick T, Forrest K, O'Brien BC (Editors). Understanding Medical Education: Evidence, Theory, and Practice. 3rd Edition.
6. Singh T, Gupta P, Singh D (Editors). Principles of Medical Education. Jaypee Brothers Medical Publishers. 2012. New Delhi.

RESEARCH METHODOLOGY, BIOSTATISTICS AND EVIDENCE BASED PRACTICE (RMB)

Course Code	M.P.T-102	L	P	C	Total sessions
Course Title	Research Methodology, Biostatistics and Evidence Based Practice (RMB)	90	-	6	90
Pre-requisite	Basic knowledge of research principles, statistics, computer applications, and undergraduate physiotherapy subjects				
Co-requisites	NIL				

Course Objective:

1. To understand the principles and methodology of scientific research in physiotherapy and rehabilitation.
2. To develop competency in designing, conducting, analyzing, and interpreting research studies.
3. To acquire knowledge of biostatistics and appropriate statistical methods used in health sciences research.
4. To develop skills in critical appraisal of scientific literature and application of evidence-based practice.
5. To understand the principles of scientific writing, publication ethics, and dissemination of research findings.

Course Learning Outcomes (CLOs): On completion of this course, the students will be able to:

CLO1: Explain the principles, types, and methodologies of research used in physiotherapy and rehabilitation sciences.

CLO2: Design appropriate research studies, formulate research questions, and select suitable sampling methods and outcome measures.

CLO3: Apply appropriate biostatistical methods for data analysis and interpretation using statistical software.

CLO4: Critically appraise published research and integrate evidence into clinical decision-making.

CLO5: Demonstrate competency in scientific writing, research reporting, and preparation of manuscripts, abstracts, and thesis.

Program Learning Outcomes (PLOs):

PLO1: Demonstrate advanced knowledge and clinical competence in the specialty area of physiotherapy.

PLO2: Apply evidence-based practice and research principles in clinical decision-making.

PLO3: Design, conduct, analyze, and disseminate scientific research with ethical responsibility.

PLO4: Demonstrate leadership, communication, and interdisciplinary collaboration in professional practice.

PLO5: Utilize modern technology, statistical tools, and information resources for lifelong learning.

PLO6: Uphold ethical, legal, and professional standards in physiotherapy practice, research, and education.

PLO7: Contribute to innovation, quality improvement, and advancement of physiotherapy through research and scholarly activities.

Program Specific Outcomes (PSOs):

PSO1: Apply appropriate research methodology and evidence-based practice principles to improve physiotherapy outcomes.

PSO2: Demonstrate competency in statistical analysis, interpretation of research findings, and scientific communication.

PSO3: Critically evaluate scientific literature and translate research evidence into physiotherapy practice.

PSO4: Conduct independent research and contribute to the advancement of physiotherapy knowledge and professional practice.

Mapping:

CLO / PLO	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PSO1	PSO2	PSO3	PSO4
CLO1	3	3	2	2	2	2	2	3	2	3	2
CLO2	3	3	3	2	2	2	2	3	3	3	3
CLO3	3	3	3	2	3	2	2	3	3	3	3
CLO4	3	3	3	3	3	3	3	3	3	3	3
CLO5	3	3	3	3	3	3	3	3	3	3	3

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Course Content

SECTION A – RESEARCH METHODOLOGY

RMB 1.1. Introduction to research.

RMB 1.2. Types of research.

RMB 1.3. Defining a research question.

RMB 1.4. Qualitative study designs.

RMB 1.5. Quantitative study.

RMB 1.6. Type I and Type II bias.

RMB 1.7. Study design: types.

RMB 1.8. Case study, Case series, Longitudinal cohort, Pre post design, Time series design, Repeated measures design, Randomized control design.

RMB 1.9. Sampling design, calculating minimum sample size based on design.

RMB 1.10. Measurement: Properties of measurement: reliability, validity, responsiveness, MCID.

RMB 1.11. Outcome measures: Use of outcome measures in rehabilitation research.

RMB 1.12. Research Methods: Designing methodology, Reporting results, Type I and Type II bias.

RMB 1.13. Communicating research.

RMB 1.14. Evaluating published research: looking at the evidence.

RMB 1.15. Introduction to evidence-based practice, evaluating evidence.

RMB 1.16. Asking clinical questions.

RMB 1.17. Translating of evidence into practice: strategies.

RMB 1.18. Use of clinical practice guidelines, clinical pathways, prediction rules to inform practice.

SECTION B – BIOSTATISTICS

RMB 2.1. Descriptive Statistics and measurement variability.

RMB 2.2. Inferential Statistics.

RMB 2.3. Comparison of group means: T-test.

RMB 2.4. Analysis of variance.

RMB 2.5. Multiple comparison tests.

RMB 2.6. Parametric and Non parametric tests.

RMB 2.7. Correlations.

RMB 2.8. Regression.

RMB 2.9. Analysis of frequencies: Chi square.

RMB 2.10. Statistical measure of validity and reliability.

RMB 2.11. Factorial Design analysis.

RMB 2.12. Power analysis – Determining sample size, Epidemiological Measures – Rate, Ratio, Proportion, Incidence and prevalence, Relative risk, Risk ratio, Odds ratio.

RMB 2.13. Application of various statistical software.

SECTION C – SCIENTIFIC WRITING

RMB 3.1. 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).

RMB 3.2. Publication – Role of author, Guide, Co-authors.

RMB 3.3. Structure, Style and contents; Style manuals (APA, MLA); Citation styles: Footnotes, References; Evaluation of research.

RMB 3.4. Significance of Report writing; Different steps in Report writing; Mechanics and precautions of writing research reports; Oral and poster presentation of research papers in conferences/symposia; Preparation of abstracts.

RMB 3.5. Structure of Thesis and Content – Preparing Abstracts.

Recommended Textbooks

1. Bailey, N.T.J. Statistical Methods in Biology. The English Universities Press, London.
2. Bajpai, S.R. Methods of Social Survey and Research. Kitab Ghar, Kanpur.
3. Colton. Statistics in Medicine. Little Brown Company, Boston.
4. Gupta, S.P. Statistical Methods. Sultan Chand and Sons Publishers, New Delhi.
5. Goulden, C.H. Methods of Statistical Analysis. Asia Publishing House, New Delhi.
6. Mohsin, S.M. Research Methods in Behavioral Sciences. Orient Publications, New Delhi.
7. Mahajan. Methods in Biostatistics. Jay Pee Brothers Medical Publishers (P) Ltd., New Delhi.
8. Hicks. Research for Physiotherapists. Churchill Livingstone, London.
9. Meenakshi. First Course in Methodology of Research. Kalia Prakashan, Patiala.
10. Kumar, R. Research Methodology. Pearson Education, Australia.
11. Snedecor, G.W. Statistical Methods. Allied Pacific Pvt. Ltd., London.
12. Singh, I. Elementary Statistics for Medical Workers. Jaypee Brothers Medical Publishers (P) Ltd., New Delhi.
13. Rehabilitation Research: Principles and Applications. Elizabeth Domholdt. Elsevier Science Health Science Division, 2004.

BIOMECHANICS & THERAPEUTICS (BCT)

Course Code	M.P.T-103	L	P	C	Total sessions
Course Title	Biomechanics & Therapeutics (BCT)	90	-	6	90
Pre-requisite	Knowledge of Human Anatomy, Physiology, Kinesiology, Exercise Therapy and Electrotherapy.				
Co-requisites	NIL				

Course Objective:

1. To understand the principles of biomechanics and kinesiology in normal and pathological human movement.
2. To develop knowledge of biomechanical assessment and analytical techniques used in physiotherapy practice.
3. To understand the scientific principles and clinical application of therapeutic exercise techniques.
4. To develop competency in electrodiagnostic procedures and advanced electrotherapeutic modalities.
5. To integrate biomechanical principles and therapeutic interventions for evidence-based physiotherapy management.

Course Learning Outcomes (CLOs): On completion of this course, the students will be able to:

CLO1: Explain the principles of biomechanics, kinesiology and movement analysis applicable to physiotherapy.

CLO2: Analyze normal and pathological movement using biomechanical assessment tools and techniques.

CLO3: Apply principles of therapeutic exercises and manual therapy approaches in physiotherapy practice.

CLO4: Demonstrate understanding of electrodiagnostic procedures and advanced electrotherapeutic modalities.

CLO5: Integrate biomechanical concepts and therapeutic interventions for clinical decision-making and rehabilitation.

Program Learning Outcomes (PLOs):

PLO1: Demonstrate advanced knowledge and clinical competence in the specialty area of physiotherapy.

PLO2: Apply evidence-based practice and research principles in clinical decision-making.

PLO3: Design, implement and evaluate physiotherapy interventions using scientific principles.

PLO4: Demonstrate leadership, communication and interdisciplinary collaboration in professional practice.

PLO5: Utilize modern technology, assessment tools and therapeutic modalities for patient management.

PLO6: Uphold ethical, legal and professional standards in physiotherapy practice.

PLO7: Contribute to innovation and lifelong learning in physiotherapy.

Program Specific Outcomes (PSOs):

PSO1: Apply biomechanical principles for assessment and management of movement dysfunctions.

PSO2: Demonstrate competency in therapeutic exercise prescription and electrotherapeutic interventions.

PSO3: Integrate biomechanical analysis with clinical reasoning for effective physiotherapy management.

PSO4: Utilize advanced assessment tools and therapeutic techniques in rehabilitation practice.

Mapping:

CLO / PLO	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PSO1	PSO2	PSO3	PSO4
CLO1	3	2	3	2	3	2	2	3	2	3	3

MPT DEPARTMENT OF PHYSIOTHERAPY											
CLO2	3	3	3	2	3	2	2	3	3	3	3
CLO3	3	3	3	2	3	2	2	3	3	3	3
CLO4	3	3	3	2	3	2	2	2	3	3	3
CLO5	3	3	3	3	3	3	3	3	3	3	3

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Course Content

SECTION A – CONCEPTS OF BIOMECHANICS

BCT 1.1. Introduction to Kinesiology and Biomechanics. Biomechanics of tissues and structures of the musculoskeletal system.

BCT 1.2. Principle of Biomechanics.

BCT 1.3. Nature and importance of Biomechanics in Physiotherapy.

BCT 1.4. Methods of kinetics and kinematics investigation.

BCT 1.5. Introduction to biomechanical analysis of human motion.

BCT 1.6. Analytical tools and techniques –

1. Isokinetic Dynamometer.
2. Kinesiological EMG.
3. Electronic Goniometer.
4. Force Platform.
5. Videography.

BCT 1.7. Upper Extremity: Shoulder and Shoulder girdle, Elbow joint, Wrist joint and Hand.

BCT 1.8. Lower Extremity: Pelvic Girdle, Hip joint, Knee joint, Ankle & Foot.

BCT 1.9. Spine.

BCT 1.10. Gait.

BCT 1.11. Gait Analysis: Kinetic & Kinematic Analysis.

BCT 1.12. Pathological Gait: Kinetic & Kinematic Analysis.

BCT 1.13. Ergonomic approach to lifting and handling, workspace and environment. Patient positioning, body mechanics and transfer techniques.

SECTION B – PHYSIOTHERAPY TECHNIQUES

BCT 2.1. Principle of therapeutic exercises.

BCT 2.2. Definition, details of effects and uses of following exercises.

BCT 2.3. Dynamic Exercises.

BCT 2.4. Plyometric Exercises.

BCT 2.5. Isokinetic Exercises.

BCT 2.6. Kinetic chain exercises.

BCT 2.7. Balance and coordination exercises.

BCT 2.8. Biophysics of contractile and non-contractile tissues, Response to mechanical loading.

BCT 2.9. Clinical reasoning and differential clinical diagnosis based on various approaches such as Maitland, Kaltenborne, Cyriax, Mulligan, Mckenzie etc.

BCT 2.10. Proprioceptive Neuromuscular Facilitation.

BCT 2.11. Hydrotherapy Techniques.

BCT 2.12. Functional assessment and re-education.

BCT 2.13. Yoga: Introduction, Historical background and Origin of Yoga, Meaning and Concept of Yoga and its relationship with Physical Education and Sports, Yoga in Global Scenario, Pranayama: Meaning, Types and its importance. Asanas: Asanas- meaning, types, principles, Techniques of asanas and effects of asanas on various systems of the body - circulatory, respiratory and digestive system.

BCT 2.14. Electro diagnosis: Introduction to methods of electro diagnosis SD CURVE.

BCT 2.15. Electromyography: Technique of EMG, interpretation of normal and abnormal responses.

BCT 2.16. Nerve conduction studies: MNCV, SNCV, variables affecting nerve conduction, measurement of NCV of nerves of upper limb and lower limb, interpretations of normal and abnormal responses.

BCT 2.17. Evoked potentials, H-reflex, P wave, repetitive nerve stimulation, VEP, BAEP, SSEP, SSR.

BCT 2.18. Review of Principles underlying the application of following modalities with reference to their Production, biophysical and therapeutic effects, indications and contraindications and the specific uses of:

1. Superficial heating modalities.
2. Deep heating modalities.
3. Ultrasound.
4. Cryotherapy.

BCT 2.19. Review of Principles underlying the application of following modalities with reference to their Production, biophysical and therapeutic effects, indications and contraindications and the specific uses of Physiotherapy.

BCT 2.20. Low Frequency Current: Diadynamic Current, Iontophoresis.

BCT 2.21. High Voltage, Pulsed Galvanic Stimulation, TENS, IFT, Russian Currents, LASER.

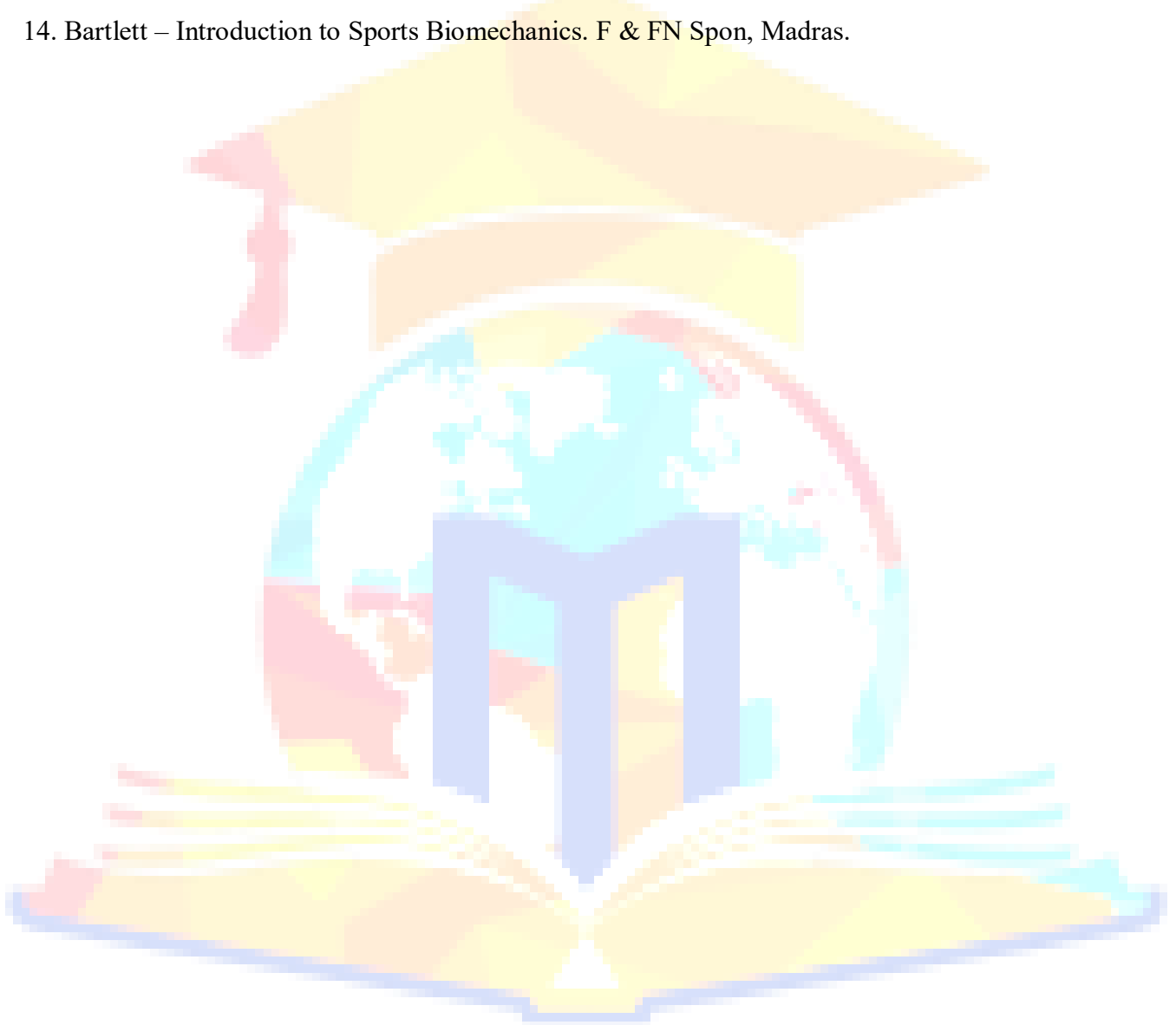
BCT 2.22. Advanced Electro Therapeutics in Tissue healing, Wound care, Management of Scars, Keloids, Muscle Plasticity & Integumentary Conditions.

BCT 2.23. BIO-FEED BACK.

Recommended Textbooks

1. James G. Hay – The Biomechanics of Sports Techniques. Prentice Hall.
2. Brunnstrom – Clinical Kinesiology. F.A. Davis.
3. Luttgens K., Hamilton N. – Kinesiology – Scientific Basis of Human Motion. Brown & Benchmark.
4. Kreighbaum E., Barthels K. – Biomechanics – A Qualitative Approach for Studying Human Motion. MacMillan.
5. Rasch and Burk – Kinesiology and Applied Anatomy. Lee and Fabiger.
6. White and Punjabi – Biomechanics of Spine. Lippincott.

7. Norkin & Levangie – Joint Structure and Function – A Comprehensive Analysis. F.A. Davis.
8. Kapandji – Physiology of Joints. Vol. I, II & III. W.B. Saunders.
9. Northrip et al. – Analysis of Sports Motion: Anatomic and Biomechanics Perspectives. W.C. Brown Co., Iowa.
10. LeVeau B.F. – Basic Biomechanics in Sports and Orthopedic Therapy. C.V. Mosby.
11. De Boer & Groot – Biomechanics of Sports. CRC Press, Florida.
12. Basmajian – Muscle Alive. Williams & Wilkins.
13. Nordin & Frankel – Basic Biomechanics of Musculoskeletal System. Williams & Wilkins.
14. Bartlett – Introduction to Sports Biomechanics. F & FN Spon, Madras.



CLINICAL, PHYSICAL AND FUNCTIONAL DIAGNOSIS IN MUSCULOSKELETAL PHYSIOTHERAPY

Course Code	M.P.T (MS)-104	L	P	C	Total sessions
Course Title	Clinical, Physical and Functional Diagnosis in Musculoskeletal Physiotherapy Speciality Paper 1	120	120	12	240
Pre-requisite	Knowledge of Human Anatomy, Physiology, Kinesiology, Biomechanics, Pathology, Orthopaedics, Exercise Therapy and Electrotherapy.				
Co-requisites	NIL				

Course Objective:

1. To develop advanced knowledge and skills in clinical, physical and functional assessment of musculoskeletal disorders.
2. To understand the principles of differential diagnosis and evidence-based clinical reasoning in musculoskeletal physiotherapy.
3. To acquire competency in selecting, performing and interpreting standardized musculoskeletal examination procedures.
4. To formulate physiotherapy diagnoses based on patient history, physical examination and functional assessment.
5. To integrate assessment findings for clinical decision-making and treatment planning in musculoskeletal physiotherapy.

Course Learning Outcomes (CLOs): On completion of this course, the students will be able to:

CLO1: Perform comprehensive clinical, physical and functional assessment of patients with musculoskeletal disorders.

CLO2: Analyze examination findings using evidence-based clinical reasoning and differential diagnosis.

CLO3: Select and interpret appropriate orthopedic tests, outcome measures and functional assessments.

CLO4: Formulate physiotherapy diagnoses and identify impairments, activity limitations and participation restrictions.

CLO5: Integrate assessment findings to develop patient-centered management plans for musculoskeletal conditions.

Program Learning Outcomes (PLOs):

PLO1: Demonstrate advanced knowledge and clinical competence in musculoskeletal physiotherapy.

PLO2: Apply evidence-based principles in clinical assessment and decision-making.

PLO3: Perform comprehensive patient evaluation and formulate appropriate physiotherapy diagnoses.

PLO4: Demonstrate leadership, communication and interdisciplinary collaboration.

PLO5: Utilize advanced assessment techniques and outcome measures in clinical practice.

PLO6: Uphold ethical and professional standards in physiotherapy practice.

PLO7: Engage in lifelong learning, research and continuous professional development.

Program Specific Outcomes (PSOs):

PSO1: Perform advanced musculoskeletal clinical examination and functional assessment.

PSO2: Apply clinical reasoning and differential diagnosis in musculoskeletal physiotherapy.

PSO3: Utilize evidence-based outcome measures for diagnosis and clinical decision-making.

PSO4: Formulate physiotherapy diagnoses and individualized rehabilitation plans for musculoskeletal disorders.

Mapping:

CLO / PLO	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PSO1	PSO2	PSO3	PSO4
CLO1	3	3	3	2	3	2	2	3	3	3	3
CLO2	3	3	3	2	3	2	2	3	3	3	3
CLO3	3	3	3	2	3	2	2	3	3	3	3
CLO4	3	3	3	3	3	3	2	3	3	3	3
CLO5	3	3	3	3	3	3	3	3	3	3	3

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Course Content**UNIT I – Clinical Decision Making and Physiotherapy Evaluation****Part I**

MCPFD 1.1. Clinical Decision Making – Planning Effective Treatment. Clinical decision making models, Team approach, Foundation for clinical decision making.

MCPFD 1.2. Vital Signs. Identification of reasons for monitoring vital signs; importance of monitoring vital signs; common techniques of monitoring vital signs; identification and analysis of normal values with that of abnormal values.

MCPFD 1.3. Principles and application of investigative and imaging techniques in Physiotherapy:

- Blood test
- Arterial Blood Gas (ABG) analysis
- Pulmonary Function Test (PFT)
- Radiological examination
- Computerized Tomography (CT)
- Magnetic Resonance Imaging (MRI)
- Ultrasonography (US)
- Electrocardiography (ECG)
- Dope testing

MCPFD 1.4. Evaluation, assessment and treatment planning strategies for musculoskeletal, neurological, cardiopulmonary, sports specific and other physiotherapy conditions: Principles of evaluation, clinical manifestations, general and specific clinical examination.

i. Physiotherapy assessment of the following:

- Range of motion (ROM)
- Tone
- Muscular strength and endurance
- Flexibility
- Coordination – Non-equilibrium test – Equilibrium test
- Sports specific skills
- Cardiac efficiency
- Sensory evaluation
- Functional Evaluation – Various scoring methods in functional assessment – Validity and reliability
- Fitness evaluation – Aerobic – Anaerobic

k. Spasm

l. Trigger Point

m. Tender Point

n. Spasm

ii. Assessment of cognitive, perceptual dysfunctions and vestibular dysfunction.

UNIT II – Electrodiagnosis and Electrophysiological Assessment**MCPFD 1.5. Electro-Diagnosis:**

- i. Characteristics and components of Electro therapeutic stimulation systems and Electrophysiological assessment devices.
- ii. Instrumentation for neuromuscular electrical stimulation.
- iii. Electrical properties of muscle and nerve.
- iv. Neurobiology of afferent pain transmission and central nervous system mechanisms of pain modulation.
- v. Electrical stimulation and circulation.

MCPFD 1.6. Clinical Electrophysiological testing: Instruments, Techniques and Interpretations of:

- a. Nerve conduction velocity including Repetitive Nerve Stimulation (RNS)
- b. Electromyography
- c. Bio-feedback technique
- d. Late responses

MCPFD 1.7. Concepts of electrophysiological studies in neuromuscular diseases as a diagnostic and therapeutic tool.**MCPFD 1.8. Evoked potentials – VEP, SSEP, MEP, BAEP.****UNIT III – Functional Diagnosis and Rehabilitation Assessment****Part II****MCPFD 2.1. Psychological aspects of rehabilitation in disability: Psychological tests.****MCPFD 2.2. Developmental Screening:**

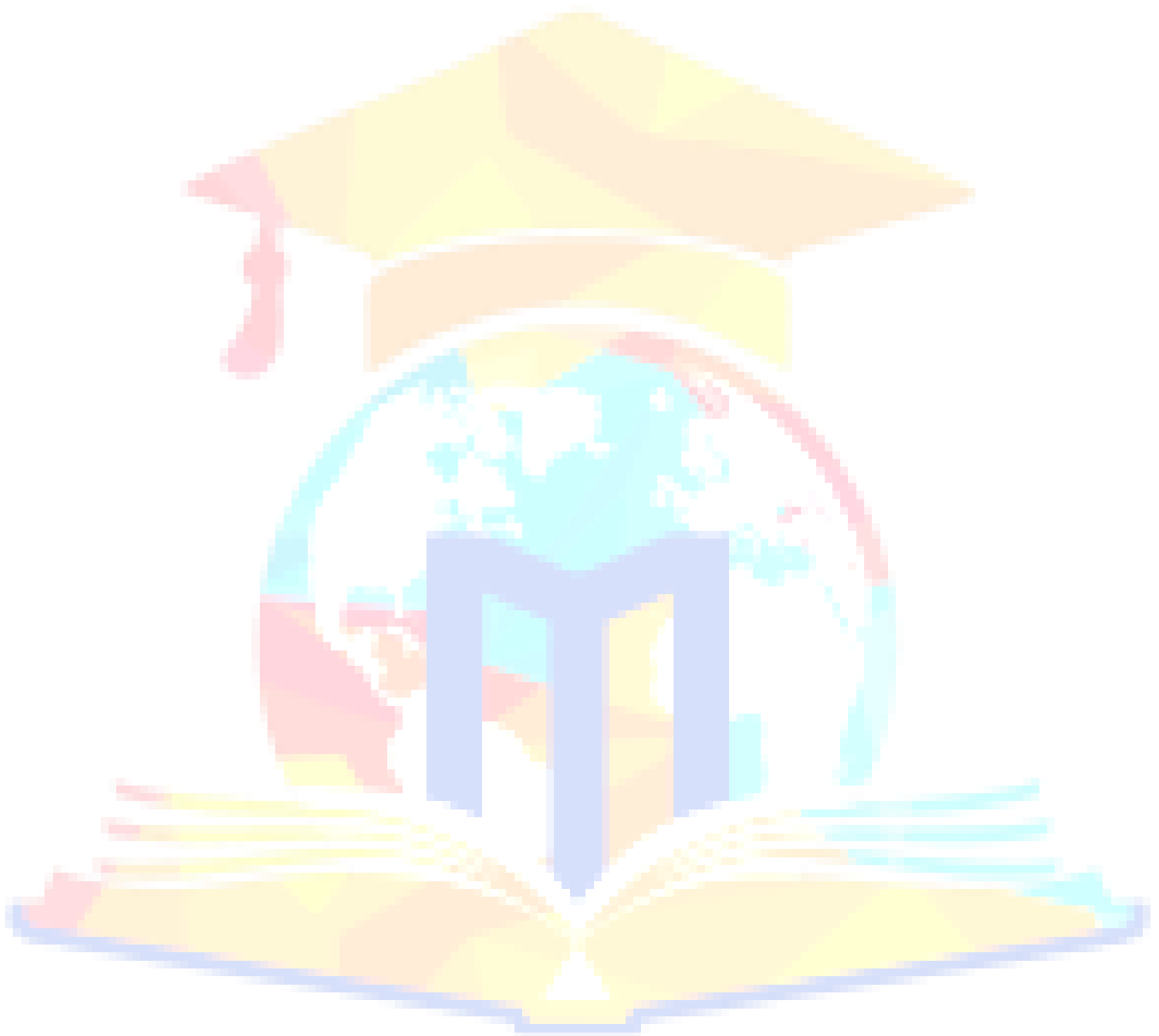
- i. Factors Motor control assessment.
- ii. Motor control theories/mechanism.
- iii. Patterns of normal development.
- iv. Specific procedures and tests used to assess motor control defects.

MCPFD 2.3. Anthropometry:

1. Body measurements – Height – Weight – Circumference.
 2. Body Proportion – Body Mass Index (BMI) – Waist Hip Ratio (WHR).
 3. Body Composition.
- i. Somatotyping.
 - ii. Methods of measurement:
 - a. Water displacement method for body fat.
 - b. Skin fold measurement.
 - c. Under water weighing.
 - d. Bioelectric Impedance Analysis (BIA).
- MCPFD 2.4. Differential diagnosis in Physiotherapy.**
-
- MCPFD 2.5.**
- i. Functional evaluation.
 - a. The concepts of health status impairment.
 - b. Functional limitations.
 - c. Disability and handicap.
 - d. Definition of functional activity and the purposes and components of the functional assessment.
 - e. Selection of activity and roles for an individual based on his or her capabilities and functional limitations.
 - ii. Various forms of functional tests.
 - a. Physical function test.
 - b. Multi-dimensional functional assessment instrument.
 - c. Identification of instrument for testing function.
 - iii. Various scoring methods used in functional assessment.
 - iv. Reliability and validity of various functional assessments.
- MCPFD 2.6. Evaluation of aging.**

Recommended Textbooks

1. Combined recommendations after speciality paper 3.



CLINICAL, PHYSICAL AND FUNCTIONAL DIAGNOSIS IN NEURO- PHYSIOTHERAPY (NCPFD)

Course Code	M.P.T (N)-104	L	P	C	Total sessions
Course Title	Clinical, Physical and Functional Diagnosis in Neuro-Physiotherapy (NCPFD) Speciality Paper 1	120	120	12	240
Pre-requisite	Knowledge of Human Anatomy, Neuroanatomy, Neurophysiology, Neurology, Exercise Therapy and Electrotherapy.				
Co-requisites	NIL				

Course Objective:

1. To develop advanced knowledge and skills in neurological clinical examination and physiotherapy diagnosis.
2. To understand the principles of neurological assessment, differential diagnosis and clinical reasoning.
3. To acquire competency in selecting and interpreting neurological outcome measures and diagnostic investigations.
4. To develop skills in assessment of movement dysfunction, balance, coordination and functional abilities in neurological disorders.
5. To integrate clinical findings into evidence-based physiotherapy diagnosis and treatment planning.

Course Learning Outcomes (CLOs): On completion of this course, the students will be able to:

CLO1: Perform comprehensive clinical, physical and functional assessment of patients with neurological disorders.

CLO2: Apply neurological examination techniques and differential diagnosis in physiotherapy practice.

CLO3: Select, administer and interpret standardized neurological outcome measures and functional assessments.

CLO4: Interpret electrophysiological investigations and diagnostic imaging relevant to neurological conditions.

CLO5: Integrate assessment findings to formulate physiotherapy diagnoses and individualized management plans.

Program Learning Outcomes (PLOs):

PLO1: Demonstrate advanced knowledge and clinical competence in neurological physiotherapy.

PLO2: Apply evidence-based principles in neurological assessment and management.

PLO3: Perform comprehensive patient evaluation and formulate physiotherapy diagnoses.

PLO4: Demonstrate leadership, communication and interdisciplinary collaboration.

PLO5: Utilize advanced assessment techniques and outcome measures in neurological physiotherapy.

PLO6: Uphold ethical and professional standards in physiotherapy practice.

PLO7: Engage in lifelong learning and research for professional advancement.

Program Specific Outcomes (PSOs):

PSO1: Perform advanced neurological clinical examination and functional assessment.

PSO2: Apply clinical reasoning and differential diagnosis in neuro-physiotherapy.

PSO3: Utilize evidence-based neurological outcome measures for clinical decision-making.

PSO4: Formulate physiotherapy diagnoses and individualized rehabilitation plans for neurological disorders.

Mapping:

CLO / PLO	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PSO1	PSO2	PSO3	PSO4
CLO1	3	3	3	2	3	2	2	3	3	3	3
CLO2	3	3	3	2	3	2	2	3	3	3	3
CLO3	3	3	3	2	3	2	2	3	3	3	3
CLO4	3	3	3	3	3	2	2	3	3	3	3
CLO5	3	3	3	3	3	3	3	3	3	3	3

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Course Content

UNIT I – Clinical and Functional Assessment in Neuro-Physiotherapy

SECTION – A

NCPFD 1.1. ICF conceptual framework.

NCPFD 1.2. Importance of assessment & evaluation, outlines of principles and methods of evaluation.

NCPFD 1.3. Need and types of documentation.

NCPFD 1.4. Critical decision making and selection of outcome measures in Musculoskeletal Physiotherapy.

NCPFD 1.5. Assessment, differential diagnosis and diagnosis of various Neurology conditions.

NCPFD 1.6. Associated functional disturbances of higher function and their testing.

NCPFD 1.7. Outcome measures used in Neuro-physiotherapy for:

- Cognitive impairment and disability.
- Focal disabilities.
- Global measures of disability.
- Motor impairment.
- ADL and extended ADL tests.
- Handicap and quality of life.
- Multiple Sclerosis.
- Parkinson's disease.
- Stroke.
- Head injury.
- Spinal cord injury.
- Pain scales.

NCPFD 1.8. Clinical analysis of posture, movement and gait, use of gait analyzer.

NCPFD 1.9. Principles, Techniques and interpretation of Pathological investigations and diagnostic imaging (CT, MRI, Ultra sound, PET, fMRI, bone scan and other diagnostic imaging) for diagnosis of neurological conditions.

NCPFD 1.10. Clinical examination and detection of movement dysfunction.

NCPFD 1.11. Evaluation of ANS dysfunction with reference to Psychophysiological testing.

NCPFD 1.12. Motor control assessment, reflexes and automatic reactions.

NCPFD 1.13. Neurodevelopment assessment.

UNIT II – Advanced Neurological Assessment

SECTION – B

NCPFD 2.1. Assessment of Hand Function.

NCPFD 2.2. Voluntary control assessment.

NCPFD 2.3. Neuropsychological tests.

NCPFD 2.4. Electrophysiological assessment devices – Instrumentation, Characteristics and components, EMG (Qualitative and Quantitative EMG), NCV, Conventional Methods, RNS, EPS, EEG related to neurological disorders with interpretation.

NCPFD 2.5. Physical disability evaluation and disability diagnosis.

NCPFD 2.6. Assessment of progressive locomotor disorder – Neuropathic, myopathic and NMJ conditions.

NCPFD 2.7. Assessment and scales for diagnosis of pain.

NCPFD 2.8. Biomarkers specific to neurological disorders.

NCPFD 2.9. Assessment of Emotional Intelligence.

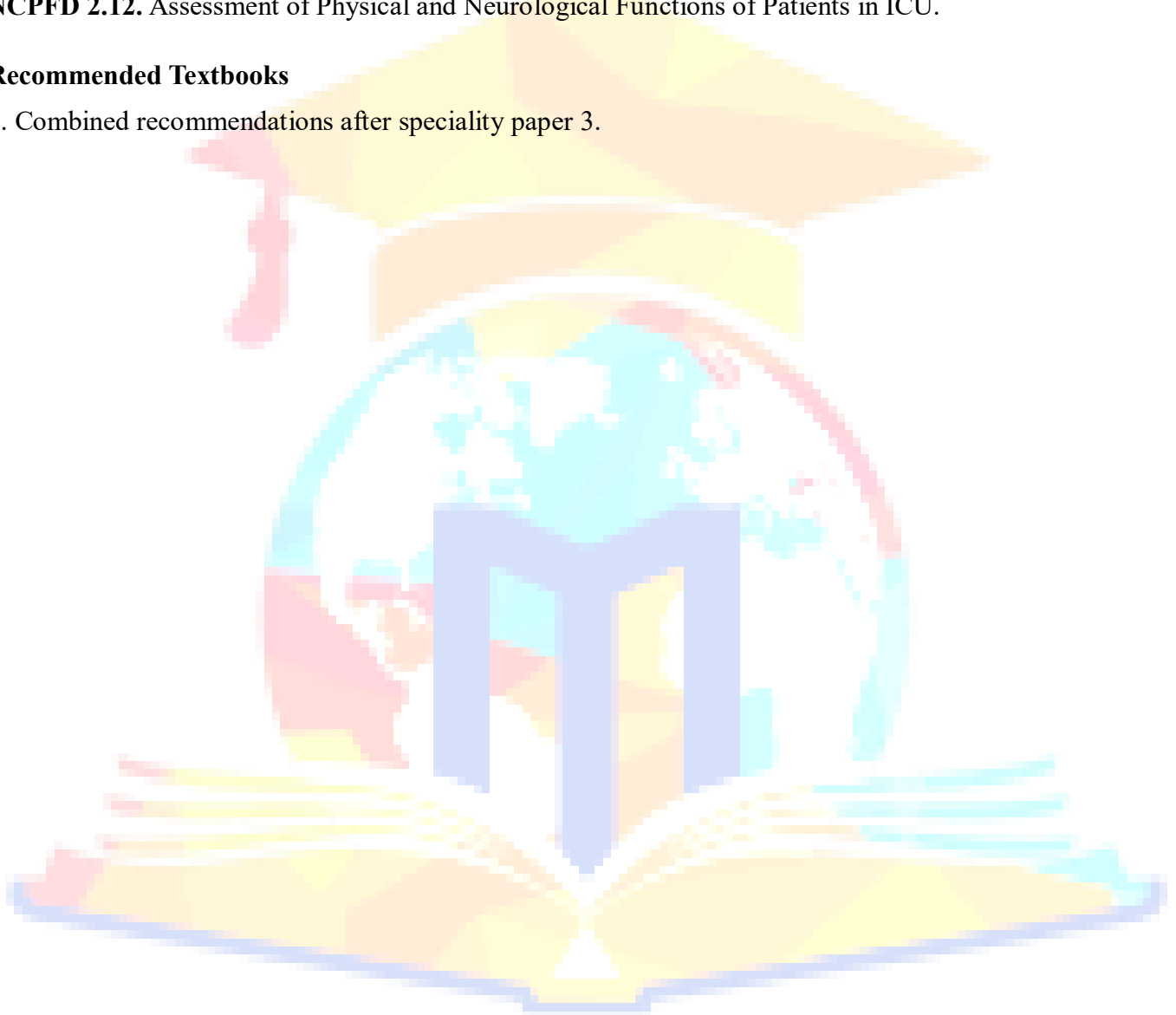
NCPFD 2.10. Assessment of Peripheral nerve injuries and Cranial nerve disorders.

NCPFD 2.11. Neurophysiology and evaluation of Balance and Coordination.

NCPFD 2.12. Assessment of Physical and Neurological Functions of Patients in ICU.

Recommended Textbooks

1. Combined recommendations after speciality paper 3.



CLINICAL, PHYSICAL AND FUNCTIONAL DIAGNOSIS IN CARDIO-PULMONARY PHYSIOTHERAPY (CCPFD)

Course CODE	M.P.T (CP)-104	L	P	C	Total sessions
Course Title	Clinical, Physical and Functional Diagnosis in Cardio-Pulmonary Physiotherapy (CCPFD) Speciality Paper 1	120	120	12	240
Pre-requisite	Knowledge of Human Anatomy, Physiology, Cardiovascular & Respiratory Physiotherapy, Exercise Therapy and Electrotherapy.				
Co-requisites	NIL				

Course Objective:

1. To develop advanced knowledge and skills in clinical, physical and functional assessment of cardiovascular and pulmonary disorders.
2. To understand the principles of differential diagnosis and evidence-based clinical reasoning in cardio-pulmonary physiotherapy.
3. To acquire competency in selecting, performing and interpreting cardio-pulmonary assessment procedures and investigations.
4. To formulate physiotherapy diagnoses based on patient history, physical examination and diagnostic findings.
5. To integrate assessment findings into clinical decision-making and treatment planning in cardio-pulmonary physiotherapy.

Course Learning Outcomes (CLOs): On completion of this course, the students will be able to:

CLO1: Perform comprehensive clinical, physical and functional assessment of patients with cardiovascular and pulmonary disorders.

CLO2: Apply differential diagnosis and clinical reasoning in cardio-pulmonary physiotherapy practice.

CLO3: Select, administer and interpret appropriate diagnostic investigations, outcome measures and exercise testing.

CLO4: Evaluate critically ill, pediatric and geriatric cardio-pulmonary patients using standardized assessment methods.

CLO5: Integrate clinical findings to formulate physiotherapy diagnoses and individualized management plans.

Program Learning Outcomes (PLOs):

PLO1: Demonstrate advanced knowledge and clinical competence in cardio-pulmonary physiotherapy.

PLO2: Apply evidence-based principles in clinical assessment and management.

PLO3: Perform comprehensive patient evaluation and formulate physiotherapy diagnoses.

PLO4: Demonstrate leadership, communication and interdisciplinary collaboration.

PLO5: Utilize advanced assessment techniques and diagnostic investigations in cardio-pulmonary physiotherapy.

PLO6: Uphold ethical and professional standards in physiotherapy practice.

PLO7: Engage in lifelong learning and research for professional advancement.

Program Specific Outcomes (PSOs):

PSO1: Perform advanced cardio-pulmonary clinical examination and functional assessment.

PSO2: Apply clinical reasoning and differential diagnosis in cardio-pulmonary physiotherapy.

PSO3: Utilize evidence-based outcome measures and diagnostic investigations for clinical decision-making.

PSO4: Formulate physiotherapy diagnoses and individualized rehabilitation plans for cardio-pulmonary disorders.

Mapping:

CLO / PLO	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PSO1	PSO2	PSO3	PSO4
CLO1	3	3	3	2	3	2	2	3	3	3	3
CLO2	3	3	3	2	3	2	2	3	3	3	3
CLO3	3	3	3	2	3	2	2	3	3	3	3
CLO4	3	3	3	3	3	2	2	3	3	3	3
CLO5	3	3	3	3	3	3	3	3	3	3	3

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Course Content

UNIT I – Clinical and Functional Assessment in Cardio-Pulmonary Physiotherapy

SECTION – A

CCPFD 1.1. ICF conceptual framework.

CCPFD 1.2. Importance of assessment & evaluation, Outlines of principles and Methods of evaluation. Need and types of Documentation.

CCPFD 1.3. Critical decision making and selection of outcome measures in cardio-pulmonary Physiotherapy.

CCPFD 1.4. GENERAL: Review of Anatomy, Embryology and Epidemiology of cardio-vascular, pulmonary and lymphatic pulmonary system.

CCPFD 1.5. Role of cardio-respiratory therapist in patient assessment.

1. Patient clinician interaction and communication with assessment findings.
2. Confidentiality, concern and universal precautions.
3. A detailed and comprehensive cardio-respiratory health history.
4. Assessment standards, common scales, questionnaire indices used for patients with cardio-pulmonary dysfunction.

CCPFD 1.6. Detailed assessment of cardio-vascular and pulmonary symptoms (dyspnea, cough, sputum production, hemoptysis, clubbing, cyanosis, chest pain, syncope, fever, night sweating, headaches, altered sensorium, personality changes).

CCPFD 1.7. Vital signs assessment.

1. Obtaining vital signs, clinical impressions.
2. General clinical presentation.
3. Temperature.
4. Pulse including the peripheral pulses.
5. Blood pressure.
6. Respiratory rate.

CCPFD 1.8. Fundamentals of physical examination with diagnosis in cardiovascular and respiratory Physiotherapy.

1. Examination of head and neck.
2. Lung topography – thoracic cage landmarks.
3. Examination of Thorax/pulmonary system.
4. Examination of Precordium/cardiac system.
5. Examination of Abdomen.
6. Examination of Extremities.

CCPFD 1.9. Assessment of neonatal and pediatric patients – newborn, critically ill infants, older infants and child.

CCPFD 1.10. Comprehensive geriatric assessment – age related sensory deficits, cardio-respiratory deficits and diagnostic tests, standard scales and questionnaires used in geriatric assessment.

CCPFD 1.11. Nutritional assessment of patients with cardio-respiratory diseases.

CCPFD 1.12. Fitness assessment.

1. Anthropometric and biophysical measurement and body composition.
2. Flexibility tests and standards.
3. Muscle strength and standards.
4. Endurance tests and standards.
5. Agility tests and coordination tests.

CCPFD 1.13. Exercise testing and standardization and interpretation.

1. TMT protocols – Maximal and submaximal protocols.
2. Field protocols.
3. Bicycle protocols.
4. Step test protocols.
5. Six minute walk test.
6. Protocols for pediatric and geriatric population.

CCPFD 1.14. Interpretation and clinical relevance of investigations in cardio-pulmonary Physiotherapy.

1. Clinical laboratory studies – hematology, microbiology, urine analysis, histology, pathology.
2. Pulmonary function tests – normal values.
3. Spirometry, arterial blood gas analysis and its interpretation in cardio-respiratory Physiotherapy, capnography and pulse oximetry and its relevance in cardio-pulmonary Physiotherapy.
4. Clinical application of chest radiograph – chest X-ray, examination, views; Computed Tomography, Magnetic Resonance Imaging, Lung scans – PET scan. Evaluation of chest radiography – clinical and radiographic findings in cardio-pulmonary disorders and its relevance in cardio-pulmonary Physiotherapy.
5. Laboratory and bedside interpretation of ECG findings – interpretation of normal and abnormal ECGs and its importance in cardio-respiratory Physiotherapy and various ECG patterns in cardiac and lung disease.
6. Cardio-respiratory monitoring in critically ill patients including patients with artificial airways.
 - i. Ventilator assessment and evaluation of oxygenation in ICU.
 - ii. Assessment of cardiac output in ICU.
 - iii. Assessment of haemodynamic pressures in ICU.
 - iv. Clinical diagnosis in cardio-respiratory disorders in intensive care.

UNIT II – Advanced Cardio-Pulmonary Assessment

SECTION – B

CCPFD 2.1. Blood flow studies – arteriography, venography, Color Doppler, ANS testing and interpretation used in cardio-respiratory Physiotherapy and edema evaluation and interpretation.

CCPFD 2.2. Cardio-respiratory assessment and diagnosis of patient on mechanical ventilator and interpretation of graphical forms, weaning modes and indices.

CCPFD 2.3. Risk factor stratification, disability evaluation with reference to cardio-vascular and pulmonary disorders.

CCPFD 2.4. Psychological evaluation with reference to stress and anxiety in cardio-pulmonary disorders. Evaluation of stress and anxiety using various scales and questionnaires.

CCPFD 2.5. Outcome measures used in Cardio-vascular and Pulmonary Physiotherapy.

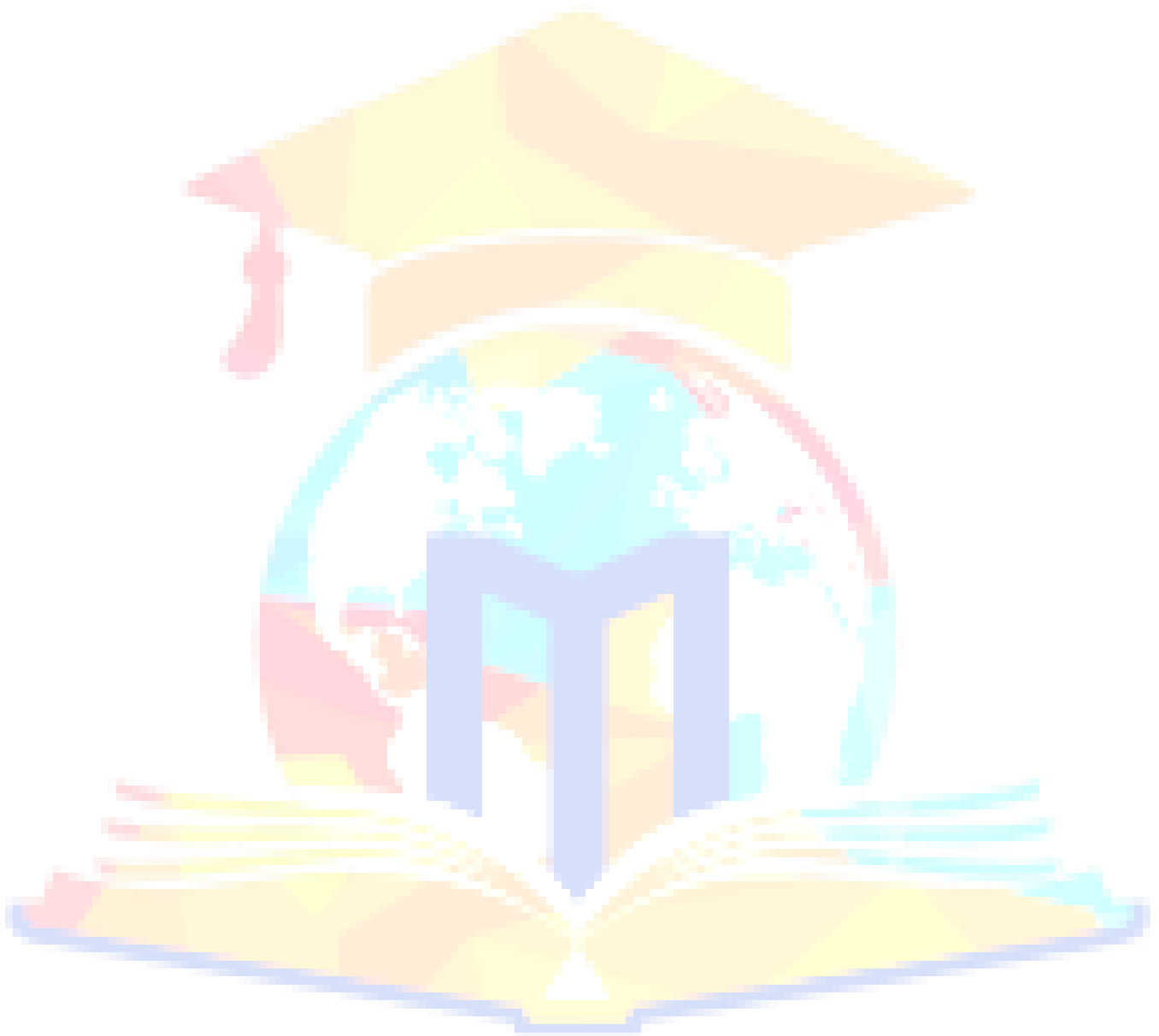
CCPFD 2.6. Cardio-pulmonary Exercise Testing, VO_2 max, METs – its importance in calculating energy expenditure and physical activities.

CCPFD 2.7. Calculating energy expenditure using calorimetry method, various formulae and equations with emphasis on its importance in prescribing exercise in various patient population.

CCPFD 2.8. Evaluation and diagnosis of sleep and breathing disorders.

Recommended Textbooks

1. Combined recommendations after speciality paper 3.



SPORTS TRAUMATOLOGY (STT)

Course CODE	M.P.T (S)-104	L	P	C	Total sessions
Course Title	Sports Traumatology (STT) Speciality Paper 1	120	120	12	240
Pre-requisite	Knowledge of Human Anatomy, Biomechanics, Exercise Therapy, Orthopaedics and Sports Physiotherapy.				
Co-requisites	NIL				

Course Objective:

1. To develop advanced knowledge and skills in assessment and diagnosis of sports injuries.
2. To understand mechanisms, prevention and management of sports-related injuries.
3. To acquire competency in pre-participation screening, emergency care and sports injury evaluation.
4. To develop clinical reasoning and decision-making skills in sports traumatology.
5. To integrate biomechanical analysis, functional assessment and rehabilitation planning in sports physiotherapy.

Course Learning Outcomes (CLOs): On completion of this course, the students will be able to:

CLO1: Perform comprehensive assessment and diagnosis of sports injuries using clinical examination and diagnostic investigations.

CLO2: Identify risk factors and conduct pre-participation screening and fitness evaluation for athletes.

CLO3: Apply evidence-based principles in prevention and management of acute and overuse sports injuries.

CLO4: Demonstrate competency in emergency assessment, first aid and on-field management of sports injuries.

CLO5: Integrate biomechanical analysis and sports-specific rehabilitation strategies into clinical practice.

Program Learning Outcomes (PLOs):

PLO1: Demonstrate advanced clinical competence in sports physiotherapy.

PLO2: Apply evidence-based principles in sports injury assessment and management.

PLO3: Design and implement comprehensive rehabilitation programmes for athletes.

PLO4: Demonstrate leadership, communication and interdisciplinary collaboration in sports medicine.

PLO5: Utilize advanced assessment techniques and technologies in sports physiotherapy.

PLO6: Uphold ethical and professional standards in physiotherapy practice.

PLO7: Engage in lifelong learning, research and professional development.

Program Specific Outcomes (PSOs):

PSO1: Perform advanced sports injury assessment and diagnosis.

PSO2: Apply clinical reasoning and evidence-based management of sports injuries.

PSO3: Design individualized rehabilitation programmes for athletes.

PSO4: Utilize advanced assessment techniques and biomechanical analysis in sports physiotherapy.

Mapping:

CLO / PLO	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PSO1	PSO2	PSO3	PSO4
CLO1	3	3	3	2	3	2	2	3	3	3	3
CLO2	3	3	3	2	3	2	2	3	3	3	3
CLO3	3	3	3	2	3	2	2	3	3	3	3

CLO4	3	3	3	3	3	2	2	3	3	3	3
CLO5	3	3	3	3	3	3	3	3	3	3	3

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Course Content

UNIT I – Assessment and Diagnosis in Sports Traumatology

SECTION – A

STT 1.1. ICF conceptual frame work

1. Importance of assessment & evaluation, Outlines of principles and Methods of evaluation. Need and types of Documentation.
2. Critical decision making and selection of outcome measures in Sports Physiotherapy.
3. Investigative Procedures. Diagnostic imaging (CT, MRI, Ultra sound, bone scan and other diagnostic imaging's) for diagnosis of congenital anomalies and normal variants, traumatic injuries, scoliosis, degenerative disorders and infections.
4. Principles of pathological investigations and imaging techniques related to musculoskeletal disorders with interpretation. Causes & Mechanism of Sports Injuries.

STT 1.2. Evaluation of Risk Factors and Pre-Participation Examination

1. Components of pre-participation evaluation, Scope and implementation of pre-participation program in Sports Physiotherapy.
2. Evaluation of Physical Fitness: Assessment of components of physical fitness including functional tests: muscle strength, flexibility, agility, balance, co-ordination, sensory deficits, cardio-pulmonary endurance.
3. Sports-specific evaluation and criteria for return to sport.
4. Examination of Lower Limb:
 - o i. Pelvis
 - o ii. Hip
 - o iii. Thigh
 - o iv. Knee
 - o v. Leg
 - o vi. Ankle and Foot
5. Examination of Upper Extremity:
 - o i. Shoulder girdle
 - o ii. Shoulder
 - o iii. Arm
 - o iv. Elbow & Forearm
 - o v. Wrist and Hand
6. Assessment of Vertebral Column:
 - o i. Cervical
 - o ii. Thoracic
 - o iii. Lumbosacral including Tests of Neural Tension
7. Sporting Emergencies Screening:
 - o i. Head and Neck
 - o ii. Face
 - o iii. Abdominal injuries
8. Anthropometric evaluation.
9. Kinesiological EMG.

UNIT II – Sports Injury Management

SECTION – B

STT 2.1. Causes & Mechanism of Sports Injuries.

STT 2.2. Prevention of Sports Injuries.

STT 2.3. Principle of Management of Sports Injuries.

STT 2.4. Common acute and overuse injuries, causation, prevention and management of Lower Extremity in Sports Physiotherapy.

STT 2.5. Common acute and overuse injuries, causation, prevention and management of Upper Extremity in Sports Physiotherapy.

STT 2.6. Common sports injuries of spine with respect to causation, prevention and management.

STT 2.7. Sporting emergencies first aid.

STT 2.8. Emergency Medical Planning and Cover for Sports Events.

STT 2.9. Emergency situations, Primary and secondary emergency assessment, emergency plan, Transportation of an injured person.

STT 2.10. Treatment of collapsed athlete – Severe head injury, Athlete with spinal injury.

STT 2.11. Causes of Collapse.

STT 2.12. Sports-specific injuries, with special emphasis on the specific risk factor, nature of Sports.

STT 2.13. Biomechanical Analysis of Skills, kind of medical intervention anticipated and prevention with respect to various sporting events.

- i. Individual events: Field & Track
- ii. Team events
- iii. Contact and Non-contact sports
- iv. Water sports

Recommended Textbooks

1. Combined recommendations after speciality paper 3.

CLINICAL, PHYSICAL & FUNCTIONAL DIAGNOSIS IN PEDIATRIC & NEONATAL PHYSIOTHERAPY (PCPFD)

Course CODE	M.P.T (P)-104	L	P	C	Total sessions
Course Title	Clinical, Physical & Functional Diagnosis in Pediatric & Neonatal Physiotherapy (PCPFD) Speciality Paper 1	120	120	12	240
Pre-requisite	Knowledge of Human Anatomy, Physiology, Developmental Pediatrics, Neurology, Musculoskeletal and Cardio-respiratory Physiotherapy.				
Co-requisites	NIL				

Course Objective:

1. To develop advanced knowledge in clinical, physical and functional diagnosis of pediatric and neonatal disorders.
2. To understand developmental assessment and differential diagnosis in pediatric physiotherapy.
3. To acquire competency in pediatric clinical examination, developmental screening and outcome assessment.
4. To interpret diagnostic investigations and functional evaluation in pediatric disorders.
5. To develop evidence-based clinical reasoning in pediatric physiotherapy practice.

Course Learning Outcomes (CLOs): On completion of this course, the students will be able to:

CLO1: Perform comprehensive clinical, physical and functional assessment of pediatric and neonatal disorders.

CLO2: Interpret developmental milestones, screening tools and outcome measures used in pediatric physiotherapy.

CLO3: Analyze diagnostic imaging, electrodiagnostic investigations and laboratory findings relevant to pediatric disorders.

CLO4: Perform physical fitness, disability and functional evaluations for pediatric conditions.

CLO5: Apply clinical reasoning to establish physiotherapy diagnosis and management planning for pediatric disorders.

Program Learning Outcomes (PLOs):

PLO1: Demonstrate advanced clinical competence in pediatric physiotherapy.

PLO2: Apply evidence-based assessment and diagnostic principles.

PLO3: Design comprehensive pediatric rehabilitation programmes.

PLO4: Demonstrate effective communication and interdisciplinary collaboration.

PLO5: Utilize advanced pediatric assessment tools and technologies.

PLO6: Uphold ethical and professional standards in pediatric physiotherapy.

PLO7: Engage in lifelong learning and research.

Program Specific Outcomes (PSOs):

PSO1: Demonstrate competency in pediatric clinical and functional diagnosis.

PSO2: Apply developmental assessment and evidence-based pediatric evaluation.

PSO3: Design individualized assessment protocols for pediatric disorders.

PSO4: Utilize advanced diagnostic and functional assessment techniques in pediatric physiotherapy.

Mapping:

CLO / PLO	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PSO1	PSO2	PSO3	PSO4
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CLO1	3	3	3	2	3	2	2	3	3	3	3
CLO2	3	3	3	2	3	2	2	3	3	3	3
CLO3	3	3	3	2	3	2	2	3	3	3	3
CLO4	3	3	3	2	3	2	2	3	3	3	3
CLO5	3	3	3	3	3	3	3	3	3	3	3

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Course Content

UNIT I – Clinical, Physical and Functional Diagnosis in Pediatric & Neonatal Physiotherapy

SECTION – A

PCPFD 1.1. Review of Embryology.

PCPFD 1.2. Maturation, patho-physiological & recovery process in the CNS.

PCPFD 1.3. Genetic basis of pediatric disorders.

PCPFD 1.4. Pain assessment in neonates & children.

PCPFD 1.5. Patho-mechanics and clinical biomechanics of posture and movement in various pediatric conditions.

PCPFD 1.6. Analysis and diagnosis of functional mechanics and patho-mechanics of gait in children.

PCPFD 1.7. Principles, procedure, interpretation and significance of Diagnostic Imaging (CT, MRI, Ultrasound, Bone Scan, PET Scan, fMRI) for clinical and functional diagnosis in various orthopedic, cardio-respiratory and neurological conditions in children.

PCPFD 1.8. Clinical examination in general and physical and functional diagnosis for detection of movement dysfunction.

PCPFD 1.9. Principles of pathological investigations, Electro-diagnosis and its interpretation related to common pediatric disorders – Laboratory investigations, clinical tests (EEG, ECG, Evoked Potentials, Qualitative and Quantitative EMG, NCV & Biofeedback).

PCPFD 1.10. Evaluation of typical and atypical development of children in various domains of development (Gross, Fine, Cognitive, Speech & Language, Personal Social and Adaptive functions).

PCPFD 1.11. Evaluation, epidemiology, symptomatology and patho-physiology of common pediatric congenital, cardio-respiratory, neurological and musculoskeletal disorders.

PCPFD 1.12. Clinical, physical and functional diagnosis of developmental disorders.

PCPFD 1.13. Neurodevelopment assessment.

PCPFD 1.14. Hand Function – Assessment and diagnosis.

PCPFD 1.15. Theories of Motor Control and Motor Learning processes.

PCPFD 1.16. Principles, administration and interpretation of Developmental Screening Tools.

UNIT II – Pediatric Functional Evaluation and Disability Assessment

SECTION – B

PCPFD 2.1. Voluntary control assessment.

PCPFD 2.2. Outcome measures used in Pediatric Physiotherapy.

PCPFD 2.3. Pre and post-surgical physiotherapeutic (Physical and Functional) evaluation for various surgical conditions in children.

PCPFD 2.4. Anthropometric measurements in children – Principles, methods, normal values for different ages, deviation and its clinical and functional significance.

PCPFD 2.5. Exercise testing & Physical fitness assessment in children with & without disability (Range of Motion, Muscle Strength, Endurance and Skills, Body Composition, Cardiac Efficiency Tests and Spirometry).

PCPFD 2.6. Fitness evaluation in children for sports.

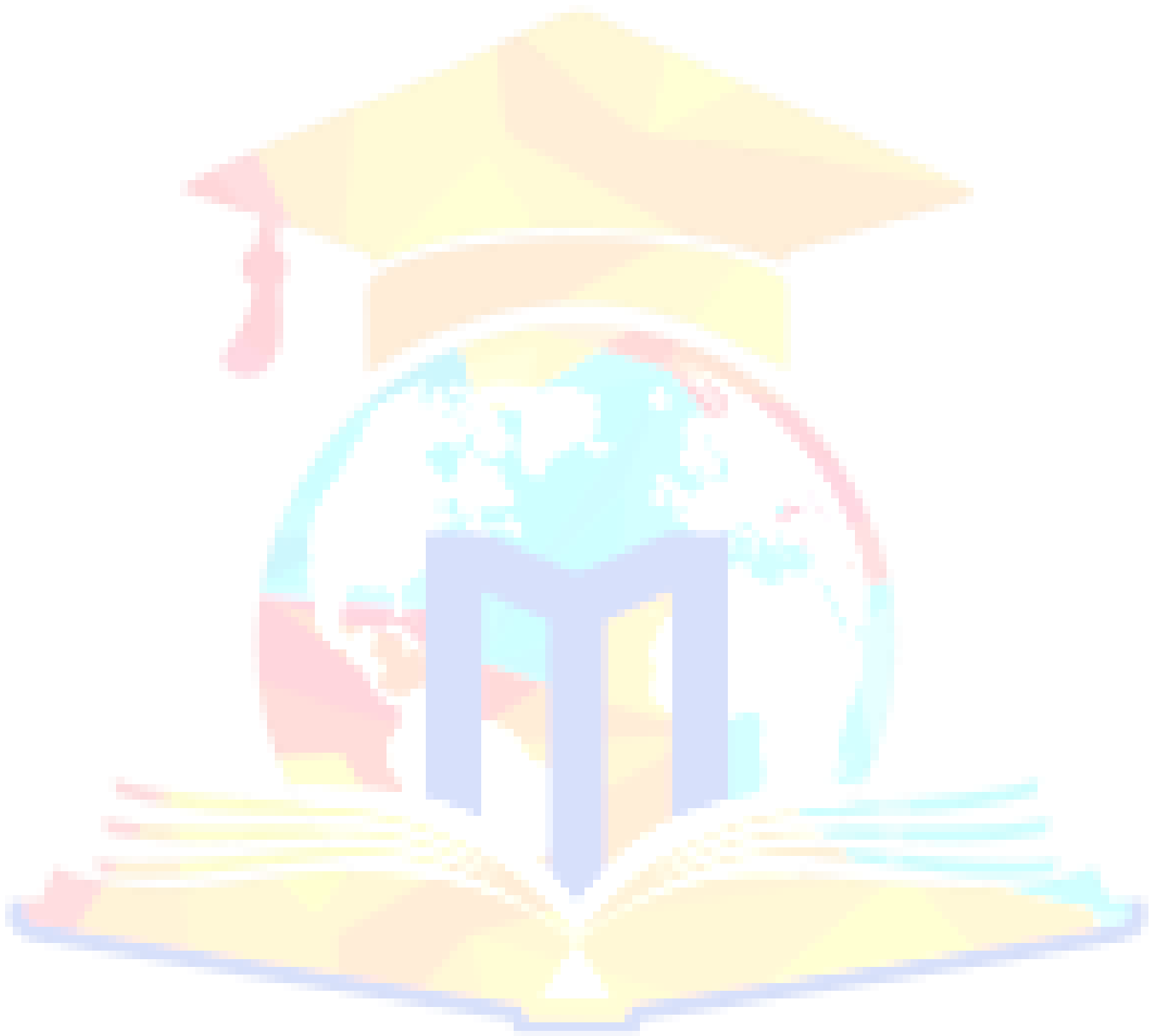
PCPFD 2.7. Physical and functional assessment for Aids, Appliances & Adaptive Devices in Pediatric disorders.

PCPFD 2.8. Physical disability evaluation and disability diagnosis.

PCPFD 2.9. Assessment of various pediatric medical and surgical conditions.

Recommended Textbooks

1. Combined recommendations after speciality paper 3.



CLINICAL, PHYSICAL & FUNCTIONAL DIAGNOSIS IN OBG PHYSIOTHERAPY (OGCPFD)

Course CODE	M.P.T (OG)-104	L	P	C	Total sessions
Course Title	Clinical, Physical & Functional Diagnosis in OBG Physiotherapy (OGCPFD) Speciality Paper 1	120	120	12	240
Pre-requisite	Knowledge of Human Anatomy, Physiology, Obstetrics & Gynecology, Musculoskeletal Physiotherapy and Women's Health Physiotherapy.				
Co-requisites	NIL				

Course Objective:

1. To develop advanced knowledge in clinical, physical and functional diagnosis of obstetric and gynecological conditions.
2. To understand physiological and pathological changes during pregnancy, labor, puerperium and menopause.
3. To acquire competency in assessment, diagnosis and interpretation of investigations related to women's health.
4. To develop clinical reasoning skills in physiotherapy diagnosis of obstetric and gynecological disorders.
5. To integrate evidence-based assessment and diagnostic principles in women's health physiotherapy.

Course Learning Outcomes (CLOs): On completion of this course, the students will be able to:

CLO1: Perform comprehensive clinical, physical and functional assessment of obstetric and gynecological conditions.

CLO2: Interpret anatomical, physiological and pathological changes associated with pregnancy, labor, puerperium and women's health disorders.

CLO3: Analyze diagnostic investigations, imaging techniques and outcome measures used in OBG physiotherapy.

CLO4: Evaluate urogynecological dysfunctions, menopausal disorders and musculoskeletal problems affecting women.

CLO5: Apply clinical reasoning in physiotherapy diagnosis and functional assessment of women's health conditions.

Program Learning Outcomes (PLOs):

PLO1: Demonstrate advanced clinical competence in Women's Health Physiotherapy.

PLO2: Apply evidence-based assessment and diagnostic principles.

PLO3: Design comprehensive rehabilitation programmes for obstetric and gynecological conditions.

PLO4: Demonstrate effective communication and interdisciplinary collaboration.

PLO5: Utilize advanced assessment techniques and technologies in women's health physiotherapy.

PLO6: Uphold ethical and professional standards in physiotherapy practice.

PLO7: Engage in lifelong learning and research.

Program Specific Outcomes (PSOs):

PSO1: Demonstrate competency in clinical, physical and functional diagnosis of obstetric and gynecological conditions.

PSO2: Apply evidence-based assessment and diagnostic principles in women's health physiotherapy.

PSO3: Design individualized assessment protocols for obstetric and gynecological disorders.

PSO4: Utilize advanced diagnostic techniques and outcome measures in women's health physiotherapy.

Mapping:

CLO / PLO	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PSO1	PSO2	PSO3	PSO4
CLO1	3	3	3	2	3	2	2	3	3	3	3
CLO2	3	3	3	2	3	2	2	3	3	3	3
CLO3	3	3	3	2	3	2	2	3	3	3	3
CLO4	3	3	3	2	3	2	2	3	3	3	3
CLO5	3	3	3	3	3	3	3	3	3	3	3

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Course Content

UNIT I – Clinical, Physical & Functional Diagnosis in Obstetrics and Gynecology

SECTION – A

OGCPFD 1.1. GENERAL ANATOMY AND PHYSIOLOGY OBG

1. Anatomy of female reproductive system and abdominal wall.
2. Contents of the pelvic cavity – Pelvic diaphragm, Pelvic floor muscles, Perineum and external genitalia.
3. Pelvic axis, position, obstetric diameters and shape, abnormal bony pelvis.
4. Clinical biomechanics and patho-mechanics of spine, female pelvis, posture, movement and gait.
5. Ovulation induction, Ovarian function, clinical aspects of ovulation.
6. Premenstrual syndrome.
7. Polycystic ovarian syndrome.
8. Menstrual cycle and other clinical phenomena such as amenorrhea, dysmenorrhea, hemorrhagia, polymenorrhea, oligomenorrhea and hypothalamic pituitary dysfunction.

OGCPFD 1.2. PREGNANCY, LABOR AND PUERPERIUM

1. Preconception health, factors affecting conception.
2. Conception.
3. Physiological changes during pregnancy.
4. Physiology of labor.
5. Physiological changes and physical problems in puerperium.
6. Injuries of uterine support & pelvic joints during labor, Repair of perineum after delivery.
7. Anatomical & physiological changes during postpartum period.

OGCPFD 1.3. CONTRACEPTION, STERILIZATION AND FERTILITY

1. Injectable and implantable contraception.
2. Intra uterine devices.
3. Abortion and Miscarriage.
4. MTP and sterilization.
5. Fertility, infertility, sub fertility.

OGCPFD 1.4. Role of Physiotherapy in High-Risk Pregnancy

1. Abortion, ectopic pregnancy.
2. Heart disease in pregnancy assessment.
3. Diabetes mellitus in pregnancy.
4. UTI in pregnancy.
5. HIV in pregnancy.

6. Trauma in pregnancy.
7. Hypertension in pregnancy.
8. Gastrointestinal disorders in pregnancy.
9. Viral exposure during pregnancy.
10. Vaginal birth after cesarean section.

OGCPFD 1.5. UROGYNAECOLOGY SYSTEM

1. Review of mechanism of continence and voiding difficulties.
2. Review of sexual dysfunction in Urogynecology.
3. Assessment of urinary bladder dysfunction.
4. Genital prolapse, assessment and diagnosis.
5. Other displacements of uterus, assessment and diagnosis.
6. Overactive bladder syndrome, assessment and diagnosis.

UNIT II – Assessment and Investigations in Women's Health Physiotherapy SECTION – B

OGCPFD 2.1. THE AGEING FEMALE

1. Anatomical, physiological & psychological changes of menopause.
2. Assessment and diagnosis of senile osteoporosis & related complications.
3. The climacteric – assessment and diagnosis.

OGCPFD 2.2. INVESTIGATIONS IN OBSTETRICS AND GYNECOLOGY WITH INTERPRETATION

1. Pregnancy tests and investigations.
2. Imaging techniques in Obstetrics and Gynecology.
3. Urodynamics investigations.
4. Investigations in endocrinal disorders in females.
5. Instrumentation for assessment of pelvic floor muscles – Perineometer.
6. Outcome measures in OBG Physiotherapy.

OGCPFD 2.3. MISCELLANEOUS

1. Antenatal Physiotherapy assessment.
2. Postnatal Physiotherapy assessment.
3. Breast function, disorders and assessment.
4. Abdominal incisions & assessment.
5. Anthropometric measurements.
6. Assessment, clinical tests and diagnosis of movement dysfunction and other musculoskeletal dysfunctions during pregnancy and postpartum period.

Recommended Textbooks

1. Combined recommendations after speciality paper 3.

CLINICAL, PHYSICAL & FUNCTIONAL DIAGNOSIS IN ONCOLOGY PHYSIOTHERAPY (OCPFD)

Course CODE	M.P.T (O)-104	L	P	C	Total sessions
Course Title	Clinical, Physical & Functional Diagnosis in Oncology Physiotherapy (OCPFD) Speciality Paper 1	120	120	12	240
Pre-requisite	Knowledge of Human Anatomy, Physiology, Pathology, Oncology, Exercise Therapy and Physiotherapy Assessment.				
Co-requisites	NIL				

Course Objective:

1. To develop advanced knowledge in clinical, physical and functional diagnosis of oncology conditions.
2. To understand assessment methods, differential diagnosis and evaluation of cancer-related impairments.
3. To acquire competency in interpretation of diagnostic investigations used in oncology.
4. To develop clinical reasoning skills in physiotherapy diagnosis of oncology conditions.
5. To integrate evidence-based assessment principles in oncology physiotherapy.

Course Learning Outcomes (CLOs): On completion of this course, the students will be able to:

CLO1: Perform comprehensive clinical, physical and functional assessment of oncology conditions.

CLO2: Interpret diagnostic imaging, pathological investigations and laboratory findings relevant to oncology physiotherapy.

CLO3: Evaluate functional impairments, disability and quality of life in cancer patients.

CLO4: Assess complications associated with cancer and its medical management.

CLO5: Apply clinical reasoning in physiotherapy diagnosis and functional evaluation of oncology patients.

Program Learning Outcomes (PLOs):

PLO1: Demonstrate advanced clinical competence in Oncology Physiotherapy.

PLO2: Apply evidence-based assessment and diagnostic principles.

PLO3: Design comprehensive rehabilitation programmes for oncology patients.

PLO4: Demonstrate effective communication and interdisciplinary collaboration.

PLO5: Utilize advanced assessment techniques and technologies in oncology physiotherapy.

PLO6: Uphold ethical and professional standards in physiotherapy practice.

PLO7: Engage in lifelong learning and research.

Program Specific Outcomes (PSOs):

PSO1: Demonstrate competency in clinical, physical and functional diagnosis of oncology conditions.

PSO2: Apply evidence-based assessment and diagnostic principles in oncology physiotherapy.

PSO3: Design individualized assessment protocols for oncology rehabilitation.

PSO4: Utilize advanced diagnostic techniques and outcome measures in oncology physiotherapy.

Mapping:

CLO / PLO	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PSO1	PSO2	PSO3	PSO4
CLO1	3	3	3	2	3	2	2	3	3	3	3
CLO2	3	3	3	2	3	2	2	3	3	3	3
CLO3	3	3	3	2	3	2	2	3	3	3	3

CLO4	3	3	3	2	3	2	2	3	3	3	3
CLO5	3	3	3	3	3	3	3	3	3	3	3

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Course Content

UNIT I – Clinical, Physical & Functional Diagnosis in Oncology Physiotherapy

SECTION – A

OCPFD 1.1. Assessment of clinical signs and symptoms, physical and functional evaluation, differential diagnosis of bone and soft tissue, breast, gynecological, lung cancers.

OCPFD 1.2. Gastrointestinal (GI), head and neck and pediatric cancers.

OCPFD 1.3. Clinical analysis of cardiorespiratory fitness, posture, gait, movement and movement dysfunction in cancer patients.

OCPFD 1.4. Outcome measures and evaluation in oncological Physiotherapy for cognitive impairment and disability, focal disabilities, global measures of disability, motor impairment, ADL and extended ADL tests, Quality of life, pain, stress and anxiety.

OCPFD 1.5. Diagnostic imaging – Types of diagnostic imaging techniques in various types of cancer, clinical interpretation and significance (Chest X-Ray, Barium swallow, Barium enema, USG abdomen, Endoscopy, Colonoscopy, Mammography and Mammogram, MRI, Ultrasound, PET and SPECT, CT scan, Gastroscopy, Laparoscopy, Pap smear test, Bone scan and other diagnostic imaging, Fiber optic endoscopy for diagnosis), histopathological, hematological, bacteriological investigations, Nuclear and radio imaging.

OCPFD 1.6. Principles of pathological, hematological and bacteriological investigations related to oncological disorders with interpretation.

UNIT II – Assessment of Oncology Complications and Medical Management

SECTION – B

OCPFD 2.1. Influence and relation of physical activity, diet, nutrition, lifestyle, obesity and anthropometric measurement in cancer. Neuropsychological tests.

OCPFD 2.2. Evaluation of cancer complications like lymphedema, musculoskeletal, neurological and cardiorespiratory complications. Exercise and cancer-related fatigue and its evaluation.

OCPFD 2.3. Detailed lymphatic system examination.

OCPFD 2.4. Medical intervention (Radiation, Chemotherapy and Surgery) in cancer.

Recommended Textbooks

1. Combined recommendations after speciality paper 3.

PHYSIOTHERAPY IN COMMUNITY REHABILITATION SCIENCES (PRC)

Course CODE	M.P.T (R)-104	L	P	C	Total sessions
Course Title	Physiotherapy in Community Rehabilitation Sciences (PRC) Speciality Paper 1	120	120	12	240
Pre-requisite	Knowledge of Human Anatomy, Physiology, Community Medicine, Rehabilitation Sciences, Exercise Therapy, Biomechanics and Public Health.				
Co-requisites	NIL				

Course Objective:

1. To develop advanced knowledge of community rehabilitation principles and healthcare delivery systems.
2. To understand institutional and community-based rehabilitation models and multidisciplinary rehabilitation services.
3. To develop competency in community assessment, epidemiology, disability evaluation and rehabilitation planning.
4. To acquire skills in health promotion, disaster management, public health education and disability rights.
5. To integrate evidence-based physiotherapy practice in community rehabilitation programmes.

Course Learning Outcomes (CLOs): On completion of this course, the students will be able to:

CLO1: Apply principles of community rehabilitation, healthcare delivery systems and multidisciplinary rehabilitation in clinical and community settings.

CLO2: Perform community-based physical and functional assessment, disability evaluation and clinical decision-making for rehabilitation.

CLO3: Design and implement health promotion, fitness, nutrition, stress management and preventive rehabilitation programmes.

CLO4: Demonstrate competency in disaster management, disability legislation, ethics, public health education and rehabilitation services.

CLO5: Integrate evidence-based practice and government policies into community rehabilitation programmes.

Program Learning Outcomes (PLOs):

PLO1: Demonstrate advanced clinical competence in Community Rehabilitation Physiotherapy.

PLO2: Apply evidence-based physiotherapy principles in community rehabilitation.

PLO3: Design individualized and community-based rehabilitation programmes.

PLO4: Demonstrate effective communication and interdisciplinary collaboration.

PLO5: Utilize appropriate rehabilitation technologies and community resources.

PLO6: Uphold ethical, legal and professional standards in physiotherapy practice.

PLO7: Engage in lifelong learning, research and community service.

Program Specific Outcomes (PSOs):

PSO1: Demonstrate competency in community rehabilitation assessment and physiotherapy management.

PSO2: Apply evidence-based rehabilitation strategies for individuals, families and communities.

PSO3: Design comprehensive community rehabilitation programmes and disability prevention strategies.

PSO4: Utilize government programmes, community resources and multidisciplinary approaches for rehabilitation.

Mapping:

CLO / PLO	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PSO1	PSO2	PSO3	PSO4
CLO1	3	3	3	2	2	2	2	3	3	3	3
CLO2	3	3	3	2	3	2	2	3	3	3	3
CLO3	3	3	3	3	2	2	2	3	3	3	2
CLO4	3	2	3	3	2	3	2	3	2	3	3
CLO5	3	3	3	3	3	3	3	3	3	3	3

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Course Content

UNIT I – Community Rehabilitation Sciences

SECTION – A

PRC 1.1. Definition, concept, principles and scope of rehabilitation; community; healthcare delivery system; health administration; institutional-based rehabilitation (IBR) and community-based rehabilitation (CBR); principles and differences between IBR and CBR; multidisciplinary approach; role of national institutes, district rehabilitation centres and primary health centres; physiotherapist as a master trainer in CBR and IBR.

PRC 1.2. Epidemiology of dysfunctions and advanced skills of physical and functional assessment related to the community; clinical decision-making skills in management of dysfunction.

PRC 1.3. Evidence-Based Practice (EBP) and recent advances in community health; Indian health statistics.

UNIT II – Community Health Promotion and Disability Rehabilitation

SECTION – B

PRC 2.1. Fitness and health promotion:

- Principles of fitness for health promotion in the community.
- Nutrition and diet.
- Stress management through yoga and psychosomatic approaches.

PRC 2.2. Natural calamities and disaster management; role of the physiotherapist in disaster management teams.

PRC 2.3. International Classification of Functioning, Disability and Health (ICF); impairment, disability and handicap and their implications; evaluation of disability and compensation for persons with disabilities; Persons with Disabilities Act, 1995 and related government infrastructure.

PRC 2.4. Physiotherapy ethics:

- Code of conduct.
- Regulatory agencies and legal issues.
- WHO policies regarding rural healthcare.
- Role of physiotherapist; principles of teamwork among medical professionals, physiotherapists, occupational therapists, audiologists, speech therapists, prosthetists & orthotists, and vocational guides in community-based rehabilitation of persons with disabilities.

PRC 2.5. Public health education methods and appropriate media; public awareness regarding various disabilities; communication, message generation and dissemination.

PRC 2.6. Role of Government and Non-Governmental Organizations (NGOs) in community-based rehabilitation; inter-sectoral programmes and coordination; implementation of disability-related Acts.

PRC 2.7. Rights of persons with disabilities.

Recommended Textbooks

1. Combined recommendations after speciality paper 3.

LOCOMOTOR DISABILITY ASSESSMENT AND BASIC EMERGENCY CARE & LIFE SUPPORT SKILLS (ECLS)

Course Code		L	P	C	Total sessions
Course Title	Locomotor Disability Assessment and Basic Emergency Care & Life Support Skills (ECLS)				
Pre-requisite	Basic knowledge of Human Anatomy, Physiology and Clinical Physiotherapy.				
Co-requisites	NIL				

Course Objective:

1. To understand the Government of India guidelines for locomotor disability assessment and certification.
2. To develop knowledge of the Rights of Persons with Disabilities Act and disability certification procedures.
3. To acquire knowledge and practical skills in Basic Life Support (BLS) and emergency care.
4. To develop competency in first aid, cardiopulmonary resuscitation, patient stabilization and transportation.
5. To prepare students to function effectively as first responders during medical emergencies and disasters.

Course Learning Outcomes (CLOs): On completion of this course, the students will be able to:

CLO1: Explain the principles and guidelines of locomotor disability assessment and certification.

CLO2: Describe the provisions of the Persons with Disabilities Acts and Government Gazette notifications related to disability certification.

CLO3: Demonstrate knowledge and skills in Basic Life Support (BLS), airway management and cardiopulmonary resuscitation.

CLO4: Perform first aid procedures and emergency management for common medical and trauma emergencies.

CLO5: Demonstrate safe patient handling, transportation and disaster preparedness as a first responder.

Program Learning Outcomes (PLOs):

PLO1: Demonstrate advanced clinical competence in physiotherapy practice.

PLO2: Apply evidence-based principles in patient assessment and management.

PLO3: Demonstrate competency in emergency care, patient safety and rehabilitation.

PLO4: Demonstrate effective communication, leadership and teamwork.

PLO5: Apply ethical, legal and professional principles in healthcare.

PLO6: Promote community health, disability management and patient advocacy.

PLO7: Engage in lifelong learning and professional development.

Program Specific Outcomes (PSOs):

PSO1: Perform disability assessment and understand certification procedures according to Government guidelines.

PSO2: Demonstrate competency in Basic Life Support and emergency response.

PSO3: Apply first aid and patient transportation principles during emergencies.

PSO4: Integrate emergency preparedness and disability management into physiotherapy practice.

Mapping:

MPT DEPARTMENT OF PHYSIOTHERAPY											
CLO / PLO	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PSO1	PSO2	PSO3	PSO4
CLO1	2	2	2	2	3	3	2	3	2	2	2
CLO2	2	2	2	2	3	3	2	3	2	2	2
CLO3	3	3	3	3	2	2	2	2	3	3	3
CLO4	3	3	3	3	2	2	2	2	3	3	3
CLO5	3	3	3	3	3	3	3	2	3	3	3

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Course Content

SECTION A – LOCOMOTOR DISABILITY ASSESSMENT

Locomotor Disability Assessment Content:

DISABILITY (PERMANENT PHYSICAL IMPAIRMENT) ASSESSMENT AND CERTIFICATION GUIDELINES & GAZETTE NOTIFICATION

LDA 1.1. Detail study of Government Gazette to be done. (The Gazette of India is regularly updated, and its publications can change over time. Refer the recent Gazette publications issued by the Government of India from the official website.)

LDA 1.2. PWD Act, 1995 and Rights of Persons with Disabilities Act, 2016 – To study in detail.

UNIT I– BASICS OF EMERGENCY CARE AND LIFE SUPPORT SKILLS (ECLS)

ECLS 1.1. Emergent conditions and magnitude, Concept of golden hour, Duties and responsibilities of first responder.

ECLS 1.2. Ethical issues and Gather information from observation, experience and reasoning. Identification of rapidly changing situations and adapt accordingly. Planning and organization of work. Scene safety. Dealing with emotional reactions family members and bystanders.

ECLS 1.3. Well-being of first responder, Personal protection:

1. Steps to be taken against airborne and blood-borne pathogens.
2. Personal protective equipment necessary for each of the following situations:
 - Hazardous materials
 - Rescue Operations
 - Violent Scenes
 - Crime scenes
3. Electricity, Water and ice.
4. Exposure to blood-borne pathogens.
5. Exposure to airborne pathogens.

UNIT 2

ECLS 2.1. Airway

1. Signs of inadequate breathing.

2. Mechanism of injury to opening the airway.
3. Steps in the head-tilt chin-lift.
4. Steps in the jaw thrust.
5. Taking out foreign body.
6. Ensuring patent airway during seizures and vomiting.

ECLS 2.2. Ventilation

1. Of a patient with a mask or barrier device.
2. Steps in providing mouth-to-mouth and mouth-to-stoma ventilation.

ECLS 2.3. Circulation

1. Evaluate the cardiac status of the patient.
2. Determine the need for and take necessary action to proper circulation.
3. Steps for control of bleeding: Pressure bandage and tourniquet.

ECLS 2.4. Clearing a foreign body airway obstruction.**ECLS 2.5. CPR**

1. Implications of cardiac arrest.
2. Cardiopulmonary resuscitation (CPR):
 - How it works.
 - Steps.
 - When to stop CPR.
3. Brief overview of AED (Automated External Defibrillator) (*only demonstration – no hands on*).

UNIT III – EMERGENCY CARE AND FIRST AID**UNIT 3****ECLS 3.1. Bleeding and Soft Tissue Injuries**

1. Difference between arterial and venous bleeding.
2. Stopping external bleeding.
3. Identification of internal bleeding.
4. Types and functions of dressings and bandages.
5. How to help a victim of burn injury.

ECLS 3.2. Injuries to Muscles and Bones

1. Suspecting bony/spinal injury.
2. Splinting – materials used.
3. Importance of splinting.

UNIT 4**ECLS 4.1. Medical Emergencies.**

ECLS 4.2. Identification of the patient and steps in providing first aid to a patient with:

- i. A general medical complaint.
- ii. Seizures.
- iii. Chest pain.
- iv. Shortness of breath.
- v. Exposure to heat.
- vi. Other medical complaints like allergy, diarrhea, fainting, low blood sugar, stroke.
- vii. Drowning.
- viii. Poisoning.

ECLS 4.3. Transportation: Importance of timely and proper transportation, methods of transportation of victim from site of injury to ambulance. Importance of spine protection and methods of spine protection during transportation.

ECLS 4.4. Disaster preparedness – Preparedness and risk reduction, Incident command and institutional mechanisms, Resource management.

Practicals

ECLS (P) 5.1. Provide Airway & Ventilation.

ECLS (P) 5.2. Perform Basic Life Support: CPR.

ECLS (P) 5.3. Perform Initial management of Thermal injury, electric injury.

ECLS (P) 5.4. Perform stabilizing injured extremity and wound management.

ECLS (P) 5.5. Demonstrate bandaging techniques to various body parts.

ECLS (P) 5.6. Demonstrate Extrication, Helmet removal and spine protection.

ECLS (P) 5.7. Demonstrate Stretcher use.

Recommended Textbooks

1. **Indian Red Cross Society. Indian First Aid Manual.** 7th Edition, 2016. Available at:
<https://www.indianredcross.org/publications/FA-manual.pdf>

DISASTER MANAGEMENT (DM)

Course Code		L	P	C	Total sessions
Course Title	Disaster Management (DM)				
Pre-requisite	Basic knowledge of Community Medicine, Physiotherapy Practice and Emergency Care.				
Co-requisites	NIL				

Course Objective:

1. To understand the role of physiotherapists in disaster management and emergency medical teams.
2. To develop knowledge of disaster preparedness, response, recovery and rehabilitation.
3. To understand the legal framework and national policies related to disaster management in India.
4. To familiarize students with national and international organizations involved in disaster management.
5. To develop competencies required for disaster response, rehabilitation, advocacy and community preparedness.

Course Learning Outcomes (CLOs): On completion of this course, the students will be able to:

CLO1: Explain the concepts, principles and phases of disaster management.

CLO2: Describe the legal framework, national policies and organizations involved in disaster management.

CLO3: Identify the role of physiotherapists in disaster preparedness, emergency response and rehabilitation.

CLO4: Apply principles of disaster response, documentation, communication and rehabilitation planning.

CLO5: Demonstrate awareness of international disaster management strategies and humanitarian principles.

Program Learning Outcomes (PLOs):

PLO1: Demonstrate advanced clinical competence in physiotherapy practice.

PLO2: Apply evidence-based principles in patient assessment and management.

PLO3: Demonstrate competency in emergency care, disaster response and rehabilitation.

PLO4: Demonstrate effective communication, leadership and interdisciplinary collaboration.

PLO5: Apply ethical, legal and professional principles in healthcare.

PLO6: Promote community health, disaster preparedness and disability management.

PLO7: Engage in lifelong learning and professional development.

Program Specific Outcomes (PSOs):

PSO1: Apply disaster management principles in physiotherapy practice.

PSO2: Participate effectively in disaster preparedness, response and rehabilitation.

PSO3: Demonstrate competency in documentation, communication and coordination during disasters.

PSO4: Integrate national and international disaster management strategies into physiotherapy practice.

Mapping:

CLO / PLO	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PSO1	PSO2	PSO3	PSO4
CLO1	2	2	3	2	2	3	2	3	2	2	2
CLO2	2	2	3	2	3	3	2	3	2	2	3
CLO3	3	3	3	3	2	3	2	3	3	3	3
CLO4	3	3	3	3	3	3	2	3	3	3	3

MPT DEPARTMENT OF PHYSIOTHERAPY											
CLO5	2	2	3	3	3	3	3	2	3	3	3
1: Slight (Low)			2: Moderate (Medium)				3: Substantial (High)				

Course Content

UNIT I – DISASTER MANAGEMENT

DM 1.1. Definition of disaster and the hazards associated with disaster, Vulnerable groups in Disaster.

DM 1.2. Definition of Advocacy, disability advocacy, Contingency planning with respect to disaster management, Hazard, Risk, Vulnerable groups.

DM 1.3. History of involvement of Physiotherapists in rehabilitation efforts during emergencies.

DM 1.4. National organisations who are involved in disaster preparedness and management strategies:

1. The legal framework for disaster management in India: Key takeaways of Disaster Management Act 2005, National Policy on Disaster Management 2009 and National Disaster Management Plan 2018.
2. Different types of disasters managed in India, Epidemiologic surveillance and disease control, main goal of the National Disaster Management Authority, areas in India are most prone to disasters, Institutional structure for disaster management in India at various levels, Central Ministry that coordinates disaster management and leader of NDMA in India.
3. Disaster Management Act of 2005 key take aways and its significance, Phases of Disaster management, Long term prevention measures, role of various stakeholders in disaster management, role of community involvement in disaster management, challenges faced in disaster management in India.
4. Prime Minister's 10 Point Agenda and Community-based and Technology-driven approaches: Key policies and strategies.

DM 1.5. International organisations who facilitate contributions of physiotherapists in disaster preparedness and management strategies. Role of physiotherapists in:

1. Disaster management within their own countries, benefits of rehabilitation provided following disasters.
2. Prevention of a disaster.
3. Preparedness for disaster with respect to essential locally appropriate preparedness for a disaster.
4. Identifying and connecting professional associations, health service providers and training institutions.
5. Developing international humanitarian response.
6. Response to disaster: Required skills and knowledge and required actions and secure resources with respect to assessment, coordination, psycho-social support and advocacy.
7. Recovery: With respect to planning of medical management and local capacity building and physiotherapy rehabilitation, advocacy.

DM 1.6. The type and distribution of injuries caused by disasters, the type of hazards, common injuries that can lead to long-lasting or permanent disability.

DM 1.7. Clinical Practice in Response phase along with documentation (conservative and surgical), record management, data and research, informed consent and confidentiality, regulations and scope of practice,

hand hygiene and infection control, communication, referral, discharge planning with respect to international management strategies.

DM 1.8. International Disaster Management Rehabilitation Response Plans and role of Physiotherapists with respect to: Systems in Place, Identifying Personnel, Facilities and Resources, Advocacy and Partnerships, Training and Capacity Building.

DM 1.9. Elements to be considered "essential" components in any disaster education or training programme for health professionals as defined by Global Response Framework.

DM 1.10. The World Health Organization (WHO): The lead UN agency in the health cluster and its emergency response framework and Humanitarian principles.

Recommended Websites for References

1. **National Disaster Management Plan, 2016.** A publication of the National Disaster Management Authority, Government of India. May 2016, New Delhi.
Website: www.mha.gov.in
2. **World Physiotherapy – Disaster Management Resources.**
Website: www.wcpt.org/disaster-management

DISSERTATION

Each candidate will have to carry out of a dissertation on Speciality related subject of MPT. Ethical approval certificate from **Registered Institutional Ethical committee** and **Clinical Trial Registration** is mandatory for interventional Dissertation study topic. The dissertation to be guided by Guide of the speciality of faculty of physiotherapy of the department under whom the student is pursuing MPT. The dissertation will be evaluated by the External/Internal Examiners. The final dissertation duly approved by the External/Internal examiners will be submitted to the Dean/Principals office with the result. The dean/ Principal's office will send the dissertation to the library for record.

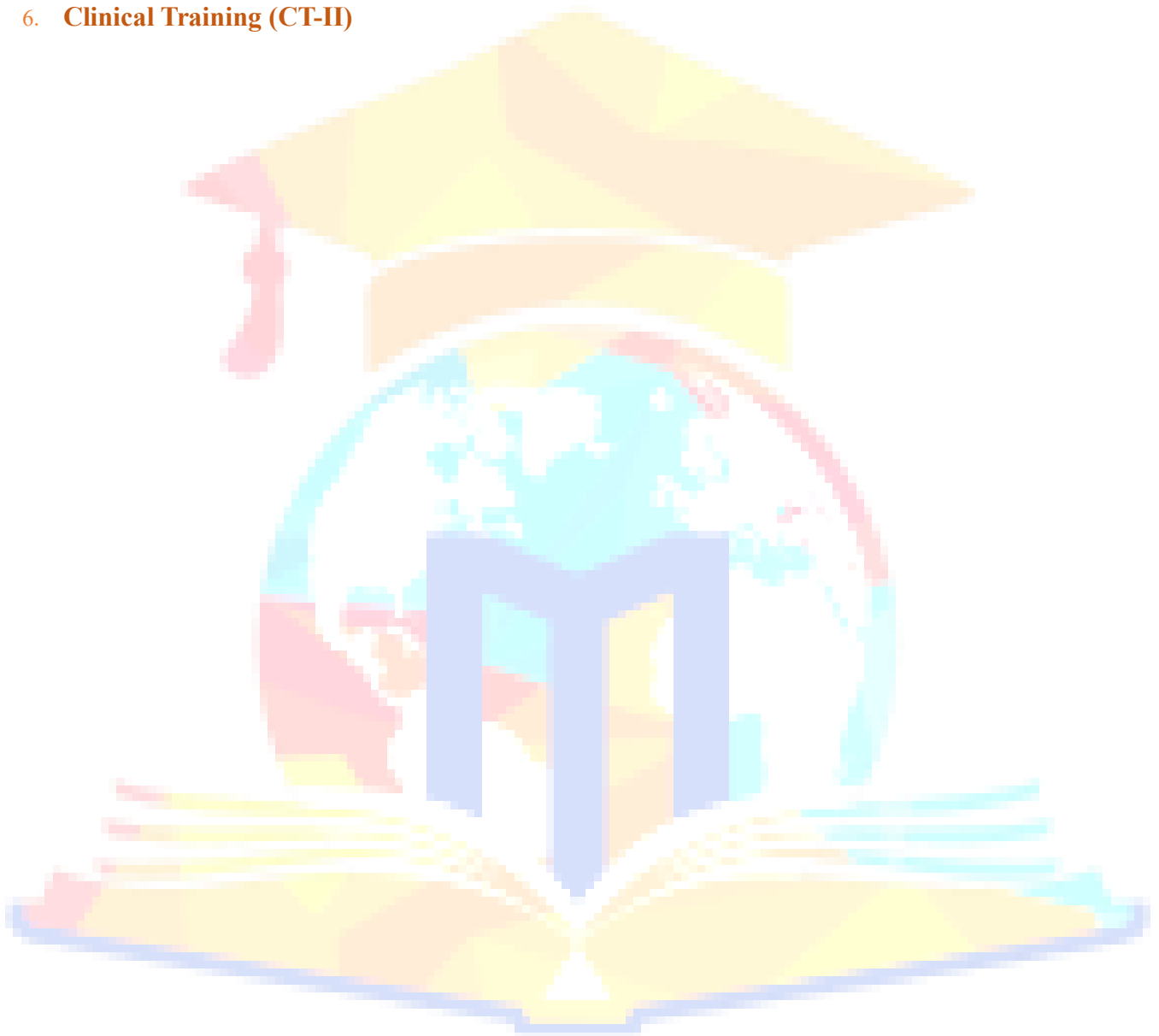
PRACTICAL / CLINICAL EXAMINATION

Compulsary rotatory Clinical Posting as per the Speciality and Clinical Assessment during Clinical posting is mandatory.



COURSE TITLES

1. **Exercise Physiology (EP)**
2. **Specialty Paper II**
3. **Specialty Paper III (Recent Advances in the Specialty)**
4. **Dissertation (Spread over a period of 18 months) (DSS-II)**
5. **Skills Acquisition and Refinement (SAR-II)**
6. **Clinical Training (CT-II)**



EXERCISE PHYSIOLOGY (EP)

Course Code	M.P.T-201	L	P	C	Total sessions
Course Title	Exercise Physiology (EP)	90	-	6	90
Pre-requisite	Basic knowledge of Human Physiology, Exercise Physiology, Biochemistry and Therapeutic Exercise.				
Co-requisites	NIL				

Course Objective:

1. To understand the physiological basis of exercise, energy metabolism and nutritional requirements.
2. To develop knowledge of cardiovascular, respiratory, endocrine and metabolic responses to exercise.
3. To understand physiological adaptations to training and environmental conditions.
4. To acquire knowledge of body composition, exercise prescription and performance enhancement.
5. To apply exercise physiology principles in health, rehabilitation and sports performance.

Course Learning Outcomes (CLOs): On completion of this course, the students will be able to:

CLO1: Comprehend the physiological basis of energy production and substrate utilization during exercise.

CLO2: Explain the metabolic and nutritional requirements for exercise, sports performance and rehabilitation.

CLO3: Analyze cardiovascular, respiratory, endocrine and acid-base responses to exercise.

CLO4: Apply principles of exercise training, conditioning and environmental physiology.

CLO5: Evaluate the role of exercise physiology in body composition, metabolic disorders and clinical rehabilitation.

Program Learning Outcomes (PLOs):

PLO1: Demonstrate advanced knowledge and clinical competence in physiotherapy practice.

PLO2: Apply evidence-based principles in patient assessment and management.

PLO3: Design and implement exercise-based rehabilitation programmes.

PLO4: Demonstrate effective communication, leadership and interdisciplinary collaboration.

PLO5: Utilize scientific principles to optimize health, fitness and performance.

PLO6: Uphold ethical and professional standards in physiotherapy practice.

PLO7: Engage in lifelong learning and research for professional advancement.

Program Specific Outcomes (PSOs):

PSO1: Apply exercise physiology principles in physiotherapy assessment and rehabilitation.

PSO2: Design safe and effective exercise programmes for health, disease and sports performance.

PSO3: Interpret physiological responses and adaptations to exercise and training.

PSO4: Integrate exercise physiology concepts into evidence-based physiotherapy practice.

Mapping:

CLO / PLO	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PSO1	PSO2	PSO3	PSO4
CLO1	3	2	3	2	3	2	2	3	3	3	2
CLO2	3	3	3	2	3	2	2	3	3	3	3
CLO3	3	3	3	2	3	2	2	3	3	3	3
CLO4	3	3	3	3	3	2	2	3	3	3	3
CLO5	3	3	3	3	3	3	3	3	3	3	3

Course Content

UNIT I – Exercise Physiology

SECTION – A

EP 1.1. Bioenergetics of exercise: High energy phosphates, Anaerobic and aerobic ATP synthesis, Bioenergetics Control, exercise intensity & substrate utilization, protecting CHO stores, muscle adaptation to endurance training, processes that potentially limit the rate of fat oxidation, regulation of substrate utilization, training-induced increase in FFA oxidation.

EP 1.2. Basal metabolic and resting metabolic rates and factors affecting them, Classification of Physical Activities by energy expenditure. Concept of MET measurement of energy cost of exercise.

EP 1.3. Nutrition metabolism of Carbohydrate, fats, proteins, vitamin, mineral and water.

EP 1.4. Nutrition in exercise: Optimum nutrition for exercise, nutrition for physical performance, pre-game meal, carbohydrate loading, food for various athletic events, fluid and energy replacement in prolonged exercise.

EP 1.5. Respiratory responses to exercise: Ventilation at Rest and during Exercise, Ventilation and the Anaerobic Threshold, static and dynamic lung volume, Gas diffusion, Oxygen and carbon dioxide transport, second wind, stitch by side, control of pulmonary ventilation during exercise, adaptive changes in the respiratory systems due to regular physical activities.

EP 1.6. Cardiovascular responses to exercise: Cardiovascular system and exercise, acute vascular effects of exercise, Circulatory responses to various types of exercise, regulation of cardiovascular system during exercise, Pattern of redistribution of blood flow during exercise, adaptive responses of cardiovascular system to aerobic and anaerobic training, Athlete heart.

EP 1.7. Exercise and Acid Base Balance: Acid and Bases, Buffers, pH, Respiratory Regulation of pH, Alkali Reserve, The kidneys and Acid base balance, Alkalosis and Acidosis, Acid base balance following heavy exercise.

EP 1.8. Hormonal responses to exercise with respect to Growth Hormone (GH), Thyroid and Parathyroid Hormones, Antidiuretic Hormone (ADH) and Aldosterone, Insulin and Glucagons, The catecholamine; epinephrine and norepinephrine, The sex hormones, The glucocorticoids (Cortisol) and Adreno Corticotrophic Hormones (ACTH), Prostaglandins and Endorphins.

UNIT II – Training and Conditioning

SECTION – B

EP 2.1. Training and conditioning: Physiological basis of physical training, training principles, interval training, continuous running, concept of anaerobic threshold and VO_2 max, physiological effects of various physical training methods – aerobic and anaerobic training, strength training, factors influencing training effects – intensity, frequency, duration, detraining, process of recovery, post exercise oxygen consumption, factors affecting recovery process, overtraining.

EP 2.2. Body temperature regulation during exercise: Mechanism of regulation of body temperature, Body temperature responses during exercise, Physiological responses to exercise in the heat, Acclimatization to exercise in the heat, Effects of age and gender on body temperature regulation during exercise, Physical

activity and heat illness (heat exhaustion, dehydration exhaustion, heat cramps & heat stroke), Prevention of Heat Disorders.

EP 2.3. Exercise in the Cold: Effects of exposure to cold and severe cold, Wind chill, Temperature receptors, Role of hypothalamus, shivering, Frost Bite and other problems, Clothing and Environment.

EP 2.4. Exercise at Altitude: Exercise at altitude, immediate physiological responses at high altitude, physiological basis of altitude training, phases of altitude training and specific training effects, altitude acclimatization, oxygen dissociation curve at altitude, disorders associated with altitude training.

EP 2.5. Exercise and body fluids: Measurement and regulation of body fluids, Body fluid responses and adaptations to exercise, Effects of dehydration and fluid replenishment on physiological responses to exercise and performance, Fluid/carbohydrate replacement beverages.

EP 2.6. Physical activity, body composition, energy balance and weight control: Significance and measurement of body composition, Body composition during growth and aging, Body composition and physical performance, Effect of diet and exercise on body composition, Physical activity, energy balance, nutrient balance and weight control, Physical activity, fat distribution and the metabolic syndrome, Healthy weight loss, Ways and methods of weight reduction, fluid maintenance, disordered eating, nutritional ergogenic aids, diet supplements in athletes and others involved in physical activity.

EP 2.7. Exercise and Diabetes Mellitus: Exercise in insulin requiring diabetes and non-insulin dependent diabetes mellitus, Effect of physical training on glucose tolerance and insulin sensitivity, Management of diabetes by diet and insulin.

Recommended Textbooks

1. Essentials of Exercise Physiology. McArdle WD, Katch FI, Katch VL. Lippincott Williams & Wilkins.
2. Fundamentals of Exercise Physiology: For Fitness Performance and Health. Robergs RA, Roberts SO. McGraw Hill.
3. Exercise Physiology. Powers SK, Howley ET. McGraw Hill.
4. Physiology of Sport and Exercise. Wilmore JH, Costill DL. Human Kinetics.
5. Exercise Physiology – Human Bioenergetics and its Application. Brooks GA, Fahey TD, White TP. Mayfield Publishing Company.
6. Komi P. (Ed.). Strength and Power in Sport. Blackwell Scientific Publications.
7. Levick JR. An Introduction to Cardiovascular Physiology. 2nd Edition. Butterworth Heinemann.
8. McArdle WD, Katch FI, Katch VL. Exercise Physiology. Lippincott Williams & Wilkins.
9. Shephard RJ, Åstrand PO. Endurance in Sport. Blackwell Scientific Publications.
10. Willmore JH, Costill DL. Physiology of Sport and Exercise. 2nd Edition. Human Kinetics.
11. Guyton AC. Textbook of Medical Physiology. Saunders, Philadelphia.
12. Berning JR, Steen SN. Nutrition for Sport and Exercise.

MUSCULOSKELETAL PHYSIOTHERAPY (MSK)

Course Code	M.P.T (MS)-202	L	P	C	Total sessions
Course Title	Musculoskeletal Physiotherapy (Msk) Speciality Paper 2	120	120	12	240
Pre-requisite	Knowledge of Musculoskeletal Physiotherapy, Orthopaedics, Biomechanics, Exercise Therapy and Electrotherapy.				
Co-requisites	NIL				

Course Objective:

1. To develop advanced knowledge and skills in the physiotherapy management of musculoskeletal disorders.
2. To understand the principles of exercise prescription, manual therapy and rehabilitation for orthopedic conditions.
3. To acquire competency in assessment, treatment planning and evidence-based management of musculoskeletal dysfunctions.
4. To develop clinical decision-making skills in pre-operative and post-operative rehabilitation.
5. To integrate advanced physiotherapy techniques for improving functional outcomes and quality of life.

Course Learning Outcomes (CLOs): On completion of this course, the students will be able to:

CLO1: Develop comprehensive physiotherapy management plans for patients with musculoskeletal disorders.

CLO2: Apply advanced manual therapy, therapeutic exercise and rehabilitation techniques in musculoskeletal physiotherapy.

CLO3: Demonstrate competency in pre-operative and post-operative orthopedic rehabilitation.

CLO4: Utilize advanced therapeutic modalities, assistive devices and rehabilitation equipment for musculoskeletal dysfunctions.

CLO5: Integrate evidence-based practice and clinical reasoning in the management of orthopedic and musculoskeletal conditions.

Program Learning Outcomes (PLOs):

PLO1: Demonstrate advanced clinical competence in musculoskeletal physiotherapy.

PLO2: Apply evidence-based principles in patient assessment and management.

PLO3: Design and implement comprehensive rehabilitation programmes.

PLO4: Demonstrate leadership, communication and interdisciplinary collaboration.

PLO5: Utilize advanced therapeutic techniques and technology in physiotherapy practice.

PLO6: Uphold ethical and professional standards in physiotherapy.

PLO7: Engage in lifelong learning, research and professional development.

Program Specific Outcomes (PSOs):

PSO1: Demonstrate advanced competency in musculoskeletal physiotherapy assessment and management.

PSO2: Apply manual therapy, therapeutic exercise and rehabilitation principles for musculoskeletal disorders.

PSO3: Design individualized rehabilitation programmes for orthopedic conditions.

PSO4: Utilize advanced rehabilitation equipment and evidence-based interventions in musculoskeletal physiotherapy.

Mapping:

CLO / PLO	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PSO1	PSO2	PSO3	PSO4
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MPT DEPARTMENT OF PHYSIOTHERAPY											
CLO1	3	3	3	2	2	2	2	3	3	3	2
CLO2	3	3	3	2	3	2	2	3	3	3	3
CLO3	3	3	3	3	3	2	2	3	3	3	3
CLO4	3	3	3	2	3	2	2	3	3	3	3
CLO5	3	3	3	3	3	3	3	3	3	3	3

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Course Content

UNIT I – Advanced Musculoskeletal Physiotherapy

SECTION – A

MSK 1.1. Advanced instruction in treatment and follow-up of the musculoskeletal system.

MSK 1.2. Upper Quarter and Lower Quarter Muscle imbalances leading to dysfunction with corrective measures. Exercise planning and Exercise Prescription for musculoskeletal conditions.

MSK 1.3. Management of pathological gaits and Postural deviations.

MSK 1.4. Orthopaedic implants – designs, materials, indications, post-operative Physiotherapy.

MSK 1.5. Manual therapy – Principles, indications, contraindications, and methods of application of joint mobilization techniques and soft tissue manipulations. Cumulative Traumatic Disorders and management.

MSK 1.6. Aids and appliances, adaptive functional devices to improve neuro-musculoskeletal dysfunctions. Physiotherapy management of locomotor impairments and disabilities at institutional & community levels.

MSK 1.7. Taping techniques in orthopedic conditions. Sports injuries and their management.

UNIT II – Musculoskeletal Rehabilitation

SECTION – B

MSK 2.1. Physiotherapy management in Fractures, Joint Instabilities, Soft Tissue Disorders, Deformities, Nerve Injuries, Metabolic, Hormonal Conditions, Neoplastic, Infective Conditions of Bones and Joints of musculoskeletal system pertaining to upper quarter, lower quarter and spine.

MSK 2.2. Pre and Post surgical Rehabilitation of Joint replacement surgeries.

MSK 2.3. Physiotherapy management after tendon transfer, Electrical stimulation and biofeedback procedures. Assessment and management of Paediatric and geriatric musculoskeletal disorders.

MSK 2.4. Physical Agents and Electrotherapeutic management in orthopedic conditions. Rehabilitation of congenital conditions and malformation of musculoskeletal disorders. Physiotherapy management in Amputation and Prosthetic Prescription.

MSK 2.5. Equipment in orthopedic Physiotherapy such as: Isokinetic, EMG and Biofeedback, Proprioception assessment equipments, Gait analyzers. Home and self-help programme in orthopedic Physiotherapy.

MSK 2.6. Disability prevention and management.

Recommended Textbooks

1. Combined recommendations after speciality paper 3.

NEUROLOGICAL PHYSIOTHERAPY (NPT)

Course Code	M.P.T (N)-202	L	P	C	Total sessions
Course Title	Neurological Physiotherapy (NPT) Speciality Paper 2	120	120	12	240
Pre-requisite	Knowledge of Neuroanatomy, Neurophysiology, Neurology, Exercise Therapy and Electrotherapy.				
Co-requisites	NIL				

Course Objective:

1. To develop advanced knowledge and skills in the physiotherapy management of neurological disorders.
2. To understand evidence-based neurorehabilitation approaches and therapeutic interventions.
3. To acquire competency in assessment, treatment planning and rehabilitation of patients with neurological dysfunction.
4. To develop clinical reasoning and decision-making skills for neurological physiotherapy practice.
5. To integrate advanced rehabilitation technologies and multidisciplinary approaches for optimizing functional outcomes.

Course Learning Outcomes (CLOs): On completion of this course, the students will be able to:

CLO1: Develop comprehensive physiotherapy management plans for patients with neurological disorders.

CLO2: Apply advanced neurophysiotherapy interventions for central and peripheral nervous system disorders.

CLO3: Demonstrate competency in neurological rehabilitation using evidence-based therapeutic approaches.

CLO4: Utilize advanced rehabilitation technologies, assistive devices and physiotherapeutic techniques in neurological conditions.

CLO5: Integrate clinical reasoning and multidisciplinary approaches in neurological physiotherapy practice.

Program Learning Outcomes (PLOs):

PLO1: Demonstrate advanced clinical competence in neurological physiotherapy.

PLO2: Apply evidence-based principles in neurological assessment and management.

PLO3: Design and implement comprehensive neurological rehabilitation programmes.

PLO4: Demonstrate leadership, communication and interdisciplinary collaboration.

PLO5: Utilize advanced rehabilitation techniques and technologies in neurological physiotherapy.

PLO6: Uphold ethical and professional standards in physiotherapy practice.

PLO7: Engage in lifelong learning, research and continuous professional development.

Program Specific Outcomes (PSOs):

PSO1: Demonstrate advanced competency in neurological physiotherapy assessment and management.

PSO2: Apply neurophysiological rehabilitation approaches for neurological disorders.

PSO3: Design individualized rehabilitation programmes for neurological dysfunction.

PSO4: Utilize advanced technologies and evidence-based interventions in neurological rehabilitation.

Mapping:

CLO / PLO	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PSO1	PSO2	PSO3	PSO4
CLO1	3	3	3	2	2	2	2	3	3	3	2

MPT DEPARTMENT OF PHYSIOTHERAPY											
CLO2	3	3	3	2	3	2	2	3	3	3	3
CLO3	3	3	3	3	3	2	2	3	3	3	3
CLO4	3	3	3	2	3	2	2	3	3	3	3
CLO5	3	3	3	3	3	3	3	3	3	3	3
1: Slight (Low)				2: Moderate (Medium)				3: Substantial (High)			

NPT 2.12. Pharmacology in Neurophysiotherapy.

NPT 2.13. Training of Emotional Intelligence.

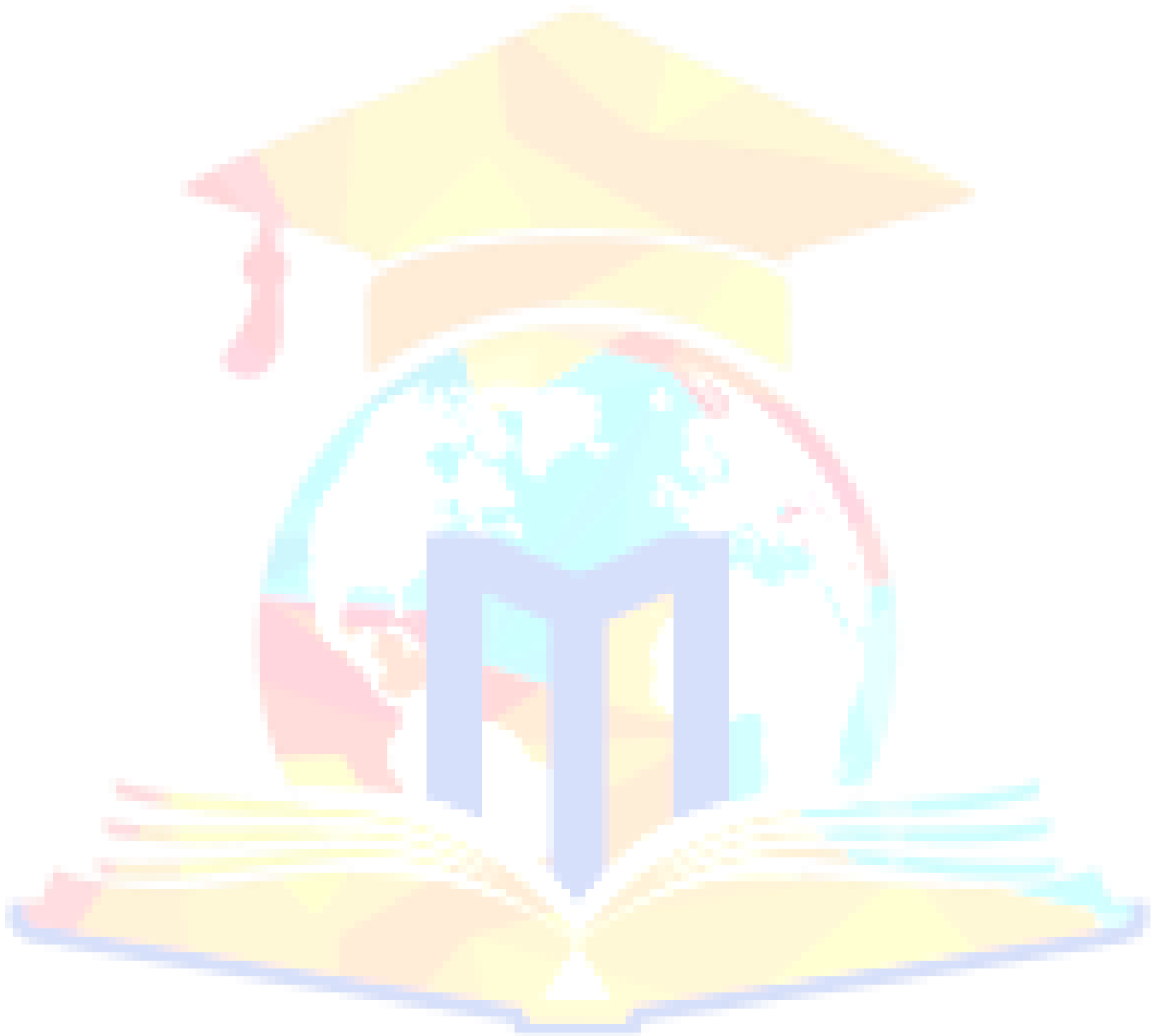
NPT 2.14. Hydrotherapy for Neurological conditions.

NPT 2.15. Palliative Care Approach.

NPT 2.16. Physiotherapy Management of Cerebellar Disorders.

Recommended Textbooks

1. Combined recommendations after speciality paper 3.



CARDIO AND PULMONARY PHYSIOTHERAPY (CPT)

Course CODE	M.P.T (C)-202	L	P	C	Total sessions
Course Title	Cardio and Pulmonary Physiotherapy (CPT) Speciality Paper 2	120	120	12	240
Pre-requisite	Knowledge of Cardiovascular and Respiratory Physiotherapy, Exercise Physiology, Exercise Therapy, Human Physiology and Electrotherapy.				
Co-requisites	NIL				

Course Objective:

1. To develop advanced knowledge and skills in the physiotherapy management of cardiovascular and pulmonary disorders.
2. To understand principles of exercise prescription, rehabilitation and lifestyle modification for cardio-pulmonary conditions.
3. To acquire competency in evidence-based assessment, treatment planning and rehabilitation.
4. To develop clinical reasoning and decision-making skills in cardio-pulmonary physiotherapy.
5. To integrate exercise prescription, patient education and advanced rehabilitation strategies for improving functional outcomes.

Course Learning Outcomes (CLOs): On completion of this course, the students will be able to:

CLO1: Develop comprehensive physiotherapy management plans for patients with cardiovascular and pulmonary disorders.

CLO2: Design individualized exercise prescription programmes for various cardio-pulmonary patient populations.

CLO3: Demonstrate competency in rehabilitation of cardiac, pulmonary and critical care patients.

CLO4: Apply evidence-based physiotherapy interventions, patient education and lifestyle modification strategies.

CLO5: Integrate clinical reasoning and multidisciplinary approaches in cardio-pulmonary physiotherapy practice.

Program Learning Outcomes (PLOs):

PLO1: Demonstrate advanced clinical competence in cardio-pulmonary physiotherapy.

PLO2: Apply evidence-based principles in assessment and management.

PLO3: Design and implement comprehensive cardio-pulmonary rehabilitation programmes.

PLO4: Demonstrate leadership, communication and interdisciplinary collaboration.

PLO5: Utilize advanced rehabilitation techniques and technologies in cardio-pulmonary physiotherapy.

PLO6: Uphold ethical and professional standards in physiotherapy practice.

PLO7: Engage in lifelong learning, research and professional development.

Program Specific Outcomes (PSOs):

PSO1: Demonstrate advanced competency in cardio-pulmonary physiotherapy assessment and management.

PSO2: Apply exercise prescription and rehabilitation principles for cardiovascular and pulmonary disorders.

PSO3: Design individualized rehabilitation programmes for cardio-pulmonary dysfunction.

PSO4: Utilize evidence-based interventions and advanced rehabilitation strategies in cardio-pulmonary physiotherapy.

Mapping:

CLO / PLO	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PSO1	PSO2	PSO3	PSO4
CLO1	3	3	3	2	2	2	2	3	3	3	2
CLO2	3	3	3	2	3	2	2	3	3	3	3
CLO3	3	3	3	3	3	2	2	3	3	3	3
CLO4	3	3	3	2	3	2	2	3	3	3	3
CLO5	3	3	3	3	3	3	3	3	3	3	3

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Course Content

UNIT I – Exercise Prescription and Cardio-Pulmonary Rehabilitation

SECTION – A

CPT 1.1. Principles of exercise prescription and exercise program adherence.

CPT 1.2. Components of physical fitness and Basic principles of exercise program design.

CPT 1.3. The art of science of exercise prescription in various patient population.

CPT 1.4. Bioenergetics of exercise and training.

CPT 1.5. Warm ups, stretching and cool down and its importance.

CPT 1.6. Exercise program adherence and factors affecting exercise adherence.

CPT 1.7. Different forms of training methods.

CPT 1.8. Designing cardio-respiratory exercise programs for cardiac and pulmonary patients, geriatric and general population. Essentials of a C.R. exercise workout, Aerobic training. Methods and modes, personalized programs.

CPT 1.9. Designing Resistance exercise programs.

1. Types of resistance training and developing respiratory exercise program including calisthenics.
2. Resistance exercise program for children and older adults.

CPT 1.10. Designing flexibility and stretching programs.

CPT 1.11. Designing weight management (weight loss and weight gain).

CPT 1.12. Application of exercise prescription principles in various cardio-pulmonary disorders including edema management.

UNIT II – Cardiovascular Physiotherapy

SECTION – B

CPT 2.1. Nutrition and cardio-vascular and pulmonary diseases including diabetic population. Role of carbohydrates, proteins, fats, vitamins in health and disease.

CPT 2.2. Diet prescription in diabetic, hypertensive, cardio-metabolic syndromes, obesity and cancer patients according to calorie expenditure.

CPT 2.3. Exercise prescription/physical activity in a high-risk cardiac patient including L.V dysfunction, chronic heart failure, myocardial ischemia.

CPT 2.4. Exercise prescription in prevention of CAD, obesity, renal dysfunction, diabetes mellitus, hypertension.

CPT 2.5. Cardio-vascular disorders and physiotherapy management including exercise prescription in:

- i. Myocardial infarction
- ii. Acquired heart conditions
- iii. Hypertension, hypotension
- iv. Rheumatic fever, rheumatic heart disease and non-rheumatic valvular diseases
- v. Diseases of myocardium, pericardial diseases, cardiomyopathies
- vi. Vascular diseases, peripheral vascular diseases and lymphatic diseases

- vii. Tumors of heart
- viii. Athlete heart
- ix. Congestive cardiac failure
- x. Cardiac arrhythmias
- xi. Congenital heart diseases
- xii. Cardiac transplantation

UNIT III – Pulmonary Physiotherapy

SECTION – C

CPT 3.1. Pulmonary disorders and physiotherapy management including exercise prescription in:

- i. Obstructive pulmonary diseases
- ii. Restrictive pulmonary diseases
- iii. Infective lung diseases
- iv. Occupational lung diseases
- v. Lung cancer
- vi. Chest wall deformities and spinal cord injury
- vii. Diaphragmatic diseases
- viii. Sleep apnea/Hyperventilation syndrome
- ix. Respiratory disorders in children, cystic fibrosis
- x. COVID-19

CPT 3.2. Common emergency conditions in cardio-respiratory system in adults and children and ethical issues in intensive care.

CPT 3.3. Management of Pediatric and geriatric Cardiac and pulmonary disorders.

CPT 3.4. Burns rehabilitation in Critical Care Unit.

CPT 3.5. Cardio-pulmonary problems and complications in various neuromuscular disorders, facilitatory and inhibitory techniques and PNF techniques in various pulmonary disorders, manual techniques for various pulmonary disorders.

CPT 3.6. Physical agents used in various cardio-vascular and respiratory disorders.

CPT 3.7. Cardio-vascular and pulmonary pharmacology – Indications, contraindications and effects and pharmacological management in cardiac and pulmonary disorders.

CPT 3.8. Body positioning: art and its physiological importance in general and in ICUs.

CPT 3.9. Aerosol therapy – Principles and its role in physiotherapy.

CPT 3.10. Humidifiers and Atomizers role in physiotherapy.

CPT 3.11. Stress, Importance of exercise in stress management and various stress coping strategies, relaxation techniques including yogic postures and yogic breathing in various lifestyle disorders and other cardio-vascular and pulmonary conditions.

CPT 3.12. Importance of Patient education and counseling in various cardio-vascular and pulmonary disorders in cardio-respiratory conditions, CBR in cardio-vascular and respiratory conditions.

CPT 3.13. Role of Tele-rehabilitation in cardiac and pulmonary disorders.

CPT 3.14. Clinical decision making in Cardiovascular and pulmonary physiotherapy.

Recommended Textbooks

1. Combined recommendations after speciality paper 3.

CONCEPTS IN SPORTS MEDICINE (SSM)

Course CODE	M.P.T (S)-202	L	P	C	Total sessions
Course Title	Concepts in Sports Medicine (SSM) Speciality Paper 2	120	120	12	240
Pre-requisite	Knowledge of Sports Physiotherapy, Exercise Physiology, Biomechanics, Exercise Therapy and Sports Traumatology.				
Co-requisites	NIL				

Course Objective:

1. To develop advanced knowledge of sports training principles and exercise prescription.
2. To understand physiological, psychological and medical aspects influencing sports performance.
3. To acquire competency in designing training programmes and recovery strategies for athletes.
4. To understand prevention and management of non-traumatic medical conditions affecting athletes.
5. To integrate sports medicine concepts into evidence-based physiotherapy practice.

Course Learning Outcomes (CLOs): On completion of this course, the students will be able to:

CLO1: Apply principles of sports training, exercise prescription and recovery in athletic performance.

CLO2: Design training programmes based on biomotor abilities, physiological adaptations and sports-specific demands.

CLO3: Evaluate psychological factors influencing sports performance and implement appropriate interventions.

CLO4: Assess and manage common non-traumatic medical conditions affecting athletes.

CLO5: Integrate sports medicine concepts into comprehensive athlete management and rehabilitation.

Program Learning Outcomes (PLOs):

PLO1: Demonstrate advanced clinical competence in sports physiotherapy.

PLO2: Apply evidence-based principles in sports medicine and athlete management.

PLO3: Design and implement comprehensive sports rehabilitation programmes.

PLO4: Demonstrate leadership, communication and interdisciplinary collaboration in sports medicine.

PLO5: Utilize advanced assessment and training techniques in sports physiotherapy.

PLO6: Uphold ethical and professional standards in physiotherapy practice.

PLO7: Engage in lifelong learning, research and professional development.

Program Specific Outcomes (PSOs):

PSO1: Apply advanced sports medicine principles in athlete management.

PSO2: Design evidence-based sports training and conditioning programmes.

PSO3: Demonstrate competency in prevention and management of sports-related medical conditions.

PSO4: Integrate sports science and physiotherapy principles for optimizing athletic performance.

Mapping:

CLO / PLO	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PSO1	PSO2	PSO3	PSO4
CLO1	3	3	3	2	3	2	2	3	3	3	3
CLO2	3	3	3	2	3	2	2	3	3	3	3
CLO3	3	3	3	3	3	2	2	3	3	3	3
CLO4	3	3	3	2	3	2	2	3	3	3	3
CLO5	3	3	3	3	3	3	3	3	3	3	3

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Course Content

UNIT I – Sports Training Parameters and Methods

SECTION – A

SSM 1.1. Training Load, Adaptation and Recovery: Relationship of load and recovery, physiotherapeutic and psychological means of recovery, Variables of Training: Volume, Intensity, Density, Complexity.

SSM 1.2. Relationship between volume and intensity.

SSM 1.3. Fatigue and overtraining: Diagnosis, Monitoring and preventing overtraining. Recovery Methods.

SSM 1.4. Training Methods: Interval training, Continuous training, Circuit training, Fartlek training, Weight training, Plyometric method, Cross training.

SSM 1.5. Bio Motor Abilities and Program Design.

SSM 1.6. Anaerobic Exercise Training & Prescription: Prerequisites, types and Factors affecting the training variables: Strength Development, Plyometric Training, Speed, Agility and Speed Endurance Development.

SSM 1.7. Aerobic Exercise Training & Prescription: Prerequisites, types and Factors affecting the training variables.

SSM 1.8. Coordination Training: Definition, Classification of coordinative abilities, factors affecting coordination and Methods to develop coordination.

SSM 1.9. Sports Psychology – Role of Sports Psychology in Sports performance, Factors affecting growth and development & role of heredity & environment, Biofeedback, Mental coping strategies, Visual Imagery, Meditation, History and current status of Sports Psychology.

- i. Personality assessment and sports personality.
- ii. Attention and perception in sports.
- iii. Concentration training in sports.
- iv. Motivational orientation in sports.
- v. Pre-competitive anxiety.
- vi. Relaxation training.
- vii. Aggression in sports.
- viii. Role of Psychology in dealing with injuries.
- ix. Eating disorders.
- x. Goal setting.
- xi. Psychological aspect of doping, stress management, group behaviour and leadership, emotion.

SSM 1.10. Para Sports.

SSM 1.11. Sports Massage.

UNIT II – Non-Traumatic Conditions of Athletes

SECTION – B

SSM 2.1. General Illness.

SSM 2.2. Chronic/Non-communicable diseases.

SSM 2.3. Exercise Induced Asthma.

SSM 2.4. Anemia.

SSM 2.5. Delayed Onset Muscle Soreness (DOMS).

SSM 2.6. Runner's High & Exercise Addiction.

SSM 2.7. G.I.T. Diseases.

SSM 2.8. Eating Disorders in Athletes.

SSM 2.9. AIDS in Sports People.

SSM 2.10. Sports for Diseased.

1. Exercises and Congestive Heart Failure.
2. Exercise for Post Coronary & Bypass Patients.

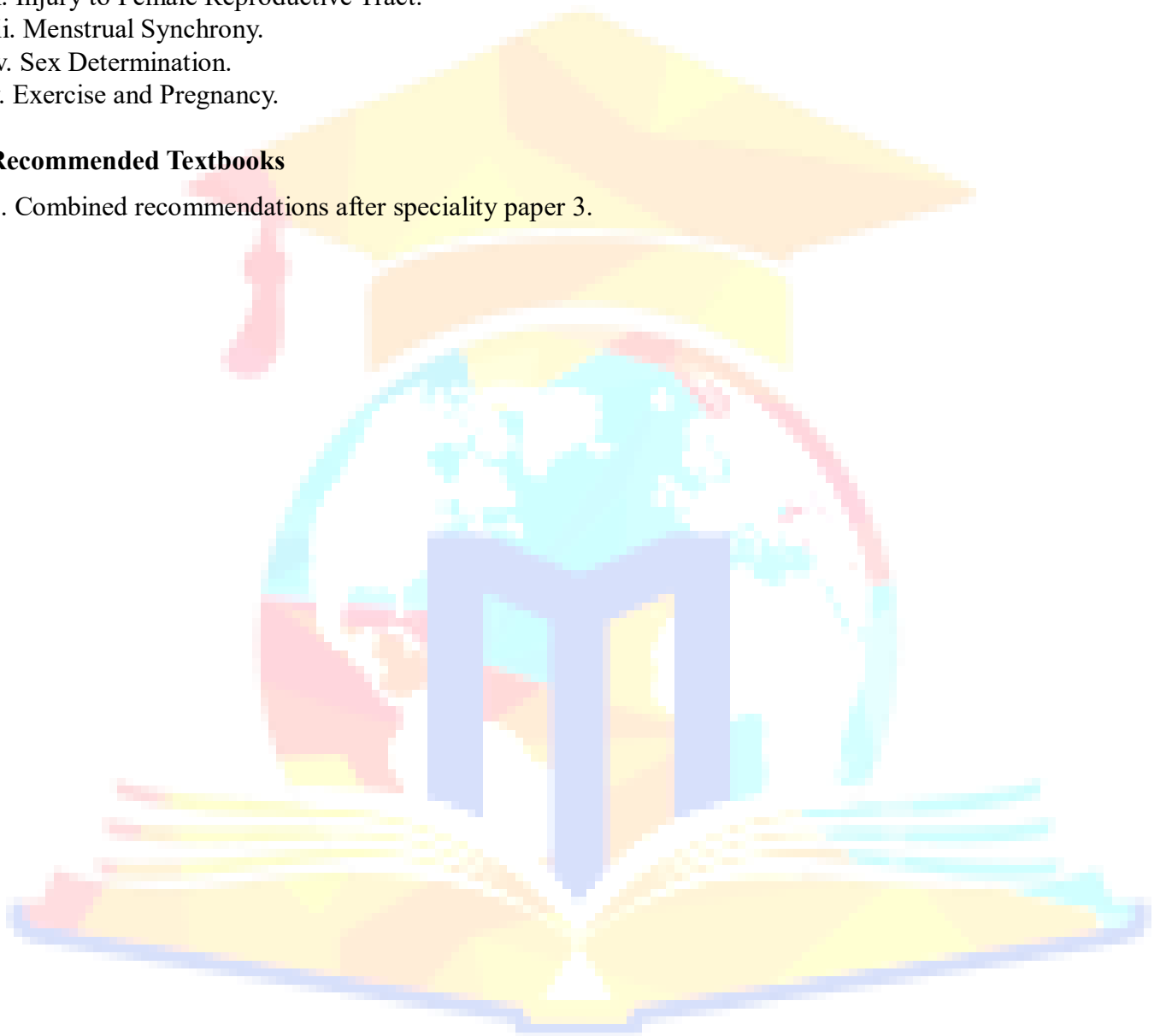
3. Exercise for Diabetics.
4. Diagnosis and management of skin conditions of Athletes:
 - a. Bacterial infections.
 - b. Fungal infections.
 - c. Viral infections.
 - d. Boils.
 - e. Cellulitis.

SSM 2.11. Female Athlete Problems.

- i. Sports Amenorrhea.
- ii. Injury to Female Reproductive Tract.
- iii. Menstrual Synchrony.
- iv. Sex Determination.
- v. Exercise and Pregnancy.

Recommended Textbooks

1. Combined recommendations after speciality paper 3.



PEDIATRIC & NEONATAL PHYSIOTHERAPY (PPT)

Course CODE	M.P.T (P)-202	L	P	C	Total sessions
Course Title	Pediatric & Neonatal Physiotherapy (PPT) Speciality Paper 2	120	120	12	240
Pre-requisite	Knowledge of Pediatric Physiotherapy, Developmental Pediatrics, Neurology, Musculoskeletal Physiotherapy and Cardio-respiratory Physiotherapy.				
Co-requisites	NIL				

Course Objective:

1. To develop advanced knowledge and skills in pediatric and neonatal physiotherapy management.
2. To understand evidence-based physiotherapy interventions for congenital, developmental, neurological and musculoskeletal disorders in children.
3. To acquire competency in neonatal care, early intervention and pediatric rehabilitation.
4. To integrate therapeutic approaches and rehabilitation strategies for pediatric disorders.
5. To develop clinical reasoning skills in planning comprehensive pediatric physiotherapy management.

Course Learning Outcomes (CLOs): On completion of this course, the students will be able to:

CLO1: Demonstrate understanding of dysfunctions affecting pediatric musculoskeletal, neurological and cardio-respiratory systems and their pathophysiology.

CLO2: Apply advanced pediatric therapeutic techniques including neurodevelopmental and sensorimotor approaches.

CLO3: Demonstrate competency in rehabilitation of congenital, developmental and pediatric locomotor disorders.

CLO4: Plan physiotherapy management for common pediatric medical, surgical and developmental disorders.

CLO5: Integrate evidence-based pediatric rehabilitation principles in institutional and community settings.

Program Learning Outcomes (PLOs):

PLO1: Demonstrate advanced clinical competence in Pediatric Physiotherapy.

PLO2: Apply evidence-based principles in pediatric assessment and rehabilitation.

PLO3: Design comprehensive pediatric rehabilitation programmes.

PLO4: Demonstrate effective communication and interdisciplinary collaboration.

PLO5: Utilize advanced pediatric therapeutic techniques and technologies.

PLO6: Uphold ethical and professional standards in physiotherapy practice.

PLO7: Engage in lifelong learning and research.

Program Specific Outcomes (PSOs):

PSO1: Demonstrate competency in pediatric and neonatal physiotherapy management.

PSO2: Apply advanced therapeutic approaches for pediatric rehabilitation.

PSO3: Design individualized rehabilitation programmes for pediatric disorders.

PSO4: Utilize evidence-based interventions for comprehensive pediatric physiotherapy care.

Mapping:

CLO / PLO	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PSO1	PSO2	PSO3	PSO4
CLO1	3	3	3	2	2	2	2	3	3	3	2
CLO2	3	3	3	2	3	2	2	3	3	3	3
CLO3	3	3	3	2	3	2	2	3	3	3	3
CLO4	3	3	3	3	3	2	2	3	3	3	3

MPT DEPARTMENT OF PHYSIOTHERAPY											
CLO5	3	3	3	3	3	3	3	3	3	3	3
1: Slight (Low)			2: Moderate (Medium)				3: Substantial (High)				

Course Content

UNIT I – Pediatric and Neonatal Physiotherapy Management SECTION – A

- PPT 1.1. Genetic counseling.
- PPT 1.2. Physiotherapy management of growth and developmental disorders (gross motor, fine, speech & language, personal-social-adaptive).
- PPT 1.3. Therapeutic techniques used in Neuro-pediatric conditions – Handling & positioning techniques, NDT, Vojta, Roods, CIMT, Sensor-motor re-education, PNF, Peto, Temple Fay, Phelps.
- PPT 1.4. Adjunct therapies – Manipulation, mobilization, taping, MFR, Cranio-sacral therapy, Body suits, hydrotherapy, hippo-therapy.
- PPT 1.5. Pain control & management in children.
- PPT 1.6. Motor learning techniques.
- PPT 1.7. Sensory integration disorders and management.
- PPT 1.8. Management of perceptual and cognitive disorders.
- PPT 1.9. Play behavior & its clinical application in therapy.
- PPT 1.10. Integrated approach in management of Pediatric disorders.
- PPT 1.11. Neonatal care and early intervention for risk babies.
- PPT 1.12. Physiotherapy management for congenital loco-motor disorders including prosthetic and orthotic prescription.
- PPT 1.13. Pediatric disability management at institutional & community levels.
- PPT 1.14. Pre and Post-operative management of pediatric surgeries.
- PPT 1.15. Rehabilitation of common pediatric musculo-skeletal disorders.
- PPT 1.16. Management of progressive loco-motor disorders – Neuropathic and Myopathic conditions.

UNIT II – Management of Pediatric Disorders SECTION – B

- PPT 2.1. Management of learning disabilities, ADHD, Autism, Developmental Coordination Disorders and behavioral disorders.
- PPT 2.2. Physiotherapeutic management of A.D.L. and functional activities.
- PPT 2.3. Sports training in pediatrics.
- PPT 2.4. Psychological and mental health problems in children.
- PPT 2.5. Management of Child abuse and its associated problems.
- PPT 2.6. Management of common congenital, neurological, musculo-skeletal and cardio-respiratory disorders.
- PPT 2.7. Vocational rehabilitation for pediatric disorders.
- PPT 2.8. Metabolic disorders and their management.
- PPT 2.9. Exercise prescription for pediatric disorders.
- PPT 2.10. Oromotor dysfunction in children.

Recommended Textbooks

1. Combined recommendations after speciality paper 3.

OBG PHYSIOTHERAPY (OGPT)

Course CODE	M.P.T (OG)-202	L	P	C	Total sessions
Course Title	OBG Physiotherapy (OGPT) Speciality Paper 2	120	120	12	240
Pre-requisite	Knowledge of Obstetrics & Gynecology, Women's Health Physiotherapy, Exercise Therapy and Rehabilitation.				
Co-requisites	NIL				

Course Objective:

1. To develop competency in physiotherapy management of obstetric and gynecological conditions.
2. To understand physiotherapy interventions during antenatal, intrapartum and postpartum periods.
3. To develop rehabilitation strategies for gynecological disorders and women's health conditions.
4. To acquire knowledge of exercise prescription and rehabilitation throughout the reproductive lifespan.
5. To integrate evidence-based physiotherapy interventions in obstetric and gynecological practice.

Course Learning Outcomes (CLOs): On completion of this course, the students will be able to:

CLO1: Develop physiotherapy management plans for obstetric and gynecological conditions.

CLO2: Implement physiotherapy interventions during antenatal, labor and postpartum periods.

CLO3: Apply rehabilitation principles in gynecological disorders, pelvic floor dysfunction and women's health conditions.

CLO4: Design exercise prescription and rehabilitation programmes across different stages of women's health.

CLO5: Demonstrate clinical reasoning and professional competency in obstetric and gynecological physiotherapy.

Program Learning Outcomes (PLOs):

PLO1: Demonstrate advanced clinical competence in Women's Health Physiotherapy.

PLO2: Apply evidence-based physiotherapy interventions.

PLO3: Design individualized rehabilitation programmes.

PLO4: Demonstrate effective communication and interdisciplinary collaboration.

PLO5: Utilize advanced therapeutic techniques in women's health.

PLO6: Uphold ethical and professional standards in physiotherapy practice.

PLO7: Engage in lifelong learning and research.

Program Specific Outcomes (PSOs):

PSO1: Demonstrate competency in obstetric and gynecological physiotherapy management.

PSO2: Apply evidence-based interventions in women's health rehabilitation.

PSO3: Design comprehensive rehabilitation programmes for obstetric and gynecological disorders.

PSO4: Utilize advanced physiotherapy techniques in women's health practice.

Mapping:

CLO / PLO	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PSO1	PSO2	PSO3	PSO4
CLO1	3	3	3	2	3	2	2	3	3	3	3
CLO2	3	3	3	2	3	2	2	3	3	3	3
CLO3	3	3	3	2	3	2	2	3	3	3	3

1. Exercise prescription during postpartum period.
2. Lactation management and breast clinic.
3. The postnatal period, postnatal exercises and advice.
4. Alternative therapies related to pregnancy and postpartum management.
5. Schools of manual therapy and joint mobilization techniques.
6. Aquanatal exercises during postnatal period.
7. Orthotic management during postpartum.
8. Stress management during postpartum period.
9. Maternal position and state during postpartum period.
10. Ergonomic advice in postpartum period.
11. Massage techniques.
12. Handling techniques of newborn.

UNIT II – Physiotherapy Management in Gynecological Conditions

SECTION – B

OGPT 2.1. GENERAL GYNAECOLOGICAL INFECTIONS

1. Physiotherapy management for incontinence.
2. Physiotherapy management for genital prolapse.
3. Physiotherapy management for endometriosis.
4. Physiotherapy management for chronic pelvic pain and dyspareunia.
5. Physiotherapy management for pelvic inflammatory disease.
6. Physiotherapy management for sexually transmitted diseases.

OGPT 2.2. PHYSIOTHERAPY MANAGEMENT FOR SEXUAL DYSFUNCTION

1. Sexual desire disorders – Hypoactive sexual desire dysfunction, Sexual aversion disorders.
2. Sexual arousal disorders.
3. Sexual pain disorders – Dyspareunia, Vaginismus.
4. Female orgasmic disorder.

OGPT 2.3. OPERATIVE PROCEDURES AND PHYSIOTHERAPY MANAGEMENT

1. Principles of surgery and physiotherapy management of intra-operative complications.
2. Pre-operative and post-operative care.
3. Hysterectomy and physiotherapy management.
4. Fertility awareness and family planning methods.
5. Cancer rehabilitation (Breast and Cervical cancer).

OGPT 2.4. MISCELLANEOUS

1. Physiotherapy management for musculoskeletal complications during menopause.
2. Nutrition for menopausal women.
3. The method of infection control for physiotherapists working with women's health.
4. Assisted reproduction treatments.

Recommended Textbooks

1. Combined recommendations after speciality paper 3.

ONCOLOGY PHYSIOTHERAPY (OPT)

Course CODE	M.P.T (O)-202	L	P	C	Total sessions
Course Title	Oncology Physiotherapy (OPT) Speciality Paper 2	120	120	12	240
Pre-requisite	Knowledge of Oncology, Human Anatomy, Physiology, Pathology, Exercise Therapy and Rehabilitation.				
Co-requisites	NIL				

Course Objective:

1. To develop advanced knowledge in physiotherapy management of oncology conditions.
2. To understand rehabilitation strategies for different types of cancers and cancer-related complications.
3. To develop competency in assessment, treatment planning and physiotherapy interventions for oncology patients.
4. To acquire skills in supportive, palliative and intensive care rehabilitation in oncology.
5. To integrate evidence-based physiotherapy approaches in oncology rehabilitation.

Course Learning Outcomes (CLOs): On completion of this course, the students will be able to:

CLO1: Perform comprehensive assessment and physiotherapy management of oncology patients.

CLO2: Plan and implement rehabilitation programmes for different types of cancers and cancer-related complications.

CLO3: Apply physiotherapy interventions for functional impairments, disability and quality of life improvement in cancer patients.

CLO4: Demonstrate competency in supportive care, palliative rehabilitation and ICU management of oncology patients.

CLO5: Integrate advanced rehabilitation techniques and therapeutic modalities in oncology physiotherapy.

Program Learning Outcomes (PLOs):

PLO1: Demonstrate advanced clinical competence in Oncology Physiotherapy.

PLO2: Apply evidence-based physiotherapy principles in oncology rehabilitation.

PLO3: Design individualized rehabilitation programmes for oncology patients.

PLO4: Demonstrate effective communication and interdisciplinary collaboration.

PLO5: Utilize advanced therapeutic techniques and technologies in oncology physiotherapy.

PLO6: Uphold ethical and professional standards in physiotherapy practice.

PLO7: Engage in lifelong learning and research.

Program Specific Outcomes (PSOs):

PSO1: Demonstrate competency in physiotherapy management of oncology conditions.

PSO2: Apply evidence-based rehabilitation strategies for cancer patients.

PSO3: Design comprehensive rehabilitation programmes for oncology disorders.

PSO4: Utilize advanced rehabilitation techniques and technologies in oncology physiotherapy.

Mapping:

CLO / PLO	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PSO1	PSO2	PSO3	PSO4
CLO1	3	3	3	2	3	2	2	3	3	3	3
CLO2	3	3	3	2	3	2	2	3	3	3	3

MPT DEPARTMENT OF PHYSIOTHERAPY											
CLO3	3	3	3	2	3	2	2	3	3	3	3
CLO4	3	3	3	2	3	2	2	3	3	3	3
CLO5	3	3	3	3	3	3	3	3	3	3	3

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

Course Content

UNIT I – Assessment and Management of Oncology Conditions

SECTION – A

OPT 1.1. Assessment of clinical signs and symptoms, physical and functional evaluation, differential diagnosis of bone and soft tissue, breast, gynecological and lung cancers.

OPT 1.2. Gastrointestinal (GI), head and neck and pediatric cancers.

OPT 1.3. Clinical analysis of cardiorespiratory fitness, posture, gait, movement and movement dysfunction in cancer patients.

OPT 1.4. Outcome measures and evaluation in oncological Physiotherapy for cognitive impairment and disability, focal disabilities, global measures of disability, motor impairment, ADL and extended ADL tests, Quality of life, pain, stress and anxiety.

OPT 1.5. Diagnostic imaging – Types of diagnostic imaging techniques in various types of cancer, clinical interpretation and significance (Chest X-Ray, Barium swallow, Barium enema, USG abdomen, Endoscopy, Colonoscopy, Mammography and Mammogram, MRI, Ultrasound, PET and SPECT, CT scan, Gastroscopy, Laparoscopy, Pap smear test, Bone scan and other diagnostic imaging, Fiber optic endoscopy for diagnosis), histopathological, hematological, bacteriological investigations, Nuclear and radio imaging.

OPT 1.6. Principles of pathological, hematological and bacteriological investigations related to oncological disorders with interpretation.

OPT 1.7. Influence and relation of physical activity, diet, nutrition, lifestyle, obesity and anthropometric measurement in cancer. Neuropsychological tests.

OPT 1.8. Evaluation of cancer complications like lymphedema, musculoskeletal, neurological and cardiorespiratory complications. Exercise and cancer-related fatigue and its evaluation.

OPT 1.9. Detailed lymphatic system examination.

OPT 1.10. Medical intervention (Radiation, Chemotherapy and Surgery) in cancer.

OPT 1.11. Oncology – Epidemiology, classification, symptomatology, pathophysiology and management of different oncological conditions.

OPT 1.12. Common pediatric oncology conditions and their assessment, signs and symptoms, medical management and Physiotherapy treatment.

OPT 1.13. Common pediatric oncology conditions and their assessment, signs and symptoms, medical management and Physiotherapy treatment.

UNIT II – Physiotherapy Management in Oncology

SECTION – B

OPT 2.1. Physiotherapy intervention for head and neck cancers.

OPT 2.2. Physiotherapy intervention for breast cancer.

OPT 2.3. Physiotherapy intervention for cancers of reproductive system and bone tumors.

OPT 2.4. Physiotherapy intervention for systemic cancers, CNS neoplasia and lung cancer.

OPT 2.5. Physiotherapy intervention for metastatic cancers and gastrointestinal cancers.

OPT 2.6. Chemotherapy, radiation therapy and adjunct therapy in cancer patients. Physiotherapy management for neuro-musculoskeletal complications due to cancer treatments.

OPT 2.7. Physiotherapy management for various dysfunctions (Bowel and Bladder, Sexual, Neuro-musculoskeletal and Nutritional deficiency) seen in cancer patients.

OPT 2.8. Supportive and palliative therapy, and pain management in cancer and palliative therapy in cancer patients.

OPT 2.9. Rehabilitation Act and financial aid for cancer patients.

OPT 2.10. Psychosomatic conditions in cancer and their management.

OPT 2.11. Physiotherapy management in Intensive Care Units (ICU) of cancer patients.

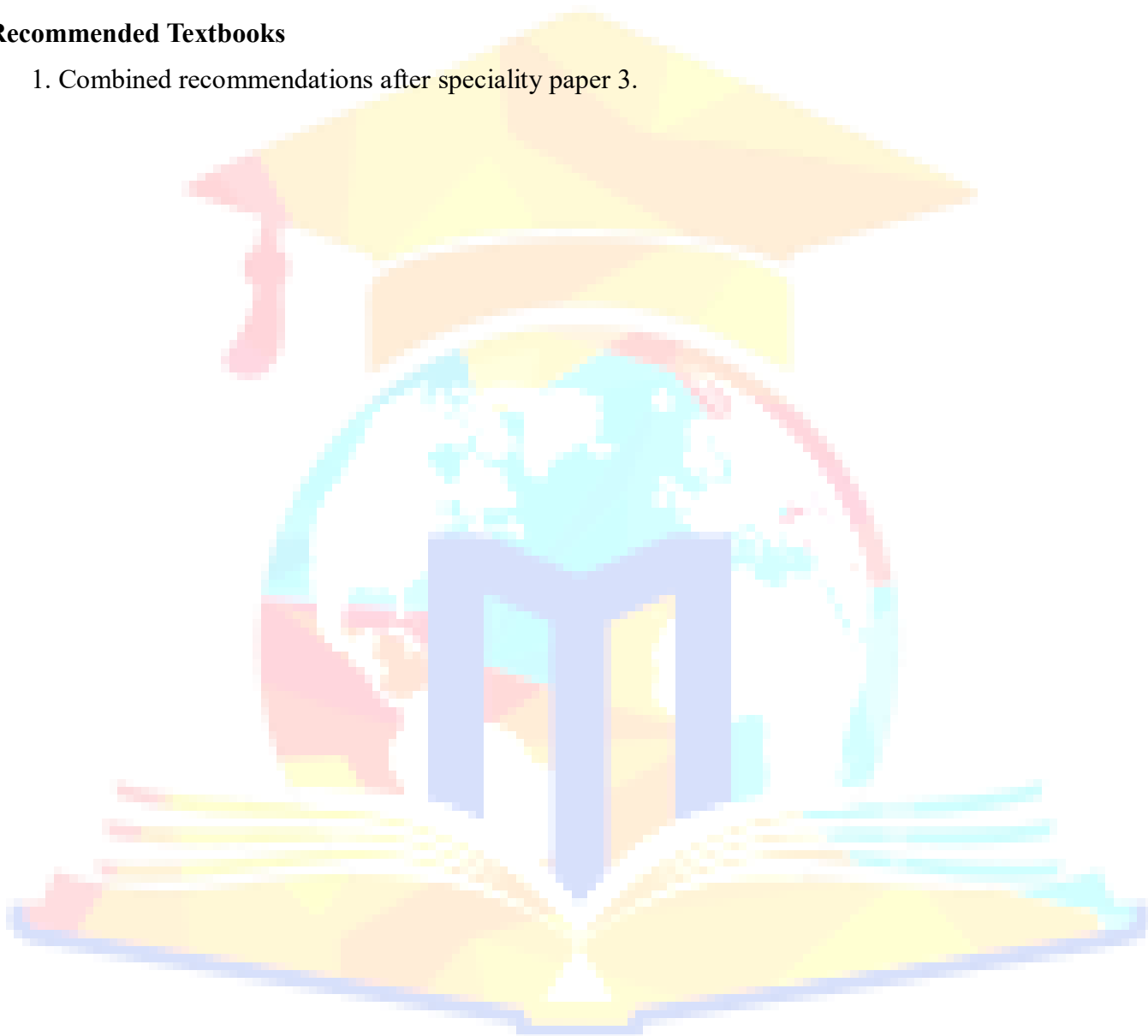
OPT 2.12. Aids and appliances, adaptive functional devices to improve dysfunction in cancer patients.

OPT 2.13. FES, NMES, Biofeedback, various equipment used in Oncology Physiotherapy, Muscle re-education approach, Sensory rehabilitation, Myofascial Release Technique, Inhibitory and Facilitation technique, Functional Re-education, Skill training, ADL training, Tapping in oncological conditions and Balance training.

OPT 2.14. Problem-based learning for various clinical conditions in Oncology Physiotherapy.

Recommended Textbooks

1. Combined recommendations after speciality paper 3.



REHABILITATION – ASSESSMENT, EVALUATION AND ASSISTIVE TECHNOLOGY (RAEA)

Course CODE	M.P.T (R)-202	L	P	C	Total sessions
Course Title	Rehabilitation – Assessment, Evaluation and Assistive Technology (RAEA) Speciality Paper 2	120	120	12	240
Pre-requisite	Knowledge of Human Anatomy, Physiology, Biomechanics, Exercise Therapy, Rehabilitation Sciences, Orthotics & Prosthetics, Ergonomics and Community Physiotherapy.				
Co-requisites	NIL				

Course Objective:

1. To develop advanced knowledge in rehabilitation assessment, evaluation and assistive technologies.
2. To understand principles of orthotics, prosthetics, adaptive devices and rehabilitation engineering.
3. To develop competency in prescription, fabrication, training and clinical application of orthotic and prosthetic devices.
4. To acquire skills in industrial physiotherapy, ergonomics, occupational health and vocational rehabilitation.
5. To integrate evidence-based rehabilitation approaches for improving functional independence and quality of life.

Course Learning Outcomes (CLOs): On completion of this course, the students will be able to:

CLO1: Perform comprehensive assessment and evaluation for orthotic, prosthetic and assistive technology prescription.

CLO2: Design, prescribe and train patients in the use of orthoses, prostheses and adaptive assistive devices.

CLO3: Assess workplace ergonomics, occupational hazards and implement industrial physiotherapy interventions.

CLO4: Plan vocational rehabilitation programmes, job analysis, workplace modifications and employee fitness evaluation.

CLO5: Integrate rehabilitation technologies, ergonomic principles and evidence-based physiotherapy into clinical and industrial rehabilitation.

Program Learning Outcomes (PLOs):

PLO1: Demonstrate advanced clinical competence in Rehabilitation Physiotherapy.

PLO2: Apply evidence-based physiotherapy principles in rehabilitation practice.

PLO3: Design individualized rehabilitation programmes for persons with disability.

PLO4: Demonstrate effective communication and interdisciplinary collaboration.

PLO5: Utilize advanced rehabilitation technologies and assistive devices.

PLO6: Uphold ethical and professional standards in physiotherapy practice.

PLO7: Engage in lifelong learning and rehabilitation research.

Program Specific Outcomes (PSOs):

PSO1: Demonstrate competency in rehabilitation assessment and assistive technology prescription.

PSO2: Apply evidence-based rehabilitation strategies using orthotic, prosthetic and adaptive devices.

PSO3: Design comprehensive industrial, vocational and community rehabilitation programmes.

PSO4: Utilize ergonomic principles and rehabilitation technologies to improve functional independence.

Mapping:

CLO / PLO	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PSO1	PSO2	PSO3	PSO4
CLO1	3	3	3	2	3	2	2	3	3	3	3
CLO2	3	3	3	2	3	2	2	3	3	3	3
CLO3	3	3	3	3	3	2	2	3	3	3	3
CLO4	3	3	3	3	2	3	2	3	3	3	3
CLO5	3	3	3	3	3	3	3	3	3	3	3

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Course Content

UNIT I – Rehabilitation Assessment, Orthotics, Prosthetics and Assistive Technology

SECTION – A

RAEA 1.1. Orthotics and Prosthetics: Definition, classification, biomechanical principles, assessment and evaluation, prescription and fabrication.

RAEA 1.2. Designing and training of upper limb, lower limb, trunk and neck orthoses; footwear modifications in various clinical conditions.

RAEA 1.3. Designing and training of upper limb and lower limb prostheses in amputees.

RAEA 1.4. Indications, contraindications and psychological aspects of orthotic and prosthetic application.

RAEA 1.5. Use of adaptive devices; design and construction of assistive devices such as canes, walkers and wheelchairs.

UNIT II – Industrial Health, Ergonomics and Vocational Rehabilitation

SECTION – B

RAEA 2.1. Applied anatomy, physiology and biomechanics related to industrial health.

RAEA 2.2. Clinical decision-making skills in assessment and management of dysfunctions related to industrial health.

RAEA 2.3. Industrial Physiotherapy:

- Prevention of occupational injuries.
- Physiological restoration.
- Rehabilitation following industrial injuries.
- Workstation adaptation and modification.

RAEA 2.4. Environmental stress in industrial settings and occupational hazards:

A. Physical agents

- Heat and cold
- Light
- Noise
- Vibration
- Ultraviolet (UV) radiation
- Ionizing radiation

B. Chemical agents

- Inhalation hazards
- Local action
- Ingestion hazards

C. Mechanical hazards

- Overuse injuries
- Fatigue injuries due to ergonomic alterations

- Workplace ergonomic evaluation

Occupational risk analysis:

- Sedentary table work (Executives, Clerical workers)
- Inappropriate seating arrangements (Vehicle drivers)
- Constant standing (Security personnel, Defence personnel, Surgeons)
- Overexertion among labourers and common industrial accidents

D. Psychological hazards

- Occupational stress among executives
- Job monotony
- Job dissatisfaction
- Anxiety related to work completion and quality

Role of Physiotherapist in industrial setup:

- Stress management and relaxation techniques
- Preventive services
- Promotive services
- Curative interventions
- Ergonomic interventions
- Rehabilitation services
- Ergonomic considerations and workplace health promotion

RAEA 2.5. Understanding and analysing occupation:

- Job description
- Job demand analysis
- Task analysis
- Employee fitness evaluation
- Job modification
- Employment Acts

RAEA 2.6. Vocational rehabilitation:

- Assessment
- Evaluation
- Management

Recommended Textbooks

1. Combined recommendations after speciality paper 3.

RECENT ADVANCES AND EVIDENCE BASED PRACTICE IN MUSCULOSKELETAL PHYSIOTHERAPY (MRAEB)

Course Code	M.P.T (MS)-203	L	P	C	Total sessions
Course Title	Recent Advances and Evidence Based Practice in Musculoskeletal Physiotherapy (MRAEB) Speciality Paper 3	120	120	12	240
Pre-requisite	Knowledge of Musculoskeletal Physiotherapy, Manual Therapy, Exercise Therapy, Orthopaedics and Research Methodology.				
Co-requisites	NIL				

Course Objective:

1. To understand recent advances in musculoskeletal physiotherapy assessment and management.
2. To develop competency in evidence-based clinical decision making and rehabilitation.
3. To understand recent advances in manual therapy, electrotherapy and rehabilitation technologies.
4. To integrate current evidence into the management of musculoskeletal disorders.
5. To promote critical appraisal and application of evidence-based physiotherapy practice.

Course Learning Outcomes (CLOs): On completion of this course, the students will be able to:

CLO1: Understand and apply recent advances in orthopedic manual therapy for patient care.

CLO2: Search and critically appraise the available evidence for assessment and management of musculoskeletal disorders.

CLO3: Apply evidence-based practice principles in the management of orthopedic and musculoskeletal conditions.

CLO4: Integrate recent advances in rehabilitation technologies, manual therapy and electrotherapeutic interventions.

CLO5: Demonstrate evidence-based clinical reasoning in musculoskeletal physiotherapy practice.

Program Learning Outcomes (PLOs):

PLO1: Demonstrate advanced clinical competence in musculoskeletal physiotherapy.

PLO2: Apply evidence-based principles in patient assessment and management.

PLO3: Design and implement comprehensive rehabilitation programmes.

PLO4: Demonstrate leadership, communication and interdisciplinary collaboration.

PLO5: Utilize advanced therapeutic techniques and technology in physiotherapy practice.

PLO6: Uphold ethical and professional standards in physiotherapy.

PLO7: Engage in lifelong learning, research and professional development.

Program Specific Outcomes (PSOs):

PSO1: Apply recent advances and evidence-based practice in musculoskeletal physiotherapy.

PSO2: Demonstrate competency in advanced manual therapy and rehabilitation techniques.

PSO3: Critically evaluate current evidence and integrate it into clinical practice.

PSO4: Utilize advanced technologies and evidence-based interventions for musculoskeletal rehabilitation.

Mapping:

CLO / PLO	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PSO1	PSO2	PSO3	PSO4
CLO1	3	3	2	2	3	2	2	3	3	2	3
CLO2	3	3	3	2	2	2	3	3	2	3	2

MPT DEPARTMENT OF PHYSIOTHERAPY											
CLO3	3	3	3	2	3	2	3	3	3	3	3
CLO4	3	3	3	3	3	2	3	3	3	3	3
CLO5	3	3	3	3	3	3	3	3	3	3	3

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

Course Content

UNIT I – Recent Advances and Evidence-Based Practice in Musculoskeletal Physiotherapy

SECTION – A

MRAEB 1.1. Manual therapy: Soft tissue manipulations and mobilization, neural mobilization, acupressure (Cyriax, Maitland, Butler, McKenzie, Kaltenborn, Mulligan).

MRAEB 1.2. EBP and Recent advances in clinical assessment, laboratory investigations and diagnosis of musculoskeletal disorders. EBP in Management of pain in musculoskeletal disorders.

MRAEB 1.3. Recent Advances in management of orthopedic conditions – Medical, surgical and Physiotherapy. Recent Advances in Physiotherapy management in arthritis and allied conditions.

MRAEB 1.4. Recent Advances and Controversies in Electrotherapy for orthopedic conditions.

MRAEB 1.5. Assessment and training for Core, postural stability and balance in musculoskeletal conditions. Recent advances in Kinematic & kinetic analysis.

MRAEB 1.6. Use of advance Assistive devices and technologies in musculoskeletal system. Current trends in sports injuries and management.

MRAEB 1.7. Evidence Based Physiotherapy in management of metabolic and hormonal, neoplastic and infective conditions of bones and joints.

UNIT II – Advanced Rehabilitation and Recent Trends

SECTION – B

MRAEB 2.1. Recent Advances in Physiotherapy following arthroplasty, implants and soft tissue repairs.

MRAEB 2.2. EBP and recent advances in Physiotherapy after tendon transfer, Electrical stimulation and biofeedback procedures. EBP in Rehabilitation of congenital conditions and malformation of musculoskeletal disorders.

MRAEB 2.3. Recent Advances in External aids, appliances, adaptive self-help devices; prescription, biomechanical compatibility, check-out and training. EBP and Recent advances in electro diagnosis, Electromyography, NCV and evoked potential studies.

MRAEB 2.4. Community based rehabilitation in musculoskeletal disorders. Recent Advances and Controversies in Orthopaedic physiotherapy. Ergonomics assessment and management at workplace.

MRAEB 2.5. Evidence Based Practice and Recent Advances of Manual Therapy in Musculoskeletal Conditions. Evidence based practice and recent advances of Aquatic therapy in Orthopaedic conditions.

Recommended Textbooks:

1. Jones MA, Rivett DA. Clinical Reasoning for Manual Therapists. Butterworth Heinemann.
2. Lederman E. Fundamentals of Manual Therapy.

3. Grieve's Modern Manual Therapy.
4. Herzog W. Clinical Biomechanics of Spinal Manipulation.
5. Fritz S, Paholsky K, Grosenbach MJ. Basic Science for Soft Tissue and Movement Therapies.
6. Adams JS, Wright S. Theory and Practice of Therapeutic Touch.
7. Sinha AG. Principle and Practice of Therapeutic Massage.
8. Manheim C. The Myofascial Release Manual. 3rd Edition.
9. Maitland's Peripheral Manipulation.
10. Maitland's Vertebral Manipulation.
11. Chaitow L. Cranial Manipulation: Theory and Practice.
12. Taylor LP. Taylor's Manual of Physical Evaluation and Treatment.
13. Deic D. Positional Release Technique from a Dynamic Systems Perspective.
14. Goodman CC, Snyder TK. Differential Diagnosis in Physical Therapy.
15. Tidy's Physiotherapy. Elsevier Publication.
16. Chaitow L. Muscle Energy Technique.
17. Reid et al. Sports Injury Assessment and Rehabilitation.
18. Kjaer et al. Textbook of Sports Medicine.
19. Scudder McCann. Sports Medicine: A Comprehensive Approach.
20. Norris CM. Sports Injuries: Diagnosis and Management for Physiotherapists.
21. Kuprian W. Physical Therapy for Sports.
22. McGinnis PM. Biomechanics of Sports and Exercise.
23. Chew FS. Skeletal Radiology: The Bare Bones.
24. Eisenberg RL, Johnson NM. Comprehensive Radiographic Pathology.
25. Hughes J, Hughes M. Imaging: Picture Tests.
26. Mace JD, Kowalczyk N. Radiographic Pathology for Technologists.
27. Redhead DN. Imaging: Colour Guide.
28. Yochum TR, Rowe LR. Yochum and Rowe's Essentials of Skeletal Radiology.
29. Gunn C. Bones and Joints: A Guide for Students.
30. Haines DE. Fundamental Neuroscience.
31. Kandel ER, Schwartz JH, Jessell TM. Principles of Neural Science.
32. Longmore J, Wilkinson I, Rajagopalan S. Oxford Handbook of Clinical Medicine.
33. Dorland WA. Dorland's Illustrated Medical Dictionary.
34. Nolte J. The Human Brain: An Introduction to its Functional Anatomy.
35. Nolte J, Angevine JB Jr. The Human Brain in Photographs and Diagrams.
36. Wicke L. Atlas of Radiologic Anatomy.
37. Seidel H. Mosby's Guide to Physical Examination.
38. Cailliet R. Neck and Arm Pain.

39. Cailliet R. Shoulder Pain.
40. Cailliet R. Knee Pain and Disability.
41. Cailliet R. Hand Pain and Impairment.
42. Cailliet R. Low Back Pain Syndrome.
43. Cailliet R. Soft Tissue Pain and Disability.
44. Chaitow L. Cranial Manipulation: Theory and Practice.
45. Greenman PE. Principles of Manual Medicine.
46. Wilson A. Effective Management of Musculoskeletal Injury: A Clinical Ergonomics Approach to Prevention.
47. O'Sullivan. Physical Rehabilitation: Assessment and Treatment. F.A. Davis.
48. Frankel VH, Nordin M. Basic Biomechanics of the Musculoskeletal System. 2nd Edition.
49. Ebenezer J. Essentials of Orthopedics for Physiotherapists. Jaypee Publications.
50. McRae R, Esser M. Practical Fracture Treatment. Churchill Livingstone.
51. Bulstrode C, Buckwalter J. Oxford Textbook of Orthopedics & Trauma. Oxford University Press.
52. Watson Jones. Fractures & Joint Injuries. Churchill Livingstone.
53. Measurement in Physical Therapy. Churchill Livingstone, London.
54. Cailliet R. Soft Tissue Pain & Disability. Jaypee Brothers, New Delhi.
55. Twomey L. Physical Therapy of the Low Back. Churchill Livingstone.
56. McRae R. Clinical Orthopaedic Examination. Churchill Livingstone.
57. Canale ST, Beaty JH. Campbell's Operative Orthopedics. Mosby.
58. Magee DJ. Orthopedic Physical Assessment. Saunders.
59. Swain J, Bush KW, Brosing J. Diagnostic Imaging for Physical Therapists. Elsevier.
60. Goodman CC, Snyder TK. Differential Diagnosis for Physical Therapists: Screening for Referral. Saunders.
61. Taylor LP. Taylor's Manual of Physical Evaluation and Treatment.
62. Goodman CC, Snyder TK. Differential Diagnosis in Physical Therapy.
63. Chaitow L, Delany JW. Clinical Application of Neuromuscular Techniques. Volume 2 (The Lower Body).

RECENT ADVANCES AND EVIDENCE BASED PRACTICE IN NEURO-PHYSIOTHERAPY (NRAEB)

Course Code	M.P.T (N)-203	L	P	C	Total sessions
Course Title	Recent Advances and Evidence Based Practice in Neuro-Physiotherapy (NRAEB) Speciality 3	120	120	12	240
Pre-requisite	Knowledge of Neurophysiotherapy, Neurology, Neurorehabilitation, Research Methodology and Evidence-Based Practice.				
Co-requisites	NIL				

Course Objective:

1. To understand recent advances in neurological physiotherapy and neurorehabilitation.
2. To develop competency in evidence-based clinical decision making for neurological disorders.
3. To understand recent technological and therapeutic advances in neurological rehabilitation.
4. To integrate current evidence into the assessment and management of neurological conditions.
5. To promote critical appraisal and application of evidence-based neurophysiotherapy practice.

Course Learning Outcomes (CLOs): On completion of this course, the students will be able to:

CLO1: Understand and apply recent advances in Neuro-Physiotherapy for patient care.

CLO2: Search, critically appraise and interpret evidence related to neurological assessment and rehabilitation.

CLO3: Apply evidence-based physiotherapy interventions in the management of neurological disorders.

CLO4: Integrate recent technologies and innovative rehabilitation approaches into neurological physiotherapy practice.

CLO5: Demonstrate evidence-based clinical reasoning in neurological rehabilitation.

Program Learning Outcomes (PLOs):

PLO1: Demonstrate advanced clinical competence in neurological physiotherapy.

PLO2: Apply evidence-based principles in neurological assessment and management.

PLO3: Design and implement comprehensive neurological rehabilitation programmes.

PLO4: Demonstrate leadership, communication and interdisciplinary collaboration.

PLO5: Utilize advanced rehabilitation techniques and technologies in neurological physiotherapy.

PLO6: Uphold ethical and professional standards in physiotherapy practice.

PLO7: Engage in lifelong learning, research and professional development.

Program Specific Outcomes (PSOs):

PSO1: Apply recent advances and evidence-based practice in neurological physiotherapy.

PSO2: Demonstrate competency in advanced neurorehabilitation techniques and technologies.

PSO3: Critically evaluate current evidence and integrate it into neurological physiotherapy practice.

PSO4: Utilize advanced technologies and evidence-based interventions in neurological rehabilitation.

Mapping:

CLO / PLO	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PSO1	PSO2	PSO3	PSO4
CLO1	3	3	2	2	3	2	2	3	3	2	3
CLO2	3	3	3	2	2	2	3	3	2	3	2
CLO3	3	3	3	2	3	2	3	3	3	3	3
CLO4	3	3	3	3	3	2	3	3	3	3	3

MPT DEPARTMENT OF PHYSIOTHERAPY											
CLO5	3	3	3	3	3	3	3	3	3	3	3
1: Slight (Low)			2: Moderate (Medium)				3: Substantial (High)				

Course Content

UNIT I – Recent Advances in Neuro-Physiotherapy

SECTION – A

NRAEB 1.1. Basics of Genetic counseling, Stem cell therapy, Gene therapy.
 NRAEB 1.2. Recent advances in Pain Modulation and Rehabilitation.
 NRAEB 1.3. Recent advances in Vocational Rehabilitation in Neurology Disorders with disability.
 NRAEB 1.4. Recent advancement in Neurology Orthosis – prescription and training.
 NRAEB 1.5. Psychiatry problems in Neurological conditions and Physiotherapy (BAT, CBT). Psychological aspects of adaptation during various aspects of neurological disabilities.
 NRAEB 1.6. Institutional & community-based rehabilitation for Neurological Dysfunction.
 NRAEB 1.7. Recent Neuro Physiotherapy techniques – Mental Imagery technique, Virtual Reality Therapy/Virtual Clinic, Robotic Movement Therapy, Pilates therapy, Mirror Box therapy, Mime therapy, Floatation Therapy, Cupping Therapy, Jadestone Therapy, Matrix Rhythm Therapy, IASTM and Dry Needling, CranioSacral therapy, Neurodynamics in Neurological conditions and Neural Mobilization, Hippo-therapy, Transcranial Direct Current Stimulation, Transcranial Magnetic Stimulation, Artificial Intelligence, Whole Body Vibrator and Neuromuscular Technique.
 NRAEB 1.8. Eclectic Approach.

UNIT II – Evidence Based Practice in Neuro-Physiotherapy

SECTION – B

NRAEB 2.1. History of Evidence Based Practice in Neurological Physiotherapy, Clinical Decision Making, importance of Evidence Based Practice, Evidence about prognosis, experience and diagnosis, locating evidences, challenges and barriers in EBP.
 NRAEB 2.2. Evidences in interventions for Neurological Impairments (Sensory, Motor, Cognitive and Perceptual).
 NRAEB 2.3. Evidences for Physiotherapy in Traumatic CNS conditions.
 NRAEB 2.4. Evidences in Physiotherapy management of Stroke, Cerebellar Ataxia.
 NRAEB 2.5. Evidences in Physiotherapy management of Peripheral Nerve Injuries.
 NRAEB 2.6. Evidences in Physiotherapy management of Parkinson's Disease.
 NRAEB 2.7. Evidences in Physiotherapy management of Myopathies, Neuropathies and NMJ Disorders.
 NRAEB 2.8. Sports training in Neurological Physiotherapy.
 NRAEB 2.9. Tele rehabilitation in Neurological Physiotherapy.

Recommended Textbooks

1. American Psychological Association. Publication Manual of the American Psychological Association. Washington, DC.
2. Domholdt E. Physical Therapy Research: Principles and Applications. W.B. Saunders, Philadelphia.
3. Kuzma JW, Bohnenblust SE. Basic Statistics for the Health Sciences. McGraw Hill.
4. Munro BH. Statistical Methods for Healthcare Research. Lippincott.
5. Coakes SJ, Steed LG. SPSS: Analysis Without Anguish. John Wiley & Sons.
6. Jenkins S, Price CJ, Straker L. The Researching Therapist: A Practical Guide to Planning, Performing and Communicating Research. Churchill Livingstone.
7. Campbell MJ, Machin D. Medical Statistics: A Commonsense Approach. John Wiley.
8. Domholdt E. Physical Therapy Research: Principles and Applications. W.B. Saunders.
9. Gowitzke, Williams & Wilkins. Scientific Basis of Human Movement.
10. Masoro EJ. Handbook of Physiology in Aging. CRC Press.
11. Hicks C. Research for Physiotherapists. Churchill Livingstone.

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12. Polgar S. Introduction to Research in Health Sciences. Livingstone.
13. Currier DP. Elements of Research in Physical Therapy. Williams & Wilkins.
14. Sproull NL. Handbook of Research Methods. Scarecrow Press.
15. Wilenski H, Hale H, Iremonger T. Public Power and Administration.
16. Hickik RJ. Physical Therapy Administration and Management.
17. Nosse LJ. Management Principles for Physiotherapists.
18. Carpenter MB. Human Neuroanatomy. Williams & Wilkins.
19. Fraser B. Physical Management of Multiple Handicapped. Williams & Wilkins.
20. Aisen ML. Orthotics in Neurological Rehabilitation. Demos Publications.
21. Delisa JA. Manual of Nerve Conduction Velocity Techniques. Raven Press.
22. Kimura J. Electrodiagnosis in Diseases of Nerve and Muscle. F.A. Davis.
23. O'Sullivan SB. Physical Rehabilitation: Assessment and Treatment. F.A. Davis.
24. Farber SD. Neuro-Rehabilitation. W.B. Saunders.
25. Kerb D. Biofeedback: A Practitioner's Guide. Guilford Press.
26. Black I. The Neural Basis of Motor Control. Churchill Livingstone.
27. Turnbull GI. Physical Therapy Management of Parkinson's Disease. Churchill Livingstone.
28. Bobath B. Abnormal Postural Reflex Activity Caused by Brain Lesions. Aspen Publications.
29. Eagle H. Disorders of Voluntary Muscle. Churchill Livingstone.
30. Knott M, Voss DE. Proprioceptive Neuromuscular Facilitation Techniques. Harper & Row.
31. Laidler P, Chapman S, Hall B. Stroke Rehabilitation.
32. Carr JH, Shepherd RB. Motor Relearning Programme for Stroke. Aspen Publications.
33. Bobath B. Adult Hemiplegia: Evaluation and Treatment. Heinemann.
34. Bromley I. Paraplegia and Tetraplegia. Churchill Livingstone.
35. Measurement in Physical Therapy. Churchill Livingstone.
36. Stokes M. Physical Management in Neurological Rehabilitation. Elsevier Mosby.
37. Misra UK, Kalita J. Clinical Neurophysiology: NCV, EMG, Evoked Potentials. Elsevier.
38. Delisa JA, Gans BM. Rehabilitation Medicine: Principles and Practice.
39. Gunzburg R, Szpalski M. Whiplash Injuries: Current Concepts in Prevention, Diagnosis and Treatment.
40. Krusen. Handbook of Physical Rehabilitation.
41. Ropper AH, Brown RH. Adams and Victor's Principles of Neurology.
42. Snell RS. Clinical Neuroanatomy for Medical Students.
43. Somers MF. Spinal Cord Injury Functional Rehabilitation.
44. Butler DS. Mobilisation of the Nervous System. Churchill Livingstone.
45. Umphred DA. Neurological Rehabilitation. Mosby.
46. Lindsay KW, Bone I. Neurology & Neurosurgery Illustrated.
47. Beal MF, Lang AE, Ludolph A. Neurodegenerative Diseases. Cambridge University Press.
48. Suarez JL. Critical Care Neurology and Neurosurgery. Humana Press.
49. Lynch DR. Neurogenetics: Scientific & Clinical Advances. Taylor & Francis Group.
50. Asbury AK, McKhann GM, McDonald WI. Diseases of the Nervous System. Vol. I & II, 3rd Edition.

RECENT ADVANCES AND EVIDENCE BASED PRACTICE IN CARDIO AND PULMONARY PHYSIOTHERAPY (CRAEB)

Course CODE	M.P.T (C)-203	L	P	C	Total sessions
Course Title	Recent Advances and Evidence Based Practice in Cardio and Pulmonary Physiotherapy (CRAEB) Speciality Paper 3	120	120	12	240
Pre-requisite	Knowledge of Cardio-Pulmonary Physiotherapy, Exercise Physiology, Research Methodology and Evidence-Based Practice.				
Co-requisites	NIL				

Course Objective:

1. To understand recent advances in cardiovascular and pulmonary physiotherapy.
2. To develop competency in evidence-based clinical decision making for cardio-pulmonary disorders.
3. To understand recent technological and therapeutic advances in cardio-pulmonary rehabilitation.
4. To integrate current evidence into assessment and management of cardiovascular and pulmonary conditions.
5. To promote critical appraisal and application of evidence-based cardio-pulmonary physiotherapy practice.

Course Learning Outcomes (CLOs): On completion of this course, the students will be able to:

CLO1: Understand and apply recent advances in cardio-pulmonary physiotherapy for patient care.

CLO2: Search, critically appraise and interpret evidence related to cardiovascular and pulmonary assessment and rehabilitation.

CLO3: Apply evidence-based physiotherapy interventions in the management of cardio-pulmonary disorders.

CLO4: Integrate recent technologies and innovative rehabilitation approaches into cardio-pulmonary physiotherapy practice.

CLO5: Demonstrate evidence-based clinical reasoning in cardio-pulmonary rehabilitation.

Program Learning Outcomes (PLOs):

PLO1: Demonstrate advanced clinical competence in cardio-pulmonary physiotherapy.

PLO2: Apply evidence-based principles in cardio-pulmonary assessment and management.

PLO3: Design and implement comprehensive cardio-pulmonary rehabilitation programmes.

PLO4: Demonstrate leadership, communication and interdisciplinary collaboration.

PLO5: Utilize advanced rehabilitation techniques and technologies in cardio-pulmonary physiotherapy.

PLO6: Uphold ethical and professional standards in physiotherapy practice.

PLO7: Engage in lifelong learning, research and professional development.

Program Specific Outcomes (PSOs):

PSO1: Apply recent advances and evidence-based practice in cardio-pulmonary physiotherapy.

PSO2: Demonstrate competency in advanced cardio-pulmonary rehabilitation techniques and technologies.

PSO3: Critically evaluate current evidence and integrate it into cardio-pulmonary physiotherapy practice.

PSO4: Utilize advanced technologies and evidence-based interventions in cardio-pulmonary rehabilitation.

Mapping:

CLO / PLO	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PSO1	PSO2	PSO3	PSO4
CLO1	3	3	2	2	3	2	2	3	3	2	3
CLO2	3	3	3	2	2	2	3	3	2	3	2

MPT DEPARTMENT OF PHYSIOTHERAPY											
CLO3	3	3	3	2	3	2	3	3	3	3	3
CLO4	3	3	3	3	3	2	3	3	3	3	3
CLO5	3	3	3	3	3	3	3	3	3	3	3

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

Course Content

UNIT I – Recent Advances in Cardio-Pulmonary Physiotherapy

SECTION – A

CRAEB 1.1. GENERAL:

- Optimizing treatment prescription: relating treatment to the underlying pathophysiology of cardio-vascular and pulmonary disorders – an evidence-based practice.
- Documentation of the data, Report writing – prescription of exercises.
- Importance of creating awareness in community, Patient education and psychological counseling in various cardio-vascular and pulmonary disorders – evidence-based practice.
- Recent advancement in Cardio-pulmonary resuscitation (Basic and Advanced).

CRAEB 1.2. Bronchial hygiene – Physiological basis and clinical application, evidence-based practice and recent advances of airway clearance techniques, including facilitating airway clearance with coughing techniques.

CRAEB 1.3. Care of a dying patient – Ethical issues and recent guidelines.

CRAEB 1.4. Cardiopulmonary training in various patient populations – Athletes, Geriatric and Pediatric population.

CRAEB 1.5. Medical gas therapy including oxygen therapy – Physiological basis, modes of administration and home delivery care – an evidence-based practice and recent advances including Hyperbaric Oxygen Therapy.

CRAEB 1.6. Aerosol therapy – An evidence-based practice in chest physiotherapy.

UNIT II – Evidence Based Practice in Cardio-Pulmonary Physiotherapy

SECTION – B

CRAEB 2.1. Recent advances and evidence-based practice in exercise testing, planning, principles of exercise prescription and physiotherapy management in cardio-vascular and pulmonary conditions.

CRAEB 2.2. Recent advances and evidence-based practice in cardio-respiratory physiotherapy and exercise prescription in special populations like cancer, renal conditions, burns, abdominal surgeries, neurological patients and Diabetes Mellitus patients.

CRAEB 2.3. Recent advances in the use of physical agents and physiotherapy management in wounds, ulcers, grafts and incisions and vascular disorders.

CRAEB 2.4. Evidence-based practice of core muscle strengthening, resistance training, endurance training and other training methods in cardiac and pulmonary rehabilitation.

CRAEB 2.5. Pilates – School of thought for cardiopulmonary conditions.

CRAEB 2.6. Physiotherapy management in oncology – Evidence-based practice and recent advances.

CRAEB 2.7. Recent advances and evidence-based practice in respiratory physiotherapy training techniques and respiratory physiotherapy devices.

CRAEB 2.8. Evidence-based practice and recent advances in improving cardio-respiratory fitness training in all populations including general, pediatric and geriatric population.

CRAEB 2.9. Evidence-based practice and recent guidelines in cardiac rehabilitation and pulmonary rehabilitation.

CRAEB 2.10. Role of exercise and quality of life and cardio-pulmonary rehabilitation, health status measurements and recent advances.

CRAEB 2.11. Use of advanced assistive devices like Robot therapy, Continuous Lateral Rotation Therapy, Intrapulmonary Percussive Ventilator and technologies in cardiovascular and pulmonary system.

CRAEB 2.12. Evidence-based practice and recent advances of Aquatic therapy in cardiovascular conditions like diabetes, peripheral vascular disease (PVD), hypertension etc.

Recommended Textbooks

1. Froelicher V, Myers J. Exercise and Heart. Saunders Publication.
2. Jean Jobin et al. Advances in Cardio-Pulmonary Rehabilitation.
3. Irwin S, Tecklin JS. Cardio-Pulmonary Physical Therapy: A Guide to Practice. Mosby.
4. Brannon FJ, Foley MW, Starr JA, Saul LM.
5. Cardio-Pulmonary Rehabilitation: Basic Theory and Application. F.A. Davis Company.
6. Zada CC. Pulmonary Management in Physical Therapy. Churchill Livingstone.
7. Webber BA, Pryor JA. Physiotherapy for Respiratory and Cardiac Problems. Churchill Livingstone.
8. Burton GG, Hodgkin JE, Ward JJ. Respiratory Care: A Guide to Clinical Practice. 4th Edition. Lippincott Williams & Wilkins.
9. Berne RM, Levy MN. Cardiovascular Physiology. Mosby.
10. West JB. Respiratory Physiology: The Essentials. Lippincott Williams & Wilkins.
11. Macleod's Clinical Examination.
12. Davies A, Moores C. The Respiratory System. Illustrated by Robert Britton. Churchill Livingstone.
13. Burton GG, Hodgkin JE, Ward JJ. Respiratory Care: A Guide to Clinical Practice. Lippincott Williams & Wilkins.
14. Branson RD, Chatburn RL. Respiratory Care Equipment. J.B. Lippincott Company.
15. MacIntyre NR, Branson RD. Mechanical Ventilation. Saunders.
16. Watchie J. Cardio-Pulmonary Physical Therapy. Saunders.
17. Hillegass E, Sadowsky HS. Essentials of Cardio-Pulmonary Physical Therapy. Saunders Elsevier.
18. Pollock ML, Schmidt DH. Heart Disease and Rehabilitation.
19. Irwin S, Tecklin JS. Cardio-Pulmonary Physical Therapy: A Guide to Practice. Mosby.
20. Brannon FJ, Foley MW, Starr JA, Saul LM.
21. Cardio-Pulmonary Rehabilitation: Basic Theory and Application. F.A. Davis Company.

RECENT ADVANCES AND EVIDENCE-BASED PRACTICE IN SPORTS PHYSIOTHERAPY (SRAEB)

Course CODE	M.P.T (S)-203	L	P	C	Total sessions
Course Title	Recent Advances and Evidence-Based Practice in Sports Physiotherapy (SRAEB) Speciality Paper 3	120	120	12	240
Pre-requisite	Knowledge of Sports Physiotherapy, Sports Medicine, Exercise Physiology, Biomechanics and Research Methodology.				
Co-requisites	NIL				

Course Objective:

1. To understand recent advances in Sports Physiotherapy and Sports Medicine.
2. To develop evidence-based clinical decision-making skills in sports physiotherapy.
3. To understand current concepts in exercise prescription, rehabilitation and sports medicine.
4. To apply evidence-based physiotherapy interventions for athletes and special populations.
5. To integrate recent technologies and advances into sports physiotherapy practice.

Course Learning Outcomes (CLOs): On completion of this course, the students will be able to:

CLO1: Explain recent advances in sports physiotherapy and evidence-based sports rehabilitation.

CLO2: Apply evidence-based exercise prescription for athletes and special populations.

CLO3: Demonstrate knowledge of current concepts in sports medicine, sports pharmacology and rehabilitation.

CLO4: Apply evidence-based clinical decision making in prevention and management of sports injuries and medical conditions.

CLO5: Integrate recent technologies and contemporary approaches into sports physiotherapy practice.

Program Learning Outcomes (PLOs):

PLO1: Demonstrate advanced clinical competence in Sports Physiotherapy.

PLO2: Apply evidence-based principles in sports rehabilitation.

PLO3: Design comprehensive rehabilitation programmes for athletes.

PLO4: Demonstrate effective communication and interdisciplinary collaboration.

PLO5: Utilize advanced assessment and treatment techniques.

PLO6: Practice ethical and professional standards.

PLO7: Engage in lifelong learning and research.

Program Specific Outcomes (PSOs):

PSO1: Apply evidence-based sports physiotherapy interventions.

PSO2: Design athlete-specific rehabilitation and conditioning programmes.

PSO3: Integrate recent advances into sports physiotherapy practice.

PSO4: Demonstrate competency in advanced sports rehabilitation.

Mapping:

CLO / PLO	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PSO1	PSO2	PSO3	PSO4
CLO1	3	3	2	2	3	2	3	3	2	3	3
CLO2	3	3	3	2	3	2	3	3	3	3	3
CLO3	3	3	3	2	3	2	2	3	3	3	3
CLO4	3	3	3	3	3	2	3	3	3	3	3

MPT		DEPARTMENT OF PHYSIOTHERAPY									
CLO5	3	3	3	3	3	3	3	3	3	3	3
1: Slight (Low)		2: Moderate (Medium)					3: Substantial (High)				

Course Content

UNIT I – Recent Advances in Sports Physiotherapy

SECTION – A

SRAEB 1.1. Exercise and Common Pulmonary Conditions

- Exercise induced bronchial obstruction
- Exercise in chronic airway obstruction
- Air pollution and exercise

SRAEB 1.2. Exercise and Cardiac Conditions

- Exercise prescription for heart disease
- Exercise in primary prevention in ischemic heart disease
- Exercise for secondary prevention of ischemic heart disease

SRAEB 1.3. Diabetes and Exercise

- Exercise in diabetic patients
- Exercise as a method of control of diabetes

SRAEB 1.4. Protective equipment design of shoe safety factors in equipment. Health club and fitness concept, use and misuse of equipment.

SRAEB 1.5. Special concerns for para-athletes.

UNIT II – Evidence-Based Practice in Sports Physiotherapy

SECTION – B

SRAEB 2.1. Exercises for Special Categories

- Child and adolescent athlete's problems (Exercise for growing bones)
- Special problems of older athletes
- Sports and exercise programme for geriatrics and rheumatic population

SRAEB 2.2. Doping in Sports

- IOC prohibited drugs – groups and classifications
- IOC rules and regulations on doping in sports, hazards of prohibited substances

SRAEB 2.3. Identification of Talent for Sports

- Detailed procedure for screening and identification of sports talent
- Prediction of adult potentials at the young age

SRAEB 2.4. Sports Pharmacology and medico-legal issues in sports.

SRAEB 2.5. Segmental Stabilization Concepts of spine.

SRAEB 2.6. Emergency medical planning and cover for Sports events.

SRAEB 2.7. Effect of physical activity intervention in youth.

SRAEB 2.8. Precision heart rate training.

SRAEB 2.9. Current concepts in obesity management.

SRAEB 2.10. Current concepts in comprehensive physical examination for the instabilities of knee.

SRAEB 2.11. Current concepts in tendinopathies.

Recommended Textbooks

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1. Chew, F. Skeletal Radiology: The Bare Bones. Williams & Wilkins.
2. Eisenberg RL, Johnson NM. Comprehensive Radiographic Pathology. Mosby.
3. Hughes J, Hughes M. Imaging: Picture Tests. Churchill Livingstone.
4. Mace JD, Kowalczyk N. Radiographic Pathology for Technologists. Mosby.
5. Redhead DN. Imaging: Colour Guide. Churchill Livingstone.
6. Yochum TR, Rowe LR. Yochum and Rowe's Essentials of Skeletal Radiology. Lippincott Williams & Wilkins.
7. Nolte J, Angevine JB. The Human Brain in Photographs and Diagrams. Mosby.
8. Wicke L. Atlas of Radiologic Anatomy. Lea & Febiger.
9. Seidel H. Mosby's Guide to Physical Examination. C.V. Mosby.
10. Cailliet R. Neck and Arm Pain. FA Davis.
11. Cailliet R. Shoulder Pain. FA Davis.
12. Cailliet R. Knee Pain and Disability. FA Davis.
13. Cailliet R. Hand Pain and Impairment. FA Davis.
14. Cailliet R. Low Back Pain Syndrome. FA Davis.
15. Cailliet R. Soft Tissue Pain and Disability. FA Davis.
16. O'Sullivan. Physical Rehabilitation: Assessment and Treatment. FA Davis.
17. Kuprian. Physical Therapy for Sports. W.B. Saunders.
18. Malone. Orthopaedic and Sports Physical Therapy. C.V. Mosby.
19. Zulunga et al. Sports Physiotherapy. W.B. Saunders.
20. Reed. Sports Injuries: Assessment and Rehabilitation. W.B. Saunders.
21. Gould. Orthopaedic Sports Physical Therapy. Mosby.
22. Norris. Sports Injuries: Diagnosis and Management for Physiotherapists. Heinmann.
23. Perry J. Gait Analysis.
24. McArdle, Katch & Katch. Exercise Physiology.
25. Era Volinski. Nutrition and Exercise in Sports.
26. Brooks GA, Fahey TD. Exercise Physiology – Human Bioenergetics and its Applications.
27. Astrand & Rodahl. Text Book of Work Physiology.
28. Fox and Mathews. The Physiological Basis of Physical Education and Athletics.
29. Erston and Reilly. Kinanthropometry and Exercise Physiology Laboratory Manual.
30. Rowland. Developmental Exercise Physiology.
31. Clarke. Exercise Physiology.
32. Gardiner MD. The Principles of Exercise Therapy.
33. Kisner and Colby. Therapeutic Exercise: Foundations and Techniques.
34. Basmajian JV. Therapeutic Exercise.
35. Wood & Baker. Beard's Massage.
36. William E. Prentice. Rehabilitation Techniques.
37. Werner Kuprian. Physical Therapy for Sports.
38. Kennedy. Mosby's Sports Therapy Taping Guide.
39. Malone. Orthopaedic and Sports Physical Therapy.
40. William E. Prentice. Therapeutic Modalities in Sports Medicine.
41. William E. Prentice. Rehabilitation Techniques.
42. O'Sullivan & Schmitz. Physical Rehabilitation: Assessment and Treatment.
43. Low & Reed. Electrotherapy Explained.
44. Meryl Roth Gersh. Electrotherapy in Rehabilitation.
45. Joseph Kahn. Principles and Practice of Electrotherapy.
46. Harrelson and Andrews. Physical Rehabilitation of Injured Athlete.
47. Nelson and Currier. Clinical Electrotherapy.
48. Greenman. Principles of Manual Medicine.
49. Kuprian. Physical Therapy for Sports.
50. Bates. Aquatic Exercise Therapy.

51. Michlovitz. Thermal Agents in Rehabilitation.
52. Lehmann. Therapeutic Heat and Cold.
53. Morgan and King. Introduction to Psychology.
54. Suinn. Psychology in Sports: Methods and Applications.
55. Grafi. Psychology in Contemporary Sports.
56. De Lisa. Manual of Nerve Conduction Velocity Techniques.
57. O'Sullivan. Physical Rehabilitation: Assessment and Treatment.
58. Kerb D. Bio-feedback: A Practitioner's Guide.
59. Luttgens K., Hamilton N. Kinesiology – Scientific Basis of Human Motion. Brown & Benchmark.
60. James G. Hay – The Biomechanics of Sports Techniques, Prentice Hall. Brunnstrom
61. Kreighbaum E., Barthels K. Biomechanics – A Qualitative Approach for Studying Human Motion. MacMillan.
62. Rasch and Burk. Kinesiology and Applied Anatomy. Lee & Febiger.
63. White and Punjabi. Biomechanics of Spine. Lippincott.
64. Norkin & Levangie. Joint Structure and Function: A Comprehensive Analysis. F.A. Davis.
65. Kapandji. Physiology of Joints. Vol. I, II & III. W.B. Saunders.
66. Northrip et al. Analysis of Sports Motion: Anatomic and Biomechanic Perspectives. W.C. Brown Co., Iowa.
67. Leveac B.F. Basic Biomechanics in Sports and Orthopaedic Therapy. C.V. Mosby.
68. Morris B. Mellion. Office Sports Medicine. Hanley & Belfus.
69. Richard B. Birrer. Sports Medicine for the Primary Care Physician. CRC Press.
70. Torg, Welsh & Shephard. Current Therapy in Sports Medicine III. Mosby.
71. Zulunga et al. Sports Physiotherapy. W.B. Saunders.
72. Brukner and Khan. Clinical Sports Medicine. McGraw Hill.
73. Reed. Sports Injuries – Assessment and Rehabilitation. W.B. Saunders.
74. Gould. Orthopaedic Sports Physical Therapy. Mosby.
75. C. Norris. Sports Injuries – Diagnosis and Management for Physiotherapists. Heinmann.
76. D. Kulund. The Injured Athlete. Lippincott.
77. Nicholas Hershman. The Upper Extremity in Sports Medicine. Vol. I.
78. Nicholas Hershman. The Lower Extremity and Spine in Sports Medicine. Vol. II.
79. Nicholas Hershman. The Lower Extremity and Spine in Sports Medicine. Vol. III.
80. The Lower Extremity and Spine in Sports Medicine. Mosby.
81. Lee & Dress. Orthopaedic Sports Medicine. W.B. Saunders.
82. Fu and Stone. Sports Injuries: Mechanism, Prevention and Treatment. Williams & Wilkins.
83. Scuderi, McCann, Bruno. Sports Medicine – Principles of Primary Care. Mosby.
84. First Aid to Injured. St. John's Ambulance Association.
85. Andrea Bates and Norm Hanson. Aquatic Exercise Therapy. W.B. Saunders.
86. Dvir. Isokinetics: Muscle Testing, Interpretation and Clinical Applications.
87. W.B. Saunders.
88. Hartley. Practical Joint Assessment: A Sports Medicine Manual (Upper and Lower Quadrants). C.V. Mosby.
89. Albert. Eccentric Muscle Training in Sports and Orthopedics. W.B. Saunders.
90. Voss et al. Proprioceptive Neuromuscular Facilitation – Patterns & Techniques. Williams & Wilkins.
91. Torg, Welsh and Shephard. Current Therapy in Sports Medicine III. Mosby.
92. Reed. Sports Injuries – Assessment and Rehabilitation. W.B. Saunders.
93. Nordin and Frankel. Basic Biomechanics of the Musculoskeletal System. Williams & Wilkins.
94. McArdle, Katch & Katch. Exercise Physiology.
95. Brukner and Khan. Clinical Sports Medicine. McGraw Hill.
96. O'Leary. Drugs and Doping in Sports.
97. Wilson A. Effective Management of Musculoskeletal Injury: A Clinical Ergonomics Approach to Prevention. Churchill Livingstone.
98. Lee and Dress. Orthopaedic Sports Medicine. W.B. Saunders.
99. Kurt Dorr and Jonathan S. Rakich. Hospital Organization and Management.

RECENT ADVANCES AND EVIDENCE-BASED PRACTICE IN PEDIATRIC & NEONATAL PHYSIOTHERAPY (PRAEB)

Course Code	M.P.T (P)-203	L	P	C	Total sessions
Course Title	Recent Advances and Evidence-Based Practice in Pediatric & Neonatal Physiotherapy (PRAEB) Speciality Paper 3	120	120	12	240
Pre-requisite	Knowledge of Pediatric & Neonatal Physiotherapy, Research Methodology, Evidence-Based Practice and Pediatric Rehabilitation.				
Co-requisites	NIL				

Course Objective:

1. To understand recent advances in Pediatric and Neonatal Physiotherapy.
2. To develop evidence-based clinical reasoning and decision-making skills in pediatric rehabilitation.
3. To understand recent therapeutic approaches and advanced rehabilitation techniques in pediatric physiotherapy.
4. To apply evidence-based interventions in pediatric and neonatal rehabilitation.
5. To integrate recent advances and technologies into pediatric physiotherapy practice.

Course Learning Outcomes (CLOs): On completion of this course, the students will be able to:

CLO1: Understand and apply recent advances in Pediatric Physiotherapy for patient care.

CLO2: Search, interpret and critically appraise evidence related to pediatric physiotherapy assessment and management.

CLO3: Apply evidence-based physiotherapy interventions in pediatric neurological, musculoskeletal and cardio-respiratory disorders.

CLO4: Integrate recent technologies, assessment methods and rehabilitation approaches into pediatric physiotherapy practice.

CLO5: Demonstrate evidence-based clinical reasoning in pediatric and neonatal physiotherapy.

Program Learning Outcomes (PLOs):

PLO1: Demonstrate advanced clinical competence in Pediatric Physiotherapy.

PLO2: Apply evidence-based principles in pediatric assessment and rehabilitation.

PLO3: Design comprehensive pediatric rehabilitation programmes.

PLO4: Demonstrate effective communication and interdisciplinary collaboration.

PLO5: Utilize advanced pediatric therapeutic techniques and technologies.

PLO6: Uphold ethical and professional standards in physiotherapy practice.

PLO7: Engage in lifelong learning and research.

Program Specific Outcomes (PSOs):

PSO1: Apply recent advances and evidence-based practice in pediatric physiotherapy.

PSO2: Demonstrate competency in advanced pediatric rehabilitation techniques.

PSO3: Integrate evidence-based interventions into pediatric physiotherapy practice.

PSO4: Utilize advanced technologies and assessment methods in pediatric rehabilitation.

Mapping:

CLO / PLO	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PSO1	PSO2	PSO3	PSO4
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MPT DEPARTMENT OF PHYSIOTHERAPY											
CLO1	3	3	2	2	3	2	2	3	3	2	3
CLO2	3	3	3	2	2	2	3	3	2	3	2
CLO3	3	3	3	2	3	2	3	3	3	3	3
CLO4	3	3	3	3	3	2	3	3	3	3	3
CLO5	3	3	3	3	3	3	3	3	3	3	3

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Course Content

UNIT I – Recent Advances in Pediatric & Neonatal Physiotherapy

SECTION – A

PRAEB 1.1. Advanced instruction in physical examination, diagnosis, treatment and reassessment of the Pediatric neurological, musculoskeletal, cardio-respiratory system.

PRAEB 1.2. Psychosocial affects in children and parents.

PRAEB 1.3. Evidence based practice for exercise prescription for home program.

PRAEB 1.4. Report writing for clinical cases & research.

PRAEB 1.5. Recent advances in prescription, indications, assessment and training for orthosis, prosthesis and adaptive equipment in physically challenged children.

PRAEB 1.6. Evidence-based practice in musculoskeletal and neurological loco-motor disorders in children.

UNIT II – Evidence-Based Practice in Pediatric & Neonatal Physiotherapy

SECTION – B

PRAEB 2.1. Rationale of basic and advanced investigative procedures with differential diagnosis.

PRAEB 2.2. Evidence-based practice & recent advances on the role of Physical Therapy in public and special schools.

PRAEB 2.3. Recent advances in exercise prescription for children.

PRAEB 2.4. Evidence-based practice for management of pediatric oncology & burns.

PRAEB 2.5. Recent advances in pain control, assessment & management in children.

PRAEB 2.6. Equipment, assessment & treatment in neonatal & pediatric intensive care units.

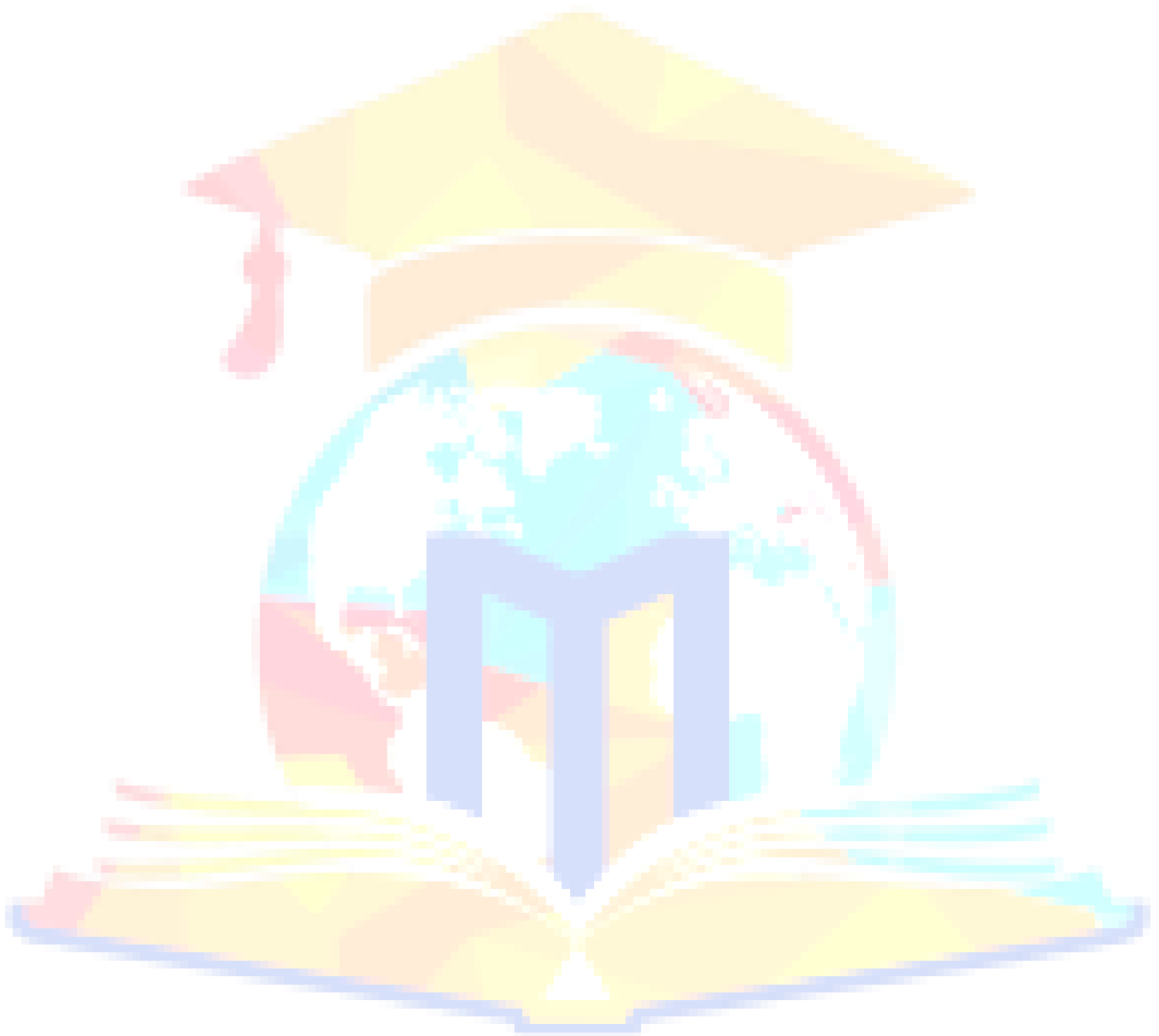
PRAEB 2.7. Recent advances in instrumentation, theories, handling and pediatric physical therapy techniques.

PRAEB 2.8. Problem-based learning relevant to clinical conditions typically seen in pediatrics.

Recommended Textbooks

1. Scientific Basis of Human Movement. Gowitzke. Williams & Wilkins, Baltimore.
2. White A, Panjabi J. Clinical Biomechanics of Spine. J.B. Lippincott, Philadelphia.
3. Carpenter M.B. Human Neuroanatomy. Williams & Wilkins, Baltimore.
4. Wilhelm. Physical Therapy in Early Infancy. Churchill Livingstone, New York.
5. Campbell Suzann K. Physical Therapy for Children. W.B. Saunders, Philadelphia.
6. Fraser. Physical Management of Multiple Handicapped. Williams & Wilkins, Baltimore.
7. Eckersley. Elements of Paediatric Physiotherapy. Churchill Livingstone, Edinburgh.
8. Shepherd R. Physiotherapy in Paediatrics. Heinmann, London.
9. The Growth Chart. WHO, Geneva.
10. Aisen. Orthotics in Neurological Rehabilitation. Demos Publication, New York.
11. Kimura J. Electrodiagnosis in Diseases of Nerve and Muscle. F.A. Davis, Philadelphia.
12. Donatelli. Orthopaedic Physical Therapy. Churchill Livingstone, London.
13. Perry J. Gait Analysis. Black Thosofare, New Jersey.
14. Kerb D. Biofeedback – A Practitioner's Guide. Guilford Press.
15. Bobath B. Abnormal Postural Reflex Activity Caused by Brain Lesions. Aspen Publications, Rockville, 1897.

16. Egel. Disorders of Voluntary Muscle. Churchill Livingstone, Edinburgh.
17. Knott M., Voss. Proprioceptive Neuromuscular Facilitation Techniques. Harper & Row, New York.
18. Anderson E.M., Spain B. Child with Spina Bifida. Methuen, London.
19. Robert N.R.C. A Manual of Neonatal Intensive Care. Edward Arnold, London.
20. Hoidkina. Pulmonary Rehabilitation: Guidelines to Success. Butterworth, Boston.
21. Amundsen L.R. Cardiac Rehabilitation. Churchill Livingstone, London.



RECENT ADVANCES AND EVIDENCE-BASED PRACTICE IN OBG PHYSIOTHERAPY (OGRAEB)

Course CODE	M.P.T (OG)-203	L	P	C	Total sessions
Course Title	Recent Advances and Evidence-Based Practice in OBG Physiotherapy (OGRAEB) Speciality Paper 3	120	120	12	240
Pre-requisite	Knowledge of Obstetrics & Gynecology Physiotherapy, Research Methodology, Evidence-Based Practice and Women's Health Rehabilitation.				
Co-requisites	NIL				

Course Objective:

1. To understand recent advances in Obstetrics and Gynecology Physiotherapy.
2. To develop evidence-based clinical reasoning in women's health physiotherapy.
3. To understand advanced physiotherapy interventions in obstetric and gynecological conditions.
4. To apply evidence-based physiotherapy management in women's health disorders.
5. To integrate recent technologies and rehabilitation approaches into obstetric and gynecological physiotherapy.

Course Learning Outcomes (CLOs): On completion of this course, the students will be able to:

CLO1: Understand and apply recent advances in Obstetrics and Gynecology Physiotherapy for patient care.

CLO2: Search, interpret and critically appraise evidence related to assessment and management of obstetric and gynecological conditions.

CLO3: Apply evidence-based physiotherapy interventions in women's health rehabilitation.

CLO4: Integrate recent technologies and advanced rehabilitation approaches into obstetric and gynecological physiotherapy practice.

CLO5: Demonstrate evidence-based clinical reasoning in Obstetrics and Gynecology Physiotherapy.

Program Learning Outcomes (PLOs):

PLO1: Demonstrate advanced clinical competence in Women's Health Physiotherapy.

PLO2: Apply evidence-based physiotherapy principles in clinical practice.

PLO3: Design comprehensive rehabilitation programmes for obstetric and gynecological conditions.

PLO4: Demonstrate effective communication and interdisciplinary collaboration.

PLO5: Utilize advanced physiotherapy techniques and technologies in women's health.

PLO6: Uphold ethical and professional standards in physiotherapy practice.

PLO7: Engage in lifelong learning and research.

Program Specific Outcomes (PSOs):

PSO1: Apply recent advances and evidence-based practice in Obstetrics and Gynecology Physiotherapy.

PSO2: Demonstrate competency in advanced women's health rehabilitation techniques.

PSO3: Integrate evidence-based interventions into obstetric and gynecological physiotherapy practice.

PSO4: Utilize advanced technologies and assessment methods in women's health rehabilitation.

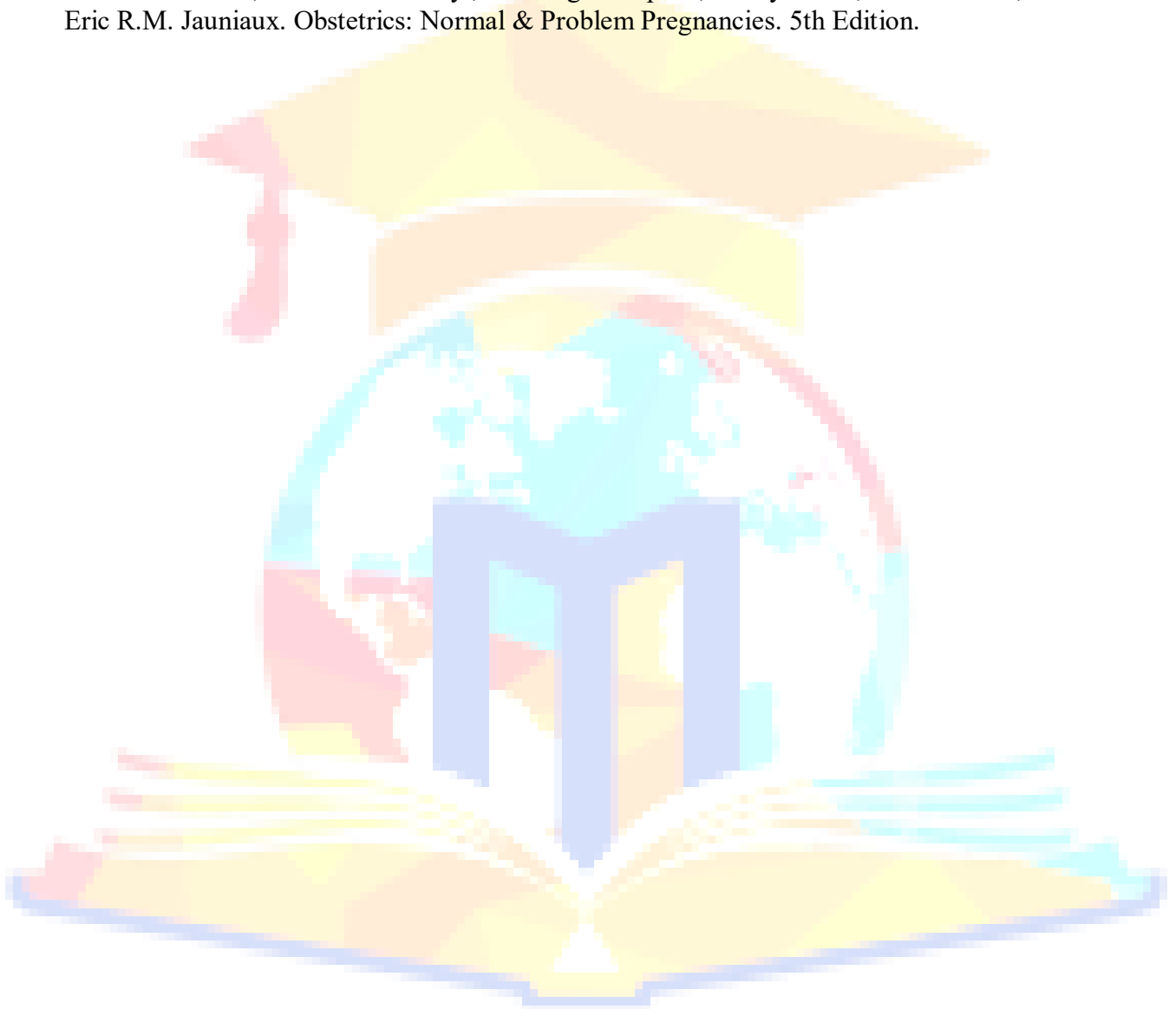
Mapping:

CLO / PLO	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PSO1	PSO2	PSO3	PSO4
CLO1	3	3	2	2	3	2	2	3	3	2	3
CLO2	3	3	3	2	2	2	3	3	2	3	2

DEPARTMENT OF PHYSIOTHERAPY											
CLO3	3	3	3	2	3	2	3	3	3	3	3
CLO4	3	3	3	3	3	2	3	3	3	3	3
CLO5	3	3	3	3	3	3	3	3	3	3	3

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

12. Rebecca C. Stephenson, Linda J. O'Connor. Obstetrics & Gynaecologic Care in Physical Therapy. 2nd Edition.
13. Haresh U. Doshi. Clinical Cases in Obstetrics & Gynaecology. Arihant Publishers.
14. Shalini Rajaram, Sumita Mehta, Niraj Goel. Advances in Obstetrics & Gynaecology (Vol. 2). Jaypee Brothers.
15. R. Baranitharan, V. Mahalakshmi. Physiotherapy Care for Women's Health. Jaypee Brothers.
16. F. Gary Cunningham, Kenneth J. Leveno, Steven L. Bloom. Williams Obstetrics. 22nd Edition.
17. Deborah Waller, Ann McPherson (Editors). Women's Health. 5th Edition. Oxford.
18. Het's Manual of Pelvic Floor Rehabilitation.
19. Het's MMT for Assessment of Pelvic Floor Muscles.
20. Steven G. Gabbe, Jennifer R. Niebyl, Joe Leigh Simpson, Henry Galan, Laura Goetzl, Mark Landon, Eric R.M. Jauniaux. Obstetrics: Normal & Problem Pregnancies. 5th Edition.



RECENT ADVANCES AND EVIDENCE-BASED PRACTICE IN ONCOLOGY PHYSIOTHERAPY (ORAEB)

Course CODE	M.P.T (O)-203	L	P	C	Total sessions
Course Title	Recent Advances and Evidence-Based Practice in Oncology Physiotherapy (ORAEB) Speciality Paper 3	120	120	12	240
Pre-requisite	Knowledge of Oncology, Human Anatomy, Physiology, Pathology, Exercise Therapy, Rehabilitation, Research Methodology and Evidence-Based Practice.				
Co-requisites	NIL				

Course Objective:

1. To understand recent advances in oncology physiotherapy and their clinical applications.
2. To develop competency in evidence-based clinical decision making for oncology rehabilitation.
3. To understand recent developments in cancer rehabilitation, pain management, assistive technologies and emerging therapeutic interventions.
4. To integrate current evidence into physiotherapy management of various oncological conditions.
5. To promote research-oriented and evidence-based clinical practice in oncology physiotherapy.

Course Learning Outcomes (CLOs): On completion of this course, the students will be able to:

CLO1: Apply recent advances in oncology physiotherapy for comprehensive patient management.

CLO2: Critically appraise and apply evidence-based rehabilitation strategies for oncology conditions.

CLO3: Integrate emerging technologies and advanced physiotherapy interventions into oncology rehabilitation.

CLO4: Develop rehabilitation programmes addressing physical, psychosocial and functional needs of cancer patients using current evidence.

CLO5: Demonstrate clinical reasoning and evidence-based decision making in advanced oncology physiotherapy practice.

Program Learning Outcomes (PLOs):

PLO1: Demonstrate advanced clinical competence in Oncology Physiotherapy.

PLO2: Apply evidence-based physiotherapy principles in oncology rehabilitation.

PLO3: Design individualized rehabilitation programmes for oncology patients.

PLO4: Demonstrate effective communication and interdisciplinary collaboration.

PLO5: Utilize advanced therapeutic techniques and technologies in oncology physiotherapy.

PLO6: Uphold ethical and professional standards in physiotherapy practice.

PLO7: Engage in lifelong learning and research.

Program Specific Outcomes (PSOs):

PSO1: Demonstrate competency in advanced oncology rehabilitation.

PSO2: Apply evidence-based rehabilitation strategies for oncology patients.

PSO3: Design comprehensive rehabilitation programmes for cancer survivors and patients undergoing treatment.

PSO4: Utilize emerging rehabilitation technologies and advanced physiotherapy techniques in oncology practice.

Mapping:

CLO / PLO	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PSO1	PSO2	PSO3	PSO4
CLO1	3	3	3	2	3	2	2	3	3	3	3
CLO2	3	3	3	2	3	2	3	3	3	3	3
CLO3	3	3	3	2	3	2	3	3	3	3	3
CLO4	3	3	3	3	3	3	3	3	3	3	3
CLO5	3	3	3	3	3	3	3	3	3	3	3

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Course Content**UNIT I – Recent Advances in Oncology Rehabilitation****SECTION – A**

ORAEB 1.1. Recent advances in oncological Physiotherapy and evidence-based interventions for oncology-related impairments.

ORAEB 1.2. Genetic counselling, stem cell therapy, gene therapy, targeted therapy, immunotherapy, hormone therapy, thermal ablation, radionics, atomics and nanomedicine.

ORAEB 1.3. Recent advances in pain modulation and rehabilitation.

ORAEB 1.4. Institutional and community-based rehabilitation and vocational rehabilitation in oncological patients.

ORAEB 1.5. Recent advancements in oncology orthosis, prescription and training, and prosthetic management following mastectomy.

ORAEB 1.6. Psychiatry problems in oncological conditions and Physiotherapy (BAT, CBT), psychological aspects of adaptation during disability, self-treatment, exercise precautions, management and exercise prescription for home programme, report writing, conceptual framework for clinical practice, requirements for medical opinion or treatment, documentation, prescription, management, advice and protocol writing.

ORAEB 1.7. Recent oncological Physiotherapy techniques including Mental Imagery Technique, Virtual Reality Therapy, Pilates Therapy, Hydrotherapy and Aquatic Therapy in oncological patients.

UNIT II – Evidence-Based Oncology Physiotherapy**SECTION – B**

ORAEB 2.1. Impact of cancer treatment on function and rehabilitation. Psychosocial impact of cancer on patients, spouses, family members and society.

ORAEB 2.2. History of Evidence-Based Practice in Physiotherapy, clinical decision making, importance of evidence-based practice, evidence related to diagnosis, prognosis and therapy, locating evidence, challenges and barriers in evidence-based practice.

ORAEB 2.3. Recent advances in Physiotherapy management of head and neck cancer and breast cancer.

ORAEB 2.4. Recent advances in Physiotherapy management of bone tumours.

ORAEB 2.5. Recent advances in Physiotherapy management of lung and respiratory tract cancers and systemic cancers.

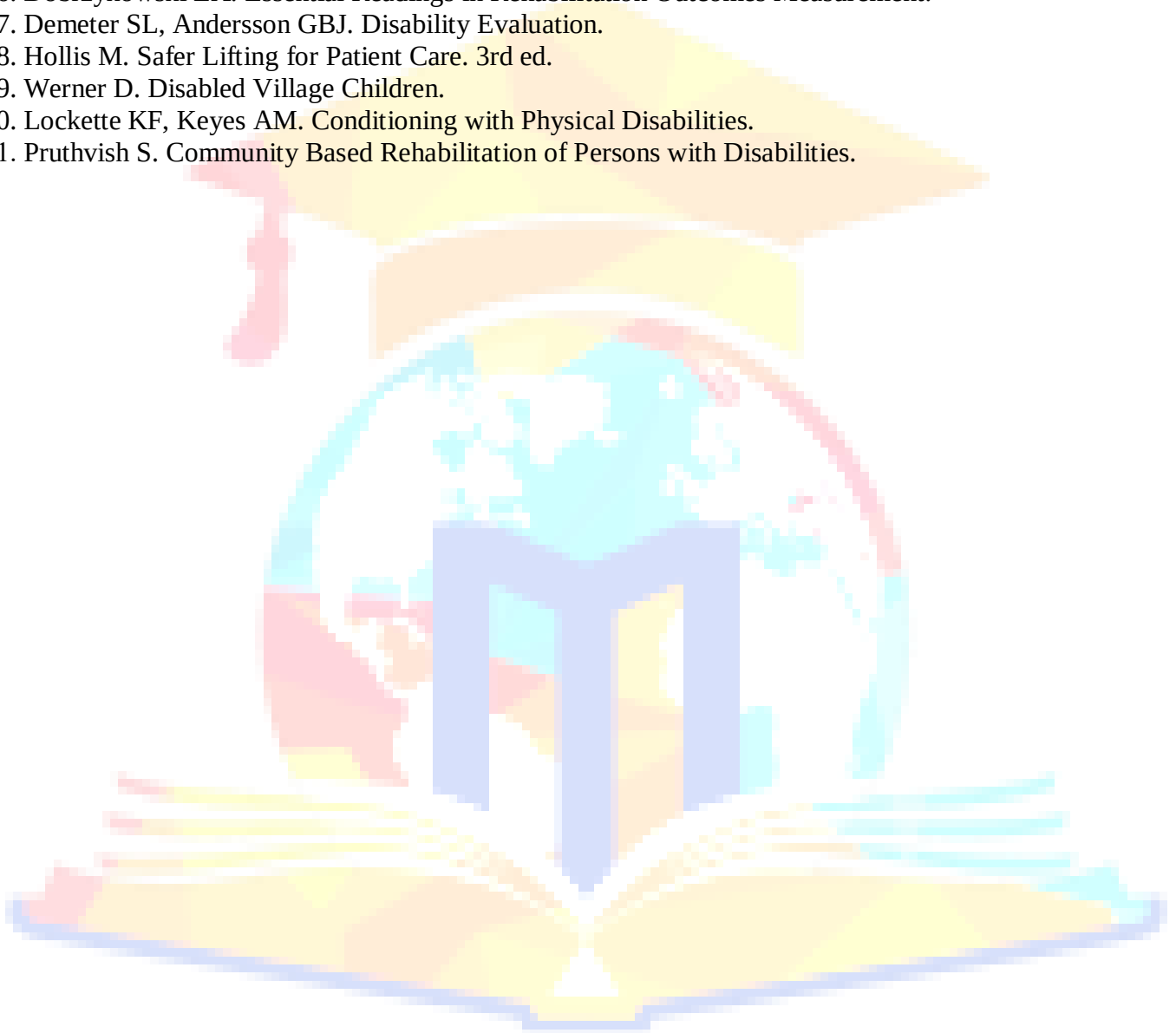
ORAEB 2.6. Sports participation and physical training in oncological conditions.

Recommended Textbooks

1. Stubblefield MD, O'Dell MW. Cancer Rehabilitation: Principles and Practice. 1st ed.
2. Schmitz KH, Campbell AM (Eds.). Cancer Rehabilitation and Survivorship: Transdisciplinary Approaches to Personalized Care. 1st ed.
3. Von Gunten CF. Palliative Care and Rehabilitation of Cancer Patients (Cancer Treatment and Research). 1st ed.

4. Bruera E. Textbook of Palliative Medicine and Supportive Care. 2nd ed.
5. American College of Sports Medicine. ACSM's Guide to Exercise and Cancer Survivorship.
6. Herbert R. Practical Evidence-Based Physiotherapy. 1st ed.
7. O'Sullivan SB, Schmitz TJ. Physical Rehabilitation. 3rd ed.
8. DeLisa JA, Gans BM. Rehabilitation Medicine. 2nd ed.
9. Braddom RL. Physical Medicine and Rehabilitation. 1st ed.
10. Kisner C. Therapeutic Exercise. 5th ed.
11. Neumann DA. Kinesiology of the Musculoskeletal System: Foundations of Rehabilitation. 2nd ed.
12. Jarvis C. Physical Examination and Health Assessment. 5th ed.
13. DeVita VT, Hellman S. Cancer: Principles and Practice of Oncology. 7th ed.
14. Abeloff MD, Armitage JO. Clinical Oncology. 3rd ed.
15. Cook AM, Hussey SM. Assistive Technologies: Principles and Practice. 1st ed.
16. Winningham ML, Burke MB. Fatigue in Cancer: A Multidimensional Approach.
17. Ainslie T (Ed.). The Concise Guide to Physiotherapy, Volume 2: Treatment.
18. Foyle L, Hostad J. Innovations in Cancer and Palliative Care Education.
19. Hanks G, Cherny NI, Christakis NA, Kaasa S. Oxford Textbook of Palliative Medicine. 4th ed.
20. Dimond B. Legal Aspects of Physiotherapy. 2nd ed.
21. Delbrück H. Rehabilitation and Palliation of Cancer Patients.
22. French S (Ed.). Physiotherapy: A Psychosocial Approach.
23. Rosenbaum E, Gautier H. Everyone's Guide to Cancer Survivorship: A Road Map for Better Health.
24. Lee BB, Bergan J, Rockson SG. Lymphedema: A Concise Compendium of Theory and Practice.
25. Lockwood S. Contemporary Issues in Women's Cancers.
26. Rankin J. Rehabilitation in Cancer Care.
27. Cooper H. Occupational Therapy in Oncology.
28. Downie PA. Cancer Rehabilitation: An Introduction for Physiotherapists and Allied Professions.
29. Taylor J. Potential and Possibility: Rehabilitation at End of Life.
30. Simpson KH, Budd K. Cancer Pain Management: A Comprehensive Approach.
31. Saxton J, Daley A (Eds.). Exercise and Cancer Survivorship: Impact on Health Outcomes and Quality of Life.
32. Downey JA, Myers SJ. Physiological Basis of Rehabilitation Medicine. 2nd ed.
33. Kottke FJ, Lehmann JF. Krusen's Handbook of Physical Medicine and Rehabilitation. 4th ed.
34. Basmajian JV, Banerjee GN. Clinical Decision Making in Rehabilitation. 10th ed.
35. Law M. Evidence-Based Rehabilitation: A Guide to Practice.
36. Anemaet WK, Moffa-Trotter M. Home Rehabilitation: Guide to Clinical Practice.
37. Brammer CM, Spires M. Manual of Physical Medicine and Rehabilitation.
38. Cooper C. Essential Physical Medicine and Rehabilitation.
39. Schuch CP, Sekerak DK. Management in Rehabilitation.
40. Murphy GP, Lawrence W. American Cancer Society Textbook of Clinical Oncology. 2nd ed.
41. Vastrad MC. Bone Tumours (A Clinico-Pathological Study).
42. Mackinnon LT. Exercise Management: Concepts and Professional Practice. 2nd ed.
43. Mackinnon LT. Advances in Exercise Immunology.
44. Principles of Exercises in Physiotherapy.
45. Gormley J, Hussey J. Exercise Therapy: Prevention and Treatment of Disease.
46. Herbert R, Jamtvedt G. Practical Evidence-Based Physiotherapy. 4th ed.
47. Gardiner MD. Principles of Exercise Therapy. 6th ed.
48. Sullivan PE, Markos PD. Clinical Decisions in Therapeutic Exercise. 2nd ed.
49. Huber FE, Wells CL. Therapeutic Exercise: Treatment Planning for Progression.
50. Narayanan. Textbook of Therapeutic Exercises.
51. Mackinnon LT. Exercise Management: Concepts and Professional Practice.
52. Clinical Exercise Testing and Prescription.
53. Evidence-Based Guide to Therapeutic Physical Agents.
54. Brody LT, Hall CM. Therapeutic Exercise: Moving Toward Function. 2nd ed.
55. Exercise in Health and Disease.

56. Ruoti RG, Morris DM, Cole AJ. Aquatic Rehabilitation.
57. ACSM's Resources for Clinical Exercise Physiology.
58. Advanced Fitness Assessment and Exercise Prescription. 3rd ed.
59. ACSM's Resource Manual for Guidelines for Exercise Testing and Prescription. 4th ed.
60. ACSM's Guidelines for Exercise Testing and Prescription. 6th ed.
61. Skinner JS. Exercise Testing and Exercise Prescription for Special Cases. 2nd ed.
62. Basmajian JV, Wolf SL. Therapeutic Exercise. 5th ed.
63. Ray DS. Yogic Exercises: Physiologic and Psychic Processes.
64. Miller PD. Fitness Programming and Physical Disability.
65. Karan OC, Greenspan S. Community Rehabilitation Services for People with Disabilities.
66. Dobrzykowski EA. Essential Readings in Rehabilitation Outcomes Measurement.
67. Demeter SL, Andersson GBJ. Disability Evaluation.
68. Hollis M. Safer Lifting for Patient Care. 3rd ed.
69. Werner D. Disabled Village Children.
70. Lockette KF, Keyes AM. Conditioning with Physical Disabilities.
71. Pruthvish S. Community Based Rehabilitation of Persons with Disabilities.



PHYSIOTHERAPY IN CLINICAL REHABILITATION CONDITIONS (PCR)

Course CODE	M.P.T (R)-203	L	P	C	Total sessions
Course Title	Physiotherapy in Clinical Rehabilitation Conditions (PCR) Speciality Paper 3	120	120	12	240
Pre-requisite	Knowledge of Human Anatomy, Physiology, Pathology, Exercise Therapy, Rehabilitation Sciences, Neurology, Orthopaedics, Cardiorespiratory Physiotherapy and Community Rehabilitation.				
Co-requisites	NIL				

Course Objective:

1. To develop advanced knowledge of rehabilitation principles across musculoskeletal, neurological, cardiopulmonary and pediatric conditions.
2. To understand comprehensive rehabilitation approaches for improving function, participation and quality of life.
3. To develop competency in designing individualized rehabilitation programmes for patients with acute and chronic disabilities.
4. To acquire skills in multidisciplinary rehabilitation, health promotion, fitness assessment and lifestyle modification.
5. To integrate evidence-based physiotherapy practice into clinical rehabilitation across the lifespan.

Course Learning Outcomes (CLOs): On completion of this course, the students will be able to:

CLO1: Plan and implement rehabilitation programmes for musculoskeletal, sports and health promotion conditions.

CLO2: Apply physiotherapy rehabilitation strategies for cardiopulmonary disorders with emphasis on functional recovery and health promotion.

CLO3: Design comprehensive rehabilitation programmes for neurological, psychosomatic and pediatric conditions.

CLO4: Perform assessment and management of body composition, obesity, physical fitness and weight control using evidence-based rehabilitation principles.

CLO5: Integrate multidisciplinary rehabilitation approaches to maximize functional independence, participation and quality of life.

Program Learning Outcomes (PLOs):

PLO1: Demonstrate advanced clinical competence in Rehabilitation Physiotherapy.

PLO2: Apply evidence-based physiotherapy principles in rehabilitation practice.

PLO3: Design individualized rehabilitation programmes for diverse clinical conditions.

PLO4: Demonstrate effective communication and interdisciplinary collaboration.

PLO5: Utilize advanced rehabilitation techniques and technologies.

PLO6: Uphold ethical and professional standards in physiotherapy practice.

PLO7: Engage in lifelong learning, research and professional development.

Program Specific Outcomes (PSOs):

PSO1: Demonstrate competency in rehabilitation assessment and physiotherapy management across clinical conditions.

PSO2: Apply evidence-based rehabilitation strategies for improving functional independence.

PSO3: Design comprehensive rehabilitation programmes for musculoskeletal, neurological, cardiopulmonary and pediatric disorders.

PSO4: Integrate multidisciplinary rehabilitation principles, health promotion and fitness management into clinical practice.

Mapping:

CLO / PLO	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PSO1	PSO2	PSO3	PSO4
CLO1	3	3	3	2	3	2	2	3	3	3	3
CLO2	3	3	3	2	3	2	2	3	3	3	3
CLO3	3	3	3	3	3	2	2	3	3	3	3
CLO4	3	3	3	2	3	2	2	3	3	3	3
CLO5	3	3	3	3	3	3	3	3	3	3	3

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Course Content

UNIT I – Clinical Rehabilitation in Musculoskeletal and Cardiorespiratory Conditions

SECTION – A

PCR 1.1. Rehabilitation in musculoskeletal conditions, sports sciences and health promotion.

PCR 1.2. Rehabilitation in cardiopulmonary conditions and health promotion.

UNIT II – Clinical Rehabilitation in Neurological, Pediatric and Fitness-related Conditions

SECTION – B

PCR 2.1. Rehabilitation in neurological conditions, movement disorders, psychosomatic disorders and pediatric conditions.

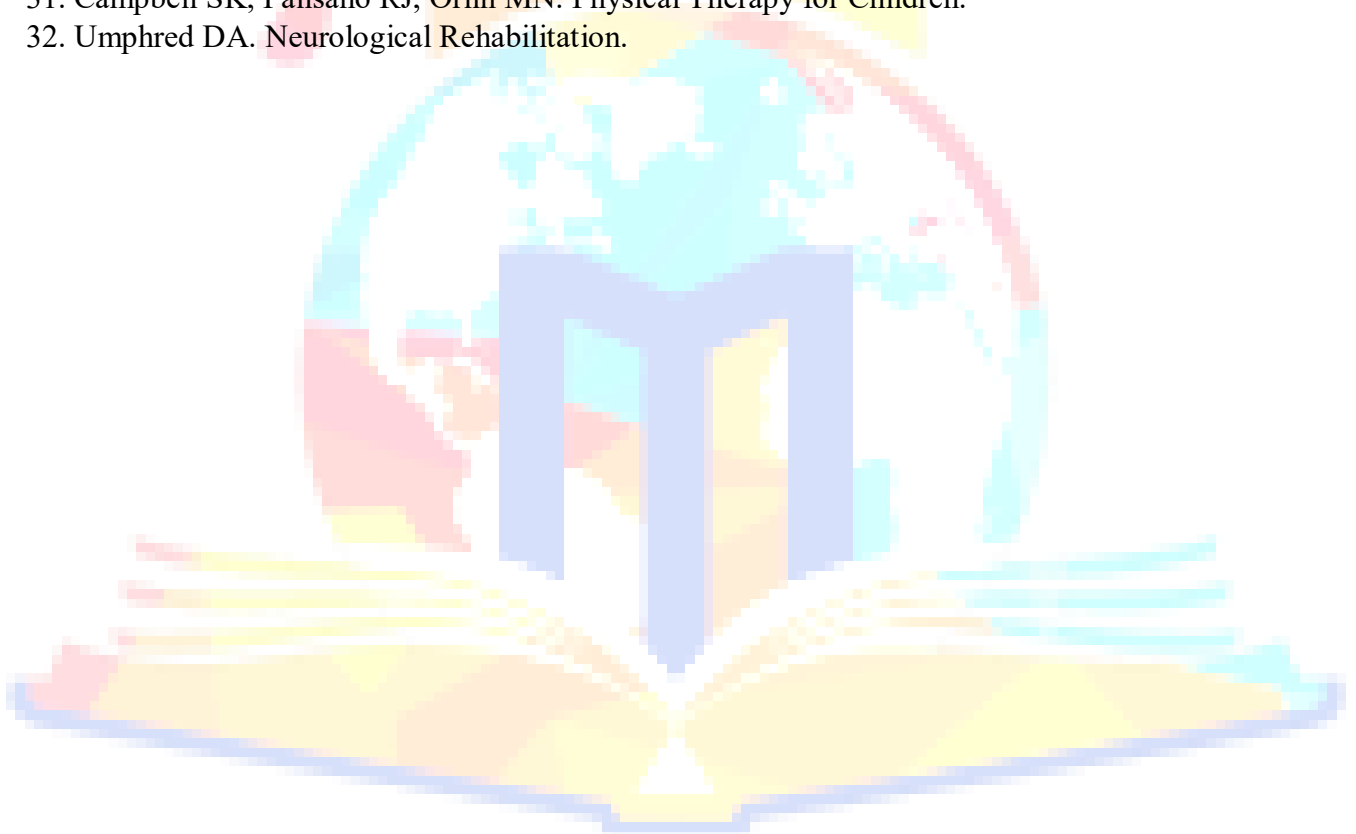
PCR 2.2. General fitness strategies:

- Body composition assessment
- Body mass assessment
- Obesity management
- Weight control strategies

Recommended Textbooks

1. O'Sullivan SB, Schmitz TJ, Fulk GD. Physical Rehabilitation. F.A. Davis Company.
2. Braddom RL. Braddom's Physical Medicine and Rehabilitation. Elsevier.
3. DeLisa JA, Gans BM, Walsh NE. Physical Medicine and Rehabilitation: Principles and Practice. Lippincott Williams & Wilkins.
4. Cook AM, Polgar JM. Assistive Technologies: Principles and Practice. Elsevier.
5. Lusardi MM, Jorge M, Nielsen CC. Orthotics and Prosthetics in Rehabilitation. Elsevier.
6. Smith DG, Michael JW, Bowker JH. Atlas of Amputations and Limb Deficiencies: Surgical, Prosthetic and Rehabilitation Principles. American Academy of Orthopaedic Surgeons.
7. Kisner C, Colby LA, Borstad J. Therapeutic Exercise: Foundations and Techniques. F.A. Davis Company.
8. Neumann DA. Kinesiology of the Musculoskeletal System: Foundations for Rehabilitation. Elsevier.
9. Kroemer KHE, Grandjean E. Fitting the Task to the Human: A Textbook of Occupational Ergonomics. CRC Press.
10. ACSM. ACSM's Guidelines for Exercise Testing and Prescription. Wolters Kluwer.
11. World Health Organization. International Classification of Functioning, Disability and Health (ICF). WHO Press.
12. World Health Organization. Community-Based Rehabilitation: CBR Guidelines. World Health Organization.

13. World Health Organization. World Report on Disability.
14. Helander E. Prejudice and Dignity: An Introduction to Community-Based Rehabilitation.
15. Stone JH. Culture and Disability: Providing Culturally Competent Services.
16. Sunder U. Disability, Handicap and Rehabilitation: A Manual for Rehabilitation Workers.
17. Basmajian JV, Wolf SL. Therapeutic Exercise.
18. Law M, MacDermid J. Evidence-Based Rehabilitation: A Guide to Practice.
19. Bridger RS. Introduction to Ergonomics.
20. Chaffin DB, Andersson GBJ, Martin BJ. Occupational Biomechanics.
21. Norkin CC, Levangie PK. Joint Structure and Function: A Comprehensive Analysis.
22. Kumar S. Ergonomics for Rehabilitation Professionals.
23. McKenzie RA, May S. The Lumbar Spine: Mechanical Diagnosis and Therapy.
24. World Health Organization. Rehabilitation in Health Systems.
25. United Nations. Convention on the Rights of Persons with Disabilities (CRPD).
26. Government of India. The Rights of Persons with Disabilities Act, 2016.
27. Indian Association of Physiotherapists. Code of Ethics and Professional Conduct.
28. National Commission for Allied and Healthcare Professions (NCAHP). Curriculum Handbook of Physiotherapy.
29. Pollock ML, Schmidt DH. Heart Disease and Rehabilitation.
30. McArdle WD, Katch FI, Katch VL. Exercise Physiology: Nutrition, Energy and Human Performance.
31. Campbell SK, Palisano RJ, Orlin MN. Physical Therapy for Children.
32. Umphred DA. Neurological Rehabilitation.



DISSERTATION

Each candidate will have to carry out of a dissertation on Speciality related subject of MPT. Ethical approval certificate from Registered Institutional Ethical committee and Clinical Trial Registration is mandatory for interventional Dissertation study topic. The dissertation to be guided by Guide of the speciality of faculty of physiotherapy of the department under whom the student is persuing MPT. The dissertation will be evaluated by the External/Internal Examiners. The final dissertation duly approved by the External/Internal examiners will be submitted to the Dean/Principals office with the result. The dean/ Principal's office will send the dissertation to the library for record.

PRACTICAL / CLINICAL EXAMINATION

Compulsory rotatory Clinical Posting as per the Speciality and Clinical Assessment during Clinical posting is mandatory .

