Maharashtra University of Health Sciences

Syllabus

(Post Graduate)

Faculty – Allied Health Sciences

Master of Physiotherapy

(02 Years)

Approved by Academic Council on dated 16/05/2016

vide Resolution No. 93/2016

Master of Physiotherapy (MPT)

Aim:

The Master of Physiotherapy (specialty) Programme is directed towards rendering competency in knowledge and skills related to advance physiotherapeutic skills especially related to speciality Clinical fields to enhance professional Physiotherapy Practice, Education and Research, in line with global standards.

Course outline:

The Masters degree in Physiotherapy is a two year full time programme consisting of classroom teaching, self academic activities and clinical postings, with self directed evidence based practice. In the first year theoretical basis of physiotherapy is refreshed along with research methodology, biostatistics & teaching technology. The students are rotated in all areas of clinical expertise including their specialty during this period. They are required to choose their study for dissertation and submit a synopsis. During the second year the students will be posted in their area of specialty. They are required to complete and submit their dissertation. The learning program includes seminars, journal reviews, case presentations, case discussions and classroom teaching. Some of the clinical postings may be provided at other reputed centers in the country in order to offer a wider spectrum of experience. The students are encouraged to attend conferences, workshops to enhance their knowledge during the course of study. University examinations are held at the end of first year and at the end of second year.

Specialties Offered:

1. Musculoskeletal Physiotherapy
2. Neuro Physiotherapy
3. Cardio vascular & Respiratory Physiotherapy
4. Community Physiotherapy
5. Sports Physiotherapy

Duration Master of Physiotherapy (MPT) (Speciality) shall be full time course with duration of two academic years.
Medium of instruction: English shall be the medium of instruction for all the subjects for studies and for examination of the course.
Faculty/Guide to Student Ratio: - 1 : 3

Eligibility for admission:

1. He/she has passed the Bachelor of Physiotherapy recognized by any Indian University (except distance education and Agriculture University) with pass marks (50%).
2. He/she has to furnish at the time of submission of application form, a certificate of physical fitness from a registered medical practitioner.
3. Admission to Master of Physiotherapy course shall be made as per the rules by the competent authority. Entrance test will be conducted as per the rules by competent authority.

Objectives: At the completion of this course, the student should be -

1. Be able to do a physical therapy diagnosis using a frame work of ICF that is to identify the impairment of body structure, body function, environmental and personal factors and to address the activity limitations and participations restrictions.

Able to execute all routine physiotherapeutic procedures with clinical reasoning & evidence based practice.

2. Able to be a prominent member of the multidisciplinary team and treat all the conditions which need physiotherapeutic procedures.
3. Able to provide adequate knowledge about the treatment procedures and its benefit.
4. Able to transfer knowledge and skills to students as well as young professionals.
5. Able to perform independent physiotherapy assessment and treatment for patients.
6. To plan and implement need based physiotherapy interventions for all clinical conditions related to respective speciality in acute, chronic cases, critical care, independent practice including health promotion and prevention.
7. Able to undertake independent research in the field of physiotherapy.
8. Learn multidisciplinary practice skills.
9. Able to practice and assess patient independently.
10. Able to practice in his / her specialty area with advanced knowledge and skills.
11. Able to take up physiotherapy teaching assignments independently for undergraduate teaching programme.
12. Able to prepare project proposal with selected research design and interpret the evaluated outcome measures (using sound data processing techniques and statistical methods).

Expectation from the future post-graduate in providing patient care.

1. Course work includes exercise physiology, principles of physiotherapy practice, electrophysiology and specialties. The student will be skilled in treatment planning, management, administration of physiotherapy treatment and provision of patient support.
2. Acquire in-depth knowledge of structure and function of human body related to the respective branch of specialty.
3. Acquire the in-depth knowledge of movement dysfunction of human body, cause thereof principles underlying the use of physiotherapeutic interventions for restoring movement dysfunction towards normalcy.

4. Demonstrate skill in Physical & Functional diagnosis pertaining to patient under his/her care.

5. Demonstrate ability to make clinical decision (based on evaluation) regarding Physiotherapy strategy techniques and select appropriate outcome measures based on the comprehensive knowledge of specialty.

6. Demonstrate ability to critically appraise recent physiotherapeutic and related literature from journals & adopt diagnostic & therapeutic procedures based on it.

7. The student will also perform independent research within the department and help the department and the team for treatment planning of the patient.

8. Physiotherapy post-graduate is encouraged to pursue further qualification to attain senior position in the professional field; also to keep abreast with the advance and new technology the professional should opt for continuous professional education credits offered by national and international institutes.

9. Employment opportunities can be found in hospitals in both private and public sectors as well as in independent physiotherapy clinics and as well as teaching institutes.

10. Demonstrate an expertise in evidence-based skill in the management of disorders including movement dysfunction in concerned specialty.

11. Demonstrate an expertise in health promotion, early identification and intervention for quality of life & restoration of function.

12. Planning and implementation of treatment programme adequately and appropriately for all clinical conditions common as well as rare related to respective specialty in acute and chronic stage, in intensive care, indoor, outdoor and institutional care, independent practice, on fields of sports and community and during disaster situations.

13. Demonstrate proficiency in creating awareness using newer technology, at various levels in community for healthcare & professional awareness.

14. Demonstrate leadership, managerial, administrative & communication skills.

15. Demonstrate the knowledge of legislation applicable to compensation for functional disability welfare schemes & rights of the disabled, laws related to industrial workers & disabled & appropriate certification.

16. Demonstrate proficiency in classroom and clinical teaching using newer and appropriate technology.

Methods of training:

The training of postgraduate for MPT degree shall be on a whole time pattern with graded responsibilities in the management and treatment of patients entrusted to his / her care. The participation of all the students in all facets of educational process is essential. Every candidate should perform self directed evidence based autonomous practice and take part in seminars, group discussions, clinical rounds, care demonstrations, clinics, journal review meetings & CME. Every candidate should be required to participate in the teaching and training programs of undergraduate students. Training should include involvement in laboratory experimental work and research studies.

Assessment:

Two exams will be conducted in theory and practical at the end of first and final academic years.

Eligibility for appearing for Exams

Every candidate presenting himself/herself for the examination for the first year should have Dissertation synopsis Title approved by MUHS Nashik.

Every candidate shall submit to the Registrar of the University in the prescribed proforma, a synopsis containing particulars of proposed dissertation work within four months from the date of commencement of the course or on or before the dates notified by the University. The synopsis shall be sent through the proper channel. The ethics committee (College level) approves the Topic. Such synopsis will be reviewed and the dissertation topic will be registered by the University.

85% attendance is mandatory for each year.

At the end of first Year University exams will be conducted in theory and practicals.

Every candidate presenting himself/herself for the examination for the first time for final year shall submit, at least four months prior to the university examination, one soft and three written copies of a dissertation not less than 2500 words consisting of the result of his/her own study carried out under the guidance of a recognized post graduate teacher together with review of recent advances pertinent to that theme. The acceptance of the dissertation by the examiners shall be a condition precedent to the admission of the candidate for the second/final year written & clinical (practical) examination. Dissertation should be based on the specialty subject.

A candidate who has submitted his/her dissertation once will not be required to submit a fresh dissertation if he/she re-appears for the examination in the same branch on a subsequent occasion, provided that the examiners have accepted the dissertation.

The Examination for second year Master of Physiotherapy (specialty) shall be held at the end of two academic years.

The Degree of Master of Physiotherapy (specialty) shall not be conferred upon a candidate Unless he/she has passed in the written, clinical (including viva voice) and the dissertation prescribed for the examination in accordance with the provision.

Log Book

Every candidate shall maintain a log book and record his/her participation in the- clinical postings and programmes conducted by the department. Record in the log book will contain report of attendance and documentation as per MUHS Nashik guidelines

The Attendance and progress report scrutinized and certified by the Head of the Department and Head of the Institution to be submitted to the university with the exam form for first year examination.

The log book in prescribed MUHS, Nashik format shall be scrutinized and certified by the Head of the Department and Head of the Institution and submitted to the university with the exam form for the final examination.

Scheduled outline shall be maintained as minimum standard for MPT program with higher order of teaching and learning process.

Year wise subjects

1st Year

1. Professional Practice
2. Research Methodology and Biostatistics
3. Biomechanics and Clinical Kinesiology
4. Exercise Physiology & Nutrition
5. Electrophysiology & Electro-diagnosis
6. Physiotherapy Diagnosis & Clinical Decision Making
7. Advanced Physiotherapeutics

2nd Year Specialties:

a. **Musculoskeletal Physiotherapy**
b. **Neuro Physiotherapy**
c. **Cardio vascular & Respiratory Physiotherapy**
d. **Community Physiotherapy**
e. **Sports Physiotherapy**

Syllabus for First year

First Year Residency

In the residency the professional is expected to work and contribute in the acute care unit, clinical set-up, community and field work.

PROFESSIONAL PRACTICE -

(History, Laws, Ethics, Administration, Education)

1. Development of Physiotherapy Profession
2. Laws governing physiotherapy practice
3. Ethical issues in practice of physiotherapy-Clinical, Research and Academics.

Ethics in Physiotherapy practice, clinical and research, code of conduct for safe disciplined practice – legal aspect, Rights and responsibility of physiotherapist and client, PWD Act . Rules and regulations governing physiotherapy practice- National & International

Administration, legislation, rules and regulations governing physiotherapy practice- National & International.

4. Administration -

Physiotherapy Management in Hospital, community & Industry.

Principles of management, planning, organisation, budget, policy procedures and quality assurance.

Communication skills, leadership quality & teamwork

Importance of documentation, types of documentation systems, documentation of professional assessment including International Classification of Functioning Disability & Health (ICF) format.

5. Scope of Physiotherapy in Hospital, Community & Industry.
6. Roles of the physiotherapist as per WCPT/WHO
7. Standards for practice for physiotherapist and the criteria as competency statements
8. Education – Formal and non-formal – Philosophy of health education, curricular planning. Teaching technology – teaching learning methods, interactive learning, methods to facilitate learning, use of audio-visual aids, clinical teaching, methods of assessment of student competencies
9. Documentation of rehabilitation assessment and management using International Classification of Functioning Disability and Health (ICF)
10. Future challenges in physiotherapy.

RESEARCH METHODOLOGY AND BIOSTATISTICS –

RESEARCH METHODOLOGY

1. Introduction to research
2. Types of research
3. Defining a research question
4. Qualitative study designs

a. Grounded theory and Phenomenological methods.

5. Use of Delphi process

6. Quantitative study

7. Type I and type II bias

8. Study design: types

a. Case study, Case series, longitudinal cohort, Pre post design, Time series design, repeated measures design, Randomized control design.

9. Sampling design, calculating minimum sample size based on design

10. Measurement: Properties of measurement: reliability, validity, responsiveness, MCID.

11. Outcome measures: Use of outcome measures in rehabilitation research

12. Research Methods: Designing methodology, Reporting results,

13. Communicating research.

14. Evaluating published research: looking at the evidence

15. Introduction to evidence based practice, evaluating evidence,

16. Asking clinical questions

17. Translating of evidence into practice: strategies

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

APPLIED BIOSTATISTICS

1. Descriptive Statistics and measurement variability

2. Statistical inference

3. Comparison of group means: T-test

4. Analysis of variance

5. Multiple comparison tests

6. Non parametric tests

7. Correlations

8. Regression

9. Analysis of frequencies: Chi square

10. Statistical measure of reliability

11. Power analysis – Determining sample size

12. Epidemiological Measures – Rate, Ratio, Proportion, Incidence and prevalence, Relative risk, Risk ratio, Odds ratio.

SCIENTIFIC WRITING

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).

2. Publication – Role of author, Guide, Co-authors.

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

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.

5. Structure of Thesis and Content – Preparing Abstracts.

BIOMECHANICS & CLINICAL KINESIOLOGY

1. Biomechanics of Tissues and structures of the musculoskeletal system and clinical application.
2. Normal and applied Biomechanics of Spine, Upper extremity and Lower extremity.
3. Clinical kinesiology of posture.
4. Biomechanics and patho-mechanics of respiration, circulation, hand function and gait.
5. Methods of kinetics and kinematics investigation
6. Patient Positioning, Body Mechanics and Transfer Techniques
7. Ergonomic Approach to lifting and handling, workspace and Environment

EXERCISE PHYSIOLOGY & NUTRITION

1. Sources of Energy, Energy Transfer and Energy Expenditure at rest and various physical activities.
2. Physiology of Movement
3. Responses and Adaptations of various systems to Exercise and training.
4. Environmental influence on Performance.
5. Body composition, nutrition and caloric balance and performance
6. Considerations of age and sex in exercise and training.
7. Exercise prescription for health and fitness with special emphasis to cardiovascular disease, Obesity and Diabetes.
8. Fatigue assessment and scientific organization of work-rest regimes to control fatigue.
9. Supplementary nutrition

ELECTROPHYSIOLOGY & ELECTRO DIAGNOSIS

1. Characteristics and components of Electro therapeutic stimulation systems and Electro Physiological assessment devices.
2. Instrumentation for neuromuscular electrical stimulation.
3. Anatomy and physiology of peripheral nerve, muscle and neuromuscular junction.
4. Electrical properties of muscle and nerve.
5. Muscles plasticity in response to electrical stimulation.
6. Electrical stimulation and its effects on various systems.
7. Clinical Electro physiological testing and clinical interpretation.
8. Safety considerations in electrotherapy

PHYSIOTHERAPY DIAGNOSIS AND CLINICAL DECISION MAKING -

1. Clinical examination in general and detection of movement dysfunction.
2. Principles of pathological investigations and imaging techniques related to neuromuscular, skeletal and cardiopulmonary disorders with interpretation.
3. Developmental screening, motor learning –motor control assessment.
4. Anthropometric measurements.
5. Physical fitness assessment - Body composition, Flexibility, Muscle strength, endurance, Cardio-respiratory endurance. Skills, Testing of agility- balance, co-ordination.
6. Evaluation Methods, Special tests used in Musculoskeletal, Neurological and Cardiopulmonary disorders.
7. EMG and Biofeedback.
8. Biophysical measurements, physiotherapy modalities, techniques and approaches.
9. Evaluation of aging.
10. Aids and appliances, adaptive functional devices to improve movement dysfunction.
11. Exercise ECG testing and monitoring.
12. Pulmonary function tests and Spirometry.
13. Physical disability evaluation and disability diagnosis.
14. Posture and Gait analysis and diagnosis.
15. Clinical decision making in electrotherapeutics

PRACTICAL -

1. Introduction to Screening for Referral In Physiotherapy

a. Reasons to Screen

b. Screenings and Surveillance

c. Diagnosis by the Physiotherapist

d. Differential Diagnosis versus Screening

e. Direct Access

f. Decision-Making Process Case Examples and Case Studies.

2. Introduction to the interviewing process

a. Concepts in Communication

b. Cultural Competence

c. The Screening Interview

d. Subjective Examination

e. Core Interview

f. Hospital Inpatient Information

3. Overview of the physiology of pain and systemic causes of pain

a. Mechanisms of Referred Visceral Pain

b. Multi-segmental Innervations

c. Assessment of Pain and Symptoms

d. Sources of Pain

e. Types of Pain

f. Comparison of Systemic Versus Musculoskeletal Pain

g. Patterns

h. Characteristics of Viscerogenic Pain,

i. Screening for Emotional and Psychologic Overlay

j. Screening for Systemic Versus Psychogenic Symptoms

4. Physical assessment as a screening tool

a. General Survey

b. Techniques of Physical Examination

c. Integumentary Screening Examination

d. Nail Bed Assessment

e. Lymph Node Palpation

f. Musculoskeletal Screening Examination

g. Neurologic Screening Examination

h. Regional Screening Examination

i. Systems Review

5. Screening for hematologic disease

a. Signs and Symptoms of Hematologic Disorders

b. Classification of Blood Disorders

6. Screening for cardiovascular disease

a. Signs and Symptoms of Cardiovascular Disease

b. Cardiac Pathophysiology

c. Cardiovascular Disorders

d. Laboratory Values.

7. Screening for pulmonary disease

a. Signs and Symptoms of Pulmonary Disorders

b. Inflammatory/Infectious Disease

c. Genetic Disease of the Lung

d. Occupational Lung Diseases

e. Pleuropulmonary Disorders

8. Screening for gastrointestinal disease

a. Signs and Symptoms of Gastrointestinal Disorders

b. Gastrointestinal Disorders

9. Screening for hepatic and biliary disease

a. Hepatic and Biliary Signs and Symptoms

b. Hepatic and Biliary Pathophysiology

c. Gallbladder and Duct Diseases

10. Screening for urogenital disease

a. Signs and Symptoms of Renal and Urological Disorders,

b. The Urinary Tract

c. Renal and Urological Pain

d. Renal and Urinary Tract Problems

11. Screening for endocrine and metabolic disease

a. Associated Neuromuscular and Musculoskeletal Signs and Symptoms

b. Endocrine Pathophysiology

c. Introduction to Metabolism

12. Screening for immunologic disease

a. Using the Screening Model

b. Immune System Pathophysiology

c. Physician Referral

13. Screening for Cancer

a. Cancer Statistics

b. Risk Factor Assessment

c. Cancer Prevention

d. Major Types of Cancer

e. Metastases

f. Clinical Manifestations of Malignancy

g. Oncologic Pain

h. Side Effects of Cancer Treatment

i. Cancers of the Musculoskeletal System

j. Primary Central Nervous System Tumors

k. Cancers of the Blood and Lymph System

14. Screening the head, neck, and back

a. Using the Screening Model to Evaluate the Head, Neck, or Back,

b. Location of Pain and Symptoms

c. Sources of Pain and Symptoms

d. Screening for Oncologic Causes of Back Pain

e. Screening for Cardiac Causes of Neck and Back Pain

f. Screening for Peripheral Vascular Causes of Back Pain

g. Screening for Pulmonary Causes of Neck and Back Pain

h. Screening for Renal and Urologic Causes of Back Pain,

i. Screening for Gastrointestinal Causes of Back Pain

j. Screening for Liver and Biliary Causes of Back Pain

k. Screening for Gynecologic Causes of Back Pain

l. Screening for Male Reproductive Causes of Back Pain

m. Screening for Infectious Causes of Back Pain

15. Screening the sacrum, sacroiliac, and pelvis

a. The Sacrum and Sacroiliac Joint

b. The Coccyx

c. The Pelvis

16. Screening the lower quadrant: buttock, hip, groin, thigh, and leg

a. Using the Screening Model to Evaluate the Lower Quadrant

b. Trauma as a Cause of Hip, Groin, or Lower Quadrant Pain

c. Screening for Systemic Causes of Sciatica

d. Screening for Oncologic Causes of Lower Quadrant Pain

e. Screening for Urologic Causes of Buttock, Hip, Groin, or Thigh Pain

f. Screening for Male Reproductive Causes of Groin Pain

g. Screening for Infectious and Inflammatory Causes of Lower Quadrant Pain

h. Screening for Gastrointestinal Causes of Lower Quadrant Pain

i. Screening for Vascular Causes of Lower Quadrant Pain

j. Screening for Other Causes of Lower Quadrant Pain

17. Screening the chest, breasts, and ribs

a. Using the Screening Model to Evaluate the Chest, Breasts, or Ribs

b. Screening for Oncologic Causes of Chest or Rib Pain

c. Screening for Cardiovascular Causes of Chest, Breast, or Rib Pain

d. Screening for Pleuro-pulmonary Causes of Chest, Breast, or Rib Pain

e. Screening for Gastrointestinal Causes of Chest, Breast, or Rib Pain

f. Screening for Breast Conditions that Cause Chest or Breast Pain

g. Screening for Other Conditions as a Cause of Chest, Breast, or Rib Pain

h. Screening for Musculoskeletal Causes of Chest, Breast, or Rib Pain

i. Screening for Neuromuscular or Neurologic Causes of Chest, Breast, or Rib Pain

18. Screening the shoulder and upper extremity

a. Using the Screening Model to Evaluate Shoulder and Upper Extremity

b. Screening for Pulmonary Causes of Shoulder Pain

c. Screening for Cardiac Causes of Shoulder Pain

d. Screening for Gastrointestinal Causes of Shoulder Pain

e. Screening for Liver and Biliary Causes of Shoulder Pain

f. Screening for Rheumatic Causes of Shoulder Pain

g. Screening for Infectious Causes of Shoulder Pain

h. Screening for Oncologic Causes of Shoulder Pain

i. Screening for Gynecologic Causes of Shoulder Pain

ADVANCED PHYSIOTHERAPEUTICS -

1. Pain (neurobiology, various theories, assessment, modulation and management of pain)
2. Maternal and child care in general physiotherapy.
3. Theories of motor control and motor learning.
4. Effect of medications on activity performance.
5. Exercise planning and prescription.
6. Use of Exercise therapy techniques and application on various types of cases.
7. Effect of aerobic, anaerobic, Isometric, Isotonic and Isokinetic exercises on muscle and cardio-pulmonary function
8. Application of advanced electrotherapy modalities & techniques on patients, monitoring of dosages and winding up procedure.
9. Ergonomic aspects of exercise on oxygen, energy consumption MET value of various exercises and activity.
10. Physiotherapy for health and stress management.
11. Massage, Mobilization and Manipulation
12. Manual therapy – different schools of thought
13. Principles of Neurological approaches.
14. Facilitation and inhibition techniques.
15. General Guidelines to be followed in Cardiac Rehabilitation, Pulmonary Rehabilitation, Burns Rehabilitation and Cancer Rehabilitation Protocol.
16. CPR, monitoring systems and defibrillators and artificial respirators.
17. Physiotherapy in Disaster management
18. Physiotherapy in common conditions of skin.
19. Physiotherapy following Plastic Surgery.
20. Physiotherapy following Obstetric and Gynecological Disorders.
21. Integration of Yoga in Physiotherapy for Health promotion and Dysfunction

Scheme of Examination

1st Year MPT

Sr. No.	Passing Head	Total Marks	Minimum Marks required for passing
1.	Theory	300	150
2.	Practical	150	75

Theory Examination

- There shall be three theory papers of 100 marks each
- Each paper shall be of three hours duration
- All the questions are compulsory

Paper I	Applied Physiotherapeutics (Part I)	Section I	Professional Practice
		Section II	Research Methodology & Biostatistics

Paper II	Applied Physiotherapeutics(Part II)	Section I	Biomechanics & Clinical Kinesiology
		Section II	Exercise Physiology & Electro Physiology

Paper III	Applied Physiotherapeutics (Part III)	Section I	Physiotherapy Diagnosis & clinical decision making
		Section II	Advance Physiotherapeutics

Distribution of Marks for papers

Section I	Long Essay question 1×20	20 Marks
	Short essay questions 3×10	30 Marks
Section II	Long Essay question 1×20	20 Marks
	Short essay questions 3×10	30 Marks

Practical Examination **150 Marks**

Short Case I - Speciality - 50marks	Spots(Based Screening of various Systems) 30 marks
Short Case II - General - 50marks	Teaching skills 20 marks

2st Year MPT

Second Year Residency in Speciality subjects

Musculoskeletal Physiotherapy

Advances in Musculoskeletal Physiotherapy – (Part I)

(Musculo-skeletal Dysfunctions of the Upper Quadrant)

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

1. Anatomical, Physiological and Biomechanical basis for assessment of movement dysfunctions of the upper quadrant
2. Patho-physiological and Patho-mechanical basis for management of movement dysfunctions of the upper quadrant
3. Clinical decision making skills in evaluation & management of all pediatric, adult and geriatric dysfunctions of the upper quadrant
4. Advances in functional diagnostic procedures & various outcome measures relevant to musculo-skeletal dysfunctions of the upper quadrant
5. Patho-biological mechanisms of pain; Recent advances in pain evaluation and management
6. Advances in the field of Manual Therapy
7. Principles of musculo-skeletal health and performance related fitness and Physiotherapeutic management of musculo-skeletal injuries & dysfunctions in various sports
8. Principles of assessment of industrial fitness and assessment & management of musculoskeletal dysfunctions related to various industries.
9. Ergonomics in Musculo-skeletal dysfunction of the upper quadrant.
10. Assistive technology used for stability and mobility to enhance function.
11. Therapeutic application of Yogasanas for musculoskeletal health and fitness (upper quadrant)
12. Evidence based practice to formulate effective assessment and treatment program
13. Evaluation of disability
14. Legislation and social care.
15. Assessment, clinical reasoning and management of Integumentary impairments due to musculoskeletal dysfunction
16. Pharmacotherapeutics in musculoskeletal conditions and its relevance in physiotherapy
17. Clinical decisions for lower quadrant function in presence of upper quadrant dysfunction-

Advances in Musculoskeletal Physiotherapy –(Part II)

(Musculo-skeletal Dysfunctions of the Lower Quadrant)

(Lower Quadrant includes lumbar spine, sacrum, pelvis and lower extremities)

1. Anatomical, Physiological and biomechanical basis for assessment of movement dysfunctions of the lower quadrant
2. Pathophysiological and Pathomechanical basis for management of movement dysfunctions of the lower quadrant
3. Clinical decision making skills in evaluation & management of all pediatric, adult and geriatric dysfunctions of of the lower quadrant
4. Advances in functional diagnostic procedures & various outcome measures relevant to musculo-skeletal dysfunctions of the lower quadrant
5. Pathobiological mechanisms of pain; Recent advances in pain evaluation and management
6. Advances in the field of Manual Therapy
7. Principles of musculo-skeletal health and performance related fitness and Physiotherapeutic management of musculo-skeletal injuries & dysfunctions in various sports
8. Principles of assessment of industrial fitness and assessment & management of musculoskeletal dysfunctions related to various industries.
9. Ergonomics in Musculo-skeletal dysfunction of the lower quadrant
10. Assistive technology used for stability and mobility to enhance function.
11. Therapeutic application of Yogasanas for musculoskeletal health and fitness (lower quadrant)
12. Evidence based practice to formulate effective assessment and treatment program
13. Evaluation of disability
14. Legislation and social care.
15. Assessment and management of Integumentary impairments due to musculoskeletal dysfunction.
16. Clinical decisions for upper quadrant function in presence of lower quadrant dysfunction

CLINICAL POSTING

Second year

Acute care & Rehabilitation in Musculoskeletal dysfunctions: Indoor and Outdoor patients

Neuro Physiotherapy

Advances in Neurophysiotherapy - (Part I)

This paper will focus on advances in theory and practices in paediatric neurological conditions

1. Gross and fine motor development skills, posture and gait examination and functional performance
2. Facilitation of development using appropriate skills in a neurologically disabled child
3. Congenital and acquired disorders affecting growth and development of child
4. Advanced skills in assessment of paediatric neuropathological, neuropsychological and neurosurgical conditions
5. Advanced Physiotherapy approaches – Neurophysiological principles, skills of handling in

various approaches and rationale for effective management.

6. Clinical decision making and evidence based practice to formulate effective assessment and treatment program

7. Theories of motor control and learning, perceptuomotor and sensory issues in children

8. Early identification of paediatric neurological disorders and early intervention skill.

9. Role of Physiotherapy in progressive paediatric neurological conditions, management of terminally ill child

10. Role of Physiotherapy in Neonatal intensive care units

11. Social integration of child in school and community – measures to ensure – attitudinal, environmental, manpower, assistive technology, legislation and support

12. Assessment, clinical reasoning and management, of Integumentary and other system impairments due to neuromusculoskeletal dysfunction.

13. Pharmacotherapeutics in neurological conditions and its relevance in physiotherapy

Advances in Neurophysiotherapy (Part II)

This paper will focus on advances in theory and practices in adult neurological conditions

1. Neurodevelopment and neurophysiological approaches in Adult neurological conditions

2. Advance skills in assessment of adult neuro-pathological, neuropsychological and neurosurgical conditions

3. Various outcome measures and assessment methods used in geriatric & adult neurological conditions

4. Clinical decision making and evidence based practice to formulate effective assessment and treatment program

5. Advanced Neuro-therapeutic skills for management

6. Role of Physiotherapy in progressive neurological conditions, management of terminally ill patient.

7. Facilitation and coping up with problems associated with ageing.

8. Prevention of age related complications

Social integration in community – measures to ensure – attitudinal, environmental, manpower, assistive technology, legislation and support

9. Pharmacotherapeutics in neurological conditions and its relevance in physiotherapy

CLINICAL POSTING

Second year

Neonatal and Acute care and Rehabilitation of

neuromedical and surgical disorders:

Adult Neuro-medical, neurosurgical and OPD,

Pediatrics Neuro-medical, neurosurgical and OPD,

Early intervention.

Cardiovascular and Respiratory Physiotherapy

Advances in Cardiovascular and Respiratory Physiotherapy (Part I).

(Respiratory Physiotherapy)

1. Structural, functional and Biomechanical basis for assessment and management of dysfunctions of the respiratory system and thorax throughout the life span.
2. Clinical reasoning in physiotherapeutic evaluation & management of all neonatal, pediatric, adult and geriatric dysfunctions of the respiratory system and thorax in acute care and in rehabilitation
3. Advances in functional diagnostic procedures & various outcome measures relevant to assess intervention to dysfunctions of thorax and respiratory system.
4. Interpretation and application of Investigations related to Respiratory and thoracic dysfunction and its relevance to physiotherapy.
5. Evidence based practice in management of Respiratory & Thoracic impairments & dysfunction.
6. Pulmonary rehabilitation
7. Ergonomics and energy conservation in Respiratory dysfunction and use of assistive devices to enhance function and performance.
8. Pathology of pain in medical and Post-surgical conditions related to thoracorespiratory dysfunction and advances in its evaluation and management
9. Clinical decision making and evidence based practice in physiotherapeutic evaluation & management of all medical, surgical and traumatic disorders across the life span in a critical care (ICU) setting
10. Management of the critically ill: knowledge of Airways -types & management Mechanical ventilator, use of Oxygen therapy; Physiotherapeutic Interventions in intensive care, weaning and ICU monitoring.
11. Postoperative respiratory care
12. Principles of health and performance, Risk stratification, Prevention and health promotion
13. Pharmacotherapeutics in respiratory condition and its relevance with physiotherapy

Advances in Cardiovascular and Respiratory Physiotherapy (Part II)

(Cardiovascular Physiotherapy)

1. Structural and functional and Biomechanical basis for assessment and management of dysfunctions of the circulatory system including peripheral vessels and mediastinum throughout the life span.
2. Clinical decision making skills in physiotherapeutic evaluation & management of all neonatal, pediatric, adult and geriatric dysfunctions of the cardiovascular including peripheral Vasculature system and mediastinum in acute care and rehabilitation
3. Advances in functional diagnostic procedures & various outcome measures relevant to assess intervention to dysfunctions of cardiovascular and peripheral vascular system.
4. Evidence based practice in assessment and management of cardiovascular and peripheral vascular dysfunction and failure

5. Ergonomics and energy conservation in cardiovascular dysfunction and use of assistive devices to enhance function and performance.

6. Pathology of pain in medical and surgical impairments related to cardiovascular dysfunction and advances in its evaluation and management

7. Clinical decision-making skills in physiotherapeutic evaluation & management of all medical, surgical and traumatic conditions across the life span in a critical care (ICU) setting

8. Management of the critically ill: knowledge of Airways -types & management Mechanical ventilator, use of Oxygen therapy; Physiotherapeutic Interventions in intensive care, weaning and ICU monitoring

9. Postoperative respiratory care

10. Cardiac Rehabilitation

11. Vascular rehabilitation

12. Principles of health and performance, Risk stratification, Prevention and health promotion

13. Interpretation and application of Investigations related to Respiratory, cardiac and thoracic dysfunction and its relevance to physiotherapy.

14. Pharmacotherapeutics in cardiac condition and its relevance with physiotherapy.

15. Clinical decision-making skills in physiotherapeutic evaluation & management of Lifestyle disorders.

16. Cardio-Respiratory fitness testing and training in sports and diseases

17. Knowledge and skill of basic life support

18. Clinical reasoning, assessment and management of Integumentary and other system impairments due to cardiovascular and respiratory diseases

CLINICAL POSTING

Second year

Acute care & Rehabilitation in Cardiovascular & Respiratory dysfunctions:

Intensive care units, Cardiovascular & Respiratory,

(Indoor & OPD)

COMMUNITY PHYSIOTHERAPY

Advances in Community Physiotherapy –Part I (Essentials of Community Physiotherapy)

1. Health and Illness; Levels of Healthcare & Fitness

2. Principles and practice of fitness training for health promotion in community

3. Basic Concepts of rehabilitation and foundations of rehabilitation

4. Institute based rehabilitation services and multi-disciplinary approach.

5. Methodology of CBR with reference to National Health Delivery system.

6. Role of National Institutes, District Rehabilitation Centre and Primary Health Centre (with appropriate exposure).

7. Public awareness to the various disabilities. Communications, Message generation and dissipation.

8. National and UN (United Nations) Legislations for persons with disability.

9. Disability detection and early intervention.

10. Appropriate Technology, Assistive devices used for Stability & Mobility to enhance function

11. Home exercise programs for various classifications of disabilities.

12. Physical fitness, stress management through yoga and psychosomatic approaches.

13. Principles and practice of Rehabilitation and outreach services including domiciliary services

14. Role of Government in CBR, inter-sectoral programs and co-ordination. Implementation of the Act.

15. Role of Non-Government organizations in CBR.

16. Community dynamics & scope of community physiotherapy.

17. Physiotherapist as a Master Trainer in CBR.

18. Role of Physiotherapist in disaster management

Advances in Community Physiotherapy – Part II (Women's Health, Industrial Health and Geriatric Health)

1. Evaluation and theories of aging; Assessment of the elderly;

2. Exercise prescription for the elderly; Psychosocial and safety issues in elderly

3. Geriatric Rehabilitation

4. Holistic physiotherapy for the aged.

5. Physiotherapy in maternal and child health care.

6. Women's, Health: Women's reproductive health and health care;

7. Exercise prescription in pre and post- natal stage;

8. Diagnosis and treatment of musculoskeletal pain and dysfunction during pregnancy

9. Diagnosis and treatment of musculoskeletal pain and dysfunction during post menopause.

10. Treatment of Incontinence and Pelvic floor dysfunction; Special problems related to women.

11. Occupational Health, Occupational Hazards, Industrial Hygiene, Vulnerable workers group and labor law;

12. Industrial therapy, Injury prevention and returning the worker to productivity

13. Ergonomics, Principles, Issues related to hand tools, posture, material handling and lifting

14. Prevention of work related Injuries and redesigning workspace, Designing auditory and visual displays for workers; Occupational stress; Environmental Pollution – nose, vibration etc.

15. Physiotherapy role in industry – preventive, intervention, ergonomic and rehabilitative.

16. Recent Advances in **Women's Health, Industrial Health and Geriatric Health** in Community Physiotherapy.

17. Evidence Based Practice in Community Health.

Clinical Posting :

Second year

Gynecology and Obstetric, antenatal postnatal OPD, geriatric OPD,
PHC/CHC in Rural areas, Urban slums, Industry, Old Age
Homes, Physical Rehabilitation Centers

Sports Physiotherapy

Advances in Sports Physiotherapy – Part I

1) Introduction to Sports sciences & exercise physiology

2) Terminology, methodology, rules, equipment, infrastructure of some common sports like Cricket, Football, Basketball, Tennis, Hockey, Track & Field, Aquatic Sports.

3) Body composition & analysis

4) Principles of Sports Biomechanics & Biomechanics of injury. Physics in sports: Biomechanics Of Running, Throwing, Swimming, Jumping .Advances In Biomechanics assessment: 2D, 3D

5) Advanced Cardio Respiratory Exercise Physiology

6) Principles of Strength training

7) Fitness & strength testing in sports

8) Sports specific conditioning

9) Sports specific Agility training

10) Sports equipments (including Gym equipments)

11) Psychological aspects in Sports

12) Doping & performance enhancing drugs.

13) Protective equipments in Sports including Orthotics Sports Traumatology:

14) Introduction to Sports Medicine

15) Introduction to Sports Injuries

16) Principles of Tissue healing

17) Soft tissue injuries of Lower limb (Hip, thigh, Knee, leg, ankle, foot problems & injuries)

18) Soft tissue injuries of Upper limb (Shoulder, arm, elbow, forearm, wrist, hand problems & injuries)

19) Fractures & Dislocations

20) Spinal injuries

21) Head injury in sports

22) Overuse injuries in Sports

23) Specific issues in Females, pediatric & elderly athletes

24) On-field assessment & decision making

25) Injury prevention in sports

26) Pharmacotherapeutics and its relevance with physiotherapy

Advances in Sports Physiotherapy – Part II

1) Principles of Sports Injury Management

2) Management of Sporting Emergencies including emergency procedures, advanced assessment skills, care & management

3) Initial management of Acute sports injuries

4) Pharmacological management of Sports injuries.

5) Fluid Balance & electrolyte disturbance correction

6) Overview of Surgical management (including Arthroscopic surgery) for Sports injuries.

7) Injury & Sports specific management

8) Management of overuse injuries in sports

9) Electrophysiological Agents in sports rehabilitation

10) Rehabilitation of Sports injuries

11) Manual Therapy Techniques in Sports Physiotherapy

12) Management of special population – paraplegic & physically challenged athletes

13) Sports medicine coverage during Sports events

14) Traveling with a Sports team as a Physiotherapist.

15) Musculoskeletal screening of Athletes – Pre season, In-season & Post –season

CLINICAL POSTING

Second year

Acute Care & Rehabilitation in Sports Injuries : Indoor and Outdoor patients.

2st Year MPT

Sr. No.	**Passing Head**	**Total Marks**	**Minimum Marks required for passing**
1.	Theory	200	100
2.	Practical	350	175

Theory Examination

- There shall be two theory papers of 100 marks each
- Each paper shall be of three hours duration
- All the questions are compulsory

Paper I	Advances in Physiotherapy (speciality) - I

Paper II	Advances in Physiotherapy (speciality) - II

Q. No	Nature of Question	Distribution of marks	Total marks
1.	Long Answer Question	1×30	30marks
2.	Long Answer Question	1×30	30marks
3.	Solve any four out of five SAQ	4 X 10	40marks

Practical Examination 350 Marks

Long Case I - Speciality - Paper I - 150 marks
Long Case II - Speciality - Paper II - 150 marks
Dissertation Viva- 50 marks

Competency Statements

1. Analyze and discuss the biomedical, behavioral and social science bases of physiotherapy and integrate the bases into physiotherapy practice.
2. Collects assessment data relevant to the client's needs and physiotherapy practice.
3. Be able to conduct the patient evaluation and assessment as per condition.
4. Assess, analyze, and plan physiotherapy management.
5. Apply and evaluate physiotherapy management.
6. Able to assess, plan, & manage Physiotherapy in acute care set up.
7. Use of ICF & its core sets in documenting & coding the functional status information for purpose of assessing stakeholder needs & planning management.
8. Advise patient on appropriate nutrition, exercises, rest, relaxation other issues
9. Demonstrate professional practice.
10. Demonstrate autonomous physiotherapy practice.
11. Demonstrate the ability to search and retrieve scientific literature
12. Demonstrate an understanding of research methods.
13. Demonstrate the ability to critically analyse scientific literature
14. Prepare Report findings of critical analysis in a scientific format

S. no.	Learning outcomes	Knowledge/comprehension	Applications / synthesis / evaluation
1.	Analyse and discuss the biomedical, behavioural and social science bases of physiotherapy and integrate the bases into physiotherapy practice	Be familiar with normal & abnormal patterns of human development and movement. Understand the anatomical framework of the human body including major systems and aspects of the social, cultural, psychological, environmental, spiritual and belief systems influencing human development. Able to understand the concept of health & its contribution to wellness.	Analyse normal and abnormal patterns of human development and movement.. Demonstrate understanding of structural and functional anatomy. Identify anatomical structure from surface landmarks. Describe the normal physiological process and the changes throughout the life span. Analyse basic human movement. Evaluate the significance of healthy lifestyles for patients/clients
2	Collects assessment data relevant to the client's needs and physiotherapy practice.	Informs the client of the nature and purpose of assessment as well as any associated significant risk.	Perform patient assessment technique which includes to know the condition and to gather information about his/her ailment. Monitors the client's health status for significant changes during the course of assessment and takes appropriate actions as required. Perform assessment procedure safely and accurately, taking into account client consent, known indications, guidelines, limitations and risk-benefit considerations.

S. no.	Learning outcomes	Knowledge/comprehension	Applications / synthesis / evaluation
3.	Be able to conduct the patient evaluation and assessment as per condition.	Be familiar with different assessment techniques. Able to examine higher motor functions, cranial nerves, ROM, MMT, Muscle tightness, muscle tone, myotome, sensory evaluation, balance, co-ordination, hand function, functional outcome measures, Physical fitness, cardio-respiratory evaluation ,posture &gait. Be familiar with special tests. Basic knowledge on radiological findings & other investigations. Demonstrate clinical reasoning with choice of assessment and examination procedures	Perform patient assessment technique to know the condition and to gather information about his/her ailment. Safely and accurately examines and re-examines a patient using standardized measures. Apply pertinent tests and measurements. Interpret all assessment findings to allow for identification of the patient's/client's impairments, activity limitations and participation restrictions. Interpret findings and reach a differential diagnosis Establishes a diagnosis for physiotherapy, identifies risks of care, and makes appropriate clinical decisions based upon the examination, evaluation and current available evidence.
4	Assess, analyse, and plan physiotherapy management	Identify the principles of assessment, clinical reasoning, problem identification, goal setting, treatment planning. Be familiar with different assessment techniques and protocols. Know the protocols used in the department. Justify treatment choices with a sound pathophysiological rationale`	Develop rapport to obtain history, current health status and previous functional abilities. Interpret the patient's/client's verbal and non-verbal responses. Determines the personality traits and Analyze how the differences in personality influence approach Perform patient assessment technique which includes to know the condition and to gather information about his/her ailment.
5.	Apply and evaluate physiotherapy management	Know the protocols used in the department. Understand and Prevent/minimise risks and hazards during physiotherapy interventions Establish equipment is within safety check time frames. Demonstrate knowledge of emergency procedures	Demonstrate safe, effective and efficient interventions. Evaluate the effectiveness of the Interventions

S. no.	Learning outcomes	Knowledge/comprehension	Applications / synthesis / evaluation
6	Able to assess, plan, & manage Physiotherapy in acute care set up.	▪ Familiarize with equipments in acute care ▪ Monitoring of vitals ▪ Assesment & interpretation of vital signs ▪ Know and apply Physiotherapy treatment protocols in acute care setup	▪ -Apply safe & effective Physiotherapy intervention. to work as team member of acute care multidisciplinary team.
7	Use of ICF & its core sets in documenting & coding the functional status information for purpose of assessing stakeholder needs & planning management.	▪ Identify and grade the impairment of body structure and body function with respect to the health condition. ▪ To identify the activity limitation and participation restriction. ▪ To identify the facilitators and barriers with respect to environmental & personal factors. ▪ To assess the felt needs of the stakeholder ▪ To assess the capacity & plan the need based physiotherapeutic intervention.	▪ Understand use of ICF & its coding in 1) surveys of specific & general population. 2.) Analysis of population Health & disability data to facilitate harmonization & comparison of data sets. 3) Derive disability questionnaires for regional & international projects. 4) Guiding policy development & monitoring its implementation.
8	Advise patient on appropriate nutrition, exercises, rest, relaxation other issues.	Explain the impact of exercise and nutritional status of patient during treatment	Assess the patient's status after exercise and proper diet.

S. no.	Learning outcomes	Knowledge/comprehension	Applications / synthesis / evaluation
9	Demonstrate professional Practice.	Demonstrate attitudes and behavior acceptable to society and the profession Practice in accordance with the Standards of Ethical Conduct Explain the health and safety issues for patients and staff Able to deliver safe, effective and timely physiotherapy interventions Recognizes risk & hazards which can happen during intervention. Ability to reflect and evaluate own practice Modify and adapt professional practice in response to evaluation	Demonstrate professional behavior. Demonstrate safe Practice Plan and show evidence of Professional development.
10.	Demonstrate autonomous physiotherapy practice	Recognize the critical conditions of patients Be familiar with current literature and evidence based best practice	Independently assess and treat patients with single or multiple problems which needs physiotherapeutic intervention. Demonstrate an ability to refer to other health professionals when beyond the scope of physiotherapy
11.	Demonstrate an understanding of research methods.	Have a basic understanding of the value of different research paradigms to physiotherapy research. Demonstrate a basic understanding of research processes. Understand the ethics of the research process including plagiarism and consent	Describe appropriate research methodologies that may be used to examine a variety of research questions. Describe the key elements of research design. Describe different methods of data Collection. Demonstrate knowledge of basic biomedical statistics
12	Demonstrate the ability to critically analyse scientific literature	Identify appropriate criteria to assess quality of different types of literature.	Demonstrate an understanding of the process of critical review. Demonstrate the use of an appropriate critiquing tool to guide interpretation. Critically analyse an appropriate selection of scientific papers
13	Demonstrate the ability to search and retrieve scientific literature	Define search terms Knowledge on available data search resources Identify relevant sources of Research	Develop and modify search strategies appropriately complete searches using relevant and available resources such as electronic data bases. Discuss different methods of statistical analysis in relation to different research designs. Discuss the possible ethical implications and requirements in health research
14	Prepare Report findings of critical analysis in a scientific format	Be familiar with different writing format depending on the research methodology. Be familiar with different referencing styles. Knowledge on presentation methods. Integrate the current literature into physiotherapy practice	• Use standardized writing format • Cite references using a recognized scientific method • Demonstrate an ability to synthesise information from several resources • Demonstrate the ability to communicate research findings using a variety of presentation methods. Critique current physiotherapy practice with reference to contemporary research literature

Annexure –I

DISSERTATION: -

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

2. The dissertation is aimed to train a postgraduate student in research method and techniques. It includes identification of a problem, formation of a hypothesis, search and review of literature, getting acquainted with recent advances, designing of a research study, collection of data, statistical analysis of results, discussion and drawing conclusion.

3. Every candidate shall submit to the Registrar of the University in the prescribed proforma, a synopsis containing particulars of proposed dissertation work within four months from the date of commencement of the course on or before the dates notified by the University. The synopsis shall be sent through the proper channel.

4. Such synopsis will be reviewed and the dissertation topic will be registered by the University.

5. Thesis Topics will be submitted 4 months after admission.

6. The ethics committee (College level) approval is mandatory.

7. Complete dissertation should be submitted 4 months before final examination.

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

i. Introduction

ii. Need for the study

iii. Aims or Objectives of study

iv. Review of Literature

v. Material and Methods

vi. Results

vii. Discussion

viii. Conclusion

ix. Limitation

x. Clinical Implication- Suggestion

xi. Summary

xii. Tables

xiii. Annexure

9. The written text of dissertation shall be not less than 50 pages excluding references, tables, questionnaires and other annexure. It should be neatly typed in double line spacing on one side of paper (A4 size, 8.27" x 11.69") and bound properly. Spiral binding should be avoided. The dissertation shall be certified by the guide, head of the department and head of the institution.

10. Five copies of dissertation along with CD (Softcopy) thus prepared shall be submitted to the controller of Examination, six months before final examination on or before the dates notified by the University.

11. The dissertation shall be valued by examiners appointed by the University. Approval of dissertation work is an essential precondition for a candidate to appear in the University examination.

12. Guide: - The academic qualification and teaching experience required for recognition by this University as a guide for dissertation work is as per M.U.H.S rules of PG teachers.

13. Change of guide: - In the event of a registered guide leaving the college for any reason or in the event of death of guide, guide may be changed with prior permission from the university.

14. Thesis shall be examined by a minimum of 3 examiners, (Appointed by University) one internal and Two external who shall be examiners for clinical / practical also.

15. At least two examiners shall approve the same otherwise candidate has to redo the dissertation.

16. Candidate is allowed to appear for the exam only after acceptance of thesis.

17. The presentation and submission of dissertation will be as per the guidelines set by the Controller of Examinations in Notification No 08/2010 (Guidelines for submission of dissertation of MPT Courses) and or as per notification revised from time to time.

Annexure -II

LIST OF REFERENCE BOOKS AND JOURNALS

FIRST YEAR M.P.T BOOKS & JOURNALS

PHYSIOTHERAPY

1) American Physical Therapy Association: Guide To Physical Therapy Practice, 2nd Edition 2001.
2) Physical Rehabilitation (4& 5th Edition) By Susan B O Sullivan And Thomas J Schmitz. (Jaypee Publication)
3) International Classification Of Functioning, Disability And Health: Short Version. (IT'S Publication)
4) Professionalism In Physical Therapy: History, Practice And Development By Laura Lee Swisher And Catherine G.Page, (Elsevier Publication 2005)
5) Effective Documentation For Physical Therapy Professionals, By Eric Shamus And Debra (McgrawHill Company2004)
6) Physical Therapy Documentation: From Examination To Outcome By Mia Erickson, Ralph Utzman(Slack Incorporated 2008)
7) Writing SOAP Notes With Patient / Client Management Formats By GingeKettenbach, Ph. D., PT, 3rd Edition, 2004 ,F.A. DAVIS COMPANY. Philadelphia
8) Practical Evidence-Based Physiotherapy Rob Herbert, GroJamtvedt, Judy Mead, KareBirger Hagen Elsevier Butter Worth Heinemann; Oxford UK (2005)
9) Guide To Evidence-Based Physical Therapy Practice By Dianne V. Jewell, PT, Phd, Virginia Commonwealth University, Virginia
10) Concern Specialty Books For Physical Therapy Assessment And Outcome Measures
11) Electromyography In Clinical Practice By Michael J. Aminoff, 3rd Edition (Churchill Livingstone)
12) Clinical Neurophysiology By UK MisraAnd Kalita, 2nd Edition (Churchill Livingstone)
13) Electro Diagnosis In Diseases Of Nerve And Muscle: Principles And Practice By Jun Kimura (Oxford University Press)
14) The ABC Of EMG: A Practical Introduction To KinesiologicalElectromyography By Peter Conrad (Noroxon Inc. USA 2005)
15) Integrating Physical Agents In Rehabilitation By Bernadette HecoxAnd John Sanko, 2nd Edition (Pearson Prentice Hall 2006)
16) Integrating Physical Agents In Rehabilitation By Bernadette HecoxAnd John Sanko, 2nd Edition (Pearson Prentice Hall 2006)
17) Physicals Agents In Rehabilitation: From Research To Practical By Michell H. Cameron, 2nd Edition (Saunders And Elsevier, 2003)
18) Therapeutic Modalities For Allied Health Professionals By William E. Prentice And Frank Underwood (Mcgraw-Hill, 1998
19) Therapeutic Exercise: Treatment Planning For Progression By Francis E. Huber, Christly. Wells (W.B. Saunders Company, 2006)
20) Therapeutic Exercise: Foundations And Techniques By Carolyn KisnerAnd Lynn Allen Colby (W.B. Saunders Company, 2007)
21) Therapeutic Exercise, Moving Towards Function By Carrie M. Hall And Lori Thein Brody (Lippincott Williams &Wilkins, 2004)
22) Grieve'sModern Manual Therapy: The Vertebral Column By Jeffrey BoylingAnd Grad Dip Man Ther(Churchill Livingston)
23) Exercise Physiology By Mc Ardle, Katch&Katch(Lippincott Williams And Wilkins, 2000)

24) Exercise Physiology: Exercise, Performance, And Clinical Applications By Robert A. Roberts And Scott O Roberts William C Brown, 1997)
25) Clinical Exercise Testing AndPrescription Theory And Applications By Scott O. Roberts, Peter Hanson (C RC Press, 1997)
26) Basic Biomechanics Of The Musculoskeletal System By Margareta NordinAnd Victor H. Frankle, 2nd Edition (Lea And Febiger)
27) Kinesiology Of The Human Body: Under Normal And Pathological Condition By Arthur Steindler, 5th Edition (Charles C Thomas, 1977)
28) Joint Structure &Function :A Comprehensive Analysis By Cynthia C Norkin, Pamela K Levangie(Jaypee Brothers, 2006)
29) Brunnstrom's Clinical Kinesiology By Laura K. Smith &Don Lehmkuh, 5th Edition (F A Davis, 1996)
30) The Physiology Of The Joints By Kapandji&Matthew J Kendel(Churchill Livingstone, 2008)
31) Clinical Biomechanics Of The Spine By Augustus A White &Manohar M Panjabi, 2nd Edition (Lippincott Williams &Wilkins; 1990)
32) Kinesiology :The Mechanics And PathomechanicsOf Human Movement By Carol Oatis(Lippincott Williams &Wilkins; 2008)
33) Kinesiology: Application To Pathological Motion By Soderberg, 2nd Edition (Wiliams&Wilkins, 1997)

Research Methodology and Biostatics

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

Teaching Technology

1) Public Power And Administration – Wilenski, Hale And Iremonger, 1986
2) Physical Therapy Administration And Management – Hickik Robert J
3) Management Principles For Physiotherapists – Nosse Lorry J.

4) Medical Education: Principles and Practice: Published by the National teacher Training Center, JIPMER, Pondicherry: latest Edition
5) Medical Education: Trainer's Manual : Published by the National teacher Training Center, JIPMER, Pondicherry: latest Edition
6) Basics in Medical Education : Zubair Amin &HoonEngKhoo: World Scientific: 2009
7) A Practical Guide for Medical Teachers : John A Dent& Ronald M Harden: Elsevier Health Sciences: 2009
8) International Handbook of Medical Education : Abdul W Sajid, Christie H McGuire et al: Greenwood Press 1994
9) PRINCIPLES OF MEDICAL EDUCATION, Tejinder Singh, Piyush Gupta, DaljitSingh.year: 2009. Edition: 3 rdeditionPublisher: JAYPEE brothers

Journals

1) Journal Of Indian Association Of Physiotherapy
2) Physical Therapy (APTA, America)
3) Physiotherapy (CSP, London)
4) American Journal Of Physical Medicine And Rehabilitation
5) Physiotherapy (Canada)
6) Physiotherapy – Theory And Practice
7) Australian Journal Of Physiotherapy
8) Physiotherapy (Canada).
9) Clinical Rehabilitation.
10) Journal Of Exercise Science & Physiotherapy

BOOKS & JOURNALS OF MUSCULOSKELETAL PHYSIOTHERAPY

1) Essentials of Orthopedics for Physiotherapists by John Ebenezer – Jaypee Publications
2) Practical Fracture Treatment by Ronald McRae, Max Esser – Churchill Livingston
3) Oxford Textbook of Orthopaedic& Trauma by Christopher Bulstrode, Joseph Buckwalter – Oxford University Press
4) Campbell's operative orthopedics. - By S. Terry Can ale, James H. Beaty - Mosby
5) Fractures & joint injuries By Watson Jones – Churchill Livingston
6) Clinical Orthopaedic Examination by Ronald McRae – Churchill Livingstone
7) Daniels and Worthingham's muscle testing: Techniques of manual examination By Helen J Hislop, Jacqueline Montgomery Barbara – Elsevier
8) Muscles – Testing and Function by Florence Peterson Kendall – Lippincott
9) Joint Range of Motion and Muscle length testing By Nancy Berryman Reese - Saunders
10) Orthopedic Physical Assessment, By David J. Magee, PhD, BPT - Saunders
11) Illustrated Orthopedic Physical Assessment, 3e B y Ronald C. Evans, - Mosby
12) Diagnostic Imaging for Physical Therapists by James Swain, Kenneth W. Bush, and Juliette Brosing – Elsevier
13) Differential Diagnosis for Physical Therapists: Screening for Referral, By Catherine C. Goodman, and Teresa Kelly Snyder – Saunders
14) Gait Analysis : Theory And Application By Rebecca Craik and Carol A Oatis – Mosby
15) Skeletal Growth and development: Clinical issues and basic science advances. The Symposium Series by Joseph A Buckwalter – AAOS
16) Introduction to Physical Therapy, By Michael A. Pagliarulo - Mosby
17) Kinesiology: The mechanics and Pathomechanics of Human Movement by Carol A Oatis - Lippincott 4. Cash Text Book for Orthopedics and rheumatology for physiotherapist by John Elizabeth Cash & Patricia A Downie – Lippincott
18) Joint Mobilization / Manipulation: Extremity and Spinal Techniques by Susan L Edmond – Mosby
19) Foundations of Chiropractic by Meridel I Gatterman – Mosby
20) Grieve's Modern Manual Therapy: The Vertebral Column, By Jeffrey Boyling and Gwendolen Jull – Churchill Livingston
21) Kinesiology of the Musculoskeletal System: Foundations for Rehabilitation, By Donald A. Neumann, PhD, PT – Mosby
22) Maitland's Peripheral Manipulation, By EllyHengeveld, and Kevin Banks, - Butterworth-Heinemann 10. Maitland's Vertebral Manipulation, By Geoff D. Maitland, - Butterworth-Heinemann

23) 11. Hand and Upper Extremity Rehabilitation: A Practical Guide, By Susan L. Burke, - Churchill Livingston 12. Manual Therapy for the Peripheral Nerves B y Jean-Pierre Barral, DO(UK) and Alain Croibier, Osteopathe DO, MRO (F) – Churchill Linvingston
24) 13. Neuromuscular Rehabilitation in manual and physical therapies: Principles and Practice by Eyal Lederman – Churchill Livingston
25) Orthopaedic Physical therapy Secrets by Jeffrey D Place - Elsevier
26) Principles and Practice of orthopedics and sports medicine b y Garret
27) A Physiotherapist's Guide to Clinical Measurement by John Edward Fox, and Richard Jasper Day – Elsevier
28) Orthotics and Prosthetics in Rehabilitation, By Michelle M. Lusardi, PhD, PT and Caroline C. Nielsen, PhD - Butterworth-Heinemann
29) Clinical Application of Neuromuscular Techniques: The Upper Body by Leon Chaitow, and Judith DeLany, - Elsevier
30) Handbook of Postsurgical Rehabilitation Guidelines for the Orthopedic Clinician By Hospital for Special Surgery – Mosby
31) An Illustrated Guide to Taping Techniques – Principles & Practice By Thomas John Hewetson – Mosby
32) Paraplegia & Tetraplegia A Guide for Physiotherapists by Id a Bromley – Churchill Livingston
33) Therapeutic exercises using swiss ball By Caroline corning creager – Executive Physical therapy
34) Manual Mobilization of the Joints – The Kaltenborn Method Volume I, II By Freddy kaltenborn
35) Treat your own Back by Robin Mckenzie
36) Treat your own Neck by Robin Mckenzie
37) Cervical and Thoracic spine : Mechanical Diagnosis & Therapy Vol I & II By Robin Mckenzie
38) The Lumbar Spine: Mechanical Diagnosis & Therapy Vol I & II By R obinMckenzie
39) The Human Extremities: Mechanical Diagnosis & Therapy by Robin Mckenzie
40) Manual Therapy by Brain R Mulligan
41) Documentation for Rehabilitation: A Guide to Clinical Decision Making, By Lori Quinn, and James Gordon - Saunders
42) Clinical Orthopaedic Rehabilitation by S Brent Brotzman
43) Treatment and rehabilitation fractures by Vasantha L Moorthy&Stanley Hoppenfield - Lippincott 33. Physiotherapy for Amputees: The Roehampton Approach by Barbara Engstrom – Churchill Livingston
44) Textbook of orthopedic medicine Vol I & II by James Cyriax - Bailliere

Journals

1) Clinical Kinesiology
2) Journal of biomechanics
3) Journal of pediatric Orthopedics
4) Journal of Orthopaedic& Sports Physical Therapy (JOSPT).
5) Journal of Manual Therapy
6) Journal of Manual & Manipulative Therapy
7) Spine
8) Journal of Hand Therapy

BOOKS & JOURNALS OF NEURO PHYSIOTHERAPY

1) Text book of clinical neuroanatomy by Vishramsingh (Elsevier 2007)
2) Clinical Neuroanatomy for Medical Students by Richard S Snell, 5th Edition (Lippincott Williams & Wilkins, 2001)

3) Neurophysiology by RHS Carpenter, 4th edition (Arnold 2003)
4) Pathophysiology of the motor systems: Principles and Clinical presentations by Christopher M. Fredericks and Lisa K. Saladin (F.A. Davis Company 1996)
5) Brain's diseases of the nervous system by John Walton, 12th edition (Oxford University press)
6) A physiological approach to clinical neurology by James W. Lance and James G. McLeod, 3rd edition (Butterworth's 1981)
7) Muscle and its diseases: An outline primer of basic science and clinical methods by Irwin M. Siegel (Year book medical publishers 1986)
8) Neuroscience fundamental for rehabilitation by Laurie Lundy Ekman (W.B Saunders 1998)
9) Illustrated neurology and neuro surgery by Kenneth Lindsay and Ian Bone (Churchill Livingston, 2004) 7. Basic neurology by John Gilroy (Elsevier)
10) Hand book of neurologic rating scales by Robert M.Herndon, 2nd edition , (Demos publications 2005) 2. Bickerstaff's neurological examination in clinical practice by John Spillane, 6th edition (Blackwell science limited 1996)
11) Physical rehabilitation laboratory manual: Focus on functional training by Susan B O Sullivan and Thomas J Schmitz. (F.A. Davis Company)
12) The development of the infant young child: Normal and Abnormal by R.S. Illingworth, 9th edition (Churchill Livingstone 1996)
13) Functional Movement Reeducation – A contemporary model for stroke rehabilitation by Susan Ryerson and Kathryn Levit (Churchill Livingston and Elsevier, 1997)
14) Pediatric Physical Therapy , Jan Stephen Tecklin, 3rd (1999) and 4th (2008) editions, Lippincott Williams & Wilkins.
15) Physical Therapy for Children , Suzann K.Campbell, 3rd edition, 2006, Saunders Elsevier.
16) Physiotherapy for Children, Teresa Pountney, 2007, Butterworth Heinemann Elsevier.
17) Meeting the Physical Therapy Needs of Children , Susan K.Effgen, 2005, F.A.Davis Company, Philadelphia.
18) Physiotherapy in Pediatrics, Roberta B. Shepherd, 3rd edition, 1995, Butterworth Heinemann.
19) Neurologic Intervention for Physical Therapist Assistant, Martin Kessler, 1st &2nd Edition, 2008, W.B.Saunders Company Ltd.
20) Physiotherapy and the growing child , Yvonne R Borns& Julie MacDonald, 1996, W.B.Saunders Company Ltd.
21) Pediatric Rehabilitation, Gabriella E. Molnar, 3rd edition, 1999. Hanly&Belfus, Philadelphia.
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