SRM UNIVERSITY

(Established Under section 3 of UGC Act 1956)

SRM COLLEGE OF PHYSIOTHERAPY

REGULATIONS & SYLLABUS FOR MASTER OF PHYSIOTHERAPY (MPT) DEGREE COURSE

SRM UNIVERSITY

(Estd. Under Section 3 of UGC Act 1956)

REGULATIONS FOR MASTER OF PHYSIOTHERAPY COURSE

These regulations may be called "THE REGULATIONS FOR THE MASTER OF PHYSIOTHERAPY DEGREE (MPT) COURSE OF SRM UNIVERSITY, SRM Nagar, Kattankulathur, Kancheepuram Dist.603 203.

These regulations shall be deemed to have come into force from the academic year 2004-2005. These regulations are subject to such modifications as may be approved by the Academic Council and Board of Management from time to time.

OBJECTIVES

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

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

BRANCHES

1. MPT in Orthopaedics
2. MPT in Neurology
3. MPT in Cardiopulmonary Sciences
4. MPT in Paediatric Physiotherapy
5. MPT in Sports Physiotherapy
6. MPT in Biomechanics
7. MPT in Hand Rehabilitation
8. MPT in Community Rehabilitation
9. MPT in Obstetrics & Gynaecology

REGULATIONS

Eligibility

Applicants must possess one of the following minimum sets of qualifications:

1. A Bachelor of Physiotherapy degree certificate with not less than 3½ years duration (including 6 months of internship) from any University within India or equivalent degree from any other recognized university.
2. A Bachelor of Physiotherapy degree certificate under Transitory Regulations (one-year duration) for the Diploma holders in Physiotherapy offered by any university within India.
3. In case of a physiotherapist holding Diploma in Physiotherapy of two years duration, who has completed the course before 1980 and has a teaching experience in a recognized institute which offers a Bachelor's Degree course of 3½ years duration, the Vice-Chancellor of SRM University may relax upper age limit, provided the applicant has undergone Transitory Regulation course for one year.

4. Candidates holding qualification regarded as equivalent in standard to the above, may be considered subject to the approval of the Academic Senate on recommendations of Board of Studies, SRM UNIVERSITY.

AGE LIMIT

A candidate should not have completed 30 years as on 31st December of the year of admission.

REGISTRATION

A candidate admitted to this course shall register with this University by remitting the prescribed fee along with the application form for registration duly filled in and forwarded to the University through the Head of the Institution within the stipulated time.

DURATION OF THE COURSE

The duration of the certified study for the Master of Physiotherapy course shall extend over a period of two academic years. Out of the total hours, 1/3 will be of classroom teaching including core lectures, practicals and seminars and the remaining 2/3 will be clinical training and dissertation.

PHYSICAL FITNESS

Every student prior to admission to the course should submit to the Head of the Institution, a certificate of Medical fitness that the candidate is physically fit to undergo the course.

ELIGIBILITY CERTIFICATE

Candidates who have passed any qualifying examination from any other University equivalent to B.P.T. not less than 3½ years shall obtain an Eligibility Certificate from the University remitting the prescribed fee along with the application form.

CONDUCT OF EXAMINATIONS

There shall be two university examination sessions in an academic year. The University Examination comprises of written, oral and clinical examination. The clinical examination will be conducted wherever stipulated.

MEDIUM OF INSTRUCTION

The medium of instruction for all subjects shall be English.

CURRICULUM

The Curriculum and syllabus for the course shall be updated by the Academic Senate from time to time as per the recommendations of the Board of Studies in Physiotherapy.

WORKING DAYS IN AN ACADEMIC YEAR

Each academic year shall have 250 working days.

ATTENDANCE REQUIRED FOR ADMISSION TO EXAMINATIONS

(a) No candidate shall be permitted to appear in any one of the parts of M.P.T. degree examinations unless he or she has attended the course in the subjects for the prescribed period and produces the necessary certificate of study, attendance, satisfactory conduct and progress from the Head of the Institution.

(b) A candidate is required to put in a minimum of 80% of attendance in theory and 80% of attendance in clinicals separately in each subject.

(c) A candidate lacking the prescribed attendance and progress in any one of the subjects, in theory and clinicals in the first appearance shall not be permitted for admission to the entire examination.

CONDONATION OF LACK OF ATTENDANCE

Condonation of shortage of attendance upto a maximum of 10% in the prescribed eligible attendance for admission to the University examination rests with the discretionary power of the Vice-Chancellor. For valid reasons, a candidate lacking in attendance may submit an application in the prescribed form and remit the stipulated fee 15 days prior to the commencement of the theory examination. The Head of the Department and Head of the Institution should satisfy themselves on the reasonableness of the candidate's request while forwarding the application with their endorsements to the Controller of Examination who would obtain the Vice-Chancellor's approval for admission of the candidate to the University examination.

RE-ADMISSION AFTER BREAK OF STUDY

Candidates having a break of study of five years and more from the date of admission and more than two spells of break will not be considered for readmission.

Candidates having break of study shall be considered for readmission provided they are not subjected to any disciplinary action and no charges are pending or contemplated against him/her.

Readmission of candidates is subjected to the approval of the Vice-Chancellor of SRM University.

The candidates having a break upto five years shall apply for readmission to the Registrar of this University. The candidate in such circumstance shall be granted exemption in the subjects she/he has already passed.

MARKS QUALIFYING FOR PASS IN THE EXAMINATIONS

(a) 50% of marks in theory where University Examinations are conducted and 50% of the marks in oral examinations and 50% of aggregate of theory and orals put together.

(b) A separate 50% of the marks in clinical examinations wherever applicable.

(c) Candidate who has failed in any one subject or more subjects in Part-I & Part-II but has obtained pass marks in other subjects shall be exempted from reexamination in passed subjects of Part-I/II.

The review of answer paper for the failed subjects is as per the regulations prescribed for review of answer papers by the SRM University.

CLASSIFICATION OF SUCCESSFUL CANDIDATES

Candidates who secure not less than 75% in aggregate in any subject gets distinction in that particular subject provided he/she passes the whole examination in the first attempt.

Candidates who pass the examination at the first appearance obtaining not less than 60% but below 75% of the aggregate marks shall be declared to have passed the examination in the first class.

Candidates who pass the examination at the first appearance obtaining not less than 50% but below 60% of aggregate marks shall be declared to have passed the examination in the second class.

CARRY OVER OF FAILED SUBJECTS

Part-I (At the end of one academic year) There shall be a supplementary examination. A candidate is allowed to continue Part-II course carrying over the failed subject of Part-I. However, the candidate is allowed to undergo the study and training in the second year and appear for Part-I & II examinations together.

MPT I YEAR

SCHEME OF EXAMINATION

Paper	Subject Title	Sessional Mark	Theory	Orals	Practicals	Total
I	Applied Anatomy & Kinesiology, Biomechanics	50	100	50	-	200
II	Exercise Physiology & Electro Physiology	50	100	50	-	200
III	Physical & Functional Evaluation	50	100	50	50	250
IV	Evidence Based Practice	50	100	-	-	150

MPT II YEAR

SCHEME OF EXAMINATION

MPT in Orthopaedics

Paper	Subjects	Theory	Practicals & Orals	Total
I	1. Musculoskeletal - I Musculoskeletal - II 2. Sports Physiotherapy (Both upper & lower quadrant)	100	100	200
II	3. Geriatric Rehabilitation 4. Hand Rehabilitation	100	100	200

MPT IN NEUROLOGY

I	1. Neuroscience 2. Paediatric Biosciences	100	100	200
II	3. Physiotherapy for spinal cord Injury 4. Advanced topics in Neurological Physiotherapy	100	100	200

MPT IN CARDIOPULMONARY SCIENCES

I	1. Cardiorespiratory Sciences 2. Cardio Pulmonary Rehabilitation	100	100	200
II	3. Acute Cardiorespiratory practice (Includes ICU Management) 4. Fitness training & Health promotion	100	100	200

MPT IN PAEDIATRIC PHYSIOTHERAPY

I	1. Clinical Paediatric Physiotherapy 2. Paediatric Physiotherapy	100	100	200
II	3. Advanced Clinical Paediatrics 4. Clinical Practice in Physiotherapy	100	100	200

MPT IN SPORTS PHYSIOTHERAPY

I	1. Clinical Sports Physiotherapy of the upper quadrant 2. Clinical sports physiotherapy of the lower quadrant	100	100	200
II	3. Sports physiotherapy of the spine & pelvis 4. Exercise in clinical practice	100	100	200

MPT IN BIOMECHANICS

I	1. Kinesiology 2. Pathomechanics of Upper limb & lower limb	100	100	200
II	3. Spine Biomechanics & Pathomechanics 4. Functional analysis	100	100	200

MPT IN HAND CONDITIONS

I	1. Biomechanics & Pathomechanics of wrist and hand 2. Hand conditions	100	100	200
II	3. Physiotherapy in hand conditions 4. Physiotherapy in hand surgeries	100	100	200

MPT IN COMMUNITY REHABILITATION

I	1. Community Medicine 2. Geriatric & Women's Health	100	100	200
II	3. CBR 4. Industrial PT & Ergonomics	100	100	200

MPT IN OBSTETRICS & GYNAECOLOGY

I	1. Medical & Surgical Gynaecology 2. PT in Gynaecology	100	100	200
II	3. Clinical Obstetrics 4. PT in obstetrics	100	100	200

			Total
Dissertation	Write up	75	
	Viva	25	100

Subject Name: **Applied Anatomy & Kinesiology, Bio mechanics**

L	T	P
70	30	NIL
~~Total : 100 Hrs.~~ 70	30	Nil

Subject Objectives

Generic

On completion of the subject, students will have had the opportunity to develop the following generic skills:

An appreciation of the team approach to learning in complex areas. The ability to critically evaluate research literature in the area of anatomy/applied anatomy, and apply this information towards understanding the mechanisms operating in musculoskeletal conditions resulting from injury or disease. An appreciation of the importance of, and development of, good written and presentation skills to aid group learning. An appreciation of the team approach to learning in complex areas.

Specific

On completion of the subject, students will have had the opportunity to develop the following specific skills:

Sound knowledge of the anatomy of the musculoskeletal system in the body. Advanced understanding of the relationship between structure and function of the musculoskeletal system of the healthy subjects and function of the musculoskeletal system of the healthy subjects. Developing ability to analyze mechanisms underlying selected musculoskeletal conditions resulting from injury or disease processes. Advanced understanding of the anatomy / applied anatomy basis for clinical testing of musculoskeletal structures.

Description

Paper I Applied Anatomy, Kinesiology & Biomechanics

UNIT I

1 Foundation of human movement: Basic movement terminology; anatomical movement description, reference system: joint movement characteristics.

2 Introduction to skeletal consideration for movement; Biomechanical characteristics of bone; aspects of bone articulations.

3 Introduction to muscular consideration for movement: overview of gross structure of muscle, functional characteristics of muscle; factors that determine muscle force, aspects of strengthening the muscles, outline of injury to skeletal muscles.

4 Introduction to neurological consideration for movement: overview of general organisation of nervous system; function of motor neurons; sensory neurons; effects of training on neurological input and output.

UNIT II

1 Functional anatomy of the upper extremity
2 Functional anatomy of the lower extremity

UNIT III

1 Functional anatomy of the trunk
2 Mechanical analysis of human motion - force, velocity, momentum, leverage, kinetic and kinematic analysis.

UNIT IV

1. Pathomechanics of Shoulder complex
2. Pathomechanics of Elbow joint
3. Pathomechanics of Wrist & Hand

UNIT V

1. Pathomechanics of Spine
2. Pathomechanics of Pelvis & Hip

UNIT VI

1 Pathomechanics of Knee joint
2. Pathomechanics of Ankle & Foot
3. Posture & Gait analysis

Subject: Exercise Physiology & Electro Physiology
Name

L	T	P
65	20	15

Total: 100 Hrs.

Subject Objectives

Generic

On completion of the subject, students will have had the opportunity to develop the following generic skills.

An appreciation of the team approach to learning in complex areas. An appreciation of the need for intercultural sensitivity and understanding particularly of different learning styles. An appreciation of the importance of, and development of, good written and verbal communication skills to articular knowledge in applied physiology. The ability to evaluate and synthesize research and professional literature, and apply this information to novel situations.

Specific

On completion of this subject students should have the opportunity to:

Acquire a sound knowledge of the physiology of motor control. Acquire theoretical knowledge of motor control theories postulated in the literature. Analyses and critique key motor control theories and models. Acquire a thorough understanding of factors influencing learning including the learner and the environment, and how these factors can be applied in clinical practice situations. Acquire sound theoretical knowledge of muscle physiology including muscle structure, mechanical properties, fibre types, neural activation, soreness, damage and adaptation, and the effects of ageing, immobile/disuse, training, fatigue and spasticity on muscle. Acquire theoretical knowledge of exercise physiology including exercise metabolism, cardio-respiratory response to exercise, energy, nutrition and environmental factors in exercise. Critically evaluate and synthesis research and professional literature relating to a chosen topic in the muscle/exercise physiology to analyze and interpret electro diagnostic procedures.

Description

Paper II Exercise Physiology

UNIT I

1 Muscle Physiology

Muscle and its contraction - Architecture of skeletal muscles, sliding filament theory, types of muscle fibres, mechanical efficiency of muscle contraction, force - velocity, motor unit, muscle fatigue - blood supply, prolonged exercise.

2 Blood & Circulation

Cardiac cycle - pressure during cardiac cycle, Haemodynamics mechanical work and pressure, hydrostatic pressure, flow and resistance, Venous - capillary structure and transport mechanisms, filtration & osmosis, vascularization of skeletal muscles, regulation of circulation during exercise, cardiac output & O_2 updates - stroke volume, blood pressure.

UNIT II

1. Respiration

Lung compliance air way resistance, pulmonary ventilation at rest and during exercise, diffusion in lung tissues, gas pressure - ventilation & perfusion - regulation of breathing - Exercise, High air pressures - Breath holding diving.

2. Physical Performance

Aerobic processes intensity & duration of exercise, prolonged exercise, muscular stress involved in exercise.

Anaerobic Processes: Power & capacity of high energy breakdown

Lactate Production - distribution & disappearance, effect of metabolism on tissue & blood PH, Anaerobic threshold, maximal aerobic power, maximal anaerobic power.

UNIT III

1. Physical Fitness tests

Test of maximal aerobic power - measurement of oxygen uptake, Treadmill tests, Bicycle ergo meter test, step-test, maximal oxygen uptake in various sports.
Evaluation of anaerobic power, Exercise electrocardiogram

2. Physical Training

Training principles, continuous vs. intermittent exercise training methods & biological long-term effects of training. Disuse, isometric strength training, dynamic strength training. Training of aerobic power, training of anaerobic power, cardiopulmonary adaptation to aerobic training, Peripheral adaptation to aerobic training. Endurance training, Retraining, recovery after exercise, Mechanical efficiency technique, body composition, stretching, psychological aspects, muscle soreness, contra-indications to physical training.

UNIT IV

1 Applied work physiology

Factors affecting sustained physical work, assessment of work load in relation to work capacity, Assessment of maximal aerobic power measurement of oxygen uptake in a typical work situation, Assessment of load exerted on specific muscles, Classification of work, Daily rates of energy expenditure, energy expenditure during specific activities like sleeping, sedentary work, house work, light industry, manual labour.

2. Fatigue & Decondiotioning

General Physical fatigue, local muscular fatigue, cardiac rhythm in humans, shift work, effect of menstruation, Decondiotioning.

UNIT V

1 Nutrition & Physical Performance

Nutrition in general digestion, energy metabolism & factors governing the selection of fuel for muscular exercises, food for the athlete, Energy balance, regulation of food intake, ideal body weight, obesity, slimming diets, optional supply of Nutrients.

2. Factors affecting performance

High altitude - limiting factors, oxygen transport, adaptation of high altitude, high gas pressure, pressure effects, nitrogen, oxygen, carbon dioxide metabolism in sports, tobacco smoking - circulatory effects, respiratory effects, metabolic effects, smoking habits among athletes, alcohol & Exercise - Neuromuscular function, aerobic & anaerobic power, metabolic effects, caffeine, Doping and "THE WILL TO WIN".

UNIT VI

ELECTRO PHYSIOLOGY

1. Anatomy and Physiology of: Motor unit, action potential, excitability of nerve and muscle, neuromuscular junction.

2. Technique of nerve conduction velocity and electromyography: Instrument, techniques, interpretations in terms of neuromuscular function and bio-feed back technique.

3. Nerve conduction studies, normal/abnormal nerve conduction, its relevance in muscle function.

4. Concepts of normal & abnormal EMG studies.

5. Late responses

6. Concepts of electro physiological studies in neuro muscular diseases as a diagnostic and therapeutic tool.

7. Evoked potentials – VEP, SSEP, MEP, BAEP

Subject Name : **Physical and Functional evaluation**

L	T	P
40	20	40

Total : 100 Hrs.

Subject Objectives

Generic

On completion of the subject, students will have had the opportunity to develop the following generic skills.

Make clinical decision and plan for effective treatment. Evaluate and analyses the physiological aspects of physical rehabilitation. Identify and recognize the importance of monitoring vital signs. Plan strategies for management of various musculoskeletal, neurological, cardio pulmonary problems and in various medical and surgical conditions.

Specific

In this course, the student will learn the comprehensive management of physical ailments to develop independent professional knowledge and skill.

Description

Paper III Physical and Functional evaluation

UNIT I

1. Clinical Decision Making - Planning Effective Treatment. Collection and documentation of data. Analysis of data and identifying the problems. Setting goals, Formulation and implementation of treatment plan including evaluation of treatment outcome. Clinical decision making models. Foundation for clinical decision making.

2. Overview of Psychological Aspect of Physical Rehabilitation. Disability adjustment; Reaction to injury; subjectivity of disability and adjustment; stress in disease. Role theory; stages of adjustment; emotional complications and emotional functioning. Overview of psychological and social adaptation to illness.

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

UNIT II

1 Evaluation assessment and treatment planning strategies for musculoskeletal problems: Principles of evaluation, clinical manifestations, general and specific musculoskeletal clinical examination.

2. Treatment goals and strategies

UNIT III

1. Gait Analysis. Overview of normal gait analysis : kinetic and kinematic analysis; the reliability and validity of gait analysis; Description of some of the most commonly used types of observational gait analysis; Advantages and disadvantages of kinematic qualitative and kinematic quantitative gait analyses.

   Gait Training. Pre ambulation programme; assistive devices and gait patterns.

2. Evaluation and management of amputee; overview of amputation surgery which includes concepts pre operative, post operative, pre fitting, post fitting physiotherapy. Prosthetic assessment and management: Prosthetic assessment including dynamic and static checkouts, components with recent advancements and management.

UNIT IV

1. Orthotic Evaluation and Management. Types of orthosis; footwear modifications; lower limb orthoses, components.

   Spinal Orthosis: Types and components; Physiotherapy management including orthotic gait analysis and gait training.

   Wheel Chair: Components of wheel chair; assessment of wheel chair; measurement for wheel chair; features of sports wheel chair.

UNIT V

1. Bio-feed back: Principles of bio-feed back in physiotherapy; limitations; lectromyographic feed back for motor relearning: Equipment and technical specifications. Kinematic feed back: Standing feedback; kinetic feed back; New concepts of bio-feed back.
2. Sensory evaluation and assessment : Purposes of sensory evaluation and assessment; classification and function of receptor mechanisms, involving the perception of sensation; identification of spinal pathways that mediate sensation; guidelines for completing sensory evaluation; description for testing protocol for assessment of each sensory modality.

3. Coordination evaluation and assessment: Purpose; common coordination defects associated with lesions of cerebellum, basal ganglia and dorsal columns. Testing procedures: Non-equilibrium coordination test; equilibrium coordination tests.

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

UNIT VI

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

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

various scoring methods used in functional assessment; reliability and validity of various functional assessment.

UNIT VII

1. Physiotherapy modalities: shortwave diathermy, microwave diathermy, ultrasonic therapy, ultraviolet therapy, infrared radiation, iontophoresis, faradic stimulation, dynamic currents, interferential therapy, transcutaneous electrical nerve stimulation, LASER therapy, cryotherapy, paraffin wax bath, fluidotherapy, hydrotherapy, hot packs, contrast bath, traction, mechanical external compression.

2. Teaching Technology, Code of Ethics, Design and Construction of Physiotherapy department, Infection control measures, Administration and management, Financial management, Quality control, Clinical evaluation and Patient management.

References:

1. Physical Assessment & Rehabilitation (Susan O Sullivan) Fifth Edition.
2. Clinical Teaching in nursing education (Dorothy E, Relly) Second Edition.
3. Code of Ethics – IAP.
4. Hospitals and Nursing homes planning, organisation & management by Syed Amin Tabuh – First Edition.
5. Fundamentals of Nursing by BT Basavanthappa Second Edition.
6. Physical Agents by Cameroon.
7. Nursing administration by BT Basavanthappa Fifth Edition.

Subject Name : **Evidence-based practice**

L	T	P
70	30	Nil

Total: 100 Hrs.

Subject Objectives

Generic

On completion of this subject, students will be able to demonstrate :

Skills in and written scientific communication, skills in oral communication and contribution to class discussion, a capacity to undertake searching of medical literature databases.

Specific

On completion of this subject, students will be able to demonstrate:

An understanding of the importance of valid and reliable objective measurement in clinical practice. The ability to undertake detailed planning and analysis to successfully complete a single subject research project. A capacity to undertake searching of computerised medical literature databases. An understanding of research design principles, reliability and validity. An understanding of basic statistical techniques. This subject introduces the principles of research methods and provides examples of their application in clinical physiotherapy research and practices. There will be emphasis on the techniques required for the critical evaluation of all aspects of published research relevant to the physiotherapy profession. The use of quantitative statistical analysis techniques will also be discussed.

Description

Paper IV Evidence based practice

This subject introduces the concept of evidence based practice by addressing topics related to research design and measurement, measurement error, case design studies and interpretation of clinical research.

BIOSTATISTICS AND RESEARCH METHODS

UNIT I

1 Introduction

Uses of statistical methods in PT
Measurement, Measurement scales, variables and their measurement
Symbolizing data and operations

2. Statistical data
Tabulation, Types of data
Calculation of central tendency and dispersion
Linear regression and correlation, comparison
Presentation of data in diagrammatic and graphic form

UNIT II

1 Probability and sampling
Probability as a mathematical system
Population and samples
Sampling distribution
Sampling methods
Surveys in research

2 Vital and health statistics
Point and interval estimation for proportion mean
Hypothesis testing, simple test of significance
Inferential technique: normal

3 Vital and health statistics - use of vital and health statistics in the practice of PT
Sources and methods of collection and recording
Implementation of commonly used vital and health statistics and estimate population using Arithmetic progression method

UNIT III

1 Research process and methods
Overviews service and scientific methods
Steps on the research process
Selection and statement of problem
Formulation of hypothesis
Basic principles and methods of research designs
Research Ethics

2 Data collection methods, scales and techniques of psychological measures
Research reliability, validity and criteria for assessing, measuring the tools,
Presentation of data
Analysis and interpretation of research data
Role of computers
Pilot study

UNIT IV

1 Introduction
History of PT research before 1900
1900-1950
1950-present

2 Critique of PT studies
Historical
Instruments and tools
PT education
Administration
PT Practice

UNIT V

1 Practical application in Research process
Selection and statement of problem and hypothesis
Review of literature
Selection of research approach
Selection of data gathering and developing the data gathering instruments
Developing the data analysis plan
Selection of sample
Identifying the assumptions and limitations of the study
Designing the data gathering plan
Pilot study

2 Conducting the study
Implementing the data gathering plan
Implementing the data analysis plan

3 Preparing the research report
Writing the report
Documentation
Details of the study
Arrangement of report

Practice - Presentation of study for discussion
Method of teaching - lecture and discussion
- Seminars and practices.

MPT IN ORTHOPAEDICS

PAPER I **1. Musculoskeletal - I**
2. Musculoskeletal - II

PAPER II **3. Geriatric Rehabilitation**
4. Hand Rehabilitation

Subject Objectives

Generic

On completion of this subject, students will have had the opportunity to develop the following generic skills :

Advanced understanding of the scope of practice of musculoskeletal physiotherapy, Advanced knowledge of physical, biological, medical and behavioral sciences. Advanced clinical knowledge, skills and attitudes necessary for the competent assessment, prophylaxis, treatment and rehabilitation of patients with neuromusculoskeletal and related disorders. The knowledge and skills in research design, research methodology and critical analysis of relevant clinical literature necessary to appreciate the role of research as a basis for evidence - based practice. The ability to further academic developments and advanced clinical skills in the specialty discipline of manipulative physiotherapy.

Specific

On completion of the subject, students will have had the opportunity to develop the following specific skills:

A deeper understanding of the basic sciences and their integration with musculoskeletal physiotherapy clinical practice. A sound theoretical knowledge and understanding of neuromusculoskeletal conditions affecting. The ability to perform an appropriate subjective and physical examination, with development of suitable analytical skills to evaluate data obtained. The ability to develop and implement a clinical analytical skills to evaluate data obtained. The ability to develop and implement a clinical management plan based on the interpretation of assessment findings. The ability to monitor patient response to modify or progress treatment appropriately. An awareness of the paramount importance of patient safety all times. A knowledge of the role of other health care professionals involved in patient care.

Description

Paper I

1. Musculoskeletal - I

L	T	P
80	20	130

Total : 230 Hrs.

UNIT I

1 Embryology and Anatomy of the musculoskeletal system. Evaluation of muscles and joints. Podiometry, Assessment of the arches of foot. Arthrokinematics and osteokinematics of musculoskeletal system.

UNIT II

1. Paediatric Orthopaedic conditions and its management, congenital deformities and its management.
2. Physiotherapy management of lumbosacral disorders, assessment of locomotor impairments, disabilities, and disability evaluation.
3. Traumatic Orthopaedics - Upper limb, Lower Limb and Spinal fractures. Medical, Surgical and physiotherapy rehabilitation.

UNIT III

1 Assessment of posture, role of physiotherapy in scoliosis unit. Clinical symptomatology, pathophysiology and pathomechanics of musculoskeletal conditions.

2 Brachial plexus Injuries, Peripheral nerve injuries & physiotherapy management, principles of amputation surgery, prosthetic management, prosthetic gait deviations. External aids, appliances, adaptive self help devices, prescription, biomechanical compatibility, check out and training-upper limb & lower limb.

3 Physiotherapy Management of upper& lower limb fractures.

4 Physiotherapy Management after Replacement arthroplasties of shoulder, elbow, hip, knee & ankle. Orthopaedic implants- design & materials.

5 Physiotherapy Management of cervical & thoracic spine disorders.

6 Physiotherapy Management of conditions affecting shoulder, elbow, hip, knee, ankle & foot.

7 Physiotherapy Management of spinal fractures, pelvic fractures & spinal cord injury.

8 Autoimmune disorders affecting Musculoskeletal system & physiotherapy management.

9 Physiotherapy Management of vascular disorders.

10 Advanced investigative procedures like CT, MRI scanning.

11 Principles of Illizarov fixation & physiotherapy management.

12 Electrotherapeutic Agents – Physiological effects – Current update on the effectiveness.

Paper II . Musculoskeletal - II

L	T	P
80	20	130

Total: 230 Hrs.

Description

UNIT IV

1 Physiological movements - Biophysics of connective tissue, response to mechanical loading. Articular neurophysiology and principles of applications. History of manual therapy - overview of various manual therapy approaches for all joints.

2 Clinical reasoning and differential clinical diagnosis based on different approaches such as Maitland, Cyriax, Kalten borne, Mulligan, Mckenzie, Myofascial release.

UNIT V

1. Soft tissue approach - myofascial technique, neutral tissue mobilisation, muscle energy methods.

2. Practical application of various manual therapy approach..

3. Therapeutic exercise as an adjunct to manual therapy.

UNIT VI

1. Upper limb injuries & PT management.
2. Lower limb injuries & PT management.
3. Spinal injuries & PT management.
4. Injury prevention in Sports Physiotherapy.
5. Fitness training for Sports people.

Paper II

Subject 3. Geriatric Rehabilitation
Name: 4. Hand Rehabilitation

Description

3. Geriatric Rehabilitation

L	T	P
80	20	130

Total: 230 Hrs.

UNIT I

1 Principles of Geriatric Rehabilitation

2. Diabetes and Geriatric patient

UNIT II

1. Arthritis in the elderly. Aging of the musculoskeletal system. Rheumatoid Arthritis in the elderly & PT management.

2. Pathological fractures, fractures in elderly, osteoporosis, vertebral fractures, stress fractures & PT management.

3. Stroke, Parkinson's disease – PT management.

4. Exercise testing & prescription for geriatric population.

5. Falls & its prevention in elderly.

UNIT III

1 Prevention of cardio pulmonary deconditioning exercise among geriatric patient.

Description

4. Hand Rehabilitation

L	T	P
80	20	130

Total: 230 Hrs.

UNIT IV

4.1 Anatomy of hand, assessment of hand. Functions of hand - motor & sensory organ.

UNIT V

1 Classification of hand injuries. Principles of hand rehabilitation. Detailed aspects of various conditions. Tendon injuries, crush injuries, nerve injuries - Leprosy, burns, fractures, joints injuries, Rheumatoid hand, Spastic hand, reconstruction and replantation, surgery, sensory re-education, functional re-education, Disability evaluation and compensation in hand injuries, orthoses and splinting.

2 Rehabilitation after Tendon reconstruction surgery.

3 Rehabilitation after nerve graft, nerve suture & neurotization surgeries.

MPT IN NEUROLOGY

PAPER I
1. **Neuroscience**
2. **Paediatric Biosciences**

PAPER II
3. **Physiotherapy for spinal cord injury**
4. **Advanced Topics in Neurological physiotherapy**

Subject Objectives

Generic

On completion of the subject, students will have had the opportunity to develop the following generic skills.

An advanced understanding of the changing knowledge base in neurology, and the international context and sensitivities of the area. The ability to evaluate and synthesise research and professional literature and apply this information to clinical situations. A capacity to articulate their knowledge and understanding in oral and individuals who deliver solving abilities in both the clinical and the theoretical aspects of neurology. A capacity to manage competing demands on time, including self directed project work. A capacity to be an effective member of a team based approach to patient care and to take a leadership role in the team as appropriate.

Specific

On completion of the subject, students will have had the opportunity to develop the following specific skills.

Patient assessment and treatment planning including integration and interpretation of patient problems and effective goal setting. The developmental processes in the nervous system. Sensorimotor systems and the processing of sensory information. The programming and execution of movement. Mechanisms of plasticity, learning and recovery of function after injury. Higher cortical functions and their disorders following brain injury. Application of neuroscience to clinical situations.

PAPER I

Description

1. Neuro sciences

L	T	P
80	20	130

Total : 230 Hrs.

UNIT I

1 Neuro Anatomy

2 Neuro Physiology

3 Growth and Development of Nervous system

UNIT II

1 Pinciples of Assessment

2 Motor control theories

3 Neural control of locomotion

4 Neurophysiological approaches

2. Paediatric Biosciences

L	T	P
80	**20**	**130**

Total: 230 Hrs.

UNIT III

1 Embryology

2 Neonatal physiology

UNIT IV

1 Clinical decision making for the management of paediatric conditions (neuropathic & myopathic)

2 Paediatric conditions

UNIT V

1 Assessment of neonatal reflexes

2 Developmentalmilestones

PAPER II

3. Physiotherapy for spinal cord injury

L	T	P
80	20	130

Total : 230 Hrs.

UNIT I

1 Analysing and evaluating various levels of spinal cord injuries

2 Various treatment approaches for medical and surgical management

UNIT II

1 Transfers

2 Gait training

3 Complications of high lesion and incomplete spinal lesion.

4 Wheel chair and orthotic support system

5 Skin care

UNIT III

1 Spinal cord injury in children

2 Sports Rehabilitation for Adult spinal cord injuries.

4. Advanced topics in Neurological physiotherapy

L	T	P
80	20	130

Total: 230 Hrs

UNIT IV

1 Sensory evaluation and treatment**.**

2 Coordination evaluation and treatment

3 Motor control evaluation and treatment

4 Stroke rehabilitation

5 Traumatic head injury

UNIT V

1 Peripheral nerve lesions

2 Neuropathy

3 Lesions of central nervous system

4 Paediatric Neurological conditions

5 Application of Electro physiology and Electro diagnostic procedures in myogenic & neurogenic conditions.

Reference:

1. Darcy A Umphred Ph.D. PT – Neurological Rehabilitation (Fourth Edition).
2. Susan B. O Sullivan. Physical Rehabilitation Assessment and Treatment (Fifth Edition)
3. Prof. Maria Stokes – Neurological Physiotherapy.
4. U.K. Misra J Kalita - Clinical Neurophysiology.
5. Richard S. Snell – Clinical Neuroanatomy for Medical students.
6. Helen Cohen – Neurosciences.
7. Susan Campbell – Physical Therapy for children.
8. Tecklin – Paediatric Physical Therapy.
9. Treatment of CP and Motor delay – Sophia Levitt.

MPT IN CARDIO PULMONARY SCIENCE

PAPER I **1. Cardio Respiratory Sciences**
2. Cardio Pulmonary Rehabilitation

PAPER II **3. Actue Cardio Respiratory Practice**
4. Fitness Training & Health Promotion

Subject objectives

Generic

On completion of the subject, students will have had the opportunity to develop the following generic skills.

An understanding of professional responsibility and ethical principles in relation to individuals and community, both locally and internationally. The ability to evaluate and synthesis research and professional literature and apply this information. A capacity to articulate their knowledge and understanding in oral and written presentation at an appropriate level. Well developed problem solving abilities in both the clinical and the theoretical aspects of cardiothoracic physiotherapy. A capacity to manage competing demands on time, including self-directed project work. Critical evaluation of assessment and treatment approaches. Education of patients, caregivers and health professionals, consultancy and advocacy; Goal setting, self evaluation and reflective practice.

Specific

On completion of the subject, students will have had the opportunity to develop the following specific skills.

Patient assessment and treatment planning, including integration and interpretation of patient problems and effective goal setting. Physiotherapeutic intervention that is based on sound base of evidence and sensitive to service delivery models and the culture of both the patient and the organisation. A capacity to be an effective member of a team-based approach to patient care and to take a leadership role in the team as appropriate.

PAPER I
Description

1. Cardiorespiratory sciences

L	T	P
80	20	130

Total : 230 Hrs.

UNIT I

1 Cardio-thoracic applied anatomy

2 Respiratory and cardio vascular physiology

3 Applied anatomy of the Respiratory muscles

4 Mechanics of ventilation

UNIT II

1 Radiological anatomy

2 Clinical assessment, rationale of laboratory investigation and differential diagnosis, ECG, exercise ECG testing, Echo, Holter monitoring imaging techniques, PFT and ABG analysis.

3 Chest Physiotherapy techniques.

4 Adjuncts to chest physiotherapy techniques.

2. Cardio pulmonary Rehabilitation

L	T	P
80	20	130

Total : 230 Hrs.

UNIT III

1 Exercise physiology compared with abnormal exercise physiology

2 Patient evaluation, low level exercise testing, maximal exercise testing

3 Programme planning and implementation – principles

4 Mobilization

UNIT IV

1 Various protocols, phase wise, early, late and long term processes in MI.

2 Beneficial effects of aerobic exercise for patients with coronary artery diseases

3 Detail study of various aspects of cardiac rehabilitation.

4 PVD

5 Cardiac transplantation

6 Trauma to the chest

UNIT V

1. Paediatric cardio vascular problems
2. Common pulmonary diseases, including assessment and management
3. Detail study of various conditions (obstructive, restrictive, surgical conditions) patient intervention.
4. Paediatric pulmonary problems
5. Respiratory muscle training
6. Tumours of the heart

3. Acute cardio respiratory practice

L	T	P
80	20	130

Total: 230 Hrs.

UNIT I

1 Goals and general basics of treatment

2 Specialised expertised ICU PT

3 General clinical aspects of management of ICU patients

UNIT II

1 Importance of team work and infection control

2. ICU management of primary cardiopulmonary dysfucntion
3. Principles and application of ICU equipments
4. Oxygen administration, principles and technique

5. CPR

4. Fitness training and Health promotion

L	T	P
80	20	130

Total : 230 Hrs.

UNIT III

1 Fitness, definition, aspects and parameters for testing.

2 Scientific basis for exercise programs

3 Stress modifications by exercise

UNIT IV

1 Fitness for cardiac patients normal and abnormal cardiac activity and effects on cardio vascular system

2. Exercise testing - principles of testing and prescription for individuals

UNIT V

1 Effects of various exercise regimen on body

2. Nutrition and fitness

MPT IN PAEDIATRIC PHYSIOTHERAPY

Physiotherapy for Paediatric Neurological conditions
Physiotherapy for Paediatric Orthopaedic conditions
Physiotherapy for Paediatric Cardio respiratory conditions

Paper I	**1.**	**Physiotherapy for Paediatric Neurological conditions**
	2.	**Paediatric Physiotherapy**
Paper II	**1.**	**Advanced Clinical Paediatrics**
	2.	**Clinical Practice in Physiotherapy**

Subject Objectives

Generic

On completion of this subject, students should be able to:

- Demonstrate a well-developed problem solving ability in paediatric physiotherapy clinical practice, characterized by a flexible approach.
- Participate effectively and sensitively as part of a team that advocates for the well-being of the child that appreciates the structure, culture and goals of the family.
- Appreciate and develop a capacity to manage competing demands on time, including self-directed professional development.

Specific

On completion of the subject, students will have had the opportunity to develop the following specific skills.

- Patient assessment and treatment planning including integration and interpretation of patient problems and effective goal setting.
- Advanced understanding of the scope of practice of paediatric physiotherapy
- Advanced knowledge of physical, biological, medical and behavioral sciences.
- Advanced clinical knowledge, skills and attitudes necessary for competent assessment, prophylaxis, treatment and rehabilitation of patients with paediatric movement and related disorders.
- Physiotherapeutic intervention that is based on sound base of evidence and sensitive to service delivery models and the culture of both the patient and the organization.

PAPER I

Description

1. Clinical paediatric Neurological Physiotherapy

L	T	P
80	20	130

Total:230 Hrs.

UNIT I

1 Clinical decision making for the management of paediatric conditions.

2 Peripheral nerve injury - Brachial Plexus Injury, Erb's palsy.

UNIT II

1 Traumatic brain injury

2 Down's syndrome

3 Cerebral Palsy

4. Spina bifida including spinal dysraphism

5. Anterior Poliomyelitis & post Polio syndrome

6. Muscular Dystrophy

7. Hydrocephalus

8. Infections of CNS – Bacterial & Viral infections

9. Infantile Hemiplegia.

2. Paediatric Physiotherapy

L	T	P
80	20	130

Total: 230 Hrs.

UNIT III

1 Growth & development of child and its disorders.

2 Embryology

3 Neonatal physiology

UNIT IV

1 Neuro developmental assessment, developmental diagnosis developmental screening (Paediatric Coma Scale).

2 Advances in the management of following conditions - CP, acquired brain injury, spina bifida neuromuscular diseases.

UNIT V

1 Assessment and management of progressive locomotor disorders – neuropathic and myopathic.

Paper II 3. Advanced Clinical Paediatrics

L	T	P
80	20	130

Total : 230 Hrs.

UNIT I

1. Principles of laboratory investigation for differential diagnosis.
2. Neonatal care; risk babies and management
3. Genetic basis of paediatric disorders, counselling

UNIT II

1. Describe the various congenital and acquired orthopaedic problems in children and its medical, surgical & PT management.
2. Describe the various congenital and acquired cardiac diseases in children and its medical, surgical & PT management.
3. Describe the various respiratory problems and its medical, surgical & PT management.

UNIT III

1. Management of Musculo Skeletal Impairments: JRA, Limb Deficiencies, Amputation, Osteogenesis imperfecta, Arthroghyposis multiplex congenita, Hemophilia, The Burn unit.

4. **Clinical Practice in Physiotherapy**

L	T	P
80	20	130

Total : 230 Hrs.

UNIT IV

1. Concepts and principles of various approaches
2. Bobath approach
3. Motor relearning program

UNIT V

1. Voijta approach
2. Clinical reasoning & clinical decision making
3. Rational of plan of treatment
4. Sensory integration

UNIT VI

1. Intensive care management of high risk babies.

References:

1. Physical therapy for children - Suzann K. Campbell.
2. Paediatric Physical therapy - Tecklin.
3. Treatment of Cerebral palsy and motor delay – Sofia Levit.
4. Neurological Rehabilitation – Umphred.
5. Text book of Paediatrics – Guptha.
6. Cardio Pulmonary Rehabilitation – Elizabeth Dean
7. Motor relearning Program – Carr & Shepered.

MPT IN SPORTS PHYSIOTHERAPY

PAPER I **1. Sports physiotherapy for upper quadrant.**
2. Sports physiotherapy for lower quadrant.

PAPER II **3. Sports physiotherapy for spine and pelvis**
4. Exercise in Clinical practice.

Subject Objectives

Generic

On completion of this subject, students will have had the opportunity to develop the following generic skills. Critical thinking, problem solving and analytical skills good written and verbal communication with patients and other health professionals' ability to apply evidence based knowledge to patient management appreciation of the importance of the team approach to patient management.

Specific

On completion of this subject, students will have had the opportunity to develop the following specific skills.

Clinical mastery in the assessment, diagnosis and management of sports injuries including the use of manual therapy, massage, taping, exercise prescription, biomechanical assessment of sports technique and motor control in sports activities. An appreciation of the role of the sports physiotherapist in the sports team training and competition setting and the value of clinical communication in the Sports Medicine Team approach. An ability to develop and deliver specific screening and preventive conditioning programs for common sports and injuries. An appreciation of the role of the sports physiotherapist in the wider community setting as a promoter of the health benefits of exercise and safety in sports and exercise.

PAPER I

Description

1. Clinical sports physiotherapy for upper quadrant

L	T	P
80	20	130

Total : 230 Hrs.

UNIT I

1 Analysis of movement of sports injuries in upper limb

2 Concepts of motor control, clinical assessment and diagnosis of injury management.

3 Neuromusculoskeletal anatomy, applied anatomy, physiology, including pain, neurosensory and motor control, psychosocial, behavioural issues

UNIT II

1 Shoulder girdle injuries

2 Shoulder rehabilitation

3 Elbow joint injuries

4 Elbow Rehabilitation

5 Wrist and Hand injuries

6 Wrist and Hand Rehabilitation

2. Sports Physiotherapy for lower quadrant

L	T	P
80	20	130

Total : 230 Hrs.

UNIT III

1 Injuries of hip

2 Knee injuries

3 Injuries of the patella

4 Hip & Knee Rehabilitation

UNIT IV

1 Injuries to the lower leg and ankle.

2 Injuries to foot.

3 Ankle & Foot Rehabilitation

UNIT V

1 Injuries to the running athlete

2 Common running related injuries to the knee

3 Common running related injuries to the knee and leg

4 Swimming injuries

PAPER II

3. Sports Physiotherapy for spine and pelvis

L	T	P
80	20	130

Total : 230 Hrs.

UNIT I

1 Applied anatomy and biomechanics of sports injury in the lumbar spine pelvis, hip and groin.

2 Biomechanics of sports injuries in such as distance running, sprinting, jumping, rowing, football, skiing, court sports and cycling.

3 Core stability and motor control in the sport activities involving spine.

UNIT II

1 Specific physiotherapy for injuries including manual therapy and exercise for rehabilitation.

2 Analyse patho-mechanics of injury of spine and pelvis and develop screening and plan preventive and conditioning programs.

4. Exercise in clinical practice

L	T	P
80	20	130

Total : 230 Hrs.

UNIT III

1 Exercise physiology and prevention of athletic injuries

2 Warm up period

3 Protective and supportive equipments

4 Emergency care and first aid

UNIT IV

1 Treatment of Athletic Injuries.

2 Therapeutic modalities and procedures

3 Taping, strapping and splinting in sports physiotherapy

UNIT V

1. Injury rehabilitation - goals, types of exercise and special forms of exercises.

2. Special groups: Physiotherapy management for female, disabled, younger & older athlete

3. Neural mobilisation
4. Trigger release

References:

1. Clinical Sports Medicine by Peter Brukner and Karim Khan.
2. The American Orthopaedic Society for Sports Medicine 1988.
3. Anderson T. Biomechanics and running economy – Sport Medicine 1996.
4. Cameron MH. Physical agents in Rehabilitation WB Saunders 1999.
5. Physical Rehabilitation of Injured Athlete – Andrews J.R, Hauelson GL.
6. The athlete Shoulder. Andrews J.R. WILR KE.
7. Frostic R.SP, Mohammed M, Ritchie. DA, Sports Injuries of Elbow.
8. Maitland G.D. Vertebral Manipulation.
9. Geraci. MC. Jr. Rehabilitation of Pelvis, hip, and thigh injuries in sports.
10. Mc Comell J, Patellofemoral Pain and Soft tissue injuries.
11. Assessment and Management of Sports Injuries – by Reid.

MPT IN BIOMECHANICS

PAPER I **1. Kinesiology**

2. Pathomechanics of Upper limb and Lower limb

PAPER II **3. Biomechanics and Pathomechanics of spine**

4. Functional Analysis

Subject Objectives

Generic

On completion of this subject, students will have had the opportunity to develop the following generic skills:

The ability to critically evaluate research literature in the area of anatomy / applied anatomy and apply this information towards understanding the mechanisms operating in musculoskeletal conditions resulting from injury or disease. An appreciation of the importance of and development of good written and presentation skills to aid group learning.

Specific

On completion of this subject, students will have had the opportunity to develop the following generic skills:

Sound knowledge of the anatomy of the musculoskeletal system. Advanced understanding of the relationship between structure and function of the musculoskeletal system in healthy subjects. Developing ability to analyse mechanisms underlying selected musculoskeletal conditions resulting from injury or disease processes. Advanced understanding of the anatomy / applied anatomy basis for clinical tests of musculoskeletal structure.

Paper I

Description

1. Kinesiology

L	T	P
80	20	130

Total : 230 Hrs.

UNIT I

1 Anatomical concepts of kinesiology

2 Biomechanics of bone and joint

3 Biology & mechanics of voluntary muscle

UNIT II

1 Principles of kinetics - Linear and angular kinetics

2 Principles of kinematics - Linear & angular kinematics

2. Pathomechanics of Upper limb and Lower limb

L	T	P
80	20	130

Total : 230 Hrs.

UNIT III

1 Pathomechanics of paralysis of the shoulder muscles

2 Paralysis of the thoracoscapular muscles of the shoulder girdle complex

3 Paralysis of the scapulo humeral muscles

4 Paralysis of the thoracohumeral muscles

UNIT IV

1 Normal mechanics of wrist and finger function

2 Paralysis of wrist flexors and extensors

3 Paralysis of finger flexors and extensors

4 Paralysis of interossei and thenar muscles of hand

5 Paralysis of wrist and finger extensors & reconstruction surgeries

6 Analysis of the arm movements under open kinetic chain conditions

7 Movement of the upper extremity in a closed kinematic chain mechanism

UNIT V

1 Pathomechanics of muscle, fatigue and contracture

2 The Pathomechanics of the static disabilities of the hip joint

3 The Pathomechanics of coxa vara

4 The Pathomechanics of coxa valga

5 The Pathomechanics of the dysplasia of the hip joint

UNIT VI

1 The Pathomechanics of the paralytic hip joint

2 The Pathomechanics of the paralytic knee joint

3 The Pathomechanics of static deformities of the knee joint

4 The Pathomechanics of the static deformities of foot and ankle

5 The Pathomechanics of the paralytic foot and ankle

UNIT VII

Biomechanical approach to treatment & rehabilitation of upper & lower limb conditions – regarding stretching, strengthening, taping, orthoses, etc

Paper II

3. Biomechanics and Pathomechanics of spine

L	T	P
80	20	130

Total : 230 Hrs.

UNIT I

1 Positive Analysis, internal External forces influencing posture.

2 Postural deviations.

3 Gait Analysis.

4 The Pathomechanics of the Lumbo sacral junction

5 The general conditions affecting mobility and stability of the lumbosacral area

6 The Pathomechanics of lumbosacralgia

UNIT II

1 The Pathomechanics of scoliosis

2 The normal & pathological mechanics of the pelvis

3 The Pathomechanics of the pelvis

4 The Pathomechanics of the fixed pelvic obliquity.

UNIT III

Biomechanical approach to treatment & Rehabilitation of Spinal conditions (congenital, acquired) – Splinting, Orthoses, Stretching, Strengthening, etc.

4. Functional Analysis

L	T	P
80	20	130

Total : 230 Hrs.

UNIT III

1 Methods of kinetics & kinematic investigations, Anthropometric measurements.
2 Functional & movement analysis- Principles & methods
3 Functional analysis : Sit to stand, squatting, walking, running, sprinting, jumping

UNIT IV

1 Neural control of locomotor functions.

2 Phases of Gait, temporal and spatial parameters, determinants of gait.

3 Pathological gait and gait deviations.

4 Applied mechanics in the application of Prosthesis, orthoses and mobility aids.

UNIT VI

1. Ergonomics; alterations at work place and industry.

2. Ergonomics with reference to tool, environment, seating

MPT IN HAND REHABILITATION

PAPER I **1. Biomechanics and Pathomechanics of hand**

2. Hand conditions

PAPER II **3. Physiotherapy in Hand Condition**

4. Physiotherapy in Hand Surgeries

Subject Objectives

Generic

On completion of this subject, students will have had the opportunity to develop the following generic skills:

Rationalise various approaches for hand rehabilitation based on etiology of disease and to progress with rehabilitation.

Specific

On completion of the subject, students will have an opportunity to develop. A deeper understanding of the musculoskeletal conditions pertaining to hand conditions. The ability to perform appropriate assessment and implement treatment plan based on the assessment. Advanced clinical knowledge, skills and attitudes necessary for the competent assessment, prophylaxis, treatment and rehabilitation of patients with hand injuries and related disorders.

Paper I

Description

1. Biomechanics and Pathomechanics of hand

L	T	P
80	20	130

Total : 230 Hrs.

UNIT I

1 Evolution of hand

2 Structure and functions of hand - motor & sensory organ

UNIT II

1 Normal mechanics of wrist & finger function

2 Paralysis of wrist flexors and extensors

3 Paralysis of finger flexors and extensors

4 Paralysis of interossei

5 Paralysis of thenar muscles

2. Hand conditions

L	T	P
80	20	130

Total : 230 Hrs.

UNIT III

1 Tendon injuries

2 Nerve injuries

3 Crush injuries

4 Industrial accidents

5 Burns

6 Fractures and joint injuries

UNIT IV

1 Spastic hand

2 Rheumatoid hand

3 Hand in Hansen's disease

UNIT V

1 Reconstruction and replantation and amputation surgeries

2 Phantom hand pain

3 Reflex sympathetic dystrophy

Paper II

3. PT in Hand conditions

L	T	P
80	20	130

Total : 230 Hrs.

UNIT I

1 Principles of hand rehabilitation

2 Evaluation of hand

3 Management of sports injuries to hand

UNIT II

1 Burns management

2 Role of PT in hand disorders - Traumatic, Degenerative, pathological conditions

4. Physiotherapy in Hand Surgeries

L	T	P
80	20	130

Total : 230 Hrs.

UNIT III

1. Current trends in total hand replacement - hand rehabilitation
2. Role of Physiotherapy in tendon transfers
3. Rehabilitation of Amputees - Prosthetic hand

UNIT IV

1. Disability Evaluation & Compensation in hand injuries

UNIT V

1. Functional reeducation
2. Orthoses for hand

MPT IN COMMUNITY REHABILITATION

PAPER I : 1. Community Medicine
2. Geriatrics and Women's health

PAPER II : 1. Community Based Rehabilitation
2. Industrial Physiotherapy and Ergonomics

Subject Objectives

Generic

On completion of the subject, students will have had the opportunity to develop the following generic skills.

An understanding of professional responsibility and ethical principles in relation to individuals and community, both locally and internationally. Have an ability to evaluate and synthesis the research and professional literature. Have an understanding of the significance and value of their knowledge to the wider community.

Specific

On completion of this subject, students will have had the opportunity to develop the following specific skills.

Integrate anatomical, physiological and pathological knowledge to devise and implement management programs for different patient groups. Be able to discuss current approaches in the management of different patient groups in the community and be able to apply this theoretical knowledge in clinical situations. Be able to express their theoretical knowledge at a level for education of patients, caregivers and other health professionals.

Paper I

D**escription**

1. Community Medicine

L	T	P
80	**20**	**130**

Total Hours 230

UNIT I

1 Natural history of Diseases and influence of social, economical and cultural aspects of disease

2 Prevention methods for Disease with disability

3 National health care delivery system public health administration system.

UNIT II

1 National health programmes and immunization programme

2 Health education - Methods of communication.

3. Causes, types, clinical features, pathophysiology of Diabetes and its physiotherapy care.

2. Geriatrics and women's health

L	T	P
80	**20**	**130**

Total Hours 230

UNIT III

1 Physiology of ageing process - Degenerative systemic changes, musculoskeletal, cardio respiratory, post menopausal changes, neurological changes senile and mental changes - Role of PT.

2 Principles of geriatric rehabilitation evaluation and prescription of exercises.

3 Fall assessement, prevention and physiotherapy.

UNIT IV

1 Nutrition in women's health

2. Nutrition in geriatric health, paediatric population.

UNIT V

1 Objectives and strategies of the National family welfare programme

2 Antenatal and postnatal programme

Paper II

3. Community Based Rehabilitation

L	T	P
80	20	130

Total Hours 230

UNIT I

1. Institution based rehabilitation services and multi disciplinary approach.

2 Methodology of CBR with reference to National Health Delivery system, Role of National Institutes, District Rehabilitation centre and Primary Health centre.

3 Role of Government in CBR, intersectional programme co-ordination, Implementation of Act, Role of Non-Government organisation in CBR, Role of community leaders and health professionals in health education.

UNIT II

1 Scope of community physiotherapy, Physiotherapist as a Master Trainer in CBR

2 Public awareness to various disabilities, disability detection and early intervention, persons with disability Act 1995 - and related Government Infrastructure, Home exercise programs, classification of disability.

4. Industrial Physiotherapy and Ergonomics

L	T	P
80	**20**	**130**

Total Hours 230

UNIT III

1 Define occupational health and list methods of prevention of occupational hazards.

2 Accidents - thermal, electrical, mechanical and chemical.

3 Factors responsible for occupational hazards.

UNIT IV

1 Disability evaluation, interpretation and legislation, principles and techniques, suggestions for compensation.

2 Ergonomic evaluation - evaluation of working area, type of work and fitness testing.

UNIT V

1 Preventive PT measures, fitness programme for specific work, relaxation programme for stress and yoga.

2 Planning, developing and management towards work efficiency productivity and avoidance of accidents.

MPT IN OBSTETRICS & GYNAECOLOGY

Paper 1 : 1. Medical & Surgical Gynaecology
2. Physiotherapy in Gynaecology

Paper II : 1. Clinical Obstetrics
2. Physiotherapy in Obstetrics.

Subject Objectives

Generic

On completion of the subject, students will have had the opportunity to develop the following generic skills.

- An advanced understanding of the changing knowledge base in this clinic area.
- An ability to evaluate and synthesis the research and professional literature in this area.
- An understanding of the significance and value of their knowledge to the wider community.
- An appreciation of a team approach to learning.

Specific

On completion of this subject, students will have had the opportunity to develop the following specific skills.

- Plan, deliver and evaluate appropriate exercise programs for specific women's groups with the community.
- Understand the impact of exercise on the altered physiology, pathophysiology and psychology of pregnancy, menopause, ageing and osteopenia /osteoporosis.
- Identify the legal and safety issues associated with leading exercise classes for women with specific physical needs.
- Understand the motivational and marketing aspects of leading community and hospital based exercise classes.

PAPER I
Description

1. Medical & Surgical Gynaecology.

L	T	P
80	20	130

Total : 230 Hrs.

UNIT I

1. Review of Pelvic anatomy, types of pelvis, Pelvic floor muscles. Pelvic Organs, reproductive tract and abdominals. Internal and external genitalia.

2. Physiology of female reproductive system.

3. Menstrural cycle and its integration.

4. Anatomy and development of Breast.

5. Physiology of urinary and faecal continence.

UNIT II

1. Gynaecological infections.

2. Pelvic inflammatory diseases.

3. Cyst and new growth in reproductive system.

4. Endometriosis.

5. Polycystic ovarian syndrome.

6. Pelvic pain.

7. Infertility.

8. Menstrual abnormalities.

9. Contraception and family planning.

UNIT III

1. Urogynaecology – Urinary dysfunction.
2. Bowel and anorectal function and dysfunction.
3. Gynaeconogical surgeries.
4. Puerperal sterilization.
5. Abortion and its types.
6. Breast cancer its screening procedures.
7. Mastectomy.
8. Types of Prolapse.
9. Menopause and osteoporosis.
10. Gynaecologic Problems in adolescent population.
11. Laproscopy and laser surgeries in Gynaecological condition.
12. Hirsutism.
13. Incontinence scales.
14. Gynaecologic problems in Female athletes

2. Physiotherapy in Gynaecology

L	T	P
80	20	130

Total : 230 Hrs.

UNIT IV

1. Internal evaluation of PFM Grading, indication and contraindication.
2. Active Pelvic floor muscle exercises.
3. Impairment of Pelvic floor muscles and its PT management.

4. Levator ani syndrome, coccydynia and its PT management

5. Vulvodynia, vaginismus, anismus and its PT management.

6. Dyspareunia and its PT management.

7. Pre and post Physiotherapy management for Gynaecological Surgeries.

8. Effect of altered tone of hip and trunk muscles over Pelvic floor muscles.

UNIT V

1. Electrotherapeutic modalities in Gynaecological conditions.

2. Bio feed back.

3. Relaxation Techniques

4. Vaginal cones.

5. Perineometer.

6. Bladder training.

7. Aerobic and Anaerobic training.

Paper II

3. Clinical Obstetrics

L	T	P
80	20	130

Total : 230 Hrs.

UNIT I

1. Preconception assessment and diagnostic test.
2. Developmental anatomy – Embryology in detail.
3. Diagnostic test during Pregnancy.
4. Physical and Physiological changes during Pregnancy.
5. Musculoskeletal changes during Pregnancy.
6. Common complication and discomforts during Pregnancy.
7. Stages and mechanism of labour.
8. Complication in labour.
9. Types of assisted deliveries.
10. Caesarean section.
11. High – risk Pregnancies.
12. Gestation tropoblastic diseases.
13. IUD.
14. GDM.
15. Water birth.
16. PIH and eclampsia.

UNIT II

1. Puerperium and its physiological changes.
2. Diastasis recti.
3. Breast milk, its advantages.
4. Common problem in Breast feeding.
5. Types of nipples and its problems.

4. Physiotherapy in Obstetrics

L	T	P
80	20	130

Total : 230 Hrs.

UNIT III

1. Antenatal classes.
2. Swiss ball in Pregnancy.
3. Electrotherapy modalities in obstetrics.
4. Physiotherapy in labour.
5. Breast feeding positions.
6. Episiotomy and its PT management.

UNIT IV

1. Perineal massage.
2. Breast engorgement and its PT management.
3. Aerobics.
4. Weight training in Pregnancy.

UNIT V

1. Physiotherapy management of edema in Pregnancy.
2. Physiotherapy management of GDM, High risk Pregnancy.
3. Water birth.
4. Management of common problem in Antenatal period.
5. PT management of diastasis recti.

RECOMMENDED BOOKS

APPLIED ANATOMY & KINESIOLOGY, BIOMECHANICS

1. Biomechanical Basis of Human Movement - ;Joe Hamill and Knutsen Publishers - Williams and Wilkins.

2. Scientific Basis of Human Movement - Gowitzke, Williams & Wilkins, Baltimore, 1988, 3rd Edition.

3. Clinical Biomechanics of Spine - White A.A. and Panjabi - J.B. Lippincot, Philadelphia.

4. Brunnstrom's Clinical Kinesiology - Laura K. Myth et al., Publishers - F.A. Davis.

5. Kinesiology of the Human Body under normal and pathological conditions Arthur Steindler.

EXERCISE PHYSIOLOGY & ELECTRO PHYSIOLOGY

1. Text Book of work Physiology - Guyton, Prim Books Bangalore - 1991, 8th Edition.

2. Samson Wright's Applied Physiology - Cyril A. Keele, Eric Neil and Normal Joels.

3. Exercise Physiology - Mc Ardle Katch, Katch.

4. Clinical Electromyography (Part I basic section only) Nerve Conduction Studies - Shin J.OH - Publisher Williams & Wilkins.

5. Clinical Neurophysiology - Nerve conduction, Electriomyography and Evoked Potentials - UK Misra, Publisher B.I. Churchill Livingstone.

6. Manual of Nerve conduction velocity techniques - DE HSA, Raven Press, New York.

7. Electrodiagnosis in Diseases of Nerve & Muscle - Kimura FA Davis, Philadelphia.

PHYSICAL & FUNCTIONAL EVALUATION

1. Physical Rehabilitation - Susan `O' Sullaivan.

2. The Neurological Examination - Dejong's Armin F. Haerer, Publisher Lippincott Raven.

3. Bio-Feed Back - A Practitioners Guide - Kerb D, Guiford Press.

4. Biofeed Back J.Y. Basmajain.

EVIDENCE BASED PRACTICE

1. Research for Physiotherapist - Hicks C. Churchill & Livingstone Edinburgh, 1995 Ed.

2. An Introduction to Biostatics - A Manual for students in Health Sciences. P.SS Sundar Rao J. Richard.

3. Introduction to Research in Health Sciences - Polgar S., Churchill Livingstone, London, 1988.

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