

SGRR UNIVERSITY
REGULATIONS FOR MASTER OF
PHYSIOTHERAPY 2 YEARS COURSE

An exercise of the powers conferred by section of the SGRR University Act no.3 of 2017. The Academic Council of the Shri Guru Ram Rai University, Dehradun, Uttarakhand hereby makes the following regulations:-

CHAPTER-I

SHORT TITLE AND COMMENCEMENT

- i) These regulations shall be called "THE REGULATIONS FOR THE MASTER OF PHYSIOTHERAPY OF THE SHRI GURU RAM RAI UNIVERSITY, DEHRADUN, UTTARAKHAND"
- ii) They shall come into force from the 2017-2018 academic sessions.
- iii) The regulations framed are subject to modification from time to time by the Standing Academic Board of the University.

1. 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.

2. ELECTIVES

1. MPT in Orthopaedics
2. MPT in Neurology
3. MPT in Cardiopulmonary Sciences
4. MPT in Paediatrics
5. MPT in Sports Physiotherapy
6. MPT in Obstetrics & Gynaecology

3. ELIGIBILITY

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

- 3.1 A Bachelor of Physiotherapy degree with not less than 4½ years duration (including 6 months of internship) from any University within India or equivalent degree from any other recognized university.
- 3.2 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, SGRR UNIVERSITY.

5. DURATION OF THE COURSE

The duration of the certified study for the Master of Physiotherapy course shall be a full time course extending over a period of two academic years for the award of the degree.

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.

3. 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.

8. CONDUCT OF EXAMINATIONS

There shall be two University Examination sessions in an academic year. The University Examination comprises of written and practical Examination. The practical Examination will be conducted wherever stipulated.

9. MEDIUM OF INSTRUCTION

The medium of instruction for all subjects shall be in English, includes Teaching, Assessment and Textbook.

10. WORKING DAYS IN AN ACADEMIC YEAR

Each academic year shall consist of not less than 250 working days.

(Including Research Work)

11. ATTENDANCE REQUIRED FOR ADMISSION TO EXAMINATIONS

A candidate is required to have a minimum of 75% of attendance in each subject. A candidate lacking the prescribed attendance and progress in any one of the subjects, in the first appearance shall not be permitted for admission to the entire examination.

12. EXAMINATION REGULATIONS:

Compartments / Supplementary/ Back Paper:

(I) A student who obtain 50% of the marks individually but has failed in two papers shall be permitted to appear in those papers only at the two consecutive examination and if he/she passes at either of those examination he/she will be deemed to have passed the examination and will be promoted to higher class. (Aggregate marks should be 50%).

(II) A student (s) appearing in back paper/ supplementary shall be eligible to join the next higher Class.

There shall be one main examination in a year and a supplementary to be held not less than 6 months after publication of its results.

13. DISSERTATION

Every Candidate presenting himself for the examination for first time shall submit three type written copies of a dissertation not exceeding 2500 words Consisting of the result of his own study of important investigations carried out by him under the guidance of a recognized teacher together with a 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 written and practical examination.

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

SCHEME OF EXAMINATIONS MPT Ist Year

Course Code	Course Title	Marks For theory			Marks for Practical			Total Marks
		IA	EE	Total	IA	EE	Total	
MP 101	Review of Basic Medical Sciences	30	70	100	-	-	-	100
MP 102	Review of basic Therapeutics	30	70	100	-	-	-	100
MP 103	Advanced therapeutics & Diagnosis	30	70	100	-	-	-	100
MP 104	Skill Enhancing Studies	30	70	100	-	-	-	100
MP 105	Practical	-	-	-	30	70	100	100
	Total	120	280	400	30	70	100	500

MPT IInd Year (Musculoskeletal Rehabilitation)

Course Code	Course Title	Marks For theory			Marks for Practical			Total Marks
		IA	EE	Total	IA	EE	Total	
MPO 201	Orthopedics in Physical Therapy	30	70	100	-	-	-	100
MPO 202	Vertebral Disorders & Rehabilitation	30	70	100	-	-	-	100
MPO 203	Hand Rehabilitation	30	70	100	-	-	-	100
MPO 204	Practical	-	-	-	30	70	100	100
MPO 205	Dissertation	-	-	-	-	200	200	200
	Total	90	210	300	30	270	300	600

MPT IInd Year (Neurological Rehabilitation)

Course Code	Course Title	Marks For theory			Marks for Practical			Total Marks
		IA	EE	Total	IA	EE	Total	
MPN 201	Physical Therapy in Neurological Disorders	30	70	100	-	-	-	100
MPN 202	Neurosurgical Rehabilitation	30	70	100	-	-	-	100
MPN 203	Physical Therapy in Paediatric Neurology	30	70	100	-	-	-	100
MPN 204	Practical	-	-	-	30	70	100	100
MPN 205	Dissertation	-	-	-	-	200	200	200
	Total	90	210	300	30	270	300	600

MPT IInd Year (Sports Rehabilitation)

Course Code	Course Title	Marks For theory			Marks for Practical			Total Marks
		IA	EE	Total	IA	EE	Total	
MPN 201	Traumatology (Orthopaedics & Community Medicine, Physical Therapy)	30	70	100	-	-	-	100
MPN 202	Fundamentals in Sports	30	70	100	-	-	-	100
MPN 203	Rehabilitation in Sports	30	70	100	-	-	-	100
MPN 204	Practical	-	-	-	30	70	100	100
MPN 205	Dissertation	-	-	-	-	200	200	200
	Total	90	210	300	30	270	300	600

MPT IInd Year (Cardiopulmonary Rehabilitation)

Course Code	Course Title	Marks For theory			Marks for Practical			Total Marks
		IA	EE	Total	IA	EE	Total	
MPC 201	Medical & surgical management of Disorders of the Cardiopulmonary System	30	70	100	-	-	-	100
MPC 202	PT Management & Principle of Cardiopulmonary System	30	70	100	-	-	-	100
MPC 203	Cardio-Pulmonary Rehabilitation & Acute Cardio Respiratory Practice	30	70	100	-	-	-	100
MPC 204	Practical	-	-	-	30	70	100	100
MPC 205	Dissertation	-	-	-	-	200	200	200
	Total	90	210	300	30	270	300	600

MPT IInd Year (Paediatric Rehabilitation)

Course Code	Course Title	Marks For theory			Marks for Practical			Total Marks
		IA	EE	Total	IA	EE	Total	
MPP 201	PT for paediatric Neurological Condition	30	70	100	-	-	-	100
MPP 202	PT for Orthopaedic Condition	30	70	100	-	-	-	100
MPP 203	PT for Cardio-Respiratory Condition	30	70	100	-	-	-	100
MPP 204	Practical	-	-	-	30	70	100	100
MPP 205	Dissertation	-	-	-	-	200	200	200
	Total	90	210	300	30	270	300	600

MPT IInd Year (Obstetric & Gynaecology Rehabilitation)

Course Code	Course Title	Marks For theory			Marks for Practical			Total Marks
		IA	EE	Total	IA	EE	Total	
MPOG 201	Medical & Surgical Gynaecology	30	70	100	-	-	-	100
MPOG 202	Clinical Obstetrics	30	70	100	-	-	-	100
MPOG 203	Physiotherapy Management in Gynaecology & Obstetrics	30	70	100	-	-	-	100
MPOG 204	Practical	-	-	-	30	70	100	100
MPOG 205	Dissertation	-	-	-	-	200	200	200
	Total	90	210	300	30	270	300	600

MPT 1ST YEAR

PAPER-1 REVIEW OF BASIC MEDICAL SCIENCES

NOTE: The question paper covering the entire course shall be divided into three sections as follows:

Section A: This will consist of essay type questions with answer to each question up to 8 pages in length. Four questions will be set by the examiner and the candidate will be required to attempt Two. Each question will carry 15 marks, total weight age of the section being 30 marks.

Section B: This will consist of essay type questions with answer to each question up to 5 pages in length. Four questions will be set by the examiner and the candidate will be required to attempt Two. Each question will carry 8 marks, total weight age of the section being 16 marks.

Section C: This will consist of Short answer questions with answer to each question up to two pages in length. Eight questions will be set by the examiner and six will be attempted by the candidate. Each question will carry 4 marks; total weight age of the section shall be 24 marks.

Course Objective

1. Anatomy & Applied anatomy for supportive specification.
2. Normal functional anatomy for Analysis between normal & abnormal
3. Subject support: Diagnosis & related mechanics.
4. Pharmacology: Medical Professional supportive purpose/ action reaction of the medical related to different specialization.
5. Pathology: Basic condition knowledge, their pathological changes & their relevant conditions to support the specialization.
6. Exercise Physiology & Nutrition: Muscle Exercise Physiology, nutrition & diet chart of different conditions.

Unit I: Human Anatomy

Outline of General Anatomy.

1- Introduction to upper limb & lower limb

- a) Bones & Joints
- b) Muscles
- c) Nerves, Roots, Plexus.

- d) Pectoral region, axilla, scapula, arm, forearm, cubital fossa & hand.
- e) Vascular structure.
- f) Thigh, gluteal region, popliteal fossa.
- g) Leg, ankle and foot.

2- Introduction of lungs, heart & thorax anatomy.

3- Introduction of vertebral column.

- a) Cervical, thoracic, lumbar, sacral spine.
- b) Anatomy of spinal cord.

4- Introduction of head & neck

- a) Neck : Side of neck
Triangle of Neck
- b) Temporomandibular joint

5- Introduction to brain.

- a) Meanings, CSF
- b) Blood supply of brain & Spinal cord.
- c) Outline of ventricles
- d) Outline of brain stem.
- 6- Introduction to anatomy of reproductive system.
- 7- Neonatal development, milestones, neonatal reflexes etc.

Unit II: Human Physiology

(1) Cardiovascular System.

- a) Structure & Properties of heart
- b) Cardiac Cycle.
- c) The regulation of heart's performance.
- d) Cardiac output.
- e) The arterial blood pressure.
- f) The physiology of vascular system.
- g) Lymphatic circulation.

(2) Muscular System:

- a) Types of muscles, types of muscle contractions, muscle work, motor units, group action of muscles, muscle spindle.
- b) Neuromuscular junction.
- b) Muscle architecture.
- c) Muscle action.
- d) Spasm, spasticity, twitch, muscle fatigue, tetani rigor motis
- e) Nerve & blood supply of muscles etc...

(3) Respiratory System:

- a) Functional anatomy
- b) Ventilation & control of ventilation
- c) Alveolar air
- d) Regulation of the breathing
- e) Pulmonary function test.

(4) Nervous System:

- a) Elementary neuroanatomy
- b) Neurons & Neuralgia
- c) Properties of nerve fibers synapse.
- d) Spinal cord.
- e) Cerebral cortex.
- f) Pyramidal & extra pyramidal system.
- g) The cerebellum.
- h) Automatic nervous system.
- i) Cerebrospinal fluid.
- j) Cranial nerves.

(5) Reproductive System:

- a) Male reproductive system.
- b) Female reproductive system.
- c) Menstrual cycle.
- d) Menopause.
- e) Fertilization & intra-uterine development.
- f) Birth.
- g) Post natal growth & development.

Unit III: Pharmacology

Discussion in details of the following groups of drug. Their effects, uses, side effects and dosage.

1. Drugs used in pain.
2. Local anesthetics
3. Steroids
4. Muscle relaxants.
5. Drug acting upon central nervous systems & autonomic nervous system.
6. Tropically acting drugs.

Unit IV: Pathology

- 1. General Pathology (Cell Injury, Inflammation, repair, immune System)**
- 2. Musculoskeletal system.**
 - a) Bones:
 - Hereditary & Metabolic diseases.
(Osteoporosis, Rickets, Osteomalacia, Osteitis fibrosa cystica, Renal Osteodystrophy)
 - Infections:
(Osteomyelitis, tuberculosis)
 - b) Joints:
 - Degenerative joint disease.
 - Bursitis.
 - c) Skeletal muscles
(Muscle atrophy, Myositis, Muscular dystrophy, Myasthenia gravis)
- 3. Nervous system**
 - a) Infection (meningitis, encephalitis)
 - b) Vascular diseases (Ischemic encephalopathy, Cerebral infarction, Intracranial hemorrhage)
 - c) Degenerative disease
(Alzheimer's disease, Huntington's disease, Parkinsonism, Motor neuron disease)
 - d) Demyelinating disease

- (Multiple sclerosis)
- e) The peripheral nervous system
(Peripheral neuropathy, acute Idiopathic polyneuropathy, Diabetic neuropathy)

Unit V: Exercise Physiology & Nutrition

Section: A

Introduction: History of Exercise physiology-Early Exercise Physiologists, the Harvard Fatigue Laboratory, The Scandinavian Influence, Contemporary Exercise Physiologists.

- Bioenergetics
- Endurance Training
- Energy Expenditure at rest and during physical activity-

Energy, Work & Power

Measurement of Energy CCSI of Exercise.

Direct Calorimetry, Indirect Calorimetry, Net O₂ cost of Aerobic and Anaerobic exercise, the concept of the MET, Ancillary considerations in Measuring Energy Expenditure, Body size and energy cost. Measuring efficiencies on a bicycle, ergometer and treadmill. Measurement of energy cost for 100M, 400M dash.

Measurement of energy cost using telemetry.

Muscle Physiology: Overview, Mechanism of Muscular Contraction.

Section B:

Respiratory response to Exercise:

Ventilation at rest and during exercise. Ventilation and the anaerobic Threshold, Alveolar Ventilation and Dead Space, Other Lung volumes and capacities, Oxygen Cost of breathing, second wind, Stitch in side.

Cardiovascular responses to Exercise:

Summary of the cardiovascular systemic physiology covered during previous year.

Cardiovascular aspects of exercise: Control and regulation of heart and circulation at rest and during exercise.

Exercise and Acid Base Balance:

Acid and Bases, Buffers, pH, Respiratory Regulation of pH, Alkali Reserve, The Kidneys and acid base balance, Alkalosis and Acidosis, Acid base balance following heavy exercise.

Hormonal response to exercise:

Growth Hormone (GM), thyroid and Parathyroid hormones. Ant diuretic Hormone (ADM) and Aldosterone, Insulin and Glucagon's, the careholamine; epinephrine and norepinephrine. The sex hormones. The glucocorticoids (ciortisol) and Adreno Corticotrophin Hormone (ACTH), Prostaglandins and Endorphin:

Section C:

Nutrition overview: Fat, Proteins, Carbohydrates, Vitamins, Minerals, Water Recommended daily allowances (RDAs) of a healthy diet for athletes and other involved in physical activity, Nutritional food pyramid and its use, Primary organizations responsible for nutritional information, nutritional considerations in rehabilitation including nutrients involved in healing and nutritional risk factors, Common illnesses and Injuries attributed to poor nutrition. Energy and nutritional demands of specific activities and the nutritional demands placed on athletes and other involved in physical activity.

Books Recommended:

Pharmacology and Pharmacotherapeutics, R.S. Satoskar - Popular Publication, Bombay

MPT IST YEAR

PAPER-2 REVIEW OF BASIC THERAPEUTICS

NOTE: The question paper covering the entire course shall be divided into three sections as follows:

Section A: This will consist of essay type questions with answer to each question up to 8 pages in length. Four questions will be set by the examiner and the candidate will be required to attempt Two. Each question will carry 15 marks, total weight age of the section being 30 marks.

Section B: This will consist of essay type questions with answer to each question up to 5 pages in length. Four questions will be set by the examiner and the candidate will be required to attempt Two. Each question will carry 8 marks, total weight age of the section being 16 marks.

Section C: This will consist of Short answer questions with answer to each question up to two pages in length. Eight questions will be set by the examiner and six will be attempted by the candidate. Each question will carry 4 marks; total weight age of the section shall be 24 marks.

Unit –I

1. Definition of physiotherapy, Goals & objectives of Physiotherapy in Clinical Evaluation Phase of management of injured person. (Multidisciplinary Approach)
2. Rehabilitations and modern concepts in sports Physiotherapy.
3. Definition, details of effects and uses of therapeutic Exercises.
 - a) Dynamic Exercises
 - b) Plyometric Exercises
 - c) Isokinetic Exercises
 - d) Manipulative Techniques
 - e) Kinetic Chain Exercise

4. Mobilization
 - a) Factors affecting the joint range of motion prevention of stiffness, methods of joint mobilization.
 - b) Testing for tightness and contracture of soft-tissue structure.
 - c) Techniques of mobilizing the various joints of the body
 - d) Introduction to manual therapy techniques, manual joint therapy, traction,
 - e) basic principles of manipulation for various disorders of the spine and
 - f) extremities.

5. Review of the following techniques.
 - a) Assessment techniques like MMT & Goniometry
 - b) Re-education and strengthening.
 - c) Balance and Co-ordination exercise
 - d) Gait analysis and training (both normal & pathological gait)
 - e) Posture
 - f) PNF
 - g) Traction

6. Strengthening

Types of Muscle Contractions and Muscle work, Strength of Muscle Contraction in terms of Motor units, group action of Muscles and its implication in designing an exercise program.

 - a. Cause of Muscle weakness. Prevention of disuse atrophy, Principles of treatment to increase muscle strength and function.
 - b. Techniques of strengthening with respect to regional consideration.
 - c. Various methods of progressive resisted exercise.
 - d. Aquatic therapy

7. Physiotherapy for Enhancing Neuromuscular Control
 - a) Neuromuscular control, methods for improving neuromuscular control, proprioception and kinesthetic sensation following different injuries.
 - b) Principles and application of neuromuscular facilitation techniques including PNF.
 - c) Protective equipment.

8. Methods of conditioning and fitness enhancement

9. Regional Exercise prescription
10. (a) Therapeutic Exercise for Shoulder, elbow, wrist and Hand injuries.
(b) Therapeutic Exercise for hip and thigh, Knee, foot and ankle injuries.
(c) Therapeutic Exercise for Spinal Problem.

11. Massage

Historical development, definition and classification of massage techniques, Physiological effects of massage, description of the techniques of classical massage. Physiological basis of massage, therapeutic applications and contraindication of massage.

12. Hydrotherapy:

History & introduction, effects of simple baths, raising temperature baths, baths with additives, Aromatic baths, Mineral baths, Physical baths, Hydroelectric baths, stammer baths, whirl pool bath, showers and steam showers, aquatic exercises.

Unit-II

Electro Therapy

1. Principles underlying the application of following modalities with reference to their production, biophysical and therapeutic effects, indications and contraindications and the specific uses in sports physiotherapy.
 - a) Infrared rays, paraffin wax, bath steam bath, moist heat pack fluid therapy, Mud bath and pelloids.
 - b) High frequency current: SWD, MWD, Ultrasound, pulsed electromagnetic energy. Physiological effects, use of Cold therapy in acute phase, rehabilitative phase, preventive phase of athletic injury, Methods of application, indications and contraindications.
2. Principles underlying the application of following modalities with reference to their production, biophysical and therapeutic effects, indications and contraindications and the specific uses in Physiotherapy.

- a) Low frequency current: Direct current, modified Direct Current, Alternative current, Diadynamic Current, Iontophoresis TENS, High Voltage, Pulsed Galvanic Stimulation.
- b) Medium Frequency Current: IFT, Russian Currents, Radiations: LASER Recent Advancement in Electrotherapy (electro therapy in wound management), Electro-diagnosis and its implications to Physiotherapy.

Unit III:

Biomechanics & Pathomechanics

Section A

1. Introduction to kinesiology and Biomechanics.
2. Principle of Biomechanics, Nature and importance of Biomechanics in Physiotherapy.

Section B

3. Introduction to biomechanical analysis of human motion. Analytical tools and techniques-Isokinetic dynamometer, Kinesiological EMG, Electronic goniometer, force platform, video therapy.

Section C

4. Biomechanics of shoulder and shoulder girdle motion, elbow motion, wrist and hand motion & their pathomechanics.
5. Biomechanics of pelvic motion, hip motion, Knee motion, Ankle & Foot motion & pathomechanics.
6. Biomechanics of Spinal motion & Pathomechanics.

Section D

7. Gait analysis, posture & Abnormal Posture & Gait.

Unit IV

Bio Engineering

1. Principles of orthotics type, indications, contra indications, Assessment (Check Out), uses and fitting –region wise.
2. Fabrication of simple Splints and self help devices for upper, lower extremity and spine-indications and applications.
3. Principles of prosthetic –type, indications, contraindications, assessment (Check Out), use and fitting –region wise.

4. Preparation, Application & training.

Recommended Books

1. A.G.Sinha, Principle and practices of therapeutic Massage, Jaypee Brothers, New Delhi.
2. William E. Prentice: Therapeutic Modalities in Sports Medicine – Mosby.
3. William E. Prentice: Rehabilitation Techniques – Mosby.
4. O’Sullivan, Schmitz: physical Rehabilitation – Assessment and treatment – F.A. Davis
5. John Low & Reed: Electrotherapy Explained, Butterworth.
6. Meryl I Roth Gersh: Electrotherapy in Rehabilitation, F.A Davis.
7. Joseph Kahn: Principles and Practice of Electrotherapy, Churchill Livingstone.
8. Claytons Electrotherapy 10th Ed. –Sarah & Bazin – W.B. Saunders
9. Harrelson and Andrews: Physical Rehabilitation of Injured Athlete.
10. Nelson and Currier: Clinical Electrotherapy, Prentice Hall.
11. Greenman: Principles of Manual Medicine, William & Wilkins
12. Kuprian: Physical Therapy for Sports , W.B. Saunders
13. Bates: Aquatic Exercise Therapy, W.B. Saunders
14. Michlovitz – Thermal Agents in Rehabilitation – F.A. Davis
15. Lehmann – therapeutic Heat and Cold - Wiliam & Wilkins
16. James G. Hay – The Biomechanics of sports Techniques, Prentice Hall
17. Brunnstrom – Clinical Kinesiology – Scientific Basis of Human Motion 9th Edi, 1997, Brown & Benchmark
18. Luttgens K., Hamilton N.: Kinesiology – Scientific Basis of Human Motion 9th Edi, 1997, Brown & Benchmark
19. Kreighbaum E., Barthels K: Biomechanics _ A Qualitative approach for studying human motion, 2nd edn. 1985, Macmillan.
20. Rasch & Burk: kinesiology and Applied Anatomy, Lee & Fabiger
21. White and Punjabi – Biomechanics of Spine – Lappincott.
22. Norkin & Levangie: Joint Structure and function - A Comprehensive Analysis – F.A. Davis
23. Kapandji: Physiology of Joints Vol I, II & III, W.B. Saunders.
24. Northrip et al: Analysis of sports Motion: Anatomic and Biomechanics perspectives, W.C. Brown Co. IOWA.
25. Leveac B.F.: Basic Biomechanics in Sports and Orthopedic Therapy, C.V. Mosby.
26. De Boer & Groot: Biomechanics of Ports, CRL Press, Florida.
27. Basmajian – Muscle alive – Williams & Wilkins.
28. Nordin & Frankel – Basic Biomechanics of Muscular Skeletal System – Williams & Wilkins.
29. Bartlet – Introduction to Sports biomechanics – F & FN Spon Madras.

MPT IST YEAR

PAPER-3 ADVANCED THERAPEUTICS AND DIAGNOSIS

NOTE- The question paper covering the entire course shall be divided into three sections as follows:

Section A: This will consist of essay type questions with answer to each question up to 8 pages in length. Four questions will be set by the examiner and the candidate will be required to attempt Two. Each question will carry 15 marks, total weight age of the section being 30 marks.

Section B: This will consist of essay type questions with answer to each question up to 5 pages in length. Four questions will be set by the examiner and the candidate will be required to attempt Two. Each question will carry 8 marks, total weight age of the section being 16 marks.

Section C: This will consist of Short answer questions with answer to each question up to two pages in length. Eight questions will be set by the examiner and six will be attempted by the candidate. Each question will carry 4 marks, total weight age of the section shall be 24 marks.

Unit I:

Manual Therapy: Introduction, History, Basic Classification, Assessment for manipulation, discussion in brief about the concepts of mobilization like Cyriax, Maitland & Mulligan and Butler in mobilization of joints & nerves. Methodology in general with examples, Joints/ nerves (Manipulation studies & work according to their specialization).

Unit II:

Muscle Energy techniques and Positional stretch: The basic concept and application of these techniques.

Unit III:

Myofascial Release: Concept & brief discussion of its application techniques.

Unit IV:

LASERS: Production, types, effects, application, indications & contraindications.

Unit V:

Nerve conduction studies and EMG: Normal & abnormal action potentials, its recording protocols, analysis & apparatus.

Unit VI:

Micro currents: Concept, Indications, Contraindications & Application.

Unit VII:

Biofeed back: Principles, effects, uses and contraindications.

(FOLLOWING ARE ONLY FOR PRACTICAL KNOWLEDGE; NOT FOR THEORY EXAM)

Unit VIII:

Radiology & Diagnostic Studies: Reading and analysis of.

1. X-Ray.
2. Myelography.
3. Cerebral angiography.
4. computer tomography.(CT SCAN)
5. Magnetic resonance imaging (MRI).
6. Angiography.
7. Radionuclide imaging, PET scan.
8. neurophysiology- electro ECG, EMG, NCS (nerve conduction studies)
9. Examination of CSF.
10. Late responses- F response, H-reflex, axon- reflex.
11. Artifacts & technical factors.
12. Evoked potentials- visual, auditory, somatosensory, motor spinal potentials, biofeedback, EEG.
13. Thermal & vibration threshold monitor.
14. EEG.
- 15.

Their clinical relation with various muscular skeletal disorder and nervous disorders

Unit IX:

Analysis of various laboratory Examination reports and their clinical Co-
relation with various muscular skeletal disorders and neurological, cardiothoracic,
pediatrics & gynecological disorders.

1. blood serum
2. Urine & stool.
3. CSF.
4. Biopsy.
5. Other test related to specific conditions.

MPT IST YEAR

PAPER-4 SKILL ENHANCING STUDIES

(RESEARCH METHODOLOGY, BIostatISTICS, EDUCATIONAL TECHNOLOGY & COMPUTERS)

Course Objective

1. BIO STATISTICS & COMPUTERS FOR COLLECTING DATA & PROGRAMME FOR PROJECT WORK & FOR PLANNING EFFECTIVE TREATMENT.
2. ETHICS & MEDICOLEGAL ASPECTS FOR CLINICAL PURPOSES.
3. EDUCATIONAL TECHNOLOGY FOR TEACHING & LEARNING PURPOSES.

Unit I:

Research Methodology

Introduction-

Uses of statistical methods & standard deviation.
Methods of collection, classification, tabulation & presentation of data.
Central tendency-
Mean, Median, Mode & standard deviation
Correlation & Regression:-
Karl Pearson's correlation method
Rank correlation method
Regression & correlation.
Sampling & hypothesis testing
Data collection
Types of sampling
Random Sampling
T. Test, Z. Test, Chi square testing.

Unit II:

Physiotherapy Ethics

1. Morals and ethics
2. Ethical issue in physical therapy
3. Rules and regulation of association/ council

Unit III:

Physical Therapy & Law: Medicolegal aspect of physical therapy, liability, negligence and practice, licensure workmen compensation & maintaining the medical register.

Unit IV:

Physiotherapy Department Management.

1. Policies and procedures.
2. Recruitment, interview, probation, salary, hours of working, leaves facilities, retirement, referred policy.
3. Maintenance of records equipments, statistics.
4. Planning, design construction, expansion plan.

Unit V:

Physiotherapy Education Technology

(I) Aims, philosophy and trends and issues:-

- a. Educational aims.
- b. Agencies of education.
- c. Formal and informal education
- d. Major philosophies of education.
(naturalism, idealism, pragmatism & realism)
- e. Modern and contemporary philosophies of educations.

Physiotherapy of education in India (past, present and future) current issues and trends in educations.

(II) Concepts of teaching and learning.

- i. Theories of teaching.
- ii. Relationship between teaching and learning.
- iii. Psychology of education.
- iv. Dynamics of behavior, motivational process of learning perception, individual differences, intelligence personality.

(III) Curriculum

- i. Curriculum committee.
- ii. Development of a curriculum for physiotherapy.

- iii. Types of Curriculum
 - iv. Placing, courses placement, time allotment
 - v. Correlation of therapy and practice.
 - vi. Hospital and community areas for clinical instructions.
 - vii. Clinical assignments.
- (IV) Principles and methods of teaching.
- i) Strategies of teaching.
 - ii) Planning of teaching.
 - iii) Organization, writing lesson plan.
 - iv) A.V. aids.
 - v) Teaching methods – socialized methods
- (V) Measurement and evaluation
- i) Nature of measurement of Educations, meaning, process, personnel, Standardized, none standardized.
 - ii) Standardized tools, important tests of intelligence, aptitude, instrument,
 - iii) Personality, achievements and status scale.
 - iv) Programme evaluation.
 - v) Cumulative evaluation.
- (VI) Guidance and counseling
- i) Philosophy, principles, concepts, guidance & counseling services.
 - ii) Faculty development and development of personnel for physiotherapy services.

Unit VI:

Computer (Non University Examination)

1. Introduction of software and hardware.
2. M.S. Office, Dos.
3. Application computer in medical sciences.

MPT IST YEAR

PAPER-5 PRACTICALS

Course Objective: Knowledge of basic therapeutics & practical studies of advanced therapeutics applied to different conditions/ relieving of mechanical factors assessment & treatment purpose.

Unit I:

Exercise Therapy: Assessment of joint muscles & nerve.

- a) All types of strengthening techniques.
- b) All type of mobilization techniques.
- c) Soft tissues stretching & mobilization.
- d) Gait analysis & training.
- e) Postural assessment & re education.
- f) Balance & coordination.
- g) Special techniques of exercise therapy.
- h) Traction.
- i) Hydrotherapy.

Unit II:

Electrotherapy.

- a) All types of low & medium frequency currents.
 - Faradic.
 - Galvanic.
 - High voltage current.
 - Didynamic.
 - Russian.
 - Interferential Therapy.
 - TENS.
 - Microcurrents.
- b) All types of high frequency currents & modalities.
 - Short wave diathermy.
 - Microwave diathermy.
 - Ultrasound.

Unit III:

Miscellaneous.

- a) Cryotherapy.
- b) Biofeedback.
- c) UVR.
- d) IRR.
- e) LASER.
- f) Other heat modalities.

Unit IV:

Advanced Manual Therapy

- a) Demonstration of any one of the following manual therapy (according to their specialization field):
 - Cyriax
 - Maitland
 - Mulligan
 - Butler
 - Nerve mobilization.
- b) Outline of practical knowledge of Muscle energy techniques & positional stretch and myofascial release.

MPT MUSCULOSKELETAL PHYSIOTHERAPY IIInd YEAR

PAPER-1 ORTHOPEDICS IN PHYSICAL THERAPY

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 behavioural 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 speciality 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.

UNIT 1

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.
2. Paediatric Orthopaedic conditions and its management, congenital deformities

- and its management.
3. Physiotherapy management of lumbosacral disorders, assessment of locomotor impairments, disabilities, and disability evaluation.
 4. Traumatic Orthopaedics - Upper limb, Lower Limb and Spinal fractures. Medical, Surgical and physiotherapy rehabilitation.

UNIT 2

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 Ilizarov fixation & physiotherapy management.
12. Electrotherapeutic Agents – Physiological effects – Current update on the effectiveness.

UNIT-3

Miscellaneous:- Leprosy, cerebral palsy, poliomyelitis, principles of geriatric

rehabilitation and some common conditions of geriatric patients.

UNIT-4

Bioengineering:-

Orthosis and splints: Their types, applications, care and uses.

MPT MUSCULOSKELETAL PHYSIOTHERAPY IIInd YEAR

PAPER-2 VERTEBRAL DISORDERS & REHABILITATION

Course Objectives:-

1. ANALYZE INTERPRETE AND EVALUATE VARIOUS LEVELS OF SPINAL CORD INJURIES.
2. BE ABLE TO RATIONALIZE THE TREATMENT APPROACH ACCORDING TO THE MANAGEMENT NEEDED (MEDICAL/SURGICAL) AND TO APPLY APPROPRIATE TECHNIQUES.
3. COMPARE THE EFFECT AND EFFICIENCY OF VARIOUS APPROACHES/TECHNIQUES FOR RESEARCH PURPOSES.

Pathophysiology, causes, clinical features, complication examinations, management physiotherapy treatment of common vertebral disorders.

Advanced techniques like Maitland, Cyriax, PNF etc. apply to the necessary cases.

Unit 1:- Review of anatomy and biomechanics of vertebral column.

Unit 2:- Congenital disorders of vertebral column & vertebral deformities.

Unit 3:- Inflammatory disorders of vertebrae, vertebral joints & soft tissues etc.

Unit 4:- Disease of vertebral joints, segmental instability.

Unit 5:- Disorders of structural changes, changes of alignment of bone, joint of vertebral column.

Unit 6:- Low back pain, pain in vertebral column & stiffness disorders.

Regional: - Cervical, Lumbar, Thoracic, Sacral.

Unit 7:- Traumatic injuries of vertebral column: General & regional injuries.

1. Soft tissue injuries, tightness, structural changes.
2. Bone injuries (fracture & dislocation of spine) Pelvic injuries.
3. Pelvic injuries.

Unit 8:- Spinal cord injuries

1. Types, classification
2. Pathology
3. level
4. examination.
5. Management & rehabilitation
6. Orthopedic surgeries
7. Bio engineering appliances & support devices.
8. Pre & post operative rehabilitation.

MPT MUSCULOSKELETAL PHYSIOTHERAPY IIInd YEAR

PAPER-3 HAND REHABILITATION

Course Objectives

1. Analyze, interpret and evaluate various levels of hand injuries and their functional importance.
2. Rationalise various approaches for hand rehabilitation based on etiology of disease and to progress with rehabilitation.
3. Play his role as an efficient team member along with other professionals such as occupational therapists for effective functional vocational.

Unit 1:-

1. Anatomy of hand, assessment of hand. Functions of hand - motor & sensory organ.
2. Classification of hand injuries. Principles of hand rehabilitation. Detailed aspects of various conditions. Tendon injuries, crush injuries, nerve injuries - Leprosy, burns, fractures, joint 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.
3. Rehabilitation after Tendon reconstruction surgery.
4. Rehabilitation after nerve graft, nerve suture & neurotization surgeries.

Unit 2:-

- a) Tendon injuries b) nerve injuries c) crush injuries.

Incision, their effects on later rehabilitation, fractures, joint injuries and correction of deformities.

Unit 3:-

- a) Burns in hand b) spastic hand c) rheumatoid hand
d) Hand in Hansen's disease e) reflex sympathetic dystrophy

Unit 4:-

- a) Phantom hand pain b) Prosthetic hand
c) Orthosis for hand and their uses

MPT MUSCULOSKELETAL PHYSIOTHERAPY IIInd YEAR

PAPER-4 PRACTICAL

Practical Examination

1. Total hours of Practical Examination will be 6 hrs.
2. Practical examination will be divided into two parts.
 - a) Two large cases-30 marks each (30x2=60)
 - b) One small cases-10 marks (10x1=10)

Large cases for example:

PIVD, spondylolisthesis, back pain, cervical rediculopathy etc.

Small cases for example:

Ligament injuries, tendonitis, bursitis, etc.

3. Following procedures will be included in the practical examination.
 1. Assessment
 - a. Physical
 - b. clinical
 - c. pathological
 - d. other investigations.
 2. Differential diagnosis & its reason.
 3. Treatment: physiotherapy management & advanced technique application.
 4. Home programme.
4. Fracture cases:- Intensive care, emergency care, positioning, reduction, plaster application, care in period of immobilization & post immobilization rehabilitation.

MPT NEUROLOGICAL REHABILITATION IInd YEAR

PAPER-1 PHYSICAL THERAPY IN NEUROLOGICAL DISORDERS

Course Objectives:-

1. ANALYZE INTERPRETE AND EVALUATE VARIOUS LEVELS OF SPINAL CORD INJURIES & PERIPHERAL NERVE INJURIES.
2. BE ABLE TO RATIONALIZE THE TREATMENT APPROACH ACCORDING TO THE MANAGEMENT NEEDED (MEDICAL/SURGICAL) AND TO APPLY APPROPRIATE TECHNIQUES.
3. COMPARE THE EFFECT AND EFFICIENCY OF VARIOUS APPROACHES/TECHNIQUES FOR RESEARCH PURPOSES.

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.

Unit 1:-

Introduction, etiology, Path physiology, Clinical presentation, conservative management & complications of the following clinical conditions:

1. Congenital & hereditary Disorders
2. Disorders of cerebral circulation
3. Head Injury
4. Spinal Cord Injury
5. Disorders of Peripheral nerves
6. Disorders of cranial nerves
7. Disorders of muscles

Investigations:

Orientation and Introduction, Physical basis, normal result & common abnormal responses, (in brief)

1. Skull X ray

2. Computerized Tomography
3. Magnetic Resonance Imaging
4. Intracranial Pressure monitoring
5. Evoked Potentials
6. EMG/ NCV
7. Lumbar puncture
8. Common Laboratory tests in Neurological disorders

Unit-2:

Cranial nerves

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

Unit-3:

Stupor and Coma

1. The neural basis of consciousness.
2. Lesions responsible for stupor & coma.
3. The assessment & investigation of the unconscious patient.
4. The diagnosis of brain death.
5. The management of the unconscious patient.
6. Total rehabilitation protocol.

Unit-4:

Disorders of the Cerebral Circulation.

1. Epidemiology of stroke.
2. Causes, types, pathophysiology.
3. Clinical features & investigation.
4. Herpes simplex
5. Chorea
6. Tuberculosis
7. Transverse myelitis

8. Poliomyelitis

Classification, causes, pathophysiology, clinical features, complication, management & rehabilitation.

Unit-6:

Demyelinating diseases of the nervous system.

Classification of demyelinating diseases.

Multiple Sclerosis.

Diffuse Sclerosis.

Unit-7:

Movement disorders

1. Akinetic-rigidity syndromes disorders.
2. Dyskinesias disorders.

Unit-8:

Degenerative disease of the spinal cord & cerebellum

1. All types of ataxia.
2. Motor neurone disease.
3. Spinal muscular atrophies

Unit-9:

Disorders of the spinal cord & Cauda equine

1. Acute traumatic injuries of the spinal cord.
2. Haematomyela & acute central cervical cord injuries.
3. Slow progressive compression of the spinal cord.
4. Syringomyelia
5. Ischemia & infarction of the spinal cord & cauda equine.
6. spina bifida.

Unit-10:

Deficiency & nutrition disorders

1. Deficiency of vitamins & related disorders.
2. Other nutritional neuropathies.

Unit-11:

Disorders of peripheral nerves.

1. Clinical diagnosis of peripheral neuropathy.
2. All type of level of peripheral neuropathy & brachial plexus.
3. Causalgia
4. Reflex sympathetic dystrophy.
5. Peripheral nerve tumours & iorradiation neuropathy.
6. Traumatic, compressive & ischaemic neuropathy
7. Spinal radiculitis & radiculopathy.
8. Hereditary motor & sensory neuropathy (HMSN) (type 1, 2, 4 & 5)
9. Acute idiopathic polyneuritis chronic
10. Neuropathy due to infections
11. Vasculomotor neuropathy
12. Neuropathy due to systematic medical disorder
13. Drug-induced neuropathy
14. Outline-metal poisoning chemical neuropathies.

Unit-12:

Disorder of muscle

1. Muscular dystrophies of adulthood.
2. The myotonic disorders.
3. Inflammatory disorders of muscle.
4. Myasthenia grevis
5. Endocrine & metabolic myopathies.

Unit-13:

Autonomic Nervous disorders

Disorders of autonomic function after lesion of the spinal cord.

Unit-14:

Seizures

1. Epidemiology, classification, causes, factors precipitating, diagnosis.
2. Myoclonus

Unit-15:

Disorders of higher cerebral cortical function

1. Disorders of different lobes:

- | | | |
|--------------------|-------------------------|-------------------|
| a. Frontal lobes | b. Temporal lobes | c. Parietal lobes |
| d. Occipital lobes | e. Sub-cortical lesions | |

MPT NEUROLOGICAL REHABILITATION IIInd YEAR

PAPER-2 PHYSICAL THERAPY IN NEUROLOGICAL DISORDERS

Course Objectives:-

Generic:-

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

The ability to evaluate and synthesize 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 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. programming and execution of movement.

Unit-1:

Techniques, types of skull, brain, spine, surgert & its complication. Pre & post Physiotherapy assessment, treatment.

Unit-2:

Cranio-cerebral injury (Head & brain injury):

1. Closed skull fractures.
2. Haematomas, epidural, subdural, intracerabral.

3. Open cranio cerebral injuries.
4. Re-construction operation in head injuries.

Epidemiology, Pathophysiology, symptoms, signs, investigations, management, pre & post physiotherapy , complication.

Unit-3:

Tumours

Pathophysiology, classifications, effects of mass lesions, symptoms & signs, examination, management, pre & post operative rehabilitative protocol.

1. Tumours & cranial bones.
2. Meningiomas
3. Tumours in spinal cord.
4. Intra cranial tumours.
5. Other conditions related to raised intra cranial pressure.
 - a. Hydrocephalus
 - b. Intracranial abscess.
 - c. Central oedema.
6. Vascular disease of the brain.
 - a. Aneurysms
 - b. Thrombosis
7. Decompression surgery of spinal cord.
 - a. Disc operation (cervical, lumbar)
 - b. Stenosis
 - c. Oedema, Abscess.
 - d. Lumbar puncture.
8. Peripheral nerves:
 - a. De-compression
 - b. Nerve-suture
 - c. Nerve grafting

MPT NEUROLOGICAL REHABILITATION IIInd YEAR

PAPER-3 PHYSICAL THERAPY IN NEUROLOGICAL DISORDERS

Course Objectives:-

Elicit & evaluate primitive reflexes, analyse developmental mile stones.

Their Pathological significances

Apply various neo-natal therapeutics approaches neurodevelopmental techniques,
Bobath Rood

Unit-1:

General Developmental sequence of normal child:

Weight, height & circumference measurements related to age in normal child
development milestones, Neonatal reflexes, factors influencing growth &
development various period of growth, post natal Growth pattern, types of body
build, physical examination of a child.

Unit-2:

Nutrition % Immunization:

Normal nutritional requirement of a child, infant feeding prevention of some
nutritional disorders, Nutritional deficiency diseases, immunization (Salk & sabin
dpt against some common viral diseases)

Unit-3:

Cerebral Palsy:

Types, aetiology, clinical features, management & rehabilitation of various types
of cerebral palsies.

Unit-4:

Neurological Affection of Childhood:

Poliomyelitis, spinal bifida hydrocephalus, encephalitis, aetiology, clinical features
& rehabilitation, peripheral nerve injuries in early childhood.

Unit-5:

Muscular disorders:

Types of muscular dystrophies & myopathies of childhood.

The floppy infant syndrome.

Unit-6:

Seizures epilepsy of childhood.

MPT NEUROLOGICAL REHABILITATION IIInd YEAR

PAPER-4 PRACTICALS

Practical Examination

1. Total hours of Practical Examination will be 6 hrs.
2. Practical Examination will be divided into 2 parts:
 - a. Two large cases-30 marks each (30x2=60 marks)
 - b. One small cases-10 marks (10x1=10 marks)

Large cases for example:

Stroke, tuberculosis, hemiplegia, cerebral palsy, paraplegia etc.

Small cases for example:

Nerve injuries, brachial neuralgia etc.

3. Following procedures will be included in the practical examinations:
 - a. Assessment—physical, clinical, pathological, other investigations.
 - b. Differential diagnosis & its reason.
 - c. Treatment: Physiotherapy management & advanced technique Application.
 - d. Intensive care unit, emergency care & positioning
 - e. Home programme.

MPT CARDIOPULMONARY REHABILITATION

IInd YEAR

PAPER-1 MEDICAL AND SURGICAL MANAGEMENT OF DISORDERS OF THE CARDIOPULMONARY SYSTEM

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:

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.

Cardio Respiratory Sciences

UNIT-1

- Cardio-thoracic applied anatomy
- Respiratory and cardio vascular physiology
- Applied anatomy of the Respiratory muscles
- Mechanics of ventilation

UNIT- 2

Radiological anatomy Clinical assessment, rationale of laboratory investigation and differential diagnosis, ECG, exercise ECG testing, Echo, Holter monitoring, imaging techniques, PFT and ABG analysis, cardiac catheterization, stress testing & medical management of disorders of the cardiac system.

Unit- 3

Cardiology

- Assessment of symptoms of heart disease.
- Disorders of cardiac rate, rhythm & conduction.
- Cardiac arrest & cardiac failure.
- Shock
- Rheumatic heart disease
- Congenital heart disease
- Diseases of the heart valves
- Infective endocarditis
- Ischaemic heart disease
- Hypertension, hypotension
- Diseases of pericardium
- Heart diseases in pregnancy
- Inflammatory & degenerative arterial diseases.
- Peripoheral vascular diseases
- Cardiomyopathy
- CPR

Unit-4

Pulmonology

- Obstructive pulmonary diseases.
- Restrictive pulmonary diseases
- Infections of pulmonary system
- Interstitial, infiltrative & inflammatory pulmonary diseases
- Pulmonary vascular diseases
- Diseases of pleura
- Respiratory failure
- Neuromuscular & skeletal disorders leading to global alveolar hypoventilation: Myopathies, spinal muscular atrophies, poliomyelitis, motor neuron diseases, chest deformities etc.

CARDIOTHORACIC SURGERY

This course provides information about surgical management for the relevant conditions of the above explained, their indication, contraindications for the surgery and precaution after surgery. Also includes:

1. Closed V/S open heart surgery.
2. Incisions.
3. Preoperative and Postoperative assessment and monitoring of the patients (ABG, ECG, radiographs, PFT, Labs etc)
4. Emergencies in CTVS.
5. Heart transplant.
6. Left ventricular assistive devices.
7. Procedures on sternum, Chest wall, Diaphragm, Mediastinum, Oesophagus.
8. Cardiopulmonary bypass.

Artificial airways-maintenance and removal.

MPT CARDIOPULMONARY REHABILITATION
IInd YEAR
PAPER-2 PHYSIOTHERAPY MANAGEMENT & PRINCIPLES IN
DISORDERS OF THE CARDIOPULMONARY SYSTEM

It provides with the principles of "Physiotherapy management in disorders of cardio pulmonary system".

The following course has to be covered via lectures, demonstration, cases conferences, journal discussions, seminars and class discussions.

Following are the topics to be included but not limited to:

1. Physiotherapy assessment.
2. Exercise testing and exercise training.
3. Respiratory muscles training.
4. Mobilization and exercises (Strengthening, conditioning and endurance)
5. Airway clearance techniques:
Postural damage
Forced expiratory techniques, AD, ACBT.
Breathing exercises
Percussion, shaking and vibration.
6. Biofeedback.
7. Ventilator: concepts, physiological effects and complications
8. Respiratory therapy equipments and adjuncts including : Humidification, Aerosol therapy and supplemental oxygen and oxygen delivery devices in respiratory diseases.
9. Functional adaptation.
10. Physiotherapy management in ICU.
11. Ventilatory facilitation techniques.
12. Principles and prescription of cardiac rehabilitation.
13. Principles and prescription of pulmonary rehabilitation.
14. Diabetes and exercises.

MPT CARDIOPULMONARY REHABILITATION
IInd YEAR
PAPER-3 CARDIO-PULMONARY REHABILITATION & ACUTE
CARDIO RESPIRATORY PRACTICE

Cardio Pulmonary Rehabilitation

UNIT 1

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 2

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. Detailed study of various aspects of cardiac rehabilitation.
4. Peripheral Vascular Diseases
5. Cardiac transplantation
6. Trauma to the chest

UNIT 3

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

UNIT- 4

Acute Cardio Respiratory Practice

- Goals and general basics of treatment
- Specialised expertised ICU Physiotherapy
- General clinical aspects of management of ICU patients

- Importance of team work and infection control
- ICU management of primary cardiopulmonary dysfunction
- Principles and application of ICU equipments
- Oxygen administration, principles and technique
- CPR

UNIT-5

Fitness training and Health promotion

Fitness, definition, aspects and parameters for testing.

Scientific basis for exercise programs

Stress modifications by exercise

UNIT 6

1. Fitness for cardiac patient's normal and abnormal cardiac activity and effects on cardio vascular system
2. Exercise testing - principles of testing and prescription for individuals

UNIT 7

1. Effects of various exercise regimen on body
2. Nutrition and fitness

MPT OBSTETRICS & GYNAECOLOGY
IInd YEAR
PAPER-1 MEDICAL & SURGICAL GYNAECOLOGY

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 clinical 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, aging 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.

UNIT I

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

Physiology of female reproductive system.

Menstrual cycle and its integration.

Anatomy and development of Breast.

Physiology of urinary and faecal continence.

UNIT II

Gynecological infections.

Pelvic inflammatory diseases.

Cyst and new growth in reproductive system.

Endometriosis.

Polycystic ovarian syndrome. (PCOS)

Pelvic pain.

Infertility.

Menstrual abnormalities.

Contraception and family planning.

UNIT III

Urogynaecology – Urinary dysfunction.

Bowel and anorectal function and dysfunction.

Gynaecological surgeries.

Puerperal sterilization.

Abortion and its types.

Breast cancer its screening procedures.

Mastectomy.

Types of Prolapse.

Menopause and osteoporosis.

Gynaecologic Problems in adolescent population.

Laparoscopy and laser surgeries in Gynaecological condition.

Hirsutism.

Incontinence scales.

Gynaecologic problems in Female athletes

MPT OBSTETRICS & GYNAECOLOGY
IInd YEAR
PAPER-2 CLINICAL OBSTETRICS

UNIT I

Preconception assessment and diagnostic test.
Developmental anatomy – Embryology in detail.
Diagnostic test during Pregnancy.
Physical and Physiological changes during Pregnancy.
Musculoskeletal changes during Pregnancy.
Common complication and discomforts during Pregnancy.
Stages and mechanism of labour.
Complication in labour.
Types of assisted deliveries.
Caesarean section.
High – risk Pregnancies.
Gestation trophoblastic diseases.
Intra Uterine Devices.
Gestational Diabetes Melitus.
Water birth.
PIH and eclampsia.

UNIT II

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

MPT OBSTETRICS & GYNAECOLOGY
IInd YEAR
PAPER-3 PHYSIOTHERAPY IN GYNAECOLOGY & OBSTERTRICS

UNIT I

Internal evaluation of PFM Grading, indication and contraindication.

Active Pelvic floor muscle exercises.

Impairment of Pelvic floor muscles and its PT management.

Levator ani syndrome, coccydynia and its PT management

Vulvodynia, vaginismus, anismus and its PT management.

Dyspareunia and its PT management.

Pre and post Physiotherapy management for Gynaecological Surgeries.

Physiotherapy in Obstetrics

UNIT 2

Antenatal classes.

Swiss ball in Pregnancy.

Electrotherapy modalities in obstetrics.

Physiotherapy in labour.

Breast feeding positions.

Episiotomy and its PT management.

UNIT 3

Perineal massage.

Breast engorgement and its PT management.

Aerobics.

Weight training in Pregnancy.

UNIT 4

Physiotherapy management of oedema in Pregnancy.

Physiotherapy management of GDM, High risk Pregnancy.

Water birth.

Management of common problem in Antenatal period.

PT management of diastasis recti.

MPT PAEDIATRICS IInd YEAR

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.

Appreciates 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

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 science.

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.

MPT PAEDIATRICS IInd YEAR

PAPER-1 Physiotherapy for Paediatric Neurological Conditions

1. Physiotherapy for Paediatric Neurological conditions

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 and post Polio syndrome
6. Muscular Dystrophy
7. Hydrocephalus
8. Infections of CNS- Bacterial and Viral infections
9. Infantile Hemiplegia.

1. Growth and development

UNIT III

1. Growth and 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.

MPT PAEDIATRICS IInd YEAR
PAPER-2 Physiotherapy for Paediatric Orthopaedic Conditions

UNIT I

1. Principles of laboratory investigation for differential diagnosis.
2. Genetic basis of paediatric disorders, counseling

UNIT II

1. Describe the various congenital and acquired orthopaedic problems in children and its medical, surgical and PT management.
2. Management of Musculoskeletal Impairments: JRA, Limb Deficiencies, Amputation, Osteogenesis imperfecta, Arthrogyposis multiplex congenital, Hemophilia, The Burn unit.

MPT PAEDIATRICS
IInd YEAR
PAPER-3 Physiotherapy for Paediatric Cardio Respiratory
Conditions

UNIT I

1. Concepts and principles of various approaches
2. Bobath approach
3. Motor Relearning Program
4. Vojta approach
5. Clinical reasoning and clinical decision making
6. Rational of plan of treatment
7. Sensory Integration

UNIT II

1. Intensive care management of high risk babies.
2. Describe the various congenital and acquired cardiac diseases in children and its medical, surgical and PT management.
3. Describe the various respiratory problems and its medical, surgical and PT management.
4. Neonatal care; risk babies and management

MPT SPORTS REHABILITATION
IInd YEAR
PAPER 1-TRAUMATOLOGY: ORTHOPAEDIC AND
COMMUNITY MEDICINE – PHYSICAL THERAPY

Course objective:

1. ANALYSE AND INTERPRET VARIOUS SPORTS INJURIES\PATHOMECHANICS AND APPLY APPROPRIATE THERAPEUTIC TECHNIQUES ON AND OFF THE FIELD
2. DEVISE AND MODIFY VARIOUS EXERCISES FOR SPORTS PERSONNEL AND PREVENT INJURIES BY APPLYING PROPER DYNAMICS DURING PLAY
3. ANALYSE THE EFFECT OF THERAPEUTIC MODALITIES , INDICATIONS AND CONTRAINDICATIONS AND PRECAUTION TO ENSURE SAFETY.
4. DEMONSTRATE SKILLS OF ASSESMENT AND MANAGEMENT IN BOTH ACUTE AND LONG STANDING INJURY CONDITION.
5. CARRY OUT RESEARCH IN PARTICULAR ASPECT/ SPECIFIC EVENT BASED ON BIOMECHANICAL AND PHYSIOLOGICAL AND OTHER VARIABLES

Unit I. Assessment Principles: Detailed physical assessment of spine , hip and thigh, knee and leg, foot and ankle, shoulder and arm, elbow and forearm, wrist and hand.

Unit II. Common back problems and injuries: PIVD, Spondylosis, Spondylolisthesis, spinal stenosis, postural strain, back injuries in sports, ankylosing spondylitis , scoliosis, whiplash injuries, cervical spine etc.

UNIT III. Hip and thigh problems and injuries: perthes disease, coxa vara, ligament and muscles injuries in sports, irritable hip, arthritis, congenital dislocation of hip etc

UNIT IV. knee and leg problems: arthritis, genu valgum and varum, meniscal injuries, ligament and muscle injuries, loose bodies , bursitis etc

UNIT V. ankle and foot problems and injuries: pain in heel, pain behind heel plantar fasciitis, corton's neuralgia, pes planus and pes cavus, CTEV, muscle and ligament injuries.

UNIT VI. shoulder and arm problems and injuries: rotator cuff injuries, peri-arthritis, bursitis, neuroma.

UNIT VII. Elbow and forearm injuries and problem: cubitis valgus and varus, arthritis tennis and golfers elbow and other injuries

UNIT VIII. Wrist and hand claw hand ,duptyrens contracture, trigger finger, arthritis, dequevrains, disease base ball finger etc.

UNIT IX. Common fractures and dislocations: fractures and dislocations of upper limb, lower limb, spine and stress fractures

UNIT X. Diagnosis and management of skin condition of athelets: fungal infection boils, cellulitis, sunburn etc.

UNIT XI. Female specific problem: sports amenorrhea, injury to female reproductive tract mensutrual problems, eating disorders , osteoporosis etc.

UNIT XII. Common diseases: common cold , fever, diarrhea, dysentery, amoebiasis , sore throat, stress ulcers , skin infections etc

MPT SPORTS REHABILITATION IInd YEAR

PAPER 2- FUNDAMENTALS IN SPORTS

Unit I: Brief idea about some common sports: terminology , methodology rules, equipments and infrastructure.

Basket ball, hockey, tennis, badminton, table tennis, wrestling, boxing , track and field, gymnastics , volleyball, basketball, aquatic sports.

Unit II: Physics in sports types of motions, distance, speed , velocity, angular motion, acceleration , inertia ,mass, laws of motion, force and its characteristics, classification of force system, force couple composition and resolution of force system, function , projectile motion, levers and fluid mechanics.

Unit III: Biomechanics

Biomechanics of running

Biomechanics of throwing

Biomechanics of swimming

Biomechanics of jumping

Introduction to analysis equipment

Unit VI: Misc

Psychological aspects in sports

Spirit and moral values, doping in sports and performance enhancing drugs.

Special aids in performance

Body composition, its analysis and effects in sports

Protective equipment in sports

MPT SPORTS REHABILITATION IInd YEAR

PAPER 3- REHABILITATION IN SPORTS

Unit I : Physiological responses to exercises: Exercise effect on metabolism, muscle fatigue, respiratory and cardiovascular changes, second wind, electrolyte regulation during sports etc.

Unit II: Responses to injury muscle trauma contusions, strains and rupture, effects of immobilization and detraining, bone trauma, ligament and tendon injuries structure, mechanical properties and injury to articular cartilage, relationship b\w injury and nervous tissue, DOMS.

Unit III: Prevention of injuries risk factors in sports(intrinsic and extrinsic) strategies of injury prevention.

Unit IV: Injury evaluation and management sporting emergencies, onfield assessment, clinical assessments, principles of management(acute management, remodeling and conditioning , maintainance of fitness and rehabilitation).

Fitness testing and analysis, flexibility defects and its correction, strength training for children and adolescents, environment effects on training, exercise testing and prescription.

Unit V: Nutrition in sports requirements of atheletes, diet planning, need for individuals sports, pre-game meal, carbohydrates loading.

Unit VI: Training in sports various techniques like plyemortics etc, in sports training

Unit VII : Some injuries related to some common & popular sports and their management

1. Injuries in foot ball and soccer
2. Track and field
3. Long distance running
4. Aquatic sports
5. Baseball and cricket
6. Basketball & volleyball
7. Hockey
8. Table tennis
9. Badminton and tennis
10. Gymnastics

MPT SPORTS REHABILITATION IInd YEAR

PAPER 4- PRACTICALS

TOTAL HOURS OF PRACTICAL EXAMINATION WILL BE 6 HOURS

1. Two large cases- 30 marks each
2. One small case- 10 marks

Large case for example: Massive trauma of soft tissues

Small cases for example: Tendinitis, bursitis etc

Following procedures will be included in practical examination

1. Assessment
 - a) Physical
 - b) clinical
 - c) Pathological
 - d) other investigations
2. Differential diagnosis & its reason
3. Treatment : physiotherapy management & advanced technique application
4. Home programme

RECOMMENDED BOOKS

APPLIED ANATOMY, KINESIOLOGY & BIOMECHANICS

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

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

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

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

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

EXERCISE PHYSIOLOGY & ELECTRO PHYSIOLOGY

Text Book of work Physiology - Guyton, Prim Books Bangalore

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

Exercise Physiology - Mc Ardle Katch, Katch.

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

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

Manual of Nerve conduction velocity techniques - DE HSA, Raven Press, New York. Electrodiagnosis in Diseases of Nerve & Muscle - Kimura FA Davis, Philadelphia.

PHYSICAL & FUNCTIONAL EVALUATION

Physical Assessment & Rehabilitation (Susan O' Sullivan) Fifth Edition.

Clinical Teaching in nursing education (Dorothy E, Relly) Second Edition.

Code of Ethics – IAP.

Hospitals and Nursing homes planning, organisation & management by (Syed Amin

Tabuh) – First Edition.

Fundamentals of Nursing by (BT Basavanthappa) Second Edition.

Physical Agents by (Cameroon).

Nursing administration by (BT Basavanthappa) Fifth Edition.

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

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

Bio-feedback J.Y. Basmajain.

EVIDENCE BASED PRACTICE

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

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

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

Elements of Research in Physical Therapy - Currier D.P., Williams & Wilkins, Baltimore 1990 Eds.

Hand Book of Research Method - Sproull, Scarecrow Press, 1998.

Physical Therapy Research - Domholdt, WB Saunders, Philadelphia, 1993.

MPT IN ORTHOPAEDICS

Orthopaedic Physical Therapy - Donattelli, London, Churchill Livingstone, 1994.

Gait Analysis - Perry J. Black Thorofare, Newjersey 1992.

Myofascial Pain & Dysfunction - Travell, Williams & Wilkins, Baltimore, 1983.

Physical Therapy of the Low Back - Tuomoy, Churchill, Livingstone, London, 1994.

Vertebral Manipulation - Maitland, G.D. Boston, Butter Worth & Co. Boston 1997.

Peripheral Manipulation - Maitland G.D. Boston, Butter worth & Co. Boston 1997.

Hand Rehabilitation - Christine - Churchill, Livingstone, London 1995.

Mechanical Diagnosis and Therapy - Robin Mckenzie.

Aspects of Manipulative Therapy - (Glasgow, Twomey) Churchill Livingstone.

Saunders's Manual of Physical Therapy (Mosby).

Common Vertebral Problems - Grieve (Churchill Livingstone).

MPT IN NEUROLOGY

Darcy A Umphred Ph.D. PT – Neurological Rehabilitation (Fourth Edition).

Susan B. O' Sullivan. Physical Rehabilitation Assessment and Treatment (Fifth Edition)

Prof. Maria Stokes – Neurological Physiotherapy.

U.K. Misra J Kalita - Clinical Neurophysiology.

Richard S. Snell – Clinical Neuroanatomy for Medical students.

Helen Cohen – Neurosciences.

Susan Campbell – Physical Therapy for children.

Tecklin – Paediatric Physical Therapy.

Treatment of CP and Motor delay – Sophia Levitt.

Neurological Physiotherapy - Susan Edward.

Stroke Patient - Principles of Rehabilitation - John Stone (Churchill Livingstone).

Motor Relearning Programme for Stroke - Carr & Shepherd.

Adult Hemiplegia - Bobath & Bobath.

Neuro Rehabilitation - Farber, WB Saunders, Philadelphia.

The Neural Basis of Motor Control - Black I, Churchill Livingstone, London, 1987.

Tetraplegia & Paraplegia - IDA Bromley, Churchill Livingstone, Edinburgh, 1991.

Proprioceptive Neuro Muscular Facilitation Techniques Knot M. and Voss, Harper and Row, New York 1972.

De Jong's the Neurological Examination, Armin F. Haerer Lippincott - Raven.

Abnormal Postural Reflex Activity caused by Brain Lesions. Bobath B. Aspen, Publications Rockville, 1987.

Spinal Cord Injuries - Orthopaedic & Neurological Aspects A.G. Hardy & Rossier A.B.

MPT IN CARDIOPULMONARY SCIENCES

Cardiopulmonary Physical Therapy - Irwin & Tecklin (Mosby).

Cardiopulmonary Rehabilitation - Barbara.

Cardiopulmonary Rehabilitation - Frown Felter & Dean.

Chest Physiotherapy in Intensive Care Unit - Makezie, Williams & Wilkins,
Baltimore.

Cardiopulmonary symptoms in Physiotherapy - Cohen M, Churchill, Livingstone,
London 1988.

A Manual of Neonatal Intensive Care - Robert NRC, Edward Arnold, London 1986.

Cardiopulmonary Equipments - David Eubanks & Bone.

Clinical Nutrition - Davidson.

Exercise Physiology and Physical Education in Athletics - Fox and Mathews.

MPT IN PAEDIATRICS

Physical therapy for children - Susan K. Campbell.

Paediatric Physical therapy - Tecklin.

Treatment of Cerebral palsy and motor delay – Sofia Levit.

Neurological Rehabilitation – Umphred.

Text book of Paediatrics – Guptha.

Cardio Pulmonary Rehabilitation – Elizabeth Dean

Motor relearning Program – Carr & Shepered.

MPT IN SPORTS PHYSIOTHERAPY

Clinical Sports Medicine by Peter Brukner and Karim Khan.

The American Orthopaedic Society for Sports Medicine 1988.

Anderson T. Biomechanics and running economy – Sport Medicine 1996.

Cameron MH. Physical agents in Rehabilitation WB Saunders 1999.

Physical Rehabilitation of Injured Athlete – Andrews J.R, Haulson GL.

The athlete Shoulder. Andrews J.R. WILR KE.

Frostic R.SP, Mohammed M, Ritchie. DA, Sports Injuries of Elbow.

Maitland G.D. Vertebral Manipulation.

Geraci. MC. Jr. Rehabilitation of Pelvis, hip, and thigh injuries in sports.
Mc Comell J, Patellofemoral Pain and Soft tissue injuries.
Sports Rehabilitation - MA Hutson (Churchill Livingstone).
Clinical Sports Medicine - Isani and Melone.
Sports Medicine - Shellock, Mink & Deutsh.
Encyclopaedia of Sports Sciences & Medicine - American College of Sports
Medicine.
Food for Sports - N.J. Smith.
Strength Training - D.P. Riley.
Sports Injury, Assessment & Rehabilitation David C. Reid.
Sports Injuries of the Shoulder - Souza Thomas. A. Churchill, Livingstone, London
1994.
Sports & Physical Therapy - Bemhardt Donna, Churchill, Livingstone, London
1995.

BIOMECHANICS

Biomechanical Basis of Human Movement - Joe Hamill and Knutsen, Publishers
Williams & Wilkins.
Gait Analysis - Perry J. Black Thorofare, Newjersy 1992.
Clinical Biomechanics of Spine White A.A. and Punjabi - J.B. Lippincot,
Philadelphia.
Kinesiology of Human Body Under Normal and Pathological conditions Arthur
Steindler.

HAND REHABILITATION

Hand Rehabilitation - Clark W.
Hand Rehabilitation - Toubiana.
Hand Rehabilitation - Wyn Parry (Butterworths)
The Hand: Principles & Techniques of Splint Making in Rehabilitation - Barr N.R.
(Butter Worths).

Hand Pain & Impairment R. Caillet (F.A. Davis & Co.)

Hand Rehabilitation - Christine - Churchill Livingstone, London, 1995.

MPT IN OBSTETRICS & GYNAECOLOGY

Physiotherapy in Obstetrics & Gynaecology - Polden & Mantle, Jaypee Brothers,

New Delhi, 1994.

Obstetrics & Gynaecologic Physical Therapy - Wilder Elnine, Churchill,

Livingstone, New York, 1988.

Women's Health - Sapsford, Publisher Lippincott.

JOURNALS

Journal of Orthopaedic & Sports Physical Therapy (Jospt).

Journal of American Physical Therapy.

Australian Physiotherapy Journal.

American Journal of Sports Medicine.

British Journal of Sports Medicine..

Physiotherapy (Canada).

Paediatric Physical Therapy.

Journal of Chartered Society of Physiotherapy.

Indian Journal of Cerebral Palsy.

American Journal of Physical Medicine & Rehabilitation.

American Journal of Sports Exercises.

Archives of Physical Medicine & Rehabilitation.

Clinical Rehabilitation.

Physical Therapy.

Stroke.