MASTER OF PHYSIOTHERAPY PROGRAM
AT
VINAYAKA MISSION’S RESEARCH FOUNDATION
DEEMED TO BE UNIVERSITY

CURRICULUM & SYLLABUS

FOR MPT REGULATIONS 2015

FROM ACADEMIC YEAR
2015- 16 ONWARDS
I - SEMESTER
PHYSICAL MODALITIES & P.T. PRACTICE (120 HOURS)

COURSE OUTCOME

At the end of this course, the student will able to

- Explain the working physiological & therapeutic effects of various physical modalities in oral & written format effectively.
- Demonstrate the various physical modalities in patients supervision precisely.
- Explain the principles involved in planning, development and administration of a physiotherapy department in written format effectively.
- Explain the laws and ethics in Physiotherapy in written format effectively.

COURSE OUTLINE

1. PAIN

Definition, types, causes, pain perception, theories of pain, management of pain, recent advances in physiotherapy for the management of acute chronic pain.

2. FARADIC & GALVANIC

Physiological effects, indications, contra indications, therapeutic effects role of these currents in muscle re-education & pain management.

3. TRANSCUTANEOUS ELECTRICAL NERVE STIMULATIONS:

Principles, physiological effects, therapeutic effects, its benefits in obstetrics, cancer pain, postoperative pain and non healing fracture.

4. DYNAMIC CURRENTS:

Physiological effects, indications, contraindications, methods, of application dosage.
5. IONTOPHORESIS:

Direct current, strength of solution, common drugs in usage today, apparatus used, indications, contraindications, dosage methods- incontact, subaquatic, Iontophoresis techniques-Treatment of hyperhydrosis, calcific tendinities, allergic vasomotor rhinitis- side effects, contraindications, technique.

6. INTERFERENTIAL THERAPY:

Interferential currents, principles of interferential therapy, physiological effects, Uses of Interferential therapy.

7. SHORT WAVE DIATHERMY:

Physics, biophysical and biochemical effects, therapeutic effects, indications, dangers, precautions, application of inductothermy.

Pulsed short wave diathermy-biological effects, indications, contraindications, techniques of application, advantages, disadvantages.

8. MICROWAVE DIATHERMY;

Physics of microwave diathermy, Biophysical, Biochemical, therapeutic effects, dosage, indications, contraindications, techniques, dangers, precautions, method of application, advantages, disadvantages, pulsed microwave diathermy.

9. ULTRASONIC THERAPY:

Medical frequencies of ultrasound, production of ultrasound, physical phenomena of ultrasound, coupling media, pulsed ultrasound, physiological effects of ultrasonic energy, indications, contraindications, dangers, dosage, methods of application, technique of application in contact methods, uses of sub aquatic method.
10. ULTRAVIOLET THERAPY:

Ultraviolet for medical use, physiological effects, therapeutic effects, dosage-calculation of dosage progression of dosage, indications, PUVA regime, contraindications, applications using Air-cooled lamps, kromayer lamp, dangers.

11. INFRARED RADIATION

Physics, apparatus for infrared heating, physiological effects, indications, contraindications, technique of application, advantages, disadvantages.

12. LASER THERAPY:

Cold laser production, physical characteristics, physiological effects, dosage, pain control, indications and contraindications

13. HOT PACKS:

Hydro collator packs, temperature maintenance, physiological effects, methods of application, uses, advantage and disadvantages.

14. PARAFFIN WAX BATH;

Methods of application – immersion, brushing, equipments required, physiological and therapeutic effects, uses and precautions

15. FLUIDOTHERAPY:

Equipment required methods of application, physiological effects, therapeutic uses, benefits of the therapy.

16. CONTRAST BATH:

Equipment use, method of application, indications, contraindications, physiological effects, therapeutic uses.
17. CRYOTHERAPY:

Cold packs, ice bags, ice massage, ice towels, compressive cryotherapy, vapocoolant sprays-therapeutic effects, uses in sports medicine, spasticity, management, therapeutic uses.

18. HYDROTHERAPY:

Physical laws of water, physiological effects of hydrotherapy, equipment, environment, hygiene, treatment time and temperatures, safety considerations, advantages and disadvantages.

19. TRACTION:

Types of spinal traction-continuous, intermittent, manual, auto traction, gravity lumbar traction, indications for spinal traction, contraindications, effects of traction, mechanical lumbar traction technique, cervical traction technique.

20. MECHANICAL EXTERNAL COMPRESSION

Causes of edema, pathophysiology of edema, types of edema, methods of external compression-taping, intermittent compression, elastic support bandaging, gradient support, massage, exercise – physiological effects, therapeutic uses, patient education.

21. P.T. PRACTICE

Physiotherapy department planning & management – policies and procedure- recruitment, interview, orientation probationary period, salary hours of work, leave facilities, retirement, referred policy, equipment maintenance records, statistics functioning, department planning design and construction, planning and innovation, growth and expansion, type and size of hospital, services and activities, space requirements, number of functional area elements, occupancy time, gymnasium, patient waiting areas, storage facilities, lighting and floor surfaces.
22. PHYSICAL THERAPY AND LAW:

Medico-legal aspects of physical therapy, liability, negligence, malpractice, licensure, workman’s compensation.

23. P.T. ETHICS:

Morals and ethics, Ethical analysis of moral problems, Ethical issue in physical therapy, Rules and regulations of Indian Association of Physiotherapists, Ethical rules, Aims and objectives of Indian Association of physiotherapists.
COURSE OUTCOME

At the end of this course, the student will be able to

- Explain the scope of statistics and data collection methods in written format effectively
- Describe the statistical methods and probability & sampling methods in written format effectively.
- Discuss the inferential statistics, vital & health statistics in written format effectively.
- Elaborate the research process and criteria of good research in written format precisely
- Summarize the various teaching methods, curriculum development & evaluation in written format effectively.
- Describe the principles, types and concepts of guidance & counselling in written format correctly.

BIO-STATISTICS (50 HOURS)

COURSE OUTLINE

1. INTRODUCTION

2. STATISTICAL METHODS

Statistical data, Tabulation, Calculation of central tendency and
dispersion, Correlation and regression.

3. PROBABILITY AND SAMPLING

Probability as a mathematical system, Types of population and samples,
Sampling distribution and sampling methods.

4. INFERENTIAL STATISTICS

Point and interval estimation, hypothesis testing, simple test of
significance.

5. VITAL AND HEALTH STATISTICS

Use of vital and health statistics in the practice of Physiotherapy.
Sources and methods of collection and recording, interpretation of
commonly used vital and health statistics.
RESEARCH METHODOLOGY (100 HOURS)

COURSE OUTLINE

1. Meaning of research, objectives, motivation & types of research
2. Research process and criteria of good research.
3. Problems encountered by researchers in India
4. Defining the research problem
5. Formulation of hypothesis
6. Research design & sampling design
8. Validity & reliability
9. Analysis of data.
10. Pilot study

11. Role of computer in research and ethical concepts.

12. Introduction: History of Physiotherapy research before 1900
   1900-1950
   1950—present

13. Practical application in research process

   Selection and statement of problem and hypothesis, Review of
   literature, Selection of research design,
   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,
   & Pilot study
PT EDUCATION (100 HOURS)

COURSE OUTLINE

1. EDUCATION & PHILOSOPHY

Aims, Philosophy and trends and issues in education including:
Educational aims, Agencies of education, Formal and informal education,
Major philosophies of education (naturalism, idealism, pragmatism,
realism) including Gandhi and Tagore, Modern and contemporary
philosophies of education (existentialism, progressivism,
reconstructionism, perennialism)
Philosophies of education in India-past, present and future.
Role of educational philosophy.
Current issues and trends in education

2. CONCEPTS OF TEACHING AND LEARNING

Principles of learning, Theories of teaching, relationship between
teaching and learning, psychology of education, Dynamics of behavior,
motivational process in learning, perception, individual differences,
intelligence and personality.

3. CURRICULUM:

Curriculum committee, Types of curriculum, formation of philosophy,
course objectives, course placement, time allotment,
Selection and organization of learning experience, Master plans of
courses, Master rotational plan-individual rotational plan, correlation of
theory and practice, current trends in curriculum planning

4. TEACHING METHODS

Principles and methods of teaching, Strategies of teaching, writing lesson
plans, Audio-visual aids, and teaching methods- socialized teaching
methods
5. EVALUATION

Nature of measurement and evaluation, meaning, process, standardized & non-standardized tests- formative and summative evaluation.
Taxonomy of cognitive, affective and psycho motor domains.
Construction of achievement test - Essay type short answers Multiple Choice Questions

6. GUIDANCE AND COUNSELLING

Philosophy, principles and concepts,
Need for guidance-objectives of guidance-kinds of guidance-educational, vocational, personal and social.
Types of counseling- directive, non-directive, eclectic and group counseling.
Guidance and counseling services for students

7. FACULTY DEVELOPMENT

Faculty development and development of personnel for physiotherapy services.

8. PRACTICAL

1. Prepare a philosophy, overall and behavioral objectives for a basic physiotherapy program.
2. Design a curriculum for a basic physiotherapy program.
3. Plan a unit of instruction for a course in a selected specialty of physiotherapy. Prepare a lesson plan and conduct classes.
4. Construct a written objective type test for the lessons you have taken.
5. Prepare a plan for evaluating the students of physiotherapy
6. Internal Assessment tests in all topics
7. Methods of teaching - lectures, Seminars, Discussion
ADMINISTRATION, SUPERVISION, ETHICS (40 HOURS)

COURSE OUTCOME

At the end of this course, the student will be able to

- Enumerate the ethics of professional practice
- Discuss the moral & legal aspects in professional practice.
- Describe the basics in managerial skills & use of information technology in professional Practice

COURSE OUTLINE

SECTION-I-PROFESSIONAL ISSUES (INCLUDING ETHICS)

2. Constitution & Functions of the Indian association of Physical therapists
3. Functioning of the World Confederation for Physical therapy (W.C.P.T.) & its various branches – special interest groups
4. Role of World Health Organization & World Confederation for Physical Therapy

SECTION-II-ADMINISTRATION/MANAGEMENT & MARKETING

1. Management: Studies related to local health care organization, management structure, planning, delivery with quality assurance & funding of service delivery, Information technology, Time management, Career development in physiotherapy
2. Administration: Principles based on the goal & functions at large hospital set up / domiciliary services/private clinic/academic
3. Methods of maintaining records
4. Equipment maintenance
5. Budget planning
6. Performance analysis, physical structure/reporting system
II - SEMESTER
BIOMECHANICS AND KINESIOLOGY (120 HOURS)

COURSE OUTCOME

At the end of this course, the student will be able to

• Describe the physical properties of bones, muscles and articular cartilages in written format clearly
• Explain the functional adaptation of bone under pathological conditions effectively
• Describe the mechanics of joints and muscle actions in written format effectively
• Elaborate the anatomy, dynamics and Pathomechanics of all the joint complexes in written format effectively.

COURSE OUTLINE

1. PHYSICAL PROPERTIES OF BONE:


2. FUNCTIONAL ADAPTATION OF BONE UNDER PATHOLOGICAL CONDITIONS:

   Static conditions: Mortin’s syndrome, Rachitic coxa vara, Tibia vara, Traumatic conditions, congenital deformities.

3. PHYSICAL PROPERTIES OF NORMAL CARTILAGE:

   Stress and structure, elasticity, deformation and pressure, patho kinetics of cartilage
4. PHYSICAL PROPERTIES OF MUSCLES:

Elasticity and contractility of muscle, Electro Physiology of muscle, contraction length, Physical properties of ligaments and tendons.

5. MECHANICS OF JOINT:

General mechanical principles, shape of the articular surfaces, joint contact, type of joint movement, degrees of freedom of motion, kinetic chain.

6. MECHANICS OF MUSCLE ACTION:

Stabilizing and rotatory components, leverage and equilibrium, morphological adaptation of muscle, co-ordination of skeletal muscle action, bi-articular muscles.

7. BODY BALANCE AND BODY EQUILIBRIUM.

Translatory effect of the force of gravity, rotatory effect of gravity, center of gravity of human body, location of center of gravity.

8. SHOULDER COMPLEX:

Describe the following:

Physiology of shoulder, codman’s paradox, Instantaneous centers of rotation, capsule and ligaments of shoulder, sternoclavicular articulation-
Articular surfaces movements, scapulo-thoracic articulation- movement of the shoulder girdle, gleno-humeral articulation- Anatomy, capsule and ligaments, circular polar movement of the shoulder joint. Dynamics of shoulder complex - Translatory movements of the shoulder blade, rotatory movement of the shoulder blade, physiology of adduction, scapulohumeral rotation.

Pathomechanics of paralytic shoulder:

Paralysis of the trapezius, paralysis of the serratus anterior, paralysis of Rhomboids, paralysis of deltoid, , paralysis of supraspinatus, paralysis of the subscapularis, paralysis of pectoralis major, paralysis of lattismus dorsi. Kinetic point of view – operations for paralysis of trapezius , serratus anterior, deltoid.
9. ELBOW JOINT:

Ligaments, articular surfaces, range of movements, pronation – supination, functional anatomy of inferior radio-ulnar joint, dynamics of superior radio-ulnar joint, position of function and compensatory movements.

Patho mechanics of paralytic elbow:
Paralysis of extensors of elbow, paralysis of flexors, transposition of forearm muscles, substitution by the triceps.

10. WRIST AND HAND:

Movements of the wrist, range of movements of the wrist, articular-surface of radiocarpal and midcarpal joints, ligaments of radio- carpal joint. Dynamics of the carpus, lunate pillar, scaphoid-lunate couple, Functional pattern of wrist motion,, paralysis of wrist extensors, paralysis of wrist flexors.

Topography of hand, Architecture of the hand, metacarpophalangeal joints, ligaments range of movements, interphalangeal joints,-ligaments, tunnels, synovial sheaths of the flexor tendons, geometry of the opposition of the thumb.
Modes of prehension-Terminal opposition, subterminal opposition, subterminal – lateral opposiion, tridigital grips, tetradigital grips, pentadigital grips, palmar grips, dynamic grips.

Pathokinetik of paralytic disabilities:
Paralysis of finger extensors and flexors, paralysis of interrossei and lumbricals, tendon transplantation in flexors and extensors. Arthrodesis of the wrist combined with tendon transplantation-kinetic analysis. Analysis of movements under open kinetic chain conditions – Balk Throwing, Discus throwing, shot putting, movement of the upper extremity in a closed kinetic chain, weight lifting and boxing.

11. HIP JOINT:

Movements of the hip and their ranges, movements of the circumduction of the hip, capsule and ligaments of the hip, muscular and bony factors affecting stability of the hip. Inversion of muscle action. Architecture of
femur, analysis of the static forces operating upon the femur, static pressure and shear effects produced by muscle action, muscle dynamics.

Pathomechanics:


12. KNEE:


Pathomechanics of static deformities

Genu valgum- static factor, dynamic factor, static genu varum, static genu recurvatum, mechanics of tibial torsion.

Pathomechanics of the paralytic knee:

Extensor paralysis, Flexor paralysis of the knee, methods of reconstruction of genu recurvatum. Fasciodesis, Tenodesis, Osteoplastic – Arthrodesis, Reconstruction of the paralytic Genu valgum, reconstruction of flexor contracture.

13. ANKLE AND FOOT:

Joint complex of the foot, articular surfaces of the ankle, ligaments of ankle, antero posterior stability of the ankle and factors limiting flexion and extension. Transverse stability of ankle tibiosfibular joints, construction of
the arches, Axes of the joint of the foot, internal architecture of the foot, ligamentous reinforcements of the articularis.

Describe the subtalar joint, articular surfaces, ligaments of subtalar joints, transverse tarsal joint, movements of subtalar joints, muscles deformities of the foot, cuneonavicular, torsometatarsal joints, fibrous tunnels of the dorsal and plantar aspects of the foot, general architecture of the plantar vault, three arches of the plantar vault - medial arch, lateral arch, anterior arch, distribution of stresses and static distribution of the plantar vault, dynamic changes of the arches of the foot during working dynamic changes of the arches of the foot during working dynamic changes related to the medial and lateral rotation of the leg on the foot.

Pathomechanics or the static deformities of the foot and ankle:

Development factors, pathological equilibirium- pronated foot, instability of the subtalar joint, pathomechanics of the foot structures: pes cavus, pes planus.

Pathomechanics of the paralytic foot and ankle:

Talipes equino varus sub talar joint, midtarsal joint, arthrodesis of paralytic joints for the establishment of equilibrium, stabilization of the ankle, single arthrodesis, double joint arthrodesis and three joint arthrodesis.

14. ERGONOMICS:

Work capacity analysis, role of physiotherapy in industrial set up, job site paralysis, pre-employment screening, worker’s functional capacity assessment, work hardening program, industrial therapy, postural examination, job task analysis, educational program for prevention of injury, adult education, documentation
EXERCISE PHYSIOLOGY & ELECTRO PHYSIOLOGY

COURSE OUTCOME

At the end of this course, the student will be able to

- Determine the processes of aerobic & anaerobic exercises in written format effectively
- Elaborate the evaluation of aerobic & anaerobic power in written format precisely
- Illustrate the principles, effects of training & recovery after exercise and contraindication to physical training effectively.
- Describe the physiology, physiological changes and adaption of cardiovascular, respiratory and circulatory system during exercise precisely
- Discuss about the applied work physiology in written format effectively
- Describe the conditions with abnormal motor unit potentials in written format precisely
- Comprehend the motor & sensory conduction studies in written format effectively.
- Discuss the nerve conduction changes in peripheral neuropathies precisely.
- Describe the general principles, polarity, methodology & uses of somatosensory evoked potentials in peripheral plexus injuries precisely
EXERCISE PHYSIOLOGY (100 HOURS)

COURSE OUTLINE

1. INTRODUCTION

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

2. AEROBIC & ANAEROBIC EXERCISE

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.

3. 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.

4. PHYSICAL TRAINING:

Training principles, continuous versus intermittent exercise training methods & biological long-term effects of training, isometric strength training, dynamic strength training. Training of aerobic power, training of anaerobic power. Peripheral adaptation to aerobic training. Endurance training, retraining, recovery after exercise, contraindications to physical training.
5. CARDIOVASCULAR & CIRCULATORY SYSTEM

Cardiac cycle – pressure during cardiac cycle, Hemodynamics mechanical work and pressure, hydrostatic pressure, flow and resistance, various-capillary structure and transport mechanism, filtration & osmosis, vascularisation of Skeletal muscles, regulation of circulation during exercise, cardiac output & O₂ uptakes –stroke volume, blood pressure.

6. RESPIRATORY SYSTEM:

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.

7. 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 labor.

8. FATIQUE:

General Physical fatigue, local muscular fatigue, shift work, effect of menstruation.

9. NUTRITION & PHYSICAL PERFORMANCE:

Nutritional requirements, 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.
10. 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’
ELECTRO PHYSIOLOGY (80 HOURS)

COURSE OUTLINE

1. INTRODUCTION & INSTRUMENTATION

Normal motor unit, action potentials, Abnormal motor units, Instrumentation, Surface electrodes- Needle electrodes-Types, intracellular electrodes, amplifiers, stimulator, cathode-ray oscilloscope, digital processing & Electrical safety.

2. METHOD OF EXAMINATION

EMG Examination during
- Muscle at rest,
- Insertional activity,
- Minimum effort,
- Maximum effort.
Quantitative methods in EMG
Action potential measurements, motor unit population.

3. ABNORMAL MOTOR UNIT POTENTIALS:

Motor neuron disease, hereditary motor neuron diseases poliomyelitis, muscular dystrophies inflammatory myotonias, metabolic myopathies.

4. MOTOR AND SENSORY CONDUCTION STUDIES

Physiology of nerve conduction, General factors affecting nerve conduction, Nerve stimulation-Latency, Amplitude, nerve conduction velocity. Special conduction techniques- H wave and F wave in Proximal conduction studies, standard motor conduction techniques of long thoracic nerve, radial nerve, ulnar nerve, median nerve, femoral nerve sciatic nerve peroneal nerve, tibial nerve, standard sensory conduction techniques, radial nerve, ulnar nerve, median nerve, lateral cutaneous nerve of thigh, saphenous nerve, Peroneal nerve tibial nerve, sural nerve, Blink reflex.
5. CONDUCTION STUDIES IN PERIPHERAL NEUROPATHIES

Nerve conduction changes in peripheral neuropathy, Electromyographic changes in peripheral neuropathies, Hereditary neuropathies-Toxic neuropathies, idiopathies, neuropathies, (Gullian-Barre syndrome) Chronic polyneuropathy, electrical study of Axon reflexes, Blink reflex, jaw jerks, Tonics Vibration Reflex.

Nerve Trauma and Compression Syndromes

Nature, and effects of nerve injury, course and prognosis, Brachial plexus lesions, Entrapment neuropathies, Median nerve (Carpal Tunnel syndrome) Ulnar nerve (Cubital Tunnel Syndrome), radial nerve meralgia paraesthetica, Tarsal Tunnel syndrome, EMG studies in Myasthenia gravis, Lambert – Eaton myasthenia syndrome, electro diagnosis in radiculopathy.

6. SOMATO SENSORY EVOKED POTENTIALS

General principles, Electrode placement, Polarity methodology for upper extremities studies, methodology for lower extremity studies, use of somato sensory evoked potentials in peripheral nerve problems, use of somato sensory evoked potentials in Brachial plexopathy, use of somato sensory evoked potentials for determining prognosis & Diagnosis.
DISABILITY EVALUATION AND COMPENSATION (40 HOURS)

COURSE OUTCOME

At the end of this course, the student will be able to
- Describe the concept of disability and its evaluation
- Discuss the eligible compensation of the disabled.

COURSE OUTLINE

• Definition of disability and the disability process
• Concepts of impairment, disability and handicap.
• Attitudes of person with disability, family and community
• Exercise of portrait of disabled person and experiencing disability.
• Needs of people in society
• Link between education, poverty and disability
• Status of persons with disability in India
• Background to social, political and economic issues in India and other low income countries. The effect on the poor who live in rural and urban areas.
• Disability and women
• Different approaches towards addressing the need of persons with disability
• The different models of working with persons with disability
• Introduction to disability issues, different acts, Government schemes and initiatives, legislation, and methods of accessing them.
• Environmental Barriers and promoting barrier free environment
• Simple methods to create a Barrier Free Environment in house, school, Roads, toilets, community levels.
• Methods of disability evaluation – Government of India’s notification, Government of Tamil Nadu notification, Mc Bride’s method, Phulhems profile, sensory impairment evaluation, Evaluation of respiratory function – Ability index – pulses profile, Kats index of Activities of daily living, Barthel Index, Modified Barthel Index, Kenny self care evaluation, functional classification of patients with diseases of the heart, vocational training.
• Compensation for different disabilities with regards to insurance and with regard to workman compensation act
COMMUNITY BASED REHABILITATION (70 HOURS)

COURSE OUTCOME

At the end of this course, the student will be able to

- To understand the need and importance for Community Based Rehabilitation;
- To understand the various components of CBR and to use all existing development programmes, for example, Primary Health Care (PHC) as a platform to build CBR services in a community.

COURSE OUTLINE

1. Meaning, scope, basic principles and strategies of Community Based Rehabilitation.
2. Difference between Community Based Rehabilitation and Institutional Based Rehabilitation.
3. Different team approaches in Community Based Rehabilitation.
4. Referral systems in Community Based Rehabilitation.
5. Building and use of existing resources of the community in sustaining Community Based Rehabilitation such as primary health, primary education, rural development and corporate sectors and development of referral and resource directory.
6. Screening for identifying disabilities and tools used in Community based rehabilitation.
7. Role of community in the prevention of disabilities.
8. Sensitization & mobilization towards community organization.
9. Organization and sustainability of Self Help Groups, bank loans to start self help groups, employment to set-up micro credit groups of persons with disabilities, and or to include persons with disabilities in the existing self help micro credit groups in the community.
10. Community health education and management.
11. Disaster management and response.
12. Record keeping & report writing.
EVIDENCE BASED PRACTICE AND CLINICAL REASONING IN PHYSIOTHERAPY (40 HOURS)

COURSE OUTCOME

At the end of this course, the student will be able to

- Explain the principles and importance of evidence based practice and clinical reasoning in physiotherapy practice.

COURSE OUTLINE

1. EVIDENCE BASED PRACTICE

Importance and need of Evidence based practice, Principles of Evidence based practice and Research in the field of physiotherapy, Application of Evidence based practice in professional day to day practice, Sources to search for evidence, Legal issues in practice.

2. CLINICAL REASONING & DIAGNOSIS

Definition of clinical reasoning, Steps in clinical reasoning process, Need for clinical reasoning in physiotherapy, Special tests & their sensitivity & reliability, Principles of physiotherapy diagnosis, Correlating clinical findings with investigations & Differential diagnosis.
III- SEMESTER
ADVANCED PT MANAGEMENT

COURSE OUTCOME

At the end of this course, the student will be able to

• Elaborate the principles and physiotherapy management of various orthopaedic, neurological and cardiothoracic conditions in oral & written format effectively
• Assess and identify the conditions of orthopaedic, neurological & cardiothoracic in patients under supervision precisely.
• Outline and plan the physiotherapy management for various orthopaedic, neurological and cardiothoracic conditions in patients under supervision.
• Demonstrate the physiotherapy management of various orthopaedic, neurological and cardiothoracic conditions in patients under supervision precisely

COURSE OUTLINE

ORTHOPAEDIC PHYSIOTHERAPY (100 HOURS)

1. FRACTURES AND DISLOCATIONS OF UPPER LIMB

Describe in detail the fracture humerus, forearm bones, colle’s fracture, hand bones and their medical and physiotherapy management and their complications. Total shoulder replacement – their medical and physiotherapy management. Anterior dislocation of shoulder and reconstructive procedures – Putti platt, Bankart repair, Magnusan, Stalk Bristow and its physiotherapy management.

2. ORTHOPAEDIC CONDITIONS OF UPPER LIMB

Rotator Cuff injuries, Bicipital tendinitis, supraspinatus tendinitis, Tennis Elbow, Trigger Finger, Periarthritis shoulder, Thoracic – outlet Syndrome, shoulder hand syndrome, carpal tunnel syndrome – physiotherapy management.
3. FRACTURES AND DISLOCATIONS OF LOWER LIMB

Describe in detail about the fracture neck of femur and their complication, fracture trochanter and their classifications, sub trochanteric fracture, shaft of femur, supracondylar fracture and intercondylar fracture of femur and its surgical and physiotherapy management.

Describe in detail the patellar fracture, patellectomy, intercondylar fracture of shaft of tibia, Pott’s fracture, calcaneal fracture, metatarsal fracture and its surgical and physiotherapy management.

The following operative procedures and its physiotherapy management: Total hip replacement, bipolar endoprosthesis, hemiarthroplasty, Richard’s compression plate technique, Jewett Nail Fixation, Total knee replacement, Anterior Cruciate Ligament reconstruction, Menisectomy.

4. ORTHOPAEDIC CONDITIONS OF LOWER LIMB:


5. FRACTURES AND DISLOCATIONS OF SPINE

Clinical features following fracture of vertebrae and its Steffi plate fixation, Harrington’s rod instrumentation, and conservative management. Describe the physiotherapy management following fracture spine.

6. ORTHOPAEDIC CONDITIONS OF SPINE:

Spondylolysis – Pathology, surgical and physiotherapy management. Intervertebral disc prolapse – Pathology, Traction, Surgery, physiotherapy management, back care, Lumbar spondylosis – Pathology, X - ray findings, physiotherapy management, Adolescent kyphosis,
Pott’s Paraplegia – Taylor’s brace, Steffi plating, decompression. Scoliosis- type, measurement, braces, operative correction and its physiotherapy management.

7. ARTHRITIS:

NEUROLOGICAL PHYSIOTHERAPY (100 HOURS)

COURSE OUTLINE

1. INTRODUCTION

Development and growth of central Nervous system, Anatomy of cerebrum, Cerebellum and spinal cord, disorders of motor system, Ageing of nervous system physiology of Cerebrospinal fluid its circulation and absorption,

2. INFECTIONS OF CENTRAL NERVOUS SYSTEM

Pyogenic infections: Bacterial meningitis, Brain abscess, Tuberculosis, Meningitis, Neurosyphilis - Clinical features, pathophysiology, medical, surgical & physiotherapy management,

Viral infections: Poliomyelitis Viral encephalitis, sub acute sclerosing encephalitis, Acquired Immuno Deficiency Syndrome - clinical features, pathophysiology, medical surgical & physiotherapy Management

3. CEREBRO-VASCULAR DISEASES:

Stroke syndrome, Ischaemic stroke infarction, thromboembolic stroke, Haemorrhagic stroke, transient ischaemic attacks, clinical features, pathophysiology, medical, surgical & physiotherapy management. Intra cranial haemorrhage, arterio-venous malformations of the brain - clinical features & physiotherapy management

4. INTRACRANIAL NEOPLASMS:

Gliomas, meningiomas, Neuroma Angiomas, craniopharyngiomas, Pituitary – Adenomas, surgical management & physiotherapy management

5. METABOLIC DISORDERS OF BRAIN:

Hypoxic encephalopathy, hypoglycemic encephalopathy, Hepatic encephalopathy - clinical features, pathophysiology, medical and physiotherapy management.
6. DEGENERATIVE DISEASES OF NERVOUS SYSTEM:
Clinical manifestations, pathophysiology, medical management surgical treatment, physiotherapy management of Parkinson’s Disease, Motor neuron disease Amyotrophic lateral sclerosis, Progressive bulbar palsy, progressive muscular atrophy and Multiple sclerosis

7. PAEDIATRIC NEUROLOGY
Cerebral palsy: Causes, classification, types, reflex, activity at different levels, Assessment of developmental milestones from birth, Deformities. Management: Lifting, carrying, positioning, orthopaedic surgeries, Equipments used. Treatment Techniques: Neuro developmental approach (Bobath), Roods approach, Vojta techniques, Home programme.

Spinabifida: Incidence, Assessment of neonate with Spina bifida, type of lesion, deformity, bladder management.

8. POLYNEUROPATHY:
Post-Infective poly radiculo neuropathy: etiology, Pathology, Signs & symptoms, Prognosis, Medical management & physiotherapy management.

Diabetic – Polneuropathy: etiology, Symptoms, signs, diagnosis, prognosis, physiotherapy management

9. DISORDERS OF SPINAL CORD:
Compression of the spinal cord: Neoplasm of the vertebral column, Intervertebral disc prolapse, extradural or epidural abscess – signs & symptoms, investigations, surgical treatment, physiotherapy management & rehabilitation.
Syringomyelia ; etiology, Pathology, clinical manifestation, surgical treatment-decompression laminectomy, venticulo-atrial shunt, physiotherapy management, spasticity management, orthoses, Pressure – sore management, patient education:
10. DISORDERS OF NEURO MUSCULAR JUNCTION:

Myasthenia gravis: Etiology, Classification, signs & symptom prognosis, Electromyographic picture - medical & surgical treatment, physiotherapy management.
Eaton-Lambert syndrome

11. DISORDERS OF MUSCLE:

Myotonia congenita, Dystrophia myotonia, Paramyotonia congenita – Clinical features, pathology, medical management & physiotherapy management.
Classification, Etiology, Clinical Presentation, Pathology enzymes level, muscle biopsy, Electromyographic picture, orthotic management physiotherapy management of Progressive muscular dystrophy
Duchenne Muscular Dystrophy
Becker’s Muscular Dystrophy
Limb-girdle muscular dystrophy
Facio - Scapulo humeral-muscular Dystrophy
CARDIO-RESPIRATORY PHYSIOTHERAPY (100 HOURS)

COURSE OUTLINE

1. INTRODUCTION


2. CARDIO-RESPIRATORY ASSESSMENT

Inspection, Palpation, Percussion & Auscultation, chest movement, Chest expansion, Breathing pattern, Investigations: Chest X-rays, Pulmonary function tests, Electrocardiography, echocardiography, cardiac catheterization, stress testing, coronary angiography, lung scintigraphy, Acid base balance, lipid profile, exercise tolerance test, Computerized Tomography scan, Magnetic Resonance Imaging.

3. NEONATES WITH RESPIRATORY DISEASES:

Anatomical & Physiological differences in neonates, pulmonary problems, secondary to immaturity, Neonatal distress, asphyxia management, Broncho pulmonary dysplasia, Nikity Wilson syndrome, Bronchial stenosis, chest physical therapy, positioning, manual percussion & vibration, Airway suctioning, Bronchial Drainage at home, suctioning at home.

4. CHILDREN WITH RESPIRATORY DYSFUNCTION:

Developing lung, developmental delay, Chronic obstructive pulmonary disease, Asthma, Cystic fibrosis, immunological deficiencies, Bone marrow transplantation, Pediatric Acquired Immuno Deficiency Syndrome, pertussis, functional & developmental assessment, Bronchial drainage, Percussion, vibration and shaking, coughing techniques, Forced expiratory techniques, Autogenic Drainage techniques, expiratory pressure therapy, postural
exercise, Home care, mechanical percussion & vibrator, Role of physiotherapy in pediatric out patient clinic, exercise testing, exercise prescription.

5. PULMONARY DISEASES:

Describe medical & physiotherapy management of the following:

Emphysema, chronic bronchitis, Bronchiectasis, Asthma, Cystic fibrosis, Exercise testing, airway clearance, O₂ therapy, pursed lip breathing exercise Bronchiectasis, lung abscess, Bronchopneumonia, Destroyed lung, carcinoma of the lung, pulmonary embolism, pneumoconiosis, Asbestosis & Interstitial lung disease, Pre-operative & Post-operative management.

Describe medical management of Empyema thoraces, Describe underwater seal intercostals drainage, Rib resection, Decortications, window operation, physiotherapy management.

6. ACUTE RESPIRATORY FAILURE

Respiratory failure and its types, Respiratory abnormalities and its management, Endotracheal Intubation, Tracheostomy, Mechanical ventilation, oxygen toxicity, Bronchial hygiene, Breathing exercises, oxygen therapy.

6. ADJUNCTS OF CHEST PHYSIOTHERAPY:


7. TRAUMA TO THE CHEST:

Pneumothorax, haemothorax, fracture ribs, lung contusion, injury to great vessels and its clinical presentation, management & physiotherapy management
8. PHYSIOTHERAPY FOLLOWING THORACIC SURGERIES

Describe physiotherapy management of lung segmental resection, lobectomy, pneumonectomy, open lung biopsy, bilobectomy & Tracheostomy.

9. ATHEROSCLEROSIS:

Coronary artery supply, Risk factors & development of coronary disease, hemodynamics of coronary artery flow in normal and diseased states.

10. MYOCARDIAL INFARCTION:

Exercise protocol, ambulation, training program, coronary artery bypass graft, metabolic equivalents, coronary angioplasty, percutaneous coronary angioplasty.

11. CONGENITAL HEART DISEASE:

Tetralogy of fallot, atrial septal defect, ventricular septal defect. Patent ductus arteriosus, total anomalous pulmonary venous connection. Partial anomalous pulmonary venous connection, single atrium, atric atresia, pulmonary atresia, tricuspid atresia, coarctation of aorta, double outlet right ventricle, transposition, of great vessels, transposition of heart – clinical features, x-ray findings, Electrocardiography, cardiac catheterization, surgical management, prosthetic cardiac values, Balloon mitral valvotomy, valve replacement, valvotomy, physiotherapy management.

12. CARDIO-PULMONARY RESUSCITATION:

Cardiac arrest, Ventricular fibrillation, resuscitation, closed & open cardiac management, artificial respiration, emergency medications.
13. ELECTROCARDIOGRAPHY:

Bipolar standard leads, Unipolar leads, normal anatomy & physiology of the cardiovascular system, normal Electrocardiography, right & left axis deviations, ventricular hypertrophy, QRS complex abnormality, normal & abnormal P wave, bundle branch block Electrocardiography in myocardial infarction, Localization of Myocardial Infarction, Q wave abnormality, coronary insufficiency, ST segment abnormalities, T wave abnormality, stress testing Electrocardiography, classification of arrhythmias, sinus tachycardia, sinus – bradycardia, ectopic atrial rhythm. Atrial fibrillation, atrial flutter, atrial bradycardia, AtrioVentricular nodal rhythm, extra systoles, ventricular rhythms, ventricular bradycardia, ventricular fibrillation 1\textsuperscript{st} degree AtrioVentricular block, II degree AtrioVentricular block, III degree AtrioVentricular block, ventricular premature beats – clinical significance, prognosis.
PHYSIOTHERAPEUTICS (200 HOURS)

COURSE OUTCOME

At the end of this course, the student will be able to

• Describe the types, principles, diagnosis and management of mechanical dysfunction using manual therapy in written format effectively.
• Explain the need, legal issues and application of evidence based practice in the field of physiotherapy in written format correctly.
• Elaborate the steps, need, special tests, and principles of diagnosis in clinical reasoning in the written format effectively.
• Discuss the concepts, grades, principles of assessment and treatment for peripheral & spinal joints through manual therapy based on Maitland concepts.
• Discuss the concepts, different methods of treatment, regional techniques for peripheral & spinal joints through manual therapy based on Mulligan concepts.
• Elaborate the principles of history taking clinical examination, treatment protocol & treatment progression for neuromusculoskeletal dysfunction through McKenzie approach in written format effectively.
• Demonstrate the Maitland & Mulligan concepts for peripheral & spinal joints in patients under supervision precisely.
• Demonstrate the McKenzie approach for neuromusculoskeletal dysfunction in patients under supervision effectively.

COURSE OUTLINE

1. INTRODUCTION TO EXERCISE THERAPY.

Physiological and therapeutic effects of exercise, Indications & contra indications, exercise prescription, Types of exercises & their effects - Isometric, Isotonic, Isokinetic, passive, active, active – assisted, active resisted.
Strengthening exercises & stretching procedures for all muscle groups, Muscle Re-education.

Mobilization of joints: Definition, Joint range-Outer range, Middle range, Inner range, Causes of joint range limitation, Effect of prolonged immobilization, Indication & Contraindication, Principles and methods of mobilization

Balance training, posture correction, co-ordination, gait training, Functional training – training for activities of daily living, Therapeutic bio feedback, Relaxation techniques

Massage – Physiological effects, principles and methods, indications and Contraindications

2. INTRODUCTION TO MANUAL THERAPY

Evolution of manual therapy, Types of mobilizations & manipulation, Principles of examination, Diagnosis & Management of mechanical dysfunction

3. EVIDENCE BASED PRACTICE

Need for evidence based practice, Research in the field of physiotherapy & manual therapy, Application of Evidence based practice in professional day to day practice, Sources to search for evidence, Legal issues in practice.

4. CLINICAL REASONING & DIAGNOSIS

Definition of clinical reasoning, Steps in clinical reasoning process, Need for clinical reasoning, Special tests & their sensitivity & reliability, Principles of diagnosis, Correlating clinical findings with investigations & Differential diagnosis

5. MANUAL THERAPY BASED ON MAITLAND CONCEPTS

Concept of Maitland, Grades, Movement diagram, Principles of assessment including flags, Principles of treatment, Different methods of treatment, Regional treatment techniques for peripheral & spinal joints
6. MANUAL THERAPY BASED ON MULLIGAN CONCEPT

Mulligan concept, Different methods of treatment, Regional techniques for peripheral & spinal joints, Rationale of mulligan concept

7. MCKENZIE APPROACH FOR NEURO MUSCULOSKELETAL DYSFUNCTION

a) Biomechanics and pathomechanics of cervical spine, Subgroups in non-specific spinal disorders, Quebec task force classification, Principles of history taking & Clinical examination & General treatment principles
Clinical picture, examination and treatment protocol for cervical postural syndrome, cervical dysfunction syndrome and cervical derangement syndrome including treatment progression
b) Biomechanics & pathomechanics of thoracic spine, Assessment of thoracic spine, Clinical picture, examination & dysfunction & derangement syndromes including treatment progression
c) Biomechanics & pathomechanics of lumbar spine, Principles of clinical examination, Clinical picture, examination and treatment for lumbar postural, dysfunction, & derangement syndromes including treatment progression

8. PILATES NEURO DYNAMICS

Clinical neuro biomechanics, Signs & symptoms following neural injury, Clinical reasoning, Tension testing of lower limb, trunk & upper limb, Principles of treatment in different presentations
IV – SEMESTER
ELECTIVE

PHYSIOTHERAPY IN ORTHOPEDICS (200 HOURS)

COURSE OUTCOME

At the end of this course, the student will be able to

• Identify, analyse and respond appropriately to ‘ethical dilemmas’ and challenges, and ethical implications of patient presentations, their living environments and health care arrangements; plan responses to these factors and reflect on practice

• Discuss a reasoned rationale for clinical evidence-based orthopedic physiotherapy intervention and design appropriate management plans to meet the needs of patients.

• Monitor and evaluate the outcomes of interventions, set realistic short and long-term goals in collaboration with the patient, select the appropriate intervention, and plan for possible contingencies and instigate modifications as required.

COURSE OUTLINE

1. MUSCULO SKELETAL SYSTEM

1. Embryology & anatomy of musculoskeletal system
2. Arthrokinematics and osteokinematics of musculoskeletal system
3. Growth & maturation of musculoskeletal system
4. Applied anatomy of musculoskeletal system
5. Physiology of musculoskeletal system
6. Applied biomechanics and pathomechanics of bones, joints & soft tissues
II. ORTHOPAEDIC ASSESSMENT

1. General Orthopaedic Physiotherapy assessment procedures which includes demographic data collection, History, Observatory, Palpatory & examination which includes the assessment of pain, Motor examination, Joint laxity, Sensory examination, Posture and Gait evaluation and Other relevant system (e.g.) Cardiorespiratory / Neurological examination methods along with disease specific / joint specific/ soft tissue specific tests assigned according to its sensitivity & specificity, disability and disability evaluation.

III. ORTHOPEDIC SURGERIES

1. Principles of Orthopaedic surgery & their PT management
   • Arthrodesis
   • Osteotomy
   • Arthroplasty
   • Bone grafting
   • Internal and external fixations
   • Distraction and limb reconstruction
   • Correction of bone deformities and joint contractures.
   • Tendon transfers
   • Nerve suturing and grafting.
   • Wound debridement
   • Orthopaedic implants

IV. AMPUTATION:

V. ORTHOTICS

1. Principles of orthotics, materials used in orthotics, Types and classification, Shoes and shoe modifications. Effectiveness and limitations of orthoses.

VI. PROSTHETICS

1. Principles of prosthetics; upper and lower limb prosthesis. Types of upper extremity prosthesis, Mechanics and function, Types of Lower extremity prosthesis, mechanics and function.
VII. PHYSIOTHERAPY IN BURNS

1. Physiotherapy management in early phase, mobilization, splinting & positioning, Management of late phase, management of contractures, tightness and deformities.

VIII. ORTHOPEDIC MANUAL THERAPY

1. Physiological and accessory movements, biophysics of contractile and non contractile tissues, response to mechanical loading.
2. History of manual therapy. Overview of various manual therapy approaches for all the skeletal joints.
3. Principles and application of different soft tissue mobilizations like Myofacial Techniques, Neural Tissue Mobilization, Muscle Energy Technique, trigger point release, positional release technique etc.
4. Principles and applications of joint mobilization and manipulation like Maitland, Mckenzie & Mulligan technique
5. Therapeutic exercise as an adjunct to manual therapy.
6. Neuromuscular Taping techniques
7. Advances in the field of manual medicine

IX. ORTHOPEDIC DEFORMITIES

1. Conservative, surgical and physiotherapy management of the following deformities
   - Upper limb deformities: Sprengel’s shoulder, madelung’s deformities, cubitus valgus, cubitus varus, claw hand
   - Lower limb deformities: Coxa valga, coxa vara, genu varum, genu valgum, genu recurvatum, club foot, hallux valgus
   - Spinal deformities: Scoliosis, kyphosis, lordosis,

X. GERIATRICS:

1. Principles of Geriatric Rehabilitation, Diabetes & Geriatric patient, Rheumatoid Arthritis in the elderly, Arthritis in the elderly, pathological fractures, osteoporosis, vertebral fractures, Geriatric amputee, lumbar canal stenosis, fractures in the elderly, stress fractures, Paget’s diseases, Aging of the musculo-skeletal system, stroke management, Role of Physical therapist in Geriatric rehabilitation, prevention of cardio pulmonary deconditioning &
Geriatric patient physiological changes & age, Alzheimer’s diseases, dementia.

XI. PHYSIOTHERAPY & COMMUNITY

1. Relevance of community physiotherapy for musculoskeletal disorders. Role of aerobics, visiting community, planning physiotherapy in the community. Home programme, principles of rehabilitation, Rapport with other groups working in Community.

XII. SPECIAL TOPICS

1. Classification of sports specific injuries and its management
2. Splinting
3. Electromyography and biofeedback
4. Ergonomics in musculoskeletal dysfunctions with special emphasis to industrial safety.
5. Understanding of disability & its compensation strategies
6. Emergency care & musculoskeletal therapeutics
7. Role of Physiotherapist as a member in disaster management team.
8. Recent advances in pain evaluation & physiotherapy management.
9. Team Approach of Physiotherapy management in poly trauma
10. Home program & counseling of care givers
PHYSIOTHERAPY IN NEUROLOGY (200 HOURS)

COURSE OUTCOME

At the end of this course, the student will be able to

• Identify, analyse and respond appropriately to ‘ethical dilemmas’ and challenges, and ethical implications of patient presentations, their living environments and health care arrangements; plan responses to these factors and reflect on practice

• Discuss a reasoned rationale for clinical evidence-based neurological physiotherapy intervention and design appropriate management plans to meet the needs of patients.

• Monitor and evaluate the outcomes of interventions, set realistic short and long-term goals in collaboration with the patient, select the appropriate intervention, and plan for possible contingencies and instigate modifications as required.

COURSE OUTLINE

I. NEURO PHYSIOLOGY

1. Limbic system
2. Development of locomotion
3. Neural control of locomotion
4. Alpha motor neuron and muscle spindle
5. Ballistic movement and ramp movement
6. Myelination of pyramidal tracts
7. Development of neuromuscular junction
8. Development of motor system in man
9. Motor control at the spinal cord level
10. Brainstem and motor control
11. Cortical motor systems
12. Cerebellar mechanisms
13. Basal ganglia and their connections
14. Special senses
II. NEUROPATHOPHYSIOLOGY

1. Neural control of bladder and its dysfunction
2. Long loop mechanism in human central nervous system and their disorders
3. Pereceptual disorders in locomotion
4. Disorders of basal ganglia
5. Neuropathies
6. Pathophysiology of pain
7. Pathophysiology of deep tendon reflex, clonus, plantar response and abdominal reflex
8. Pathophysiology of unconscious patient, autonomic nervous system and Neurotransmitters

III. NEUROLOGICAL CONDITIONS

1. Describe in detail the etiology, clinical features, assessment and management of the following:
   - Cerebral palsy
   - Cerebrovascular accidents
   - Movement disorders
   - Basal ganglia disorders
   - Neuropathy
   - Muscle diseases
   - Cerebellar dysfunctions
   - Traumatic head injury and spinal cord injury
   - Demyelinating diseases of peripheral nervous system
   - Demyelinating diseases of central nervous system
   - Vestibular disorders
   - Cognitive and perceptual dysfunctions

IV. SPASTICITY & RIGIDITY

1. Definitions, Types & classifications and significance, assessment, physiotherapy management, use of casts and splints, newer methods in physical therapy.
V. ORTHOTICS IN NEUROLOGICAL CONDITIONS

1. Different types of splints for the upper limb, uses of static and dynamic splints. Application and training with splints, lower extremity orthotics—uses and applications, training with orthoses in Lower motor neuron and Upper motor neuron conditions.

VI. COMPLICATIONS ASSOCIATED WITH NEUROLOGICAL DISEASES

1. Bedridden patients—problems, methods to manage them. Identification and management of respiratory complications in neurological conditions, Hand and foot problems in Diabetes & leprosy. Physiotherapy of the neurologically impaired hand, contractures and deformities.

VII. NEUROTHERAPEUTIC TECHNIQUES

1. Therapeutic approaches based on motor learning
2. Inhibition in central nervous system
3. Common facilitatory and inhibitory treatment techniques
4. Theories of learning
5. Sensory system in motor performance
6. Feed back mechanism and its application in treatment
7. Treatment approaches in neurological rehabilitation: Bobath, Neuro Developmental Therapy, Sensory Integration, Brunnstrom, Roods, Proprioceptive Neuro muscular Facilitation, Vojta therapy, Motor Relearning Programme, Myofacial release
8. Vestibular rehabilitation
9. Myofacial release technique
10. Swiss ball therapy
11. Alternative and complementary therapies
VIII. ELECTROMYOGRAPHY

1. Electromyography and nerve conduction study instrumentation, methodology of Electromyography/Nerve conduction studies including the common clinical finding and their interpretation.

IX. BRAINSTEM AUDITORY EVOKED POTENTIALS

1. Equipment required Methodology normal values uses in peripheral hearing disorders, clinical interpretation uses in acoustic multiple sclerosis, Use of Brainstem auditory evoked potentials in Pediatrics.

X. VISUAL EVOKED POTENTIALS

1. Equipments, Methodology, Normal results and interpretation, clinical uses in optic neuritis and multiple sclerosis, use in pediatrics, use of Visual evoked potentials in surgery.

XI. DISABILITY AND COMPENSATION


XII. COMMUNITY RELATED PHYSIOTHERAPY

1. Needs of neurologically impaired persons in a community, planning home programs, community related physiotherapy, working with active groups in community, multidisciplinary approach, Rapport with other professionals.
PHYSIOTHERAPY IN CARDIO RESPIRATORY DISEASES  
(200 HOURS)

COURSE OUTCOME

At the end of this course, the student will be able to

• Identify, analyse and respond appropriately to ‘ethical dilemmas’ and challenges, and ethical implications of patient presentations, their living environments and health care arrangements; plan responses to these factors and reflect on practice.

• Discuss a reasoned rationale for clinical evidence-based cardiorespiratory physiotherapy intervention and design appropriate management plans to meet the needs of patients.

• Monitor and evaluate the outcomes of interventions, set realistic short and long-term goals in collaboration with the patient, select the appropriate intervention, and plan for possible contingencies and instigate modifications as required.

COURSE OUTLINE

I. CARDIO RESPIRATORY ANATOMY & PHYSIOLOGY

Mechanics of respiration, Breathing mechanism in normal and diseased states, respiratory muscle physiology and fatigue, age related changes in the cardiovascular and pulmonary system, physiology of myocardial contractibility and factor affecting the same, physiology of microcirculations and edema, lung volumes and capacities, body positioning and cardio respiratory function, normal and abnormal exercise responses (heart rate, blood pressure, $O_2$ consumption), cardiac muscle blood flow and cardiac output during exercise, cardiovascular and respiratory factors limiting physical exercises.
II. CARDIO RESPIRATORY ASSESSMENT AND INVESTIGATIONS

Inspection, Palpation, Percussion & Auscultation, chest movement, Chest expansion, Breathing pattern, Investigations: Chest X-rays, Pulmonary function tests, Electrocardiography, echocardiography, cardiac catheterization, stress testing, coronary angiography, lung scintigraphy, Acid base balance, lipid profile, exercise tolerance test, Computerized Tomography scan, Magnetic Resonance Imaging.

III. CARDIO PULMONARY CONDITIONS

Describe the etiology, clinical features, assessment and management of the following:

Respiratory Conditions

- Obstructive lung diseases
- Restrictive lung diseases
- Infective lung diseases
- Occupational lung diseases
- Chest trauma
- Chest wall deformities
- Lung cancers
- Children with respiratory dysfunction
- Diaphragmatic diseases
- Hyperventilation syndrome

Cardio Vascular Conditions

- Congenital heart diseases
- Acquired heart diseases
- Myocardial infarction
- Hypertension
- Diseases of the myocardium
- Pericardial diseases
- Tumors of the heart
- Vascular diseases
- Peripheral vascular diseases
IV. CARDIO PULMONARY RESUSCITATION

Procedure & techniques, cardiac massage, defibrillation, artificial respiration.

V. INTENSIVE CARE UNIT


VI. CARDIO PULMONARY REHABILITATION

Principles of cardiac & pulmonary rehabilitation, Activities of daily living analysis, modification of activity, energy saving adaptations, sexuality; community oriented approach to rehabilitation, nature of impairment, disability and handicap in cardio respiratory conditions.

VII. PEDIATRIC CHEST PHYSICAL THERAPY

Assessment & management, Modifications required, common conditions were physiotherapy is indicated

VIII. RELAXATION EXERCISES

Principles of Relaxation, Methods of Relaxation, Yoga, Transcendental Meditation and other forms of Relaxation; Anxiety/panic and Respiratory function, progressive muscle relaxation; Desensitization, Music & Imagery as Relaxation therapy, Biofeedback in Relaxation.
SPORTS PHYSIOTHERAPY (200 HOURS)

COURSE OUTCOME

At the end of this course, the student will be able to

- Identify, analyse and respond appropriately to ‘ethical dilemmas’ and challenges, and ethical implications of patient presentations, their living environments and health care arrangements; plan responses to these factors and reflect on practice

- Discuss a reasoned rationale for clinical evidence-based sports physiotherapy intervention and design appropriate management plans to meet the needs of injured athlete.

- Monitor and evaluate the outcomes of interventions, set realistic short and long-term goals in collaboration with the patient, select the appropriate intervention, and plan for possible contingencies and instigate modifications as required.

COURSE OUTLINE

1. HISTORY AND BACKGROUND

Origin of sports, Historical, Background, Qualities of an athlete, Relevance of sports in the modern time, Introduction to sports physiotherapy, occurrence of injury in sports.

2. ATHLETIC INJURIES AND THEIR PREVENTION

Types of injuries, in contact sports, non-contact sports, accidents, other health hazards, infections. Education of the athlete on injuries. Steps taken for prevention of injuries.

3. ATHLETIC PSYCHOLOGY

4. ATHLETIC CONDITIONING PROGRAM

Skeletal muscle – Type I and Type II fibers, General conditioning principles – Strength, power, Muscular endurance, flexibility, anaerobic metabolism.

Warm-up schedule, stretching partner, stretching using the proprioceptive neuromuscular facilitation technique.

5. NUTRITION AND ATHLETE:

Well – balanced diet, pre-event nutrition, increasing weight, decreasing weight in wrestlers, carbohydrate – loading diet, sugar before and after competition.

6. PROTECTIVE AND SUPPORTIVE EQUIPMENT:

Protective equipments, supportive devices, motion limiting devices. Taping and wrapping techniques.

1. THERAPEUTIC MODALITIES:

General principles of therapeutic modalities, Hydrotherapy, shortwave Diathermy, Microwave Diathermy, Ultrasound, Iontophoresis, phonophoresis, Electrical muscle stimulation transcutaneous Electrical Nerve stimulation, cryotherapy, cold spray, Contrast bath, Paraffin wax bath. Ultraviolet& massage - indications, contraindications, therapeutic and physiologic effects, treatment techniques.

8. ON-FIELD MANAGEMENT OF ATHLETIC INJURY:-

Identifying on field injury, Assessment of injury and risks, major injuries and life threatening, trauma/illness, internal injury, spinal injury, fractures; Other bone, joint, muscle injury, shock, first aid in sports, immediate management, Definitive management, referral, return, to sport. On-field medical team, rapport with other professionals.
9. INJURY REHABILITATION:


10. EPIPHYSEAL INJURIES:

Prevention, classification, treatment, complications and prognosis of epiphyseal injuries, Osgood Sclatter disease, traction epiphysitis, tendonitis at the insertion of the patella., tendon, complete avulsion of the epiphysis of the tibial tubercle shoulder – contributing risk factors – intrinsic factors, extrinsic factors.

11. SHOULDER GIRDLE INJURIES:


Shoulder Rehabilitation following Puttiplatt or Bankart repair for an anterior shoulder dislocation, exercise for acromioclavicular separation, exercises for overuse and impingement syndrome.

12. ELBOW JOINT INJURIES:


13. WRIST AND HAND INJURIES:

Colle’s fracture, scaphoid fracture – mechanism of injury, symptoms and signs, treatment Gamekeeper’s Thumb Boutonniere deformity, Pseudo-boutonnière deformity – mechanism of injury, symptoms and signs, treatment, splinting,
fractures of the metacarpals, symptoms and signs, treatment, Bennett’s fracture – immediate and delayed treatment, acute, mallet finger, tenosynovitis of the thumb, symptoms and signs, treatment, Bowler’s thumb, handler palsy.

14. THIGH INJURIES:

Contusion to the quadriceps – symptoms and signs, treatment, complications, prognosis, strain of the quadriceps musculature, mechanism of injury, symptoms and signs, treatment, acute strain of the hamstring group – signs and symptoms, treatment, complete rupture of the patellar tendon – symptoms and signs and treatment.

15. KNEE INJURIES:


16. INJURIES OF THE PATELLA;


17. INJURIES TO THE LOWER LEG, ANKLE AND FOOT-INJURIES:

Rupture of the gastrocnemius (Tennis leg), total rupture of the Achilles tendon and partial rupture of the Achilles tendon – mechanism of injury, symptoms and signs, treatment, rehabilitation.
18. INJURIES TO THE ANKLE;


19. INJURIES TO THE RUNNING ATHLETE:

Biomechanics of normal running, causes of overuse injuries, prevention of overuse injuries, biomechanical, examination of the running athlete’s – alignment, Common running induced injuries to the lower back-examination, treatment, common running induced injuries to the hip – iliotibial tract pain, tronchanteric bursitis, stress, fracture of femoral neck, slipped capital femoral epiphysis, vague hip pain.

Common Running related injuries to the knee: Medial patellar pains, pes anserine bursitis, patellar tendonitis, retropatellar pain, lateral patellar pain, lateral knee pain, biceps femoral tendonitis.


20. SWIMMING INJURIES:

“Swimmer’s Shoulder” anterior subluxation of the Glenohumeral joint – symptoms and signs, treatment, prevention of injury. Breaststroker’s injuries-mechanism, symptoms and signs, treatment, prevention

21. SPORTS PHYSIOTHERAPY FOR THE DISABLED

Sports for the Disabled persons – need, opportunities and limitations. Special needs and protection, prevention and management of injuries
PAEDIATRIC PHYSIOTHERAPY (200 HOURS)

COURSE OUTCOME

At the end of this course, the student will be able to

• Identify, analyse and respond appropriately to ‘ethical dilemmas’ and challenges, and ethical implications of patient presentations, their living environments and health care arrangements; plan responses to these factors and reflect on practice

• Discuss a reasoned rationale for clinical evidence-based paediatric physiotherapy intervention and design appropriate management plans to meet the needs of patients.

• Monitor and evaluate the outcomes of interventions, set realistic short and long-term goals in collaboration with the patient, select the appropriate intervention, and plan for possible contingencies and instigate modifications as required.

COURSE OUTLINE

I. GROWTH AND DEVELOPMENT

Patterns of normal growth, milestones, various indices of health. Mortality and morbidity statistics of infancy and childhood.

II. DEVELOPMENT DISORDERS

Factors related to developmental disorders, Early/Late detection of disorders. Various disorders related to development. Hereditary and genetic disorders, prematurity, genetic counseling.

III. PAEDIATRIC NUTRITION

Elements of Nutrition, Daily allowance/requirement of nutrients, Nutritional disorders and their relevance to physiotherapy.
IV. PAEDIATRIC ASSESSMENT

Evaluation of the pediatric patient, Eliciting history and information, securing co-operation of the sick child, sharing information with parents/caregivers. Various assessment of child with developmental delay, child on life support systems, child with spasticity ataxia, in co-ordination and other neurological conditions, child with congenital limb deficiency/abnormality.

V. MODALITIES AND TECHNIQUES

Choosing the modality, precautions, contraindications, and care of equipment in the paediatric setting. Correct use of techniques of exercise; techniques and movement patterns; emphasis on various Bio-feedback, Retraining, neuro developmental and Proprioceptive neuromuscular facilitation approaches, principles of motor control, motor learning, handing techniques, facilitation techniques, inhibition techniques, sensory integration, rood approach, vojta therapy, sensory motor approach, constraint – induced movement therapy, myofascial release, mobilization & manipulation, muscle energy techniques, advanced airway clearance technique monitoring and evaluation of patients on therapy.

VI. EARLY INTERVENTION SERVICES

Purpose, principles & elements of early intervention, interactions between infants & caregivers, meeting the intervention needs of infants, clinical assessment of infants, development meaningful intervention, planning & implementation of services.

VII. PHYSIOTHERAPY OF MUSCULOSKELETAL CONDITIONS

components of physical performance and physiotherapy management of sports injuries in children, juvenile diabetes & obesity.

VIII. PHYSIOTHERAPY OF NEUROVASCULAR CONDITIONS

Neurological and vascular conditions with emphasis on spina bifida, cerebral palsy, poliomyelitis anterior horn cell diseases, sequelae of encephalopathy, meningitis & cerebro-vascular diseases, paralytic disorders including peripheral nervous system diseases. Traumatic Brain injury sequelae, Spinal cord injury, Guillian barre syndrome, spinal muscular atrophy, disorders in co-ordination and movement. Identifying goals, planning, goal-oriented physiotherapy, monitoring evaluation.

IX. PHYSIOTHERAPY IN SURGICAL CONDITIONS:-

Pre-surgical physiotherapy, assisting to attain surgical goals, Post operative complications and their physiotherapy, emphasis on pulmonary, Cardiac and limb problems including prevention of Deep vein thrombosis and pressure sores. Post operative physiotherapy after bone, joint and tendon Surgery, contracture release, amputations, cardiac and pulmonary surgery, Burns and their management.

X. PHYSIOTHERAPY IN CARDIO PULMONARY CONDITIONS:-

Cardiac diseases of children including congenital heart diseases, their impact on the child’s health. Role of exercises in these conditions. Pulmonary conditions like Bronchitis Asthma, Lung abscess, Bronchiectasis, cystic fibrosis, respiratory distress syndrome and broncho pulmonary dysplasia - their physiotherapy management including management after cardiac and lung surgery. Role of physical therapist in neonatal & pediatric intensive care units, cardiopulmonary resuscitation in children.

XI. PEDIATRIC ONCOLOGY

Physiotherapy intervention for different types of cancers, bone marrow transplantations & terminal disease
XII. AIDS, APPLIANCES, SUPPORT SYSTEMS

Use of orthosis /prothesis in childhood and training, Special care needed for orthotic and prosthetic use, Enhancing function/participation of a child using support systems, Crutches, Wheelchairs and mobility aids in childhood, Adaptive equipment for physically challenged children.

XIII. THERAPEUTIC RECREATION

Definitions, need for recreation in children, Recreation Activities as therapy/exercise, sports and fitness in pediatrics. Recent advances, Emerging issues; Schooling and physiotherapy, issues related to Acquired immuno deficiency syndrome and Tuberculosis in children.

IV. PEDIATRIC PHYSICAL THERAPY PRACTICE

Ethical & legal framework of pediatric physical therapy practice, models of team interaction & service delivery in pediatric physical therapy practice.
HAND REHABILITATION (200 HOURS)

COURSE OUTCOME

At the end of this course, the student will be able to

• Identify, analyse and respond appropriately to ‘ethical dilemmas’ and challenges, and ethical implications of patient presentations, their living environments and health care arrangements; plan responses to these factors and reflect on practice

• Discuss a reasoned rationale for clinical evidence-based hand rehabilitation physiotherapy intervention and design appropriate management plans to meet the needs of patients.

• Monitor and evaluate the outcomes of interventions, set realistic short and long-term goals in collaboration with the patient, select the appropriate intervention, and plan for possible contingencies and instigate modifications as required.

COURSE OUTLINE

I. ANATOMY OF HAND

Anatomy of the bones, joints, muscles, ligaments, nerves of the hand

II. ASSESSMENT OF HAND

Subjective assessment, objective assessment on observation tactile, pain, range of motion, edema, sensation (light touch pressure, pain temperature, proprioception, two point discrimination stereognosis, tinnel’s sign) manual muscle testing, grip strength , deformities, functional assessment & Psycho social assessment

III. BIO MECHANICS & PATHO MECHANICS OF HAND

1. Describe the structure of wrist complex including radio carpal joint, mid carpal joint, and the ligaments of the wrist complex.
2. Describe the function of the radio carpal joint and mid carpal joint
3. Describe the hand complex including structure of fingers – Carpo Meta carpal joint, Meta carpo phalangeal joint and inter phalangeal joints of fingers, Ligaments, range of motion
4. Describe the structure of the joints of thumb
5. Describe the extrinsic and intrinsic thumb muscles
6. Describe prehension, power, cylindrical, spherical and hook grip
7. Describe precision handling – pad to pad, tip to tip, pad to side
8. Functional position of the wrist
9. Role of interossei and lumbricals muscles at the Meta carpo phalangeal joint and inter phalangeal joints.
7. Pathomechanics due to the paralysis of extrinsic and intrinsic muscle of the hand

IV. PERIPHERAL NERVE INJURIES

Anatomy of nerve, types of injury clinical signs of nerve damage, nerve repair, nerve graft, conservative, pre operative and post operative physiotherapy management

V. TENDON INJURIES

Anatomy, nutrition, tendon healing, tendon repair, clinical presentation of injuries at the flexor and extensor zones and their conservative, pre and post operative management

VI. TENDON TRANSFERS

Definition, principles of tendon transfer, pre & post operative physiotherapy management following various tendon transfer surgeries.

VII. FLEXIBLE IMPLANT ARTHROPLASTY

Introduction, indications and pre requisites, surgical technique, principles of management, physiotherapy management following surgery.

VIII. AMPUTATION
Definition, causes, classification, surgical considerations for digital amputation, technique, complications, function and significance of respective digits. Reconstruction surgeries, psychological aspects, pre & post operative physiotherapy management amputation and reconstruction surgeries including prosthesis.

IX. HAND CONDITIONS

Describe the etiology, clinical features, assessment and management of : Dupytren’s contracture, Dequervains disease, Reflex sympathetic dystrophy, Rheumatoid hand, Osteoarthritis hand, Hand burns, Carpal tunnel syndrome, Spastic hand.

X. SPLINTS

Definition classification static, dynamic, patient education, principles of making forearm based splints, principles of making dynamic splints, indications and benefit of various hand splints

XI. OCCUPATIONAL HAND DISORDERS

Applied ergonomics, nature and prevalence of injuries in work atmosphere, specific solutions, preventive measures and physiotherapy, management.

XII. SPECIAL TECHNIQUES

Desensitization, motor re education, joint mobilization techniques, soft tissue techniques, scar mobilization, sensory re education, taping techniques, therapeutic exercises.
COMMUNITY PHYSIOTHERAPY (200 HOURS)

COURSE OUTCOME

At the end of this course, the student will be able to

• Identify, analyse and respond appropriately to ‘ethical dilemmas’ and challenges, and ethical implications of patient presentations, their living environments and health care arrangements; plan responses to these factors and reflect on practice

• Discuss a reasoned rationale for clinical evidence-based community physiotherapy intervention and design appropriate management plans to meet the needs of patients.

• Monitor and evaluate the outcomes of interventions, set realistic short and long-term goals in collaboration with the patient, select the appropriate intervention, and plan for possible contingencies and instigate modifications as required.

COURSE OUTLINE

I. FOUNDATIONAL CONCEPTS IN COMMUNITY PHYSIOTHERAPY

1. Historical development of community health and community Physiotherapy- World and India, various health and family welfare committees
2. Principles of community based rehabilitation
3. Population studies and epidemiological implications of impairment, disability and handicap
4. Basic concepts of community based rehabilitation
5. Physiotherapist as a master trainer in Community based Rehabilitation.
6. Bioethics ethico-moral codes of conduct physiotherapy ethics
7. Evidence based practice in community health.
9. Scope of Physiotherapy in community
10. Multicultural psychology and its influence on psychosocial rehabilitation

II. PHYSIOTHERAPY INTERVENTIONS IN COMMUNITY

1. Physical fitness
2. Principles of fitness training for health promotion in community
3. Stress management through yoga and psychosomatic approaches.
4. Home exercise programs for various classifications of disabilities.
5. Physiotherapy in maternal and child health care.
6. Exercise prescription for the elderly
7. Psychosocial and safety issues in elderly
8. Geriatric rehabilitation
9. Holistic physiotherapy for the aged.
10. Community mental health

III. PHYSIOTHERAPY IN OCCUPATIONAL AND INDUSTRIAL HEALTH

1. Industrial hygiene
2. Vulnerable workers group and labor law
3. Industrial Physiotherapy
4. Injury prevention and returning the worker to productivity
5. Ergonomics: principles, issues related to hand tools, posture and material handling and lifting
6. Prevention of work related injuries and redesigning workspace, designing auditory and visual displays for workers; occupational stress; environmental pollution – noise, vibration etc.
7. Assistive technology used for stability & mobility to enhance function
8. Appropriate technology, skill transfer, sustainability, disability evaluation, concessions available to persons with disability.
   8. Application of & environmental modification techniques to improve quality of life, information, education and communication

IV. ROLE OF PHYSIOTHERAPIST IN NATIONAL HEALTH CARE DELIVERY SYSTEM

1. Health care delivery program in urban and rural areas
2. Disability survey
3. Epidemiological aspects and demands of Physiotherapy services
4. Concept of rural camps and integration of infrastructural service and voluntary agencies, extension services and mobile units.
5. Institute based rehabilitation services and multi-disciplinary approach.
6. Methodology of Community based Rehabilitation with reference to national health delivery system.
7. Role of national institutes, district rehabilitation centre and primary health centre (with appropriate exposure).
8. Public awareness to the various disabilities.
10. Message generation and dissipation.
12. Role of Government in Community based Rehabilitation
13. Implementation of the act, Role of non Governmental agencies in Community based Rehabilitation

V. SPECIAL CONSIDERATIONS IN COMMUNITY

1. Advances in disaster management.
2. Role of Physiotherapist as a member in disaster management team.
3. Health care in the community – Principles & delivery systems
4. Principles and strategies of communication skills, management, information and evaluation system, records and reports, information technology, tele-medicine and tele-physiotherapy, journalism and mass media
5. Regulatory agencies & legal issues
7. Recent advances in community physiotherapy
8. Research in community physiotherapy
OBSTETRICS AND GYNAECOLOGICAL PHYSIOTHERAPY
(200 HOURS)

COURSE OUTCOME

At the end of this course, the student will be able to

• Identify, analyse and respond appropriately to ‘ethical dilemmas’ and challenges, and ethical implications of patient presentations, their living environments and health care arrangements; plan responses to these factors and reflect on practice

• Discuss a reasoned rationale for clinical evidence-based obstetrics and gynecological physiotherapy intervention and design appropriate management plans to meet the needs of patients.

• Monitor and evaluate the outcomes of interventions, set realistic short and long-term goals in collaboration with the patient, select the appropriate intervention, and plan for possible contingencies and instigate modifications as required.

COURSE OUTLINE

I. INTRODUCTION

1. Anatomy and physiology of pelvis, pelvic floor and muscles of pelvis, perineum, abdominal muscles, breast, reproductive tract, urinary tract, anorectal region, and endocrine physiology related to reproductive medicine

2. Puberty and menarche

3. Adolescence and the musculoskeletal system

4. Diet and exercise for adolescence

II. PHYSIOLOGY OF PREGNANCY
1. Menstruation, pregnancy and fetal development, endocrine system, reproductive system, cardiovascular system, breasts, skin, gastrointestinal system, nervous system, urinary system, musculoskeletal system.

2. Adaptation of mother following musculoskeletal changes during pregnancy.

III. ANTENATAL PERIOD

1. Pregnancy tests and investigations

2. Antenatal care, antenatal screening, antenatal education, diet and weight gain, planning and leading labor and parent craft classes, antenatal complications, high risk pregnancy, Urinary dysfunction during pregnancy and its management.

2. Musculoskeletal problems during pregnancy, its assessment & management

3. Use of physical modalities like Transcutaneous Electrical Nerve Stimulation, Interferential Therapy, Ultrasound Therapy, Electrical stimulation, Biofeedback & Short wave Diathermy.

4. Relaxation technique in prenatal education: Physiologic basis for relaxation training, various relaxation techniques, psycho analgesic methods of pain control


IV. LABOR

1. Physiology of labor, signs that indicate labor, stages of labor, mechanics of labor and its assessment

2. Induction of labor- Methods, indications, contraindications and other interventions in labor.
3. Pain during labor and various coping techniques: Relaxation, positioning, breathing during various stages of labor, electrical modalities for pain reduction, massage and other techniques

4. Complications of labor and its management

V. PUERPERIUM

1. Anatomical and physiological changes, care and management of complications.

VI. POST NATAL PERIOD

1. Post natal physical and mental conditions, post natal assessment and care, post natal exercises, ergonomics, immediate post natal complications and its management, late post natal complication and its management, psychological and emotional changes and coping with the demand of newborn, contraceptive methods.

VII. CLIMACTERIC PERIOD

1. Physiological and endocrine changes of the menopause, menopausal systemic changes and their management, physical, psychological and emotional symptoms, post menopausal problems and its management urinary dysfunction.

VIII. GYNECOLOGICAL CONDITIONS

1. Etiology, clinical features, assessment, medical and physiotherapy management of: Infective conditions, cysts and new growths, displacements and genital prolapse, disorders associated with menstruation, back ache and abdominal pain, polycystic ovarian syndrome, infertility, premature ovarian failure/ premature menopause, lymph edema, breast cancer and psychosexual problems.

IX. GYNECOLOGICAL SURGERY

1. Physiotherapy care of patients undergoing gynecological surgeries including preoperative physiotherapy assessment and treatment, post operative physiotherapy assessment and treatment, post operative complication and its management, discharge advice for
- Gynecological excision surgery including mastectomy
- Gynecological repair surgery
- Surgical treatment of stress incontinence,

X. URINARY FUNCTION AND DYSFUNCTION

Normal urinary tract function, lower urinary tract dysfunction, incontinence of urine – common types, voiding difficulties, Physiotherapy assessment methods, Urodynamics, radiological and electromyographical assessment and Physiotherapy management

XI. BOWEL AND ANORECTAL FUNCTION AND DYSFUNCTION

Normal bowel function, bowel and anorectal dysfunction, physiotherapy assessment and management of foecal incontinence and bowel dysfunction
PROJECT (60 HOURS)

COURSE OUTCOME:
At the end of this course, the student will be able to

- Conduct a live research work to find the efficacy of a physiotherapy treatment procedure or compare various physiotherapy treatment procedures and present a written dissertation.

COURSE OUTLINE:

1. Introduction of a research project
2. Statement of the study
3. Aim and need for the study
4. Review of literature
5. Research design
6. Criteria for selection of subjects
7. Population of the study
8. Sample size and method of selection
9. Variables of the study
10. Validity and reliability of the tools used
11. Statistical analysis and presentation
12. Results, Discussion and recommendations
13. Conclusion
14. References

15. Appendices

GUIDANCE:

Each student will receive guidance from the physiotherapy teacher towards referring relevant literature / collect required data and discuss them with the project guide periodically and consolidate the findings and discuss them with the project guide before compiling into final shape.

After correction and edition of hand written manuscripts by the project guide, the student will compile his/her study/ work into a manual form for submission to the institution of study.

Two copies of the project work done by the student will be certified by the project guide as a bonafide record.

The student will be expected to submit the above project work two months before the commencement of final semester examinations of the two years M.P.T. degree course