

FINAL YEAR B. PHYSIOTHERAPY:

SUBJECT	TEACHING HOURS		
	THEORY	PRACTICAL	TOTAL
PHYSIOTHERAPY IN ORTHOPEDIC CONDITIONS	50	50	100
PHYSIOTHERAPY IN NEUROLOGICAL CONDITIONS	50	50	100
PHYSIOTHERAPY IN CARDIO-PULMONARY CONDITIONS	50	50	100
PHYSIOTHERAPY IN MEDICAL & SURGICAL CONDITIONS	50	50	100
PHYSIOTHERAPY IN REHABILITATION & ALLIED THERAPEUTICS	50	50	100
BIO - ENGINEERING	20	-	20
PRINCIPLES OF ETHICS & ADM.	50	-	50
CLINICS	-	960	960
EDUCATIONAL TOUR AND INSTITUTIONAL VISITS	-	-	88
SEMINAR PRESENTATION, CASE PRESENTATION & CLINICAL DISCUSSION	-	-	162
TOTAL			1760

**Exams:**

<b>PAPER NO.</b>	<b>SUBJECT</b>	<b>MARKS</b>				
		<b>THEORY</b>		<b>PRACTICAL</b>		<b>TOTAL</b>
		<b>EXTERNAL</b>	<b>INTERNAL</b>	<b>EXTERNAL</b>	<b>INTERNAL</b>	
<b>1.</b>	PHYSIOTHERAPY IN ORTHOPEDIC CONDITIONS	<b>80</b>	<b>20</b>	<b>80</b>	<b>20</b>	<b>200</b>
<b>2.</b>	PHYSIOTHERAPY IN NEUROLOGICAL CONDITIONS	<b>80</b>	<b>20</b>	<b>80</b>	<b>20</b>	<b>200</b>
<b>3.</b>	PHYSIOTHERAPY IN       CARDIO- PULMONARY CONDITIONS	<b>80</b>	<b>20</b>	<b>80</b>	<b>20</b>	<b>200</b>
<b>4.</b>	PHYSIOTHERAPY IN MEDICAL & SURGICAL CONDITIONS	<b>80</b>	<b>20</b>	<b>80</b>	<b>20</b>	<b>200</b>
<b>5.</b>	PHYSIOTHERAPY IN REHABILITATION	<b>40</b>	<b>10</b>	<b>40</b>	<b>10</b>	<b>100</b>

## **STRUCTURE OF QUESTION PAPERS**

### **Subjects:**

**Final B. Physio:** Physiotherapy In Orthopedic Conditions, Physiotherapy In Neurological Conditions, Physiotherapy In Cardio-pulmonary Conditions & Physiotherapy In Medical-Surgical Conditions.

Duration: 3 Hours

	<b>SECTION – I (40 Marks)</b>	
Q – 1 Full Question		15 Marks
	OR	
Q – 1 Full Question		15 Marks
Q – 2 Write Short Notes (3 out of 4) (5 Marks each)		15 Marks
Q – 3 Write Short Notes (2 out of 3) (5 Marks each)		10 Marks
	<b>SECTION – II (40 Marks)</b>	
Q – 4 Full Question		15 Marks
	OR	
Q – 4 Full Question		15 Marks
Q – 5 Write Short Notes (3 out of 4) (5 Marks each)		15 Marks
Q – 6 Write Short Notes (2 out of 3) (5 Marks each)		10 Marks

**Final B. Physio:** Physiotherapy in Rehabilitation

Duration: 2 Hours

**Total 40 Marks**

Q – 1 Full Question 15 Marks

OR

Q – 1 Full Question 15 Marks

Q – 2 Write Short Notes (3 out of 4) (5 Marks each) 15 Marks

Q – 3 Write Short Notes (2 out of 3) (5 Marks each) 10 Marks

# PHYSIOTHERAPY IN ORTHOPAEDIC CONDITIONS

## Objectives:

At the end of the course the candidate will be able to:

1. Identify, discuss and analyze the musculoskeletal dysfunction in terms of biomechanical and biophysical basis and correlate the same with the provisional diagnosis, routine radiological and electrophysiological investigations and arrive at appropriate functional diagnosis with clinical reasoning
  2. Describe as well as acquire the skill of executing short and long term treatment by selecting appropriate mode of mobilization/ manipulation, electrotherapy, therapeutic exercise and appropriate ergonomic advice for the relief of pain, restoration or maintenance of function &/rehabilitation for maximum functional independence for ADL at home and workplace
- Musculoskeletal Evaluation Which includes.
- 10 Basic Laboratory Data/ Blood tests Interpretation.
    1. EMG, NCV Interpretation.
    2. MRI/ CT scan Screening & Interpretation.
    3. Physical Examination Including Manual Muscle Testing
    4. Special Tests for motor function, Sensory function & Autonomic.
    5. Superficial & Deep Reflexes / Jerks.
    6. Analysis of Current Impairments & Effect to function.
    7. Analysis of Prolonged Impairment functional limitation & Disability.
    8. Analysis of Living Environment, Potential Discharge Description & Social Supports.

## Syllabus:

### TRAUMATOLOGY:

#### 1) **General Physiotherapy approach in traumatology:** fractures and

complications-definition, healing, causes, signs and symptoms, methods of reduction, means of immobilization, duration, fractures in children-epiphysial injury, principles of physiotherapy assessment and management in fractures of injury, principles of physiotherapy assessment and management in fractures of UL and LL bones, scapula, ribs, vertebrae and pelvis and fracture complications

- 2) **General physiotherapy approach in dislocations:** causes, types, principles of treatment, Physiotherapeutic assessment and management (conservative and surgical) of shoulder, elbow, wrist, MP, IP, hip, knee, ankle dislocations, acromioclavicular and sternoclavicular joints.
- 3) **Physiotherapeutic assessment and management of soft tissue injury** –  
contusions, sprains, strains, ruptures of muscles and ligaments, meniscal injuries, arthroscopy.
- 4) **Rehabilitation of patient with orthopedic surgery:** pre and post op management of arthroplasty of all major joints, girdle stone arthroplasty, arthrodesis, arthroscopy, Osteotomy, excision arthroplasty, total/partial hip and knee replacement, McMurry's Osteotomy, reconstructive surgical mechanical changes (tendon transfer, Peripheral Nerve Injuries)
- 5) **Physiotherapeutic assessment and management of amputations:** Classification and levels of UL and LL amputations Physiotherapeutic and prosthetic management/ complete rehabilitation.
- 6) **PT assessment and management of reconstructive surgery** in CP and polio patients.

#### **RHEUMATOLOGY AND INFECTIONS:**

- 1) Pathological changes in inflammation, edema
- 2) Pyogenic conditions and Osteomyelitis
- 3) Physiotherapeutic assessment and management of rheumatology: still's disease, AS, bursitis, capsulitis, synovitis, tendonitis, infective arthritis, Gout, PA
- 4) PT assessment and management of infective conditions: TB spine and other major joints, Perthes disease, osteomyelitis, pyogenic arthritis
- 5) PT assessment and management in metabolic and hormonal disorders of the bone  
Tissue-osteoporosis

#### **DEGENERATIVE CONDITIONS:**

- 1) Osteoarthritis: All joints
- 2) Lumbar and Cervical Spondylosis
- 3) Spondylolysis and Spondylolisthesis
- 4) Prolapsed Intervertebral Discs

## **CONGENITAL CONDITIONS:**

Pt assessment and management in congenital and acquired conditions: coxa vara, valga, CDH, genu vara, valga, sprangle shoulder, torticollis, Madelung's deformity, wry neck, kyphosis, lordosis, CV anomalies, CTEV, pes cavus/planus

## **MISCELLANEOUS:**

PT assessment and management of miscellaneous orthopedic conditions: Mallet and trigger finger, DQ, metatarsalgia, hallux, valgus, Dupuytren's contracture, fasciitis, tennis elbow, ganglion, tenosynovitis, CMP, Osgood Schlatter's disease and causalgia Etc.

## **PRINCIPLES AND TECHNIQUES OF MANUAL THERAPY:**

Briefly Maitland, McKenzie and Mulligan.

## **YOGA INTERVENTION IN ORTHOPEDICS CONDITIONS**

## **SPORTS MEDICINE/REHABILITATION:**

Objective:

1. At the end of the course, the candidate will be able to understand the nature of sports injuries and treat sports injuries, understand the role of therapist in training and rehabilitating a sports person.

## **Syllabus:**

1. Sports injuries and management

## **TEXT BOOKS**

- 1) Cash's Textbook of Orthopedics & Rheumatology for Physiotherapists-Jaypee
- 2) Manual mobilization of extremity joints – by Freddy Kaltenborn, Maitland
- 3) Therapeutic exercise – by Kolby & Kisner
- 4) Therapeutic exercise – by O' Sullivan
- 5) Taping Techniques – by Rose Mac Donald
- 6) Tidy's physiotherapy – Porter
- 7) Essentials of Orthopedics and applied physiotherapy - Jayant Joshi & Prakash Kotwal.
- 8) Clinical orthopedic rehabilitation- Brotzman.

## **REFERCE BOOKS**

- 1) Orthopedic Physical therapy – by Donatelli
- 2) Manual Therapy – by Maitland
- 3) Neural tissue mobilization – Butler

- 4) Treatment and Rehabilitation of Fractures by Stanley Hoppenfeld and Vasantha L Murthy
- 5) Principles of Neuromusculoskeletal Treatment and Management by Nicola J. Petty (2004)
- 6) Physical Therapies in Sport and Exercise by Gregory Kolt and Lynn Snyder-Mackler, 2007.



## **PHYSIOTHERAPY IN NEUROMUSCULAR CONDITIONS**

### **Objectives:**

At the end of the course the candidate will be able to:

1. Acquire the knowledge of normal neuro development with specific reference to locomotion
2. Identify and analyze neuromotor and psychosomatic dysfunction in terms of alteration in the muscle tone, Power, coordination, involuntary movements, sensations/ perception etc. Correlate the findings with provisional diagnosis and investigations such as EMG/NCV studies and arrive at functional diagnosis with clinical reasoning in various neurological disorders.
3. Plan, prescribe and execute short term and long term treatment with special reference to relief of neuropathic and psychosomatic pain and use of various P.T. techniques/modalities including ergonomic advice and parent education in neuropediatric cases.
4. Prescribe appropriate orthosis/splints will be able to fabricate temporary protective and functional splints

### **Syllabus:**

#### **1. Neuromuscular Evaluation Which Includes:**

1. Basic Laboratory Data / Blood tests Interpretation.
2. ENG, NCV Interpretation.
3. MRI / CT scan Screening & Interpretation.
4. Physical Examination Including Manual Muscle Testing.
5. Special Tests for motor function, Sensory function & Autonomic.
6. Superficial & Deep Reflexes/ Jerks.
7. Tests for Balance, Co-ordination & Its Interpretation.
8. Analysis of Current Impairments & Effect to function.
9. Analysis of Prolonged Impairment functional limitation & Disability.
10. Analysis of Living Environment, Potential Discharge Description & Social Supports.

**2.** Review of basis neuroanatomy and physiology

**3.** Symptomatology of neurological disorders, role of investigation in differential diagnosis

**4.** Clinical examination of CNS functions including cranial nerves.

**5. Development disorders of CNS**, early detection of brain damaged child, high risk babies, neuropsychiatric examination.

**6.** Development programs and delayed milestones, Neurodevelopmental screening test, minimum brain damage, sensory motor, functional, psychosocial behaviors of a child, perception development and training.

**7. Neurodevelopmental approaches** (Bobath technique, Rood's approach, Vojta technique, and biofeedback), limited patterns and abnormal motor behaviour due to brain damage, its control and training with reference to gait and hand function.

**8. Assessment and treatment techniques in BRAIN DISORDERS:**

- Stoke

- Cerebral palsy
- Hydrocephalus
- Meningitis
- Encephalitis
- Parkinsonism syndrome and parkinson's disease
- Basal ganglia-extrapyramidal tract lesions
- Head injury
- Brain injury
- Brain tumors
- Cerebellar ataxia
- Friedreich's ataxia

### **9. Assessment and treatment of SPINAL CORD LESIONS:**

- Motor Neuron Diseases (ALS, SMA, and other types)
- Quadraplegia
- Paraplegia
- Monoplegia
- Cauda Equina
- Pott's Spine
- Brown Sequard Syndrome
- S.C.D.C.
- Multiple sclerosis
- Tabes dorsalis
- Disseminated sclerosis
- Transverse myelitis
- Syringomyelia
- Poliomyelitis
- Spina bifida
- Prolapsed disc

### **10. Assessment and treatment of PERIPHERAL NERVE LESIONS:**

- Erb's palsy
- Klumpke's palsy
- Axillary nerve palsy (BPI)
- Rectal palsy
- Carpal tunnel syndrome
- Thoracic inlet syndrome
- Bell's palsy

- Peripheral neuritis
- Polyneuropathies
- Causalgia
- Sciatic nerve injury
- Nerve trunk and root injuries
- Cranial nerve injuries (intra-cranial aneurysms and abscess, tumors)
- Leprosy-operations, transplantations, graphs, sutures and splints

### **11. Pre and post-surgical assessment and treatment in NEURO SURGERIES including**

- Hydrocephalus
- Myelomeningocele
- C.V. junction anomalies
- Spinal neoplasms, Infections, T.B., abscess
- Laminectomy
- Discoidectomy
- Spinal fusion

### **12. Electrodiagnosis: SDC, FG Test Chronaxie, Rheobase, EMG, NCV**

### **13. Miscellaneous: Myopathies, Myasthenia Gravis, Herpes Zoster**

### **14. yoga intervention in Neurological condition.**

### **TEXT BOOKS**

- 1) Cash's Textbook for physiotherapist in Neurological disorders-Jaypee bros.
- 2) Proprioceptive Neuro muscular Facilitation – by Herman Kabat
- 3) Practical Physical Therapy – Margaret Hollis
- 4) Therapeutic exercise – by O'Sullivan
- 5) "Right in the middle" – by Patricia Davis
- 6) Stroke rehabilitation – by Margaret Johnson

### **REFERENCE BOOKS**

- 1) Therapeutic exercise – by Basmajian – 5th edn.
- 2) Physical Rehabilitation – by Krusen
- 3) Brain's disorders of Nervous system

## **PHYSIOTHERAPY IN CARDIOPULMONARY CONDITIONS**

### **Objectives:**

At the end of the course the candidate will be able to:

1. Identify, discuss and analyze cardiovascular and pulmonary dysfunction based on patho-physiological principles and arrive at the appropriate functional diagnosis.
2. Acquire the knowledge of rationale of basis investigative approaches in the medical system and surgical intervention, regimes related to cardiovascular and pulmonary impairments.
3. Execute effective physiotherapeutic measures (with clinical reasoning) and special emphasis on breathing retraining, nebulization, humidification, bronchial hygiene, general mobilization and exercise conditioning.
4. Acquire knowledge of overview of patient's care at the I.C.U., artificial ventilation, suctioning, positioning for bronchial hygiene and continuous monitoring of patient in I.C.U.
5. Acquire the skill of evaluation and interpretation of functional capacity, using simple exercise tolerance test such as 6 minute walk test, symptom limited test.
6. Select strategies for cure, and prevention, afopt restorative and rehabilitative measures for maximum possible functional independence of patient at home, work and in community.
7. Acquire the skill of basic CPR.

### **Syllabus:**

#### **1. CARDIOPULMONARY EVALUATION Which Includes:**

1. Skill to palpate all pulses, rhythm, rate, volume and heart rate / pulse rate discrepancy.
2. Skill to assess Blood pressure at various sites and its physiological variation and to assess ankle – brachial index.
3. Pulmonary Function test & Its Interpretation.
4. Chest Imaging & Neck Imaging.
5. ECG Interpretation
6. Invasive & non-Invasive blood gas analysis & its Interpretation.
7. Basic laboratory data Interpretation.
8. Special Tests – Stress test, Exercise Tolerance Test
9. Interpretation of the procedures performed – Open heart Surgery, Angiogram, Nuclear Test Catheterization.
10. Analysis of current impairments & effect to function.

11. Analysis of prolonged impairments, functional limitation & disability.
12. Analysis of living environment potential discharge description & social supports.

**1. Review of:**

- Mechanism of normal respiration
- Cardiorespiratory anatomy and physiology
- Relaxation and maintenance of bronchial hygiene in respiratory diseases

**2. Respiratory and Cardiac Rehabilitation, Fitness Programs for Cardiorespiratory Disorders** – definition, aims and objectives, pathophysiology of diseases, Physiotherapy assessment and principles of rehabilitation

**3. Principles and techniques of Physiotherapy in diseases of Respiratory and Cardiopulmonary system** – P.D., breathing exercises, PNF techniques of respiration, **Airway Clearance Techniques** : Hydration, Humidification and Nebulization, Mobilization and Breathing exercises, Postural Drainage, Manual techniques – Percussion, Vibration and Shaking, ACBT, Autogenic Drainage, Mechanical Aids – PEP, Flutter, IPPB, Facilitation of Cough and Huff, Nasopharyngeal Suctioning etc...

**4. Clinical examination of CARDIOVASCULAR DISORDERS, principles and techniques of P.T. in cardiovascular diseases:**

- Congestive Cardiac Failure,
- Myocardial infarction,
- Endocarditis, myocarditis, pericarditis
- Valvular diseases of heart,
- Congenital heart diseases

**5. Clinical examination of RESPIRATORY DISEASES, principles and techniques of P.T. in:**

Chronic bronchitis, Emphysema, Asthma, Bronchiectasis, Cystic fibrosis, Pulmonary embolism, Pulmonary T.B., Pleurisy, Empyema, Atelectasis, Pneumothorax, Bronchopulmonary fistula, Pneumonia, lung abscess, Cor pulmonale

**6. Evaluation, principles and techniques of physiotherapy management in traumatic and surgical conditions of chest, lung, pleura and mediastinum**

**7. Cardiothoracic surgery – incisions, types, indications and contra indications**

**8. Pre and post operative physiotherapy assessment and management in:**

- Lobectomy, pneumonectomy, decortication, thoracoplasty
- Tracheostomy
- Mitral valvotomy (mitral stenosis)
- Aortic incompetence
- Valve replacement
- PDA, coarctation of aorta
- Pericardiectomy in chronic constrictive pericarditis
- Septal defects, fallot's tetralogy
- Bypass surgery
- Open heart surgery and heart transplant

**9. Physiotherapy assessment and management of vascular diseases:**

- Thrombosis, phlebitis and phlebotrombosis
- Buerger's disease
- Varicose veins, Deep Vein Thrombosis, Venous ulcers
- Lymphoedema

**10. Intensive & Emergency Care**

- **Principles of chest physiotherapy in I.C.U., I.C.C.U.** along with effect of anesthesia on cardiopulmonary system.
- Knowledge of equipments in C.C.U., I.C.U. and I.C.C.U. – Ventilators-Modes, classification criteria for initiating mechanical ventilation, suction apparatus. IABP, Pulse oximeter, nebulizers, humidifiers, O<sub>2</sub> therapy, aerosol therapy, drugs used in ICU, etc...

- Emergency In Cardio Respiratory Conditions – CPR, Defibrillator, Resuscitation Procedure

## **11. YOGA INTERVENTION IN CARDIO RESPIRATORY CONDITIONS**

### **TEXT BOOKS:**

- 1) Cash's Textbook for Physiotherapists in Chest, Heart & Vascular diseases
- 2) Physiotherapy for Respiratory and Cardiac problems by Jennifer A Pryor.
- 3) Tidy's physiotherapy.
- 4) Chest Physical therapy & pulmonary rehabilitation by Donna Frownfilter

### **REFERENCE BOOKS:**

- 5) Cardiopulmonary Physical Therapy by Irwin Scott.
- 6) Physiotherapy in respiratory care by Alexandra Hough.
- 7) Chest Physical therapy & pulmonary rehabilitation by Donna Frown filter.
- 8) ECG by P.J. Mehta
- 9) Cardiopulmonary physical therapy (a clinical manual) by Joanne Watchie
- 10) Essentials of cardiopulmonary physical therapy by Ellen A. Hillegass and H. Steven sadowsky
- 11) Egan's fundamentals of respiratory care by Robert L. Wilkins



## **PHYSIOTHERAPY IN SURGICAL AND MEDICAL CONDITIONS**

### **Objectives:**

At the end of the course the candidate will be able to:

1. Identify discuss and analyze cardiovascular and pulmonary dysfunctions based on pathophysiological principles and arrive at appropriate functional diagnosis.
2. Acquire knowledge of rationales of basic investigative approaches in the medical system and surgical intervention, regimes in general surgeries (special emphasis on abdominal surgeries)
3. Execute effective physiotherapeutic measures (with appropriate clinical reasoning) and exercise, conditioning in general medical and surgical conditions.
4. Acquire knowledge of the overview of patient's care in the I.C.U. for bronchial hygiene and continuous monitoring of the patient in I.C.U.
5. Select strategies for cure, care and prevention, adopt restorative and rehabilitative measures for maximum possible functional independence of a patient at home, work and in community.
6. Acquire the knowledge of evaluation and physiotherapeutic treatment for obstetric and gynecological conditions
7. Acquire the knowledge of various conditions where physiotherapy plays a vital role in the rehabilitation (psychiatry, dermatology, geriatric and ENT conditions)
8. Evaluate, grade and treat non healing wounds.

### **Syllabus:**

#### **1) Basic review of anatomy & physiology of reproductive system**

#### **2) Physiotherapy in mother and child care – ante and post natal management, early intervention and stimulation therapy in child care (movement therapy) - Diagnosis of Pregnancy, Physiological changes during Pregnancy, Diagnosis and Investigations during Pregnancy.**

Importance of antenatal exercises and Normal labour, normal Puerperium.

Prenatal training, Physiotherapy during labour, Aerobic Exercise during pregnancy. Postnatal Physiotherapy and common Postnatal complications.

Multiple child birth and Maternal and child care.

Child birth complications investigations and management, Diastases Recti.

### **3) Physiotherapy assessment & management of common gynaecological surgeries**

Hysterectomy- Types, Indications, Operative procedure.

Menopausal women, Osteoporosis, Mental health and Physiotherapy Management. Pelvic repair, Caesarean delivery, EUA, D&C, Colporrhaphy, Colpoperineoraphy, Manchester Repair. Ovarian Cystectomy, Myomectomy and laproscopic surgeries. Post-Operative complications and Management of post-operative patients.

### **4) Physiotherapy assessment & management of abdominal surgeries**

Anatomy of Abdominal Wall and muscles, Various Abdominal Incisions.

Common Abdominal Surgeries with Etiology and Indications- Cholecystectomy, Colostomy, Ileostomy, Gastrectomy, Hernias, Mastectomy, Nephrectomy, Prostatectomy, Appendectomy, Operative procedures for the lower urinary tract disorders.

Physiotherapy Management- Preoperative Physiotherapy Assessment and treatment, Types of Anesthesia, Clips and sutures, Post-operative Physiotherapy management, Chest Physiotherapy. Post-Operative Complications of Abdominal Surgeries and Physiotherapy Management.

Wounds, local infections, ulcers, pressure sores – UVR, and other electrotherapeutic modalities for healing of wound, hypergranulated scars, relief of pain and mobilization

### **5) Physiotherapy assessment & management of urogenital dysfunctions**

Prolapse of uterus and vagina. Incontinence – types, causes, features, investigations and assessment and Physiotherapy management.

Infection of female genital tract including sexually transmitted diseases like AIDS, Gonorrhoea, Syphilis, low backache.

## **6) Physiotherapy assessment & management of burns**

Burns- Classification, Etiology, Complications, Assessment and Management. Various types of Skin graft and Physiotherapy management post skin grafting, Flaps and Pedicles. Various types of scar and scar management.

## **7) Physiotherapy assessment & management of dermatological conditions**

Structure and Functions of Skin. Various skin disorders- Acne vulgaris, Psoriasis, Mycosis fungoides, Polymorphous Light eruption, Vitiligo.

Pityriasis rosea, Alopecia, Leprosy. PT management of various skin disorders.

## **8) Physiotherapy assessment & management of ENT conditions**

Sinusitis, Otitis Media, Otosclerosis, Labyrinthitis, Facial Palsy Mastoidectomy, Chronic Rhinitis, Laryngectomy, Pharyngolaryngectomy and Post-Operative PT management

## **9) Psychiatry – Physiotherapy in psychiatric conditions. Schizophrenia , depression, psychosis , anxiety**

## **10) Geriatrics – assessment, handling of old patients and PT management of common geriatric problems.**

## **11) Yoga Intervention In Medical Surgical CONDITIONS.**

### **TEXT BOOKS**

- 1) Cash's Textbook- General Med & Surgical conditions for Physiotherapists
- 2) Therapeutic exercise – by Kolby & Kisner
- 3) Therapeutic exercise – by O' Sullivan
- 4) Physiotherapy in Gynaecological & Obstetrical conditions – by Poldon – Jaypee
- 5) Geriatrics Physiotherapy – By Andrew Guccione
- 6) Tidy's physiotherapy

## **REFERENCE BOOKS**

- 1) Handbook of geriatric assessment by Gallo JJ
- 2) Women's health: a textbook for physiotherapists by R Sapsford

## **REHABILITATION AND ALLIED THERAPEUTICS**

### **Objectives:**

At the end of the course the candidate will be able to

1. Understand the role of physiotherapist in multidisciplinary team approach in rehab
2. Understanding the principle of biomechanics and therapeutic application in neurological musculoskeletal dysfunction
3. Design, manufacture and use of bioengineering applications.
4. Describe the general concepts about health and disease: General fitness
5. Describe various national and international health policies – role of IAP to promote physiotherapy as a health delivery system
6. Attain ability of conducting small surveys and collection of anthropometry data, data collection for morbidity assessment.
7. Assess prevalence and incidence of various conditions that increase the morbidity, role of PT in improving morbidity, expected functional & clinical recovery. Reasons for noncompliance in specific community, environment, solution strategy of CBR program, concept of team work, role of members in CBR, role of multipurpose health worker.
8. Comprehend the use of various allied therapeutic sciences in health care delivery.

### **Syllabus:**

#### **1. The philosophy and need of rehabilitation.**

The principles of physical medicine

Basic principles of administration and organization

#### **2. The evaluation process and treatment planning**

#### **3. Principles of prescription writing.**

#### **4. Principles of rehabilitation**

Nursing

Communication problem

Social problem

Vocational problems and placements

Occupational therapeutics

Speech pathology and audiology

#### **5. Ethics, Administration, Management, Marketing and Medico-Legal aspects**

1. **General Rehabilitation:** Conceptual framework of rehabilitation, definitions, various models of Rehab, Rehab team including Medical person/P.T./O.T. audiologist/speech therapist /P.&O./ rehab nurse/ psychologist/ vocational guide. WHO definition of Health & disease, Health care delivery system, National Policies of Rehab, National health care programs
2. **Introduction to Community Based Rehabilitation** - Concept of CBR, Need for CBR, Objectives of CBR, Scope of CBR, Members of CBR team, Models of CBR, Institute Based Rehabilitation, Outreach Based Rehabilitation, Community Approach to Handicapped Development.
3. Community awareness and participation in preventing aspects and demands PT services.
4. Definition of impairments, disability, rehabilitation. Difference between impairment, handicap and disability, Causes, Types and Prevention and rehabilitation of disability.
5. **Disability surveys** – epidemiological aspects, screening for disabilities and developmental disorders, disability evaluation - Introduction, What, Why and How to evaluate, Quantitative versus Qualitative data
6. Disability presentation and rehabilitation
7. Present rehabilitation services.
8. Home exercise program in various PT conditions and parental education program
9. **Pediatric disorders** – screening including mental retardation
10. Vocational evaluation and goals for the disabled.
11. Contribution of social worker to the rehabilitation - Definition and Methods of social work. Role of social worker in rehabilitation.
12. Rural rehabilitation incorporated with primary health centers.
13. Extension services and mobile units.

**14. National district level rehab program** - Primary rehabilitation unit, Regional training center, District rehabilitation center, Primary Health center, Village rehabilitation worker, Anganwadi worker

**15. Health promotion**

**16. Disaster Management:-**

- a) Definition: Disaster preparedness, Disaster response and disaster recovery
- b) Types of classification of Disasters
- c) Stages of progress of Disasters
- d) Role of physiotherapist in Disaster preparedness, response and disaster recovery.
- e) National and international agencies providing support during disaster
- f) Physiotherapist's role post disaster
- g) Physiotherapist's role of psychological upliftment post disaster.

**17. Occupational health.**

- Occupational health diseases: Prevention, diagnosis and management.
- Occupational & Environmental Hazards: Accidents due to:
- Physical agents: e.g. heat/cold, light, noise, vibration, UVR. Ionizing radiation.
- Chemical agents: inhalation, local action & ingestion.
- Mechanical Hazards: overuse / fatigue, injuries due to ergonomics alteration & ergonomic evaluation of work place.
- Psychological Hazards: job dissatisfaction, work anxiety, quality control, interpersonal relationships, work hours.
- Role of Physiotherapy.
- Industrial health: Job analysis, job description, job demand analysis, task analysis, Employee fitness, job modification
- Management: Acute care, concept of functional capacity assessment, work hardening and work conditioning.
- Employment acts [briefly]: Employee state insurance scheme, Workman's compensation act,
- Legal aspects of disability in terms of compensation for PWD, benefits & rights.
- Vocational Rehabilitation: Introduction, evaluation & management.

## **18. Yoga Intervention In Rehabilitation**

### **Bio – Engineering**

1. Introduction and terminology: prosthesis and orthosis
2. Classification of and difference between prosthesis and orthosis
3. Bio medical principles
4. Designing
5. Materials used for fabrications
6. Psychological aspects
7. Prescription and designing
8. Design and construction of adaptive devices

### **Prostheses:**

Purpose, types and biomedical principles

#### **(A) Upper limb prosthesis:**

U.L. prosthetic devices: components, terminal devices, hooks, wrist units, Forearm shoulder harness, suspension control system

Partial Hand, Wrist Disarticulation, Trans Radial, Elbow Disarticulation, Trans Humerus, Shoulder Disarticulation

Prosthetic check out procedure

#### **(B) Lower limb prosthesis:**

Prosthetic Feet: Various types of Prosthetic feet. Conventional foot. Rocker, SACH foot, UCBL sole, modified SACH Foot. Jaipur Foot, Seattle foot, flex foot.

Knee Joints: Different types of endoskeleton and exoskeleton knee joints - Single axis, knee joints, and Polycentric knee joints

Through Knee Prosthesis, Trans Femoral Prosthesis, Hip Joints/Pelvic Disarticulation

Syme's and partial foot prosthesis

B/K and A/k prosthetic components, check out procedures, gait analysis and deviations

#### **(C) Wheel Chairs:**

Different types, prescription criteria

Measurement techniques

Components and wheelchair modification and maintenance according to individual's needs

Transfer techniques, its safe handling, pressure relief techniques, user assessment

Wheelchair mobility, skills, Care



Various attachments of a wheelchair, fitting, importance of wheelchair user, instructions

Different types of cushions.

Other types: Introduction: Motorized wheelchair, tricycle and motorized tricycle

## **Orthoses:**

Purpose, types and biomedical principles

Pathological gaits

### **(A) Upper Limb Orthoses:**

Biomechanics, Types and Indications, Fitting, donning and doffing, techniques and check outs. Introduction to wrist hand orthosis

Principles of wrist finger thumb orthosis, opponens splint (short and long), finger splints for correction of contractures, knuckle bender splint, I.P. extension splint with lumbrical bar spring and coil assists

Introductory demonstration of methods of construction of temporary orthosis for hand and fingers

### **(B) Cervical Orthoses:**

Principle, all types of Cervical Orthoses especially different types of cervical collar, Philadelphia collar, semi-rigid/rigid cervical Orthoses various types of Immobilizers, Fitting, donning and doffing, techniques both temporary and permanent

### **(C) Thoraco Lumbo Sacral Orthoses:**

Flexible spinal Orthoses. Rigid spinal Orthoses. Principle- all types of Thoraco Lumbosacral Orthoses (TLSO) especially all types of Orthoses for scoliosis. All types of under arm Orthoses and variants (Knight Brace, Taylors's Brace, Milwaukee Brace, and Collars). Various types of Immobilizers, Fitting, donning and doffing, techniques. Check out procedures. All types of Lumbo sacral Orthoses (LSO) especially Corsets and all types of Orthoses for Lordosis, Kyphosis and scoliosis, Pelvic traction and its uses

### **(D) Lower Limb Orthoses:**

Biomechanics of lower limb orthotics, components, check out procedure and training with orthosis. All types of HKAFO, KAFO, AFO, FRO, Foot Orthoses.

### **(E) Splints:**

Objectives of splinting and principles Splints for Upper-limb: cock up (dorsal/volar), Outrigger, Opponens splint, Anterior and posterior guard

splints, Mallet Finger Splint, C bar for 1st web space of hand Splints for lower limb: - AKBK splints, foot-drop splint.

**ETHICS AND ADMINISTRATION (50 HOURS)**  
**(ETHICS, ADMINISTRATION, MANAGEMENT & MARKETING)**  
**SECTION – I: ETHICS (20 HOURS)**

**Objectives:**

This course is aimed to enable the candidate to acquire the knowledge of ethical code of professional practice, its moral & legal aspects, role of IAP, WHO & WCPT.

**Contents:**

1. Concepts of Morality, Ethics and Legality. Rules of professional conduct and their medico-legal & moral implications. The need of Council Act for Physiotherapy.
2. Constitution and Functions of the Indian Association of Physiotherapists.
3. Functioning of the World Confederation of Physical therapy (WCPT) & its various branches.
4. Role of WHO & WCPT

**SECTION – II: ADMINISTRATION/MANAGEMENT & MARKETING (30 HOURS)**

**Objectives:**

At the end of the course the student will acquire the knowledge of the basics in Managerial & Management skills and use of Information Technology in professional practice.

**Contents:**

1. Management studies related to: -local health care organization management & structure, -planning delivery with quality assurance and funding of service delivery.
2. Information Technology in professional practice.
3. Time Management and Career Development in Physiotherapy.
4. Administration: Principles based on the Goals & Functions – at large hospital setup, domiciliary services, private clinic and academic setup.
5. Facility Planning – Academic and Clinical Setup.
6. Methods of maintaining records and documentation.
7. Budget planning for physiotherapy services in various setups.
8. Performance analysis: physical structure, reporting system (man power, status, functions), quantity & quality of services, turn over, cost benefit and revenue contribution.
9. Public Relations and Marketing: reaching media, marketing of physiotherapy practice and strengthening of brand identity with consumers & other health care professionals.

### **ALLIED THERAPEUTICS (Basics only)**

1. Acupuncture and acupressure: definition, principles, techniques, physiological and therapeutic effects, contraindications and dangers
2. Introduction to Naturopathy
3. Magneto therapy
4. Yoga Sana and their scientific study

### **TEXTBOOKS:**

- 1) K. Park – Park’s Textbook of Preventive & Social Medicine
- 2) Legal Rights of disabled in India-by Gautam Bannerjee
- 3) Text book of Community Medicine & Community Health – by Bhaskar Rao
- 4) Textbook Of Rehabilitation by S Sunder
- 5) Therapeutic Exercise – By Kisner
- 6) Physical Rehabilitation By Susan O’Sullivan
- 7) Alternative Therapies By Swati Bhagat
- 8) Physical Therapy Ethics by Donald L. Gabard and Mike W. Martin

### **REFERENCE BOOKS:**

- 1) Industrial Therapy – by Glenda Key
- 2) Yoga And Rehabilitation by Nilima Patel
- 3) Amputations and Prosthetics – A case study Approach by Bella J May
- 4) Legal and Ethical Issues in Physical Therapy by Laura Lee, Ph.D. Swisher and Carol Krueger-Brophy [https://www.amazon.com/Amputations-Prosthetics-Case-Study-Approach/dp/080360839X/ref=la\\_B001KHKNFE\\_1\\_2?s=books&ie=UTF8&qid=1492669712&sr=1-2](https://www.amazon.com/Amputations-Prosthetics-Case-Study-Approach/dp/080360839X/ref=la_B001KHKNFE_1_2?s=books&ie=UTF8&qid=1492669712&sr=1-2)