SYLLABUS FOR PHYSIOTHERAPIST- A TO B- MFCP

ANATOMY

General anatomy
Embryology as relevant to nervous, cardiovascular and musculoskeletal system
Various types of tissue/cells
Regional Anatomy – head, neck, spine, upper and lower extremity, thorax, abdomen, pelvis, organs and glands
Musculoskeletal Anatomy – bones, joints, muscles, fascia
Neuroanatomy
Circulatory system - foetal and adult

PHYSIOLOGY

General and applied physiology
Nerve and muscle physiology
Cardiovascular system and Respiratory system
Special senses
Nervous system
Physiology of exercise

BIOMECHANICS

Basic concepts
Joint structure and function, levers and pulleys
Muscle structure and function
Biomechanics of thorax, chest wall
Biomechanics and kinesiology of vertebral column, joints
Biomechanics and kinesiology of posture, daily activities and gait

BIOCHEMISTRY

Cell and components
Nutrition and muscle metabolism
Water and electrolyte balance
Clinical biochemistry and normal values

FIRST AID AND NURSING

Importance of First Aid in Physiotherapy
Examination of Vital Signs
First Aid in cardiac arrest. respiratory failure, seizures, electric shock
First Aid kit
Indication of cardiopulmonary resuscitation (CPR)

Assessment and technique of CPR
Basic principles of nursing
Lifting and Transporting Patients
Aseptic techniques
Surgical Dressing

ELECTROTHERAPYAND PHYSICAL MODALITIES

Physics
Current electricity and magnetism, ionization
Basic current types
Therapeutic and Functional Electrical Stimulation
NMES, Faradic and Galvanic current
Low frequency, medium frequency and high frequency currents
TENS, IFT
Biofeedback
Thermotherapy, actinotherapy, cryotherapy
Electromagnetic spectrum, UVR
LASER, ESWT, Magnetic Stimulation
Non invasive brain stimulation
Superficial heating modalities
Deep heating modalities
Medical instrumentation - basics
Calibration
Maintenance of equipments – Preventive maintenance, break down maintenance

EXERCISE THERAPY AND REHABILITATION EQUIPMENT

Introduction
Mechanical principles
Methods of testing – clinical and functional evaluation, measurements, goniometry
Conventional and specialised exercise programs
Passive and active movements
Functional re-education
Massage, manipulation, manual therapy, mobilization, traction
Manual myofascial release
Balance and co-ordination exercises/protocols
Stretching and strengthening exercises/protocols
Respiratory exercises
Posture
Hydrotherapy
Group exercises
Evaluation and prescription of exercise

Factors affecting exercise performance
Exercise Prescription for Specific groups: Elderly, Women and Children
Balance systems, tilt table, static cycler, treadmill, body weight supported treadmill training, dynamic step trainer, patient transfer systems
Robotics and exoskeletal systems
Virtual reality and gaming

PHARMACOLOGY

General principles
CNS, cardiovascular and respiratory drugs that may influence exercise session/training
Drugs for pain and inflammation
Drugs administered by Iontophoresis and Phonophoresis

PATHOLOGY

Introduction
Cell injuries, Inflammation and repair
Respiratory and Cardiovascular pathology
Musculoskeletal system and Rheumatological pathology
Neurological pathology

COMPUTER SCIENCE

Application of computers in rehabilitation equipment
Computer hardware and software, Operating systems, E-mail, MS Office
Use of internet
Electronic medical records

ETHICS

History of physiotherapy
Rules of professional conduct
Consent
Confidentiality and Responsibility, Malpractice and negligence, Legal aspects

COMMUNITY MEDICINE

Health and Disease, levels of prevention
Health care system in India
Health worker and vaccination
Biomedical waste management
Introduction to community based rehabilitation (CBR)
Role of Physiotherapy in CBR
Occupational Diseases and Hazards

Ergonomics
Legislation and national/state schemes in disability
Social factors in health and disease situations
Social problems of the disabled
Introduction to Research methodology and Biostatistics
Methods of data collection

PHYSIOTHERAPY IN CARDIO-RESPIRATORY DISORDERS & INTENSIVE CARE MANAGEMENT

PT assessment in cardiorespiratory and vascular conditions
Cardio respiratory investigations and tests
Common respiratory infections
Congenital heart conditions and types of surgeries
Physiotherapy techniques to increase lung volume
Physiotherapy techniques to decrease the work of breathing
Physiotherapy techniques to clear secretions
Neonatal and Paediatric Cardiac Physiotherapy
Physiotherapy in Obstructive and Restrictive lung conditions
Pulmonary Rehabilitation
Physiotherapy following Lung surgeries, Thoracic outlet surgery
Respiratory failure – Oxygen Therapy and Mechanical Ventilation
Acute phase physiotherapy management following cardiac surgeries and interventions especially angioplasty, CABG, valve surgeries, congenital heart surgeries
Cardiac Rehabilitation
Peripheral Vascular Disease: Physiotherapy management following PVD
Abdominal Surgeries: Management of Pulmonary Restorative function following surgical procedures on Abdomen and Thorax
Treatment, response to exercise and Implications of Physiotherapy in Hypertension, Diabetes, Renal Failure and Obesity
Applied Yoga in Cardio-respiratory conditions

PHYSIOTHERAPY IN NEUROLOGY & NEURO SURGERY

PT assessment in neurological conditions - adult and paediatric
Investigations in neurological conditions including radiodiagnosis, electro physiology, lab studies, CSF analysis, non invasive procedures, instrumented gait analysis - basic interpretation
Introduction to Motor Control & Motor Learning
Introduction to Neural Plasticity
Introduction to various Neuro Developmental Approaches
Higher mental functions and cognitive rehabilitation
Psychological conditions affecting physiotherapy
Physiotherapy component of rehabilitation of various nervous system conditions especially

stroke, cerebral palsy, encephalitis, Parkinsonism, Multiple sclerosis, Motor Neuron Disease, peripheral neuropathies, myopathies, neuromuscular junction disorders, neurodegenerative conditions, brain and spinal tumors
Physiotherapy after brain surgery, spine surgery, DBS surgery, epilepsy surgery, intrathecal drug delivery system implantation, interventional radiology procedures

PHYSIOTHERAPY IN MUSCULOSKELETAL AND RHEUMATOLOGIC CONDITIONS

PT assessment for Musculoskeletal and Rheumatologic conditions
Investigations including radiodiagnosis in bone and joint conditions
Identification of musculoskeletal and rheumatologic issues in neuro and cardiac patients
Degenerative, Inflammatory and Autoimmune conditions, various arthritis
Postural abnormalities of spinal column, deformities, medical and surgical management
Specific joint conditions afflicting shoulder, elbow, hip, knee, ankle
Musculoskeletal issues like epicondylitis, plantar fascitis, tenosynovitis, periarthritis
Chronic pain conditions - myofascial pain syndrome, fibromyalgia
Post poliomyelitis residual paralysis deformities
Physiotherapy in osteoporosis
Physiotherapy in osteoarthritis, spondylosis, spondylolisthesis

PHYSIOTHERAPY IN REHABILITATION MEDICINE

Introduction to rehabilitation
ICF model
Rehab issue identification, prioritisation and goal setting
Outcome prediction
Functional scores used in rehabilitation
Outcome measures used in rehabilitation
Medical and specific complications encountered in rehabilitation especially pressure sores, UTI, aspiration pneumonia, DVT, contractures, autonomic dysfunction
Rehabilitation phase emergencies
Disability assessment and legal aspects of disability
Rehabilitation team members and indication for referral
Principles of Orthotics, Prosthetics, Ambulatory Aids, Assistive Devices and Wheeled Mobility Devices
Basics of occupational therapy, speech and swallow therapy
Basics of rehabilitation surgeries
Neurorehabilitation
Cardiopulmonary rehabilitation
Musculoskeletal and rheumatologic rehabilitation
Pain management and interventions
Assistive technology
Social, vocational and recreational rehabilitation

WEIGHTAGE/MARK DISTRIBUTION FOR THE SUBJECTS

SUBJECTS	MARKS ALLOTED
Anatomy, Physiology, Biochemistry, Biomechanics	8
Pathology, Pharmacology, First Aid & Nursing, Ethics, Community Medicine, Computer Science	2
Electrotherapy and Physical Modalities, Exercise Therapy and Rehabilitation Equipment	10
Physiotherapy in Cardio-Respiratory Disorders & Intensive Care Management	10
Physiotherapy in Neurology & Neuro Surgery	10
Physiotherapy in Musculoskeletal and Rheumatologic Conditions	5
Physiotherapy in Rehabilitation Medicine	5
TOTAL	**50**

Administrative Officer Gr. I (I/C)