

## **BACHELOR OF PHYSIOTHERAPY**

Human beings make a society. Healthy human beings make a healthy society. However, every society has its share of unhealthy human beings. Illness disease and invalidity may be a curse for society; but their victims certainly are not. They are as much a part of society as the healthiest of individuals.

**Objectives:** This course fulfils specific needs of hospitals. The syllabus and course content take into consideration the existing background as well as the future needs of hospitals. This exclusive programme will provide a professional qualification to those who wish to take up hospital administration as a career. It will be of benefit to those currently engaged in hospital administration at senior and middle levels.

**Eligibility Criteria:** 10+2(Biology) or equivalent in any stream

Every student has to attain a minimum of D grade in all courses, a student may however, repeat or change any course being offered. Notwithstanding, every student must acquire the desired number of credits. The detailed course structure under different categories is given in succeeding pages. Brief description of the course content follows thereafter.

*\*This course will be offered after necessary approvals from the respective council and as per their requirements*

## **BACHELOR OF PHYSIOTHERAPY**

<b>Codes</b>	<b>Courses</b>	<b>Credit</b>
19.101	Anatomy	4
19.102	Biochemistry	4
19.103	Biomechanics	4
19.104	Psychology	4
19.105	Physiology	4
19.106	Sociology	4
19.107	Basic Nursing	4
19.201	Orientation to Physiotherapy	4
19.202	English	4
19.203	Pathology	4
19.204	Microbiology	4
19.205	Pharmacology	4
19.206	Exercise Therapy	4
19.207	Electrotherapy	4
19.301	Research Methodology & Biostatistics	4
19.302	First Aid & CPR	4
19.303	Introduction to Treatment	4
19.304	General Medicine	4
19.305	General Surgery	4
19.306	Orthopedics and Traumatology	4
19.307	Orthopedics and Sports Physiotherapy	4
19.401	Cardio-Respiratory & General Physiotherapy	4
19.402	Allied Therapies	4
19.403	Neurology & Neurosurgery	4
19.404	Neuro-Physiotherapy	4
19.405	Community Medicine	4
19.406	Community Based Rehabilitation	4
19.407	Ethics, Administration and Supervision	4
19.408	Evidence Based Physiotherapy Practice	4

### **19.101 Anatomy**

Credit: 4

**Content:** General Histology, Study of basic tissues of the body, embryology, Regional Anatomy, thorax, cardio vascular system, mediastinum, pericardium, respiratory system, abdomen, pelvis, endocrine glands, musculo skeletal anatomy, neuro anatomy

### **19.102 Biochemistry**

Credit: 4

**Content:** Nutrition, importance, calorific value, energy requirement of a person, balanced diet, carbohydrate chemistry, lipid chemistry, amino-acid chemistry, enzymes, Nucleotide and Nucleic acid Chemistry, Digestion and Absorption, Carbohydrate Metabolism, Lipid Metabolism, Amino acid and Protein Metabolism, Vitamins, Mineral Metabolism, Cell Biology, Muscle Contraction, Biochemistry of Connective tissue, Hormone Action, Acid-Base balance, Water balance, Electrolyte balance, Clinical Biochemistry

### **19.103 Biomechanics**

Credit: 4

**Content:** Basic Concepts in Biomechanics: Kinematics and Kinetics, Joint structure and Function, Muscle structure and function, Biomechanics of the Thorax and Chest wall, The Temporomandibular Joint, Biomechanics of the vertebral column, Biomechanics of the peripheral joints, Analysis of Posture and Gait

### **19.104 Psychology**

Credit: 4

**Content:** Introduction to psychology, growth and development, sensation, attention and perception, motivation, frustration and conflict, emotions, intelligence, thinking, learning, personality, social psychology.

### **19.105 Physiology**

Credit: 4

**Content:** General Physiology, blood, nerve muscle physiology, cardiovascular system, respiratory system, digestive system, renal system, endocrine system, reproductive system, special senses, nervous system, physiology of exercise, Effect of gravity / altitude /acceleration / pressure on physical parameters, physiology of age, applied physiology, pulmonary functions, cardiovascular functions, muscles and nervous system functions, blood functions, metabolic functions

### **19.106 Sociology**

Credit: 4

**Content:** Meaning- Definition and scope of sociology, its relation to Anthropology, Psychology, Social Psychology, Social Factors in Health and disease situations, socialization, social groups, family, community, culture and health, social change, social problems of disabled, social security, social worker.

### **19.107 Basic Nursing**

Credit: 4

**Content:** Nursing principles, Inter-Personnel relationships, Bandaging, Nursing Position, Lifting and Transporting Patients, Bed side Management, Methods of Giving Nourishment, Care of Rubber Goods, Surgical Dressing

### **19.201 Orientation to Physiotherapy**

Credit: 4

**Content:** Patterns of Health Care Delivery, National Trends and resources, Components of Physiotherapy Profession, Role of Physiotherapy in meeting Health Care, Needs in India, Physiotherapist as 'Educator', Typical Job settings, Common problems and solutions

### **19.202 English**

Credit: 4

**Content:** The use of the dictionary, Enlargement of vocabulary, Effective diction, Applied Grammar, Written Composition, Reading and comprehension, The Study of Various Forms of Composition, Paragraph, Essay, Letter, and Verbal Communication

### **19.203 Pathology**

Credit: 4

**Content:** Introduction to Pathology, Cell injuries, Inflammation and Repair, Immunopathology, Infectious diseases, Circulatory Disturbances, Growth Disturbances and Neoplasia, Nutritional Disorders, Genetic Disorders, Hematology, Leukocytic disorders, Respiratory System, Cardiovascular Pathology, Alimentary tract, Hepato – biliary pathology, Lymphatic System, Musculoskeletal System, Endocrine pathology, Neuropathology, Inflammations and Infections, Dermatopathology

### **19.204 Microbiology**

Credit: 4

**Content:** General Microbiology, Routes of infection and spread, Physiology, Antimicrobials, Immunology, Bacteriology, General Virology, Mycology, Clinical/Applied Microbiology

### **19.205 Pharmacology**

Credit: 4

**Content:** General Pharmacology, Autonomic Nervous system, Cardiovascular Pharmacology, Neuropharmacology, Disorders of Movement, Inflammatory/ Immune Diseases, Digestion and Metabolism, Geriatrics

### **19.206 Exercise Therapy**

Credit: 4

**Content:** The aims of Exercise Therapy, The techniques of Exercise Therapy, Methods of Testing, Functional tests, Measurement of Joint range, Tests for neuromuscular efficiency, Relaxation, Passive Movements, Active Movements, Proprioceptive Neuromuscular Facilitation, Suspension Therapy, Functional Re-education, Aerobic Exercise, Stretching, Manual Therapy & Peripheral Joint Mobilization, Balance, Co-ordination Exercise, Posture, Walking Aids, Massage, Hydrotherapy, Individual and Group Exercises, Introduction to Yoga

### **19.207 Electrotherapy**

Credit: 4

**Content:** Introductory Physics, Electricity, Static electricity, Current Electricity, Magnetism, Valves, transformers, types, principles, construction and working, Ionization, Therapeutic Electricity, Low frequency Currents, Faradic Current, Galvanic Current, Sinusoidal Current & Diadynamic Current, HVPGS, Ionization / Iontophoresis, Cathodal / Anodal galvanism, Micro Current & Macro Current, Types of Electrical Stimulators, Principles of Application, Nerve Muscle, Physiology, TENS, Pain, Electro-diagnosis, Medium Frequency, Thermo & Actinotherapy, Electro Magnetic Spectrum, Pulsed Electro Magnetic Energy, Micro Wave Diathermy, Ultrasound, Superficial heating Modalities, Wax Therapy, Contrast Bath, Moist Heat Therapy, Cyclotherm, Fluidotherapy, Whirl Pool Bath, Cryotherapy

### **19.301 Research Methodology and Biostatistics**

Credit: 4

**Content:** Introduction to Research methodology, Research problem, Research design, Sampling Design, Measurement & scaling techniques, Methods of data collection, Sampling fundamentals, Processing & analysis of data, testing of hypothesis, computer application in research, Meaning, definition, characteristics of statistics., Tabulation of Data, Measure of Central Tendency, Probability and Standard distributions, Sampling techniques, Analysis of variance & covariance

### **19.302 First Aid and CPR**

Credit: 4

**Content:** Importance of First Aid in Physiotherapy, examination of Vital Signs, first Aid in cardiac arrest, first Aid in Respiratory failure, first Aid in Burns, first Aid in Electric shock, first Aid in Drowning, first Aid in Spinal cord injuries, first Aid in Hypovolemic Shock, first Aid in Poisoning, instrumentation used in First Aid (First Aid kit), first Aid in RTA, indication of CPR, assessment and technique of CPR, artificial ventilation.

### **19.303 Introduction to Treatment**

Credit: 4

**Content:** General Information regarding Hospital wards, Patients hospital records and functioning of department in patient management and departmental clinical units, History taking, assessment, tests, Patient communication, documentation of findings, treatment organization and planning/execution for intervention, record keeping and information retrieval, techniques of use of electrotherapy equipments on patients, monitoring of dosages and winding up procedure, introduction about standardized tests and scales used in various types of cases for assessment and interpretation, exercise therapy treatment organization and methods of application on various types of cases

### **19.304 General Medicine**

Credit: 4

**Content:** Infection, Poisoning, Food and Nutrition, Endocrine diseases, Diseases of the blood, Diseases of the digestive system, Cardiovascular Disease, Respiratory Disease, Diseases of the Skin, Pediatrics, Psychiatric Disorders

### **19.305 General Surgery**

Credit: 4

**Content:** Fluid, Electrolyte and Acid-Base disturbances – diagnosis and management, Wound healing, Scars, Hemostasis, Transfusion therapy in surgery, Surgical Infections, General Post, Reasons for Surgery, Types of anaesthesia and its affects on the patient, Causes, Clinical Presentation, Diagnosis and treatment of the following Thoracic Trauma situations – Airway obstruction, Pnuemothorax, Hemothorax, Cardiac Tamponade, Tracheobronchial disruption, Aortic disruption, Diaphragmatic disruption, Esophageal disruption, Cardiac and Pulmonary Contusions. Surgical Oncology, Disorders of the Chest Wall, Lung and Mediastinum, Disorders of the Heart, Thoracic surgeries, Diseases of the Arteries and Veins, Definition, Indication, Incision, Physiological changes and Complications following Common operations, Burns, Womens Health, ENT, Ophthalmology

### **19.306 Orthopedics and Traumatology**

Credit: 4

**Content:** Introduction to orthopedics, Clinical examination in an orthopedic patient. Common investigative procedures, Fracture: definition, types, signs and symptoms, Fracture healing, Complications of fractures, Fractures and dislocations of Upper Limb, Fracture of Cervical Spine, Fracture of Thoracic and Lumbar Regions, Fracture of Rib Cage, Fractures and Dislocations of Lower Limb, Soft Tissue Injuries, Hand Injuries, Amputations, Traumatic Spinal Cord Injuries, Deformities, Congenital Deformities, Acquired Deformities, Disease of Bones and Joints, Inflammatory and Degenerative Conditions, Syndromes, Neuromuscular Disorders, Cervical and Lumbar Pathology, Orthopedic Surgeries, Regional Conditions

### **19.307 Orthopedics and Sports Physiotherapy**

Credit: 4

**Content:** PT assessment for Orthopedic conditions - SOAP format, Fractures - types, classification, signs and symptoms, complications, Fracture healing – factors affecting fracture healing, Specific fractures and dislocations, Selection and application of physiotherapeutic techniques, maneuver's, modalities for preventive, curative and rehabilitative means in all conditions, Principles of various schools of thought in manual therapy, Degenerative and Inflammatory conditions, Infective conditions, Define, review the postural abnormalities of spinal column, clinical features, deformities, medical and surgical management, Deformities, Cerebral palsy, Poliomyelitis, Leprosy, Amputations, Spinal conditions, Effects of spinal traction, types of traction, Osteoporosis- causes, predisposing factors, investigations and treatment, orthopedic surgeries, Shoulder joint Elbow and forearm, Wrist and Hand, Hip: Joint surgeries, Knee, Ankle and foot, Introduction to Bio-Engineering, Sports Physiotherapy, Applied Yoga in orthopedic conditions

### **19.401 Cardio-Respiratory and General Physiotherapy**

Credit: 4

**Content:** Anatomical and Physiological differences between the Adult and Pediatric lung, Bedside assessment of the patient-Adult & Pediatric, Investigations and tests – Exercise tolerance Testing, Physiotherapy techniques to increase lung volume, Physiotherapy techniques to decrease the work of breathing, Physiotherapy techniques to clear secretions, Drug therapy, Management of wound ulcers, Physiotherapy in dermatology, Neonatal and Pediatric Physiotherapy, Physiotherapy in Obstructive lung conditions, Physiotherapy in Restrictive lung

conditions, Management of breathlessness, Pulmonary Rehabilitation, Physiotherapy following Lung surgeries, Respiratory failure – Oxygen Therapy and Mechanical Ventilation, Introduction to ICU, Burns management, Physiotherapy management following cardiac surgeries, Cardiac Rehabilitation, Physiotherapy management following PVD, Abdominal Surgeries, Management of Amputations following Diabetes, PVD, Physiotherapy intervention in the management of Medical, Surgical and Radiation Oncology Cases, Home program and education of family members in patient care, Physiotherapy in Obstetrics, Health Fitness and Promotion, Applied Yoga in Cardio-respiratory conditions

#### **19.402 Allied Therapies**

Credit: 4

**Content:** Basic Occupational Therapy, Introduction to Occupational Therapy, Principles of Occupational Therapy, Human Structure and Function in Occupational Therapy, Therapeutic Media in Occupational Therapy, Therapeutic Modalities in Occupational Therapy, Health Care Management in Occupational Therapy, Pathophysiology in Occupational Therapy, Mental Health in Occupational Therapy, Physical Function in Occupational Therapy, Basic Speech Therapy, Anatomy and Physiology of the Organs of Language, Introduction to Audiology, Neurological Basis of Language, Linguistics, Phonetics and Phonology, Introduction to Language Disorders, Speech Therapy, Intervention in Language Development Disorders, Aphasia, Speech, Articulation Disorders, Deafness, Dyslexias and dysgraphias, Stuttering, Alternative Systems of Communication, Intervention in autism and Psychopathological Disorders, Intervention in Basic Language, Psychomotor Development, New Educational Methodologies for Children with Auditory Alterations, Technology Applied to Speech Processing, Speech Therapy Intervention in Cochlear Implantation, Alternative Medicine, Accupuncture, Introduction to Naturotherapy, Magnetotherapy, Yogasanas and their scientific studies.

#### **19.403 Neurology and Neurosurgery**

Credit: 4

**Content:** Disorders of function in the context of Pathophysiology, Anatomy in Neurology and Cortical Mapping, Classification of neurological involvement depending on level of lesion, Neurological assessment, Investigations, Neuro-ophthalmology, Deafness, vertigo, and imbalance, Lower cranial nerve paralysis, Cerebro-vascular diseases, Head injury, Higher cortical, neuro psychological and neurobehavioral disorders, Movement disorders, Cerebellar and coordination disorders, Spinal cord disorders, Brain tumors and spinal tumors, Infections of brain and spinal cord, Motor neuron diseases, Multiple sclerosis, Disorders of neuromuscular junction, Muscle diseases, Polyneuropathy, Focal peripheral neuropathy, Paediatric neurology, Toxic, metabolic and environmental disorders, Introduction, Indications and Complications of following Neuro surgeries

#### **19.404 Neuro-Physiotherapy**

Credit: 4

**Content:** Neurological Assessment, Neuro physiological Techniques, Paediatric Neurology, Evaluation and Management of Brain and Spinal Cord Disorders, Evaluation and Management of Cerebellar, Spinal Cord and Muscle Disorders, Evaluation and Management of Peripheral Nerve Injuries and Disorders, Assessment and management of Neurological gaits, Pre and Post

surgical assessment and treatment following conditions, Applied Yoga in Neurological conditions

#### **19.405 Community Medicine**

Credit: 4

**Content:** Health and Disease, Dimensions and Indicators of Health, Concept of well-being, Epidemiology, definition and scope. Dynamics and modes of disease transmission, Screening for Disease, Epidemiology of communicable disease, Public health administration, Health programmes in India, Demography and Family Planning, Preventive Medicine in Obstetrics, Nutrition and Health, Environment and Health, Hospital waste management, Disaster Management, Occupational Health, Mental Health, Health Education

#### **19.406 Community Based Rehabilitation**

Credit: 4

**Content:** Rehabilitation: Definition, Types, Community, Community Entry strategies, CBR and Community development, Introduction to Community Based Rehabilitation, Principles of Community based Rehabilitation, Planning and management of CBR Programmes, Disability, Disability Evaluation, Role of Government in CBR, Role of Social work in CBR, Role of voluntary Organizations in CBR, National District Level Rehabilitation Programme, Role of Physiotherapy in CBR, Screening and rehabilitation of pediatric disorders in the community, Extension services and mobile units, Vocational training in rehabilitation, Geriatrics, Industrial Health & Ergonomics

#### **19.407 Ethics, Administration and Supervision**

Credit: 4

**Content:** Ethical principles in health care, Ethical principles related to physiotherapy, Scope of practice, Enforcing standards in health profession, Medical ethics and Economics in clinical decision-making, Rules of professional conduct, Confidentiality and Responsibility, Malpractice and negligence, Provision of services and, advertising, Legal aspects, Memorandum Of Association & Rules and Regulations, Branches of administration, Nature and scope of administration, Principles of hospital administration and its applications to physiotherapy, Planning and organization, Financial issues including budget and income generation, Hospital administration, National health policy and health care system in India, Organization of physiotherapy department, Organizing meetings, committees, and negotiations, Personnel management, Material management, Quality assurance, Public relations in hospital and human resource management.

#### **19.408 Evidence Based Physiotherapy**

Credit: 4

**Content:** Introduction to Evidence Based Practice: Concepts of Evidence based Physiotherapy: Awareness, Consultation, Judgement, Development of Evidence based knowledge, Evidence Based Practitioner: The Reflective Practitioner, Finding the Evidence: Measuring outcomes in Evidence Based Practice, Measuring Health, Outcomes, Measuring clinical outcomes, Searching for the Evidence, Assessing the Evidence, Economic evaluation of the evidence, Using the evidence, Practice guidelines,



algorithms, and clinical pathways, Communicating evidence to clients, managers and funders,  
Research dissemination and transfer of knowledge