

## **PROGRAMME NAME: BACHELOR OF PHYSIOTHERAPY**

### **PROGRAM OUTCOMES:**

After successful completion of the programme, an individual will be able to:

- PO1 KNOWLEDGE:** Graduates will adopt of physical therapy services using theoretical and practical knowledge with consideration for patients in clinical judgment.
- PO2 LEARNING SKILLS:** Ability to reflect theoretical and practical knowledge on assessment planning, implementation in physiotherapy practice requiring for individual rehabilitation.
- PO3 PROFESSIONAL ETHICS:** Graduate will achieve moral principles and values that out to guide the professional ethical rules and legislation.
- PO4 ANALYTIC SKILLS:** Ability to consider new ideas, and uses the knowledge to collect data and analyze accurately to complete research project.
- PO5 SOCIAL AWARENESS:** The graduate will demonstrate the impact of physiotherapy knowledge on the society.
- PO6 LIFE LONG LEARNING:** Develop educational experience for proficiency in profession and promote preventive and rehabilitative aspects of healthy individual.

### **BPT 1<sup>ST</sup> YEAR**

#### **HUMAN ANATOMY**

### **COURSE OUTCOMES:**

At the end of the course, a student would be able to:

- CO1-** Identify & describe various parts of Nervous system, structures of the cardio vascular & Respiratory system & musculoskeletal system.
- CO2-** Understand the Anatomical basis of clinical conditions of Nervous system, Musculoskeletal system & cardiovascular & Respiratory system.

**CO3-** Analyze the movements, structures of various CNS trans – sections, course of peripheral nerves & mechanism of Respiration.

**CO4-** Application of knowledge of anatomy on the living.

## **HUMAN PHYSIOLOGY**

### **COURSE OUTCOMES:**

At the end of the course, a student would be able to :

**CO1-** Describe physiological functions of various systems like – Musculo-skeletal, Neuro-motor, cardio-respiratory, endocrine & Uro-genital function.

**CO2-** Acquire the knowledge of the relative contribution of each organ system in maintenance of Homeostasis.

**CO3-** Acquire the skill of basic clinical examination of PNS, CNS, CVS & Respiratory system.

## **BIOCHEMISTRY**

### **COURSE OUTCOMES:**

At the end of the course, a student would be able to:

**CO1-** Describe normal functions of different components of food, enzymes and cell in brief.

**CO2-** Discuss nutritional aspects of carbohydrates, lipids, proteins & vitamins & their metabolism with special reference to obesity.

**CO3-** Acquire knowledge in brief about the Clinical biochemistry, with special reference to Liver & renal function test, Blood study for Lipid profile, metabolism of fat, Carbohydrates, proteins, bone minerals, and electrolyte balance.

## **FUNDAMENTALS OF EXERCISE THERAPY**

### **COURSE OUTCOMES:**

At the end of the course, a student would be able to:

**CO1-** Recall the basic principles of Physics related to mechanics of movement /motion & will be able to understand the application of such principles to the simple equipment designs, and their efficacy in therapeutic gymnasium and various starting positions used in therapeutics.

**CO2-** To demonstrate passive movements in terms of various Anatomical planes

**CO3-** Acquire the skill of application of various massage manipulations and describe the Physiological effects, therapeutic use, merits /demerits of the same

**CO4-** To describe types of Goniometer, merits and demerits of goniometry and to demonstrate and acquire the skill of measuring ROM with Goniometer

**CO5-** Be able to demonstrate General Fitness exercises and shall gain fitness for self.

## **FUNDAMENTALS OF ELECTROTHERAPY**

### **COURSE OUTCOMES:**

At the end of the course, a student would be able to :

**CO1-** Recall physics principles and Laws of Electricity, Electro-magnetic spectrum, and ultra -sound.

**CO2-** Describe in brief, main electrical supply, Electric shock & precautions, certain common electrical components such as transistors, valves, capacitors, transformers etc and the simple instruments used to test /calibrate these components [such as potentiometer, oscilloscope etc] of the circuitry, and will be able to identify such components.

**CO3-** Acquire knowledge of various superficial thermal agents such as Paraffin wax bath, Cryotherapy, homemade remedies, etc; their physiological and therapeutic effects, Merits/ demerits; and also acquire the skill of application.

## **SOCIOLOGY**

### **COURSE OUTCOMES:**

At the end of the course, a student would be able to :

**CO1-** Sociology & Health – Social factors affecting Health Status, Social Consciousness & Perception of Illness, Decision Making in taking Treatment

**CO2-** Socialization – Definition, Influence, of Social Factors, on Personality, Socialization in the Hospital & Rehabilitation of the patients.

**CO3-** Community Role of Rural & Urban communities in Public Health, Role of community in determining Beliefs, Practices & Home Remedies in Treatment.

## **YOGA THERAPY**

### **COURSE OUTCOMES:**

At the end of the course, a student would be able to :

**CO1-** Define Yoga and its types, its physiological and Psycho-somatic effects and will be able to demonstrate standard yoga postures used by the beginners.

## **ENGLISH COMMUNICATION**

### **COURSE OUTCOMES:**

**CO1-** Projecting the first impression

**CO2-** Use simple forms of polite expressions to establish basic social contact and to perform everyday functions including making requests and offers, conducting simple phone conversations, asking and telling time, giving simple directions, asking about price, ordering a meal, etc.

**CO3-** Students learn to use general, social and professional language.

**CO4-** Polishing manners to behave appropriately in social and professional circles.

**CO5-** Handling difficulty situations with grace style and professionalism.

## **ENVIRONMENTAL STUDIES**

### **COURSE OUTCOMES:**

Students will be able,

**CO1-** To understand the concept and function of the environment and recognize the physical, chemical, and biological components of the earth's systems and their functions.

**CO2-** To acquire the awareness on the ecosystem structure and process which interlinked with human survival, intensively need attention at global and regional level.

**CO3-** To identify common and adverse impacts of human activities on biotic communities, soil, water, and air quality and suggest sustainable strategies to mitigate these impacts;

**CO4-** Develop an understanding of environmental pollutions and hazards and general measures to control them.

**CO5-** To identify surrounding natural resources including renewable resources and non-renewable resources and practices for their restoration.

**CO6-** To realize the importance of biodiversity for maintaining ecological balance and Global conservation practices and strategies.

**CO7-** To analyze the need for sustainable development in respect of environmental management through Policies, movements and social awareness.

**CO8-** To acquire skills required to research and analyze environmental issues scientifically in applied situations such as careers.

## **BPT 2<sup>ND</sup> YEAR**

### **BASIC PROFESSIONAL PRACTICE AND ETHICS**

#### **COURSE OUTCOMES:**

At the end of the course, a student would be able to :

**PO1-** Understand Concepts of morality, Ethics & Legality-rules of professional conduct & their Medico-legal & moral implications-The need of Council Act for Physiotherapy.

**PO2-** Acquire knowledge of Functioning of the World Confederation of Physical therapy [W.C.P.T.] & its various branches-Special Interest groups [brief]

### **PATHOLOGY**

#### **COURSE OUTCOMES:**

At the end of the course, a student would be able to :

**CO1-** Acquire the knowledge of concepts of cell injury & changes produced thereby in different tissues & organs - capacity of the body in healing process

**CO2-** Recall the Etio – pathogenesis, the pathological effects & the clinico – pathological correlation of common infections & non-infectious diseases.

### **MICROBIOLOGY**

#### **COURSE OUTCOMES:**

At the end of the course, a student would be able to :

**CO1-** Acquire knowledge of common Immunological disorders & their resultant effects on the human body.

**CO2-** Understand in brief, about the Hematological diseases & investigations necessary to diagnose them & determine their prognosis.

**CO3-** At the end of the Microbiology course, the candidate will have sound knowledge of the agents responsible for causing human infections, pertaining to C.N.S., C.V.S. Musculoskeletal & Respiratory system.

## **PHARMACOLOGY**

### **COURSE OUTCOMES:**

At the end of the course, a student would be able to :

**CO1-** Describe Pharmacological effects of commonly used drugs by patients referred for Physiotherapy, list their adverse reactions, precautions to be taken & contraindications, Formulation& route of administration.

**CO2-** Identify whether the pharmacological effect of the drug interferes with the Therapeutic response of Physiotherapy & vice-versa

**CO3-** Indicate the use of analgesics & anti-inflammatory agents with movement disorders with consideration of cost, efficiency & safety for individual needs.

**CO4-** Get the awareness of other essential &commonly used drugs by patients-The bases for their use & common as well as serious adverse reactions

## **PSYCHIATRY**

### **COURSE OUTCOMES:**

At the end of the course, a student would be able to :

**CO1-** Acquire the knowledge in brief, about the pathological & etiological factors, signs / symptoms & management of various Psychiatric conditions.

## **PSYCHOLOGY**

### **COURSE OUTCOMES:**

At the end of the course, a student would be able to :

**CO1-** Understand the importance of psychological status of the person in health & disease; environmental & emotional influence on the mind & personality.

**CO2-** Have the knowledge and skills required for good interpersonal communication

**CO3-** Understand the patient more empathetically.

## **BIOMECHANICS & KINESIOLOGY**

### **COURSE OUTCOMES:**

At the end of the course, a student would be able to :

- CO1-** Acquire the knowledge of axis and planes
- CO2-** Acquire the knowledge of forces acting at various joints.
- CO3-** Acquire the knowledge of muscle and joint work in activities of daily living.
- CO4-** Acquire the knowledge of kinetics and kinematics of Spine, Extremities, Temporo-Mandibular joint, Thoracic cage
- CO5-** Acquire the knowledge of Musculo skeletal movements during normal Gait and Activities of Daily Living

## **EXERCICE THERAPY**

### **COURSE OUTCOMES:**

At the end of the course, a student would be able to :

- CO1-** Describe the physiological & Therapeutic uses, merits /demerits of various exercise modes.
- CO2-** Demonstrate various therapeutic exercises on self & acquire the application skill on models.
- CO3-** Acquire the skill of assessment of isolated &group muscle strength, & Range of motion of the joints subjectively & objectively.
- CO4-** Describe the pattern of normal and abnormal movements of various joints and activities.

## **ELECTROTHERAPY**

### **COURSE OUTCOMES:**

At the end of the course, a student would be able to :

- CO1-** Describe the Production &Physiological effects, Therapeutic uses, merits, demerits indication &contraindications of various low/medium Frequency Currents modes.
- CO2-** Describe the Physiological effects &therapeutic uses of various therapeutic ions & Topical Pharmaco-therapeutic agents to be used for the application of Iontophoresis & sono/phonophoresis
- CO3-** Acquire the skill of Application of the Electro therapy modes like UVR and LASER on models, for the purpose of Assessment &Treatment.
- CO4-** Acquire an ability to select the appropriate mode as per the tissue specific & area specific application.

## **BPT 3<sup>RD</sup> YEAR**

### **FUNCTIONAL DIAGNOSIS & PHYSIOTHERAPEUTIC SKILLS**

#### **COURSE OUTCOMES:**

At the end of the course, a student would be able to :

**CO1-** Understand the use of appropriate tools or instruments of assessment in Musculoskeletal, Neurological and Cardio-vascular conditions.

**CO2-** Understand the theoretical basis and principles of manipulative skills, neurotherapeutic skills and skills of cardiopulmonary care and resuscitation

**CO3-** Perform assessment of measures of body structures and functions related to tissue mechanics.

**CO4-** Perform assessment of measures of body structures and functions related to motor control affecting activity and participation, quality of life and independence.

**CO5-** Demonstrate skills of manual therapy musculoskeletal, neurotherapeutics and cardiovascular and respiratory skills on models (Laboratory work).

**CO6-** Follow the principles of appropriate handling technique that is draping, hand placement, body part positioning, manual techniques, lifting and transfer techniques.

### **ORTHOPAEDICS**

#### **COURSE OUTCOMES:**

At the end of the course, a student would be able to :

**CO1-** Be able to discuss the Patho-physiology, clinical manifestations & conservative/Surgical management of various traumatic & cold cases of the Musculo-skeletal Conditions

**CO2-** Gain the skill of clinical examination & interpretation of the preoperative cold cases & all the post- operative cases

**CO3-** Will be able to read & interpret a] salient features of the X-ray of the spine & Extremities

**CO4-** Pathological/ biochemical studies pertaining to Orthopaedic Conditions

**CO5-** Will be able to correlate the radiological findings with the clinical findings



## **NEUROLOGY**

### **COURSE OUTCOMES:**

At the end of the course, a student would be able to :

**CO1-** Be able to describe Etiology, Pathophysiology, Signs &Symptoms &Management of the various Neurological conditions.

**CO2-** Acquire skill of clinical examination of Neurological System.

**CO3-** Acquire knowledge of various drugs used for each medical condition to understand its effects and its use during therapy.

## **PAEDIATRICS**

### **COURSE OUTCOMES:**

At the end of the course, a student would be able to:

**CO1-** Acquire knowledge in brief about intra-uterine development of the foetus

**CO2-** Be able to describe normal development &growth of a child, importance of Immunization & breast-feeding & psychological aspect of development.

**CO3-** Acquire skill of clinical examination of a neonate /child with respect to neurological, Musculoskeletal, Respiratory & Cardiovascular conditions

## **MEDICINE**

### **COURSE OUTCOMES:**

At the end of the course, a student would be able to :

**CO1-** Describe Etiology, Pathophysiology, Signs &Symptoms &Management of the various Endocrinal, Metabolic, Geriatric &Nutrition Deficiency conditions.

**CO2-** Describe Etiology, Pathophysiology, Signs & Symptoms, Clinical Evaluation & Management of the various Rheumatological Cardiovascular and Respiratory Conditions.

**CO3-** Interpret Chest X-ray, Blood gas analysis, P.F.T. findings, Blood investigations done for various medical and Rheumatological conditions.

**CO4-** Describe the principles of Management at the Medical Intensive Care Unit

## **SURGERY**

### **COURSE OUTCOMES:**

At the end of the course, a student would be able to :

**CO1-** Understand & describe pre operative evaluation various surgical indications in abdominal thoracic, Neuro Surgical & Peripheral vascular conditions.

**CO2-** Understand surgical steps & approaches in short & should be able to describe components of soft tissues cut to reach target tissue & complications.

**CO3-** Assess post operative complications & its implications in ward treatment, prognosis, morbidity & mortality.

**CO4-** Describe effects of surgical trauma & Anaesthesia in post operative course.

## **OBSTETRICS & GYNAECOLOGY**

### **COURSE OUTCOMES:**

At the end of the course, a student would be able to :

**CO1-** Be able to describe the normal & abnormal physiological events during the Puberty, Pregnancy, Labor, Puerperium, & Pre, Peri & Post Menopause.

**CO2-** Be able to discuss common complications during Pregnancy, Labor, Puerperium & Pre, Peri & Post Menopausal stage & various aspects of Urogenital Dysfunction & the management in brief.

## **DERMATOLOGY**

### **COURSE OUTCOMES:**

At the end of the course, a student would be able to :

**CO1-** Describe the Pathophysiology, Signs & Symptoms, Clinical Features, Examination & Management of Common Skin Conditions

## **COMMUNITY MEDICINE**

### **COURSE OUTCOMES:**

At the end of the course, a student would be able to :

**CO1-** Know National & International Definition of Health, Role of Socio-Economic & Cultural Environment in Health & Disease.

**CO2-** Understand Epidemiology of socio-economical & cultural issues - related to morbidity

**CO3-** Acquire knowledge of Demography and objectives of national family welfare programmes and national population policy

## **BASICS OF COMPUTER APPLICATION**

### **COURSE OUTCOMES:**

At the end of the course, a student would be able to :

- CO1-** Effectively use Microsoft Office to communicate with patients while rendering care.
- CO2-** To utilize PowerPoint presentations and Picture management for effective teaching and Learning.
- CO3-** Learn the use of Internet services for Research and Documentation

## **FIRST-AID & EMERGENCY CARE**

### **COURSE OUTCOMES:**

At the end of the course, a student would be able to :

- CO1-** Acquire skills for assessment, immediate actions and the priorities within first aid Bandages
- CO2-** Understand concept of Emergency Definition importance and rules, code tags and triage terminology.

## **CHOICE BASED COURSE- PT IN PAEDIATRICS**

### **COURSE OUTCOMES:**

At the end of the course, a student would be able to :

- CO1-** Embryology of nervous system, Embryology of cardiovascular, pulmonary & musculoskeletal system , Developmental & congenital anomalies, Deformities of vertebral column, deformities of chest wall.
- CO2-** Acquire the knowledge of normal neurodevelopment, with specific reference to Locomotion

## **CHOICE BASED COURSE- MANUAL THERAPY**

### **COURSE OUTCOMES:**

At the end of the course, a student would be able to :

- CO1-** Integrate the manual therapies to rehabilitate the Mechanical NeuroMuscular problems.
- CO2-** Acquire the knowledge and skill of various approaches of Manual therapy for joints of the limbs/spine.

## **BPT 4<sup>TH</sup> YEAR**

### **MUSCULOSKELETAL PHYSIOTHERAPY**

#### **COURSE OUTCOMES:**

At the end of the course, a student would be able to :

**CO1-** Identify, discuss & analyze, the Musculoskeletal Dysfunction in terms of Biomechanical, Kinesiology & Biophysical basis & correlate the same with the provisional diagnosis, routine radiological & Electrophysiological investigations & arrive at appropriate Functional diagnosis with clinical reasoning.

**CO2-** Plan & Prescribe as well as acquire the skill of executing short & long term Physiotherapy treatment by selecting appropriate modes of Mobilization / Manipulations, Electro-Therapy, Therapeutic exercise & appropriate Ergonomic advise for the relief of pain, restoration / Maintenance of function & rehabilitation for maximum functional independence in A.D.L. at home & work place.

### **NEUROPHYSIOTHERAPY**

#### **COURSE OUTCOMES:**

At the end of the course, a student would be able to :

**CO1-** Acquire the knowledge of normal neurodevelopment, with specific reference to locomotion

**CO2-** Assess, identify & analyze Neuro-motor & psychosomatic dysfunction in terms of alteration in the muscle tone, power, coordination, involuntary movements

**CO3-** Plan, prescribe & execute short term & long term treatment, with special reference to relief of Neuropathic & psycho-somatic pain, mat exercises, functional re-education, gait training, postural & functional training for A.D.L., ergonomic.

### **CARDIO-VASCULAR & RESPIRATORY PHYSIOTHERAPY**

#### **COURSE OUTCOMES:**

At the end of the course, a student would be able to :

**CO1-** Identify, discuss & analyze cardio-vascular & pulmonary dysfunction, based on Patho-physiological principles, & arrive at the appropriate functional diagnosis,

**CO2-** Acquire the skill of evaluation & interpretation of functional capacity, using simple exercise tolerance tests, such as 6 minutes walk test, symptom limited test.

**CO3-** Be able to execute the effective Physio Therapeutic measures [with appropriate clinical reasoning] with special emphasis to Breathing retraining, nebulization, humidification, bronchial hygiene, General mobilization, & Exercise conditioning

**CO4-** Be able to execute the effective Physio therapeutic measures with appropriate clinical reasoning to improve general surgical & medical condition.

## **COMMUNITY PHYSIOTHERAPY**

### **COURSE OUTCOMES:**

At the end of the course, a student would be able to :

**CO1-** Acquire skills for the evaluation of disability and planning for prevention and rehabilitation.

**CO2-** Deliver Community Based Rehabilitation in urban and rural set up.

**CO3-** Identify with clinical reasoning the prevailing contextual (e.g. environmental and psycho-social cultural} factors, causing high risk responsible for various dysfunctions and morbidity related to sedentary life style and specific community like women, children, aged as well as industrial workers and describe planning strategies of interventional policies to combat such problems.

## **RESEARCH METHODOLOGY & BIOSTATISTICS**

### **COURSE OUTCOMES:**

At the end of the course, a student would be able to :

**CO1-** Acquire skills for the evaluation of disability and planning for prevention and rehabilitation. Gain knowledge of the basic concepts of Biostatistics & its need for professional practice & research.

**CO2-** Describe an Over - view- a] Ethnography & Anthropology b] Design & Methodology of an Experiment or Survey c] Demography & vital statistics d] Sampling & interpretation of Data.

## **PRINCIPLES OF BIO-ENGINEERING**

### **COURSE OUTCOMES:**

At the end of the course, a student would be able to :

**CO1-** Acquire knowledge about biomechanical principles, of application of variety of aids & appliances used for ambulation, protection & prevention.

**CO2-** Acquire knowledge about various material used for splints / Orthosis & prosthesis--selection criteria.

## **ADMINISTRATION, MANAGEMENT AND MARKETING**

### **COURSE OUTCOMES:**

At the end of the course, a student would be able to :

**CO1-** Learn the management basics in fields of clinical practice, teaching, research and physiotherapy practice in the community

**CO2-** Acquire the knowledge of the basics in Managerial & Management skills, & use of Information technology in professional Practice

**CO3-** Develop behavioral skills and humanitarian approach while communicating with patients, relatives, society at large and co-professionals

## **ADVANCE PROFESSIONAL PRACTICE AND ETHICS**

### **COURSE OUTCOMES:**

At the end of the course, a student would be able to :

**CO1-** Understand the moral values and meaning of ethics.

**CO2-** Develop psychomotor skills for physiotherapist-patient relationship

**CO3-** Develop bed side behavior, respect & maintain patients' confidentiality

## **ICU EVALUATION & MANAGEMENT**

### **COURSE OUTCOMES:**

At the end of the course, a student would be able to :

**CO1-** Utilise psychomotor skills to implement appropriate bronchial hygiene therapy, CPR, Intensive (critical) care.

**CO2-** Utilise skills such as executing exercise tests, PFT, Ankle brachial index, arterial & venous insufficiency tests

## **CHOICE BASED COURSE- PT IN SPORTS**

### **COURSE OUTCOMES:**

At the end of the course, a student would be able to :

**CO1-** Identify, discuss & analyse, the various cardio-respiratory function & co-relate the same with the provisional diagnosis, for fitness training & rehabilitation.

**CO2-** Lay down rehabilitation protocol for sports specific injuries focusing an early rehabilitation to injuries.

**CO3-** Identify the causes prone for injury & prevent them.

**CO4-** Understand the role of Sports physiotherapist in the team.

## **CHOICE BASED COURSE- PT IN HAND CONDITIONS**

### **COURSE OUTCOMES:**

At the end of the course, a student would be able to :

**CO1-** Further develop clinical reasoning that incorporates theoretical concept with evidence-based practice in the field of Hand rehabilitation.

**CO2-** Recognize the implication of dysfunction on the Neuro- Musculoskeletal system on hand function and the student's clinical decision making for rehabilitation.

**CO3-** Lay down rehabilitation protocol for sports specific hand injuries focusing an early rehabilitation to injuries.

**CO4-** Use recent Technique/ approaches to treat & train patients with hand dysfunction in children, adults & geriatrics.