



TAKSHASHILA UNIVERSITY

(Tamil Nadu State Private University)
ONGUR, TINDIVANAM TK, VILLUPURAM DT

FACULTY OF HEALTH SCIENCES SCHOOL OF PHYSIOTHERAPY

Department of Physiotherapy

**REGULATION 2025NEP
CURRICULUM & SYLLABI**

Bachelor of Physiotherapy

Semester – I



VISION AND MISSION OF UNIVERSITY

VISION:

To create change makers and world leaders similar to the ancient Takshashila University

MISSION:

The brightest minds and the best resources are used to nurture and develop the leaders of tomorrow, where they are encouraged to be eternally curious and ethically sound.

DEPARTMENT VISION AND MISSION

VISION:

To create a productive learning and research environment for graduates to become highly dynamic, competent, ethically responsible, professionally knowledgeable in the field of physiotherapy to meet the needs on par with global standards.

MISSION:

M1: Quality Education	Empowering the students with the necessary technical skills through quality education to grow professionally
M2: Innovative Research	Advocating the innovative research ideas by incorporating with hospitals for developing new treatment techniques
M3: Placement and Entrepreneurship	Advancing the education by strengthening the clinical-academic relationship through hands-on training to seek placement in the Hospitals and rehabilitation centres.
M4: Ethics and Social Responsibilities	Stimulating professional behaviour and good ethical values to improve the leadership skills and social responsibilities.

PROGRAMME OUTCOMES (POs)

As an independent practitioner, entry level Physiotherapy graduate will be able to

- PO1:** Demonstrate competencies to provide quality care to the individuals and populations to optimize their movement, function, and quality of life.
- PO2:** Demonstrate competency to examine, assess, evaluate, treat and prescribe physiotherapeutic management of various disease, disorders and trauma conditions.
- PO3:** Promote health and implement strategies informed by best available research evidence to prevent and minimize impairments, activity limitations and participation restrictions caused due to various disorders.
- PO4:** Demonstrate the commitment to provide ethical care through high standards of professional practice.
- PO5:** Demonstrate abilities to communicate effectively to augment therapeutic and professional relationships.
- PO6:** Demonstrate competency to prescribe and comprehend various diagnostic imaging, electrophysiological, hematological and bio- chemistry investigations for proper diagnosis, treatment or referral to other healthcare professionals.
- PO7:** Demonstrate competencies to integrate best available research evidence in to clinical decision making and practice.
- PO8:** Exhibits commitment towards continuous learning and scholarly activities.
- PO9:** Demonstrate abilities to work effectively with Healthcare team in providing patient centered care.
- PO10:** Demonstrate abilities to manage self, time, resources and priorities to ensure safe, effective, and sustainable services.
- PO11:** Demonstrate competencies in quality assurance relevant to Physiotherapy practice.

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

- PEO1:** Able to acquire the cognitive, affective and psychomotor skills deemed essential for completion of this program and to perform as a competent physiotherapist who will be able to examine, evaluate, diagnose, plan, execute and document Physiotherapy treatment independently or along with the multidisciplinary team.
- PEO2:** Evaluate patients for impairments and functional limitations and able to execute all routine physiotherapeutic procedures as per the evaluation.
- PEO3:** Able to operate and maintain Physiotherapy equipment used in treatment of patient, Physiotherapy treatment planning (both electrotherapy and exercise therapy) & procedures independently.
- PEO4:** Able to provide patient education about promotion of health, prevention of disease and disorders and various physiotherapeutic interventions to the patient and care givers.
- PEO5:** Able to demonstrate all competencies to achieve the program outcomes.

PROGRAM SPECIFIC OUTCOMES (PSOs)

PSO1: Clinician / Physiotherapy Practitioner

Demonstrate competencies to provide quality care to individuals and populations to optimise their movement, function, and quality of life. Promote health and implement strategies informed by best available research evidence to prevent and minimise impairments, activity limitations and participation restrictions caused due to various disorders.

PSO2: Ethical and Professional practitioner

Demonstrate the commitment to provide ethical care through high standards of professional practice

PSO3: Communicator

Demonstrate abilities to communicate effectively to augment therapeutic and professional relationships

PSO4: Evidence-based Practitioner and lifelong learner

Demonstrate competencies to integrate best available research evidence into clinical decision making and practice.

Exhibits commitment towards continuous learning and scholarly activities.

PSO5: Inter-professional teamwork

Demonstrate abilities to work effectively with Healthcare team in providing patient centred care

PSO6: Leader and Manager

Demonstrate abilities to manage self, time, resources and priorities to ensure safe, effective, and sustainable services.

PSO7: Quality assurance

Demonstrate competencies in quality assurance relevant to physio- therapy practice

CURRICULUM

School: School of Physiotherapy
Program: Bachelor of Physiotherapy

Batch: 2025 -2029
Regulation: R-2025

SEMESTER -I										
SL.NO	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS			CREDITS	MAX. MARKS		
				L	T	P		CAM	ESE	TOTAL
THEORY AND PRACTICAL										
1.	U25PT01B	Human Anatomy (HA)-I	DSC	6	0	4	8	40	60	200
								50	50	
2.	U25PT02B	Human Physiology(HP)- I	DSC	6	0	4	8	40	60	200
								50	50	
3.	U25PT03T	Biochemistry(BC)-I	MDC	3	0	0	3	40	60	100
4.	U25PT04T	Psychology(Psy)	MDC	4	0	0	4	40	60	100
5.	U25PT05B	Fundamentals of Exercise Modalities(FoEM)-I	DSC	4	0	2	5	40	60	200
								50	50	
6.	U25PT06B	Fundamentals of Electro Physical Agents(FoEA)-I	DSC	4	0	2	5	40	60	200
								50	50	
7.	U25PT07T	Fundamentals Of Health Care Delivery System In India (FoHS)- I	MDC	4	0	0	4	40	60	100
8.	U25PT08P	Clinical Orientation(COr)-I	SEC	0	0	4	2	-		100
								100		
9.	VAC	Computers and Information Science (IT)	VAC	0	0	4	2	100		100
10.	AEC	English, Communication and Soft Skills(EG)-I	AEC	0	0	4	2	100		100
First Semester Total							43	780	620	1400

U25PT01B	Human Anatomy (HA)-I	L	T	P	C	Total
		6	0	4	8	150

COURSE OUTCOMES:

After completion of the course, the students will be able to

CO1 :	Explain the fundamental concepts of anatomy, including anatomical terminology, bones, cartilage, joints, muscles, connective tissue, embryology, and the integumentary system, and apply this knowledge to describe the normal structure and organization of the human body
CO2 :	Identify, describe, and correlate the osteology, muscles, joints, nerves, blood vessels, and lymphatic drainage of the upper extremity with their functional movements and clinical significance
CO3 :	Describe and analyze the anatomy of the heart, mediastinum, pericardium, conducting system, and major blood vessels, and interpret their structural and functional relationships in the cardiovascular system
CO4 :	Explain the anatomy of the respiratory passages, lungs, pleura, diaphragm, and respiratory muscles, and analyze their roles in respiration and ventilation
CO5 :	Identify, explain, and evaluate the anatomical features of the vertebral column, thoracic cage, abdominal wall, pelvic girdle, and pelvic floor muscles, and relate their structure to posture, stability, and movement

UNIT 1: Introduction to Anatomy	18 Hrs.
Define Scope of Anatomy, Discuss the Anatomical Position and anatomical Terminology common anatomical terminologies (Groove, tuberosity, trochanters etc.), Identify Anatomical positions of body, axes, and planes Bone: Discuss Composition, Functions, Classification based on Morphology, Describe Development and Structure, Formation / Development of Bones esp. Long Bones, Parts of Long Bones, Discuss the Blood Supply of Bones, Cartilage: Describe Types and Features of cartilage Joints: Define and state types of joints. Discuss the features of fibrous, Cartilaginous & Synovial joints, sub-types of synovial joints Explain the movements of joints, factors permitting and limiting these movement, discuss blood supply of joints applied aspects, Muscles: Discuss Comparative Feature of Skeletal, Smooth and Cardiac Muscles, parts & structure of Skeletal Muscle including fascicular architecture, Describe Blood supply and nerve supply of Skeletal Muscle, Motor Unit, Discuss the Types of Skeletal Muscles based on their action i.e. Agonists, Antagonists, Fixators, Synergists, Origin & Insertion, Tendon, Isometric & Isotonic contractions, Applied Aspects, Connective Tissue: Explain Composition i.e. Cellular & Non-Cellular components, Types and functions of connective tissue, Types and functions of Ligaments; Applied Aspects. General	

Embryology: Describe Ovum, Spermatozoa, fertilization and formation of the Germ layers and their derivations. Development of skin, Fascia, blood vessels, lymphatic, (outline only details not required), Discuss Development of bones, axial and appendicular skeleton and muscles, Neural tube, brain vessels and spinal cord, Development of brain and brain stem structures, **Integumentary System:** Discuss the Structure of skin and its appendages.

UNIT 2: Musculo Skeletal Anatomy of Upper Extremity

**18
Hrs.**

Identify Osteology: Clavicles, Scapula, Humerus, Radius, Ulna, Carpals, Metacarpals, and Phalanges, **Identify Soft parts:** Breast, pectoral region, axilla, front of arm, back of arm, cubital fossa, front of fore arm, back of fore arm, palm, dorsum of hand, muscles, nerves, blood vessels and lymphatic drainage of upper extremity, Explain Shoulder girdle, shoulder joint, elbow joints, radio ulnar joint, wrist joint and joints of the hand, Discuss Arches of hand, skin of the palm and dorsum of hand.

UNIT 3: Cardio-vascular system

**18
Hrs.**

Describe Mediastinum : Divisions and contents Pericardium Describe Thoracic Wall: position, shape and parts of the heart; conducting System Describe blood Supply and nerve supply of the heart; names of the blood vessels and their distribution in the body – region wise.

UNIT 4: Respiratory system

**18
Hrs.**

Outline the respiratory passages, Pleura and lungs: position, parts, relations, blood supply and nerve supply, Lungs – emphasize on bronchopulmonary segments. **Describe Diaphragm:** Origin, insertion, nerve supply and action, openings in the diaphragm. **Describe Intercostal muscles and Accessory muscles of respiration:** Origin, insertion, nerve supply and action.

UNIT 5: Musculo skeletal anatomy of trunk & pelvis

**18
Hrs.**

Identify Osteology: Cervical, thoracic, lumbar, sacral and coccygeal vertebrae and ribs. **Discuss Soft tissue:** Pre and Para vertebral muscles, intercostal muscles, anterior abdominal wall muscles, Inter-vertebral disc. Describe Pelvic girdle and muscles of the pelvic floor.

Practical:

**60
Hrs.**

Identify the parts of bones (Upper limb, Cardiovascular and Respiratory system, trunk and pelvis), Identify the muscles of upper extremity, trunk and pelvis on a dissected human body/3 D models, Identify the joints of upper extremity, trunk and pelvis on a dissected human body/3 D models,

Identify the course and relationships of major peripheral nerves including plexuses formation, Identify the surface markings of joints, fascia, ligaments and muscles of upper extremities, trunk & pelvis on a model, Identify the gross structure of heart, lungs, on a dissected human body/3 D models.

TEXT BOOKS :

1. Snell RS. Clinical anatomy: an illustrated review with questions and explanations. Lippincott Williams & Wilkins; 2004.
2. Inderbir Singh, Text book of Anatomy with color Atlas – Vol. 1, 2, 3. Jaypee Brothers
3. Chaurasia BD. Human anatomy Volume- I, II & III, CBS Publisher; 2004.
4. Singh I. Textbook of human neuroanatomy. Jaypee Brothers Publishers; 2006.
5. Kadasne'S T.B. of Anatomy Vol.1 Upper and Lower Extremities 2009

REFERENCE BOOKS :

1. Gray's Anatomy: Descriptive and Applied. Longman
2. Snell RS. Neuroanatomy.
3. Singh V. Textbook of clinical neuroanatomy.
4. Romanes GJ. Cunningham's manual of practical anatomy
5. McMinn's Last's Anatomy – Regional and applied, Churchill Livingstone.

WEB REFERENCES :

1. <https://nptel.ac.in/courses/117101056>
2. <https://teachmeanatomy.info>
3. <https://openstax.org>
4. <https://medlineplus.gov>
5. <https://www.visiblebody.com>

K.N. Jena
BoS Chairman

U25PT02B	Human Physiology(HP)- I	L	T	P	C	Total
		6	0	4	8	150

COURSE OUTCOMES:

After completion of the course, the students will be able to

CO1 :	Explain the structure and functions of cells, cell organelles, membrane transport mechanisms, and body fluid compartments to illustrate the principles of cellular physiology.
CO2 :	Analyze the composition, functions, and physiological mechanisms of blood, including hematopoiesis, hemostasis, immunity, blood groups, blood transfusion, and lymphatic circulation in maintaining homeostasis.
CO3 :	Analyze the physiological mechanisms of cardiac function, cardiac cycle, ECG, cardiac output, blood pressure regulation, and regional circulation, and interpret cardiovascular responses during exercise.
CO4 :	Analyze the mechanics of respiration, pulmonary function, transport and regulation of respiratory gases, and physiological adaptations to exercise and altered environmental conditions.
CO5 :	Evaluate the physiological processes of digestion, gastrointestinal secretion, motility, liver and pancreatic functions, and justify their importance in maintaining normal digestive function and identifying common disorders.

UNIT I : General Physiology	18Hrs.
Discuss Cell : Morphology, Organelles their structure and functions And Transport Mechanisms across the cell membrane Discuss Body fluids: Distribution, composition.	

UNIT II: Blood	18Hrs.
Explain Composition and functions of blood and Plasma: Describe RBC, count and its variations. Erythropoiesis- stages, factors regulating. Reticulo-endothelial system (in brief) Describe Hemoglobin –structure, function and derivatives Anemia (in detail), types of Jaundice Blood indices, PCV, ESR, Discuss WBC. Morphology, functions, count, its variation of each. Immunity Describe Platelets: Morphology, functions, count, its variations , Discuss Hemostatic mechanisms: Blood coagulation–factors, mechanisms,Their disorders.,Anticoagulants, Describe Blood Groups ,Describe Cross matching: Indications and complications of Blood Transfusion Discuss Composition, formation, circulation and functions of Lymph	

UNIT III: Cardiovascular system**18Hrs.**

Describe: Physiological anatomy and nerve supply of the heart and blood vessels. Organisation of CVS, **Cardiac muscles:** Structure Ionic basis of action potential and pacemaker potential. Properties, Explain **Conducting system** in terms of Components, Impulse conduction, **Cardiac Cycle:** Definition. Phases of cardiac cycle, Pres- sure and volume curves, **Heart sounds** – causes, character, **ECG:** Definition, Different types of leads, Waves and their causes, P-R interval, Heart block, **Discuss Normal value,** Determinants, Stroke volume and regulation of **Cardiac Output:** Heart rate and its regulation, Their variations ,Describe Definition Normal values and its variations, Determinants, Peripheral resistance of Arterial Blood Pressure Regulation of BP Arterial Pulse , Discuss the causes and features of **Shock** ,Discuss **Regional Circulations** such as Coronary, Cerebral and Cutaneous circulation, Discuss **cardiovascular changes during exercise.**

UNIT IV: Respiratory System**18Hrs.**

Discuss the functions of : Pleura, tracheo-bronchial tree, alveolus, respiratory membrane and their nerve supply, Functions of respiratory system, Respiratory muscles, Explain the **Mechanics of breathing** in terms of Intra pleural and intrapulmonary pressure changes during respiration, Chest expansion, **Discuss Spirometry:** Lung volumes and capacities, Timed vital capacity and its clinical significance, Maximum ventilation volume, Respiratory minute volume, **Discuss Pulmonary Circulation,** Ventilation-perfusion ratio and its importance, Explain **Transport of respiratory gases:** Diffusion across the respiratory membrane, Oxygen transport – Different forms, oxygen-hemoglobin dissociation curve. Factors affecting it, P50, Haldane and Bohr effect, Carbon dioxide transport: Different forms, chloride shift, **Explain Regulation of Respiration:** Neural Regulation, Hering-breuer's reflex, Voluntary control, Chemical Regulation, **Discuss Hypoxia:** Effects of hypoxia, Types of hypoxia, Hyperbaric oxygen therapy, Acclimatization Hypercapnia. Asphyxia. Cyanosis – types and features, Dysbarism **Explain Respiratory changes during exercise.**

UNIT V: Digestive System**18Hrs.**

Describe the functions of digestive system, **Describe Salivary Secretion:** Saliva: Composition. Functions, Regulation, Mastication, Discuss the stages and Function of **Swallowing** ,Describe **Stomach** in terms of Functions, Gastric juice: Gland, composition, function, regulation, Gastrin: Production, function and regulation, Peptic ulcer, Gastric motility, Gastric emptying, Vomiting, **Describe Pancreatic Secretion:** Composition, production, function, Regulation, **Discuss the Functions of liver,** Gall bladder And Composition, functions of bile.

Practical:	60Hrs.
Practical classes include hematology experiments, clinical examinations, amphibian chart, and recommended demonstrations.-Perform the following clinical examination procedures, Body Temperature measurement, Pulse rate ,Blood Pressure, Oxygen saturation, Respiratory rate, Differentiate Blood cells, Determine the blood cell counts ,Determine Blood groups ,Calculate bleeding and clotting time, Observe the procedures of common blood investigations ,Interpret normal ECG wave pattern ,Identify normal breath sounds ,Differentiate Heart sounds including murmurs .	

TEXT BOOKS :	
1.	Text book of Physiology –Anand & Manchanda, Tata McGraw Hill.
2.	Human Physiology – Vol. 1 & 2, Chatterjee. CC, Calcutta. Medical Allied.
3.	Concise Medical Physiology. Chaudhari, S.K, New Central Agency, Calcutta.
4.	Principles of Anatomy and Physiology. Tortora & Grabowski –Harper Collins.
5.	Text book of Practical Physiology – Ghai – Jaypee

REFERENCE BOOKS :	
1.	Text book of Medical Physiology –Guyton Arthur (Mosby.)
2.	Best & Taylor's Physiological Basis of Medical Practice
3.	West's Respiratory Physiology..
4.	Nunn and Lumb's Applied Respiratory Physiology

WEB REFERENCES :	
1.	https://guides.lib.uw.edu/c.php?g=345740&p=2329795
2.	https://libguides.cairn.edu/anatomyandphysiology/websites
3.	https://library.gc.edu/anatomy-and-physiology/open-access
4.	https://www.anatsoc.org.uk/educational-resources/educational-tools-and-resources/
5.	https://alvernia.libguides.com/anatomyphysiologyresearch/web

K. N. Jena
BoS Chairman

U25PT03T	Biochemistry (BC)-I	L	T	P	C	Total
		3	0	0	3	45

COURSE OUTCOMES:

After completion of the course, the students will be able to

CO1 :	Explain the concepts of acids, bases, buffers, and pH, and analyze the physiological mechanisms involved in maintaining acid–base balance and the causes of acid–base disorders.
CO2 :	Analyze the structure, classification, metabolism, hormonal regulation, and nutritional significance of carbohydrates, and interpret their role in maintaining energy homeostasis and metabolic disorders such as diabetes mellitus.
CO3 :	Analyze the classification, structure, functions, metabolism, and nutritional importance of lipids and lipoproteins, and evaluate their role in health and disease.
CO4 :	Analyze the classification, structure, functions, and nutritional significance of amino acids, peptides, and proteins, and evaluate protein quality and nitrogen balance in maintaining normal physiological functions.
CO5 :	Evaluate the principles of human nutrition, energy metabolism, dietary requirements, and nutritional disorders to formulate appropriate nutritional recommendations for maintaining health.

UNIT I : Acid-Base balance

9Hrs.

Acid-Base balance -Acids, bases and buffers, ph, Buffer systems of the body, bicarbonate buffer system Role of lungs and kidneys in acid base balance, Acid base imbalance.

UNIT II : Carbohydrate Chemistry

9Hrs.

Definition, general classification with examples, Glycosides bond ,Structures, composition, sources, properties and functions of **Monosaccharides, Disaccharides, Oligosaccharides and Polysaccharides, Glycosaminoglycan** (mucopoly saccharides) ,**Carbohydrate Metabolism** - Introduction, Glycolysis – Aerobic, Anaerobic Citric acid cycle, Substrate level phosphorylation,**Glycogen metabolism** – Glycogenesis, Glyco Geno lysis, Metabolic disorders glycogen, Gluconeogenesis, Cori cycle Hormonal regulation of glucose, Glycosuria, Diabetes mellitus ,**Role of carbohydrates in diet:** Digestible carbohydrates and dietary fibers.

UNIT III : Lipid Chemistry	9Hrs.
Lipid Chemistry -Definition, general classification ,Definition, classification, properties and functions of Fatty acids, Triacylglycerol, Phospholipids, Cholesterol, Essential fatty acids and their importance, Lipoproteins: Definition, classification, properties, Sources and function Ketone bodies, Role of lipids in diet .	

UNIT IV : Amino acid chemistry	9Hrs.
Amino acid Chemistry -Definition, Classification, Peptide bonds, Peptides: Definition, Biologically important peptides, Protein chemistry: Definition, Classification, Functions of proteins, Role of proteins in diet: Quality of proteins - Biological value, net protein utilization, Nutritional aspects of proteins-essential and non- essential amino acids, Nitrogen balance.	

UNIT V : Nutrition	9 Hrs.
Nutrition -Introduction, Importance of nutrition Calorific values, Respiratory quotient – Definition, and its significance Energy requirement of a person - Basal metabolic rate: Definition, Normal values, factor affecting BMR Special dynamic action of food, Physical activities - Energy expenditure for various activities,Calculation of energy requirement of a person, Balanced diet -Recommended dietary allowances, Nutritional disorders.	

TEXT BOOKS :	
1.	Textbook of Biochemistry- Chatterjee M.N.-Jaypee Brothers.
2.	Textbook of Biochemistry for Medical Students Vasudeval D.M. Jaypee Brothers.
3.	Clinical Biochemistry- metabolic & Clinical aspects- Marshall &Bangert- Churchill Linvingstone.
4.	Biochemistry Southerland-Churchill Livingstone.

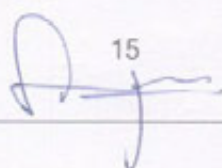
REFERENCE BOOKS :	
1.	Drugs in Sports: David R. Mottram and Sally Gunnel E. &F.N.Span.
2.	Normal and Therapeutic Nutrition Robison H. Cortinne et al., Mac Millian Publish Company, New York.
3.	Physiological Chemistry. By Harpar

WEB REFERENCES :

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|----|---|
| 1. | https://pmc.ncbi.nlm.nih.gov/articles/PMC3453779/ |
| 2. | http://www.csun.edu/~hcchm001/biosites.htm |
| 3. | https://pmc.ncbi.nlm.nih.gov/articles/PMC3453779/ |
| 4. | http://www.csun.edu/~hcchm001/biosites.htm |
| 5. | https://pmc.ncbi.nlm.nih.gov/articles/PMC3453779/ |

K.N. Jena
BoS Chairman



15




U25PT04T	Psychology (PSY)	L	T	P	C	Total
		4	0	0	4	60

COURSE OUTCOMES:

After completion of the course, the students will be able to

CO1 :	Demonstrate the fundamental concepts, schools, methods, and branches of psychology, and analyze the stages and factors influencing human growth and development and their relevance to physiotherapy practice.
CO2 :	Analyze the psychological processes of emotion, sensation, attention, and perception, and interpret their influence on human behavior and patient responses in clinical settings.
CO3 :	Analyze the principles of motivation, learning, and intelligence, and apply appropriate psychological theories to facilitate effective learning and patient rehabilitation.
CO4 :	Evaluate the effects of stress, frustration, anxiety, personality, and defense mechanisms on behavior, and justify appropriate coping strategies and psychological approaches in patient care.
CO5 :	Evaluate the principles of social and clinical psychology, including leadership, attitude change, psychotherapy, and physiotherapist–patient interaction, to develop effective communication and patient management strategies.

UNIT I : Introduction to Psychology and Developmental Psychology

12Hrs.

Describe Schools: Structuralism, functionalism, behaviorism, Psychoanalysis, **Describe Methods:** Introspection, observation, inventory and experimental method, **Describe in brief Branches:** pure psychology and applied psychology, **Describe importance of study of Psychology to physiotherapy, Developmental Psychology-**Describe Growth and Development Nature of growth and development, Characteristics of growth and development, Developmental periods of infancy, Describe **Childhood, adolescence, adulthood and old age**, Factors affecting growth and development, Describe **Role of heredity and environment** and their relative importance in physical, psychological and social development

UNIT II : Emotions and perception

12Hrs.

Describe **Emotions Concept** and definition, Theories of emotions, Physiological changes due to emotional state. Nature and control of anger, fear and anxiety, **Describe Sensation, attention and perception** Meaning and definition., Describe **Types of sensation and Perception**, Describe **Principles of Perception**, Illusion and hallucination concept of Iattention and Factors determining attention.

UNIT III : Motivation and Learning**12Hrs.**

Definition, needs, drives and motives, primary motives and secondary motives, Achievement motivation, Discuss the **theories of motivation**, Describe **theories of Learning**, Describe Concepts, Characteristics, Types, Laws of Learning, Theories of learning, Trial and Error theory, **Describe Conditioning**-classical and operant, Insight theory of learning, Factors influencing learning, **Describe the effective ways to learn**: Massed/Spaced, Whole/Part, Recitation/Reading, Serial/Free recall, Incidental/Intentional learning, Knowledge of results, association, organization, and mnemonic methods, **Describe Intelligence**; Discuss Characteristics, Types, IQ, Mental age, Describe **Assessment of intelligence**, intelligence tests-verbal and performance test

UNIT IV: Psychology of frustration and Stress & Personality**12Hrs.**

Describe Frustration and stress under the following headings: Definition, Causes, Sources of frustrations, Conflict, Different types of conflicts, Adjustment and maladjustment, Defense Mechanism, **Describe Different types of Anxiety**, Tension, Physiological symptoms, causes reactions to stresses, psycho-somatic problems, coping strategies, **Personality**- Define Personality and describe factors in personality development, **Describe tools of Measurement of Personality**:- observation, situational test, questionnaire, rating scale, interview, and projective techniques, **Describe Defense Mechanisms**: denial of reality, rationalization, projection, reaction formation, identification, repression, regression, intellectualization, undoing, introjection, acting out, **Describe psychological reactions** of a patient during admission and treatment in terms of possible Anxiety, shock denial, suspicion, Loneliness, shame, guilt, rejection, fear, withdrawal, depression, egocentric, justify and loss of hope.

UNIT V: Social psychology and Clinical psychology**12Hrs.**

Describe Different types of leaders and Different theoretical approaches to leadership, **Describe development of attitude** and Change of attitude, **Describe Models of training**, abnormal behavior assessment, clinical judgement, psychotherapy, self-management methods, physiotherapist patient interaction, aggression, **Discuss the following** : Self-imaging stress management, assertive training, Group therapy, Body awareness, Pediatric, child and geriatric clinical psychology.

TEXT BOOKS :

1.	Morgan C.T. & King R.A. Introduction to Psychology– recent edition [Tata McGraw-Hill publication]
2.	Munn N.L. Introduction to Psychology [Premium Oxford, I.B.P. publishing.]
3.	Clinical Psychology –Akolkar
4.	Hurlock EB. Development psychology. McGraw-Hill;

REFERENCE BOOKS :

1.	Psychology Indian continent edition Raron RA mishra 2018
2.	Abnormal Psychology Sarason IG Sarason BR Prentice Hall India
3.	Introduction to psychology Atkinson RL Hilgard ER 2019
4.	Development a lifespan approach Johnson ML 2020 Pearson education

WEB REFERENCES :

1.	https://www.us.elsevierhealth.com/physiotherapy-9780750653299.html
2.	https://www.apa.org/about/policy/guidelines-health-care-delivery-systems.pdf
3.	https://jssphysiotherapy.edu.in/assets/documents/pdf/Textbooks_in_Psycology_and_Sociology.pdf

K.N. Seena
BoS Chairman

U25PT05B	Fundamentals of Exercise Modalities (FoEM)-I	L	T	P	C	Total
		4	0	2	5	90

COURSE OUTCOMES:

After completion of the course, the students will be able to

CO1 :	Apply the principles of exercise therapy, biomechanics, and patient assessment to plan safe and effective therapeutic interventions.
CO2 :	Demonstrate the starting and derived positions and analyze their muscle activity and therapeutic applications.
CO3 :	Describe joint range of motion assessment using goniometry and analyze the findings for functional evaluation.
CO4 :	Apply the principles and techniques of Manual Muscle Testing to assess muscle strength accurately
CO5 :	Evaluate upper limb muscle strength using Manual Muscle Testing and interpret the results for clinical decision-making.

UNIT I : Basic principles

12 Hrs.

Exercise Therapy-Describe the aims of Exercise Therapy, The techniques of Exercise Therapy, Approach to patient's problems, and Assessment of patient's condition – Measurements of Vital parameters ,**Apply the principles of mechanics applied to Exercise Therapy:** Force, Composition, Resolution, Equilibrium- stable, unstable, neutral gravity-LOG-COG, levers-types, Speed, velocity, work, energy, power, acceleration, momentum, friction and inertia, **Discuss Muscle work** group action of muscles, angle of pull and mechanical efficiency of the muscles.

UNIT II : Starting and Derived Positions

12Hrs.

Demonstrate the starting positions, their muscle work, effects and uses and Standing, Kneeling, Sitting, Lying and Hanging, **Demonstrate derived positions**, **Discuss the muscle work** of each derived position.

UNIT III : Measurement of Joint Range

12Hrs.

Measurement of Joint Range-Demonstrate Different methods of measuring range of motion (ROM), **Discuss Reliability and validity of goniometry**. Functional ROM and normal range of motion of various joint, Technique of Goniometry, Perform ROM measurement of individual joint's using goniometer.

UNIT IV: Muscle testing	12Hrs.
Muscle testing -Discuss the Principles & Aims, Indications & Limitations, and Techniques of MMT for group & individual testing	

UNIT V: MMT for upper limb	12Hrs.
Manual Muscle testing procedure, Perform MMT for upper limb.	

Practical:	30Hrs.
Demonstrate the different types of muscle contraction, muscle work, group action of muscles and co-coordinated movements on self -Demonstrate various fundamental and derived positions. And describe muscle work, and uses on self -Measure the ROM of joints using hand held goniometer – upper limb, lower limb & trunk on human model -Demonstrate the testing of muscle strength/ function region upper limb on human model . Demonstration ONLY [to be shown to the student by the teacher] - Digital goniometry - Pelvic inclinometry - Dynamometry	

TEXT BOOKS :	
1.	Principle of Exercise Therapy -Gardiner - C.B.S. Delhi
2.	Practical Exercise Therapy - Hollis - Blackwell Scientific Publications.
3.	Therapeutic Exercises Foundations and Techniques - Kisner and Colby -F.A. Davis
4.	Principles and practices of therapeutic massage – Sinha 3rd edition. Jaypee brothers Delhi
5.	Margaret Hollis-Textbook of Massage.

REFERENCE BOOKS :	
1.	Therapeutic Exercises - Basmajian - Williams and Wilkins.
2.	Licht SH, editor. Massage, manipulation, and traction. E. Licht;
3.	World Health Organization; Global Strategy on Diet, Physical Activity and Health

4.	McArdle WD, Katch FI, Katch VL. Exercise physiology: nutrition, energy, and human performance. Lippincott Williams & Wilkins; 2010.
5.	Kennedy-Armbruster C, Yoke M. Methods of group exercise instruction. Human Kinetics; 2014.

WEB REFERENCES :

1.	https://www.scribd.com/presentation/608513892/Introduction-to-Exercise-Therapy
2.	https://now.aapmr.org/exercise-prescription-and-basic-principles-of-therapeutic-exercise/
3.	https://www.ncbi.nlm.nih.gov/books/NBK555914/
4.	https://www.physio-pedia.com/Introduction_to_Therapeutic_Exercise
5.	https://www.sciencedirect.com/science/article/pii/S0004951414607364

K.N. Jeeva
BoS Chairman

U25PT06B	Fundamentals of Electro Physical Agents (FoEA)-I	L	T	P	C	Total
		4	0	2	5	90

COURSE OUTCOMES:

After completion of the course, the students will be able to

CO1 :	Apply the principles of physics, electricity, electronics, and properties of matter to understand the working principles of physiotherapy equipment and modalities.
CO2 :	Analyze the chemical, magnetic, thermal, optical, and sound effects of electricity and correlate their applications in physiotherapy.
CO3 :	Identify electrical hazards, safety measures, and protective devices, and apply safety principles during the use of electrical equipment.
CO4 :	Demonstrate the principles, therapeutic applications, indications, contraindications, equipment handling, and patient preparation techniques of iontophoresis.
CO5 :	Apply the principles, therapeutic uses, indications, contraindications, equipment operation, and patient preparation techniques of faradic current therapy in clinical practice.

UNIT I : Physical Principles In Relation to Physiotherapy	12Hrs.
Structure and Properties of matter -solids, liquids and gases, adhesion, surface tension, viscosity, density and elasticity, Structure of atoms, molecules, elements and compounds, electron theory, static and current electricity, Conduction, Insulators, Potential difference, Resistance and Intensity. Ohm's Law its application to AC and DC currents, Rectifying Devices -Thermionic valves, semiconductors, Transistors, Amplifiers, Transducers, Oscillator Circuits, Capacitance, Condensers in DC and AC circuits, Display devices and indicators -analogue & digital.	

UNIT II : Effects of Current Electricity	12Hrs.
Chemical effects - ions and electrolytes, ionization, production of E.M.F by chemical actions- Magnetic effects, Molecular theory of Magnetism-Magnetic fields, electromagnetic induction, Milli ammeter and voltmeter , transformers and choke coil, thermal effects-joules law and heat production, Physical principles of light and its properties, Physical principles of sound and its properties, Electromagnetic spectrum-biophysical application.	

UNIT III: Electrical Supply	12Hrs.
Brief outline of main supply of electric current - Dangers short circuits, electric shocks, Precautions safety devices , earthing, fuses etc, First and initial management of electric shock.	

UNIT IV: Iontophoresis	12Hrs.
Iontophoresis -Biophysics, principles, therapeutic uses, indications, contra indications, operational skills of equipment and patient preparation.	

UNIT V: Faradic current	12Hrs.
Faradic current -Biophysics, principles, therapeutic uses, indications, contra indications, operational skills of equipment and patient preparation.	

Practical:	30Hrs.
Identify components and safety devices involved in electric supply of the electrotherapy department-Experience sensory and motor stimulation of nerves and muscles by various types of low frequency currents on self-Locate and stimulate different motor points region wise including the upper & lower limb, trunk face on human model-Demonstrate the application of special techniques of low frequency current including Faradic foot bath, faradism under pressure - Demonstrate the application of techniques of Iontophoresis.	

Total Hours: 60

TEXT BOOKS :	
1.	Electro therapy Explained: Principles & Practice Low & Reed, Butterworth Heinemann.
2.	Claytons Electro therapy, Forster & Palastange Baillier Tindal.

REFERENCE BOOKS :	
1.	Principles & Practice of Electrotherapy, Kahn, Churchill Livingstone
2.	clinical electrotherapy Currier and Nelson
3.	Therapeutic Heat & Cold, Lehmann, Williams & Wilkins.

WEB REFERENCES :

1.	http://evolve.elsevier.com/Watson/electrotherapy
2.	http://booksite.elsevier.com/9780750688437
3.	https://www.apta.org?utm_source=chatgpt.com
4.	https://www.physio-pedia.com/Electrotherapy?utm_source=chatgpt.com
5.	https://world.physio?utm_source=chatgpt.com

X.N. Seena
BoS Chairman

U25PT07T	Fundamentals of Health care delivery System In India (FoHC)-I	L	T	P	C	Total
		4	0	0	4	60

COURSE OUTCOMES:

After completion of the course, the students will be able to

CO1 :	Describe about the healthcare delivery system
CO2 :	Elaborate the primary, secondary and tertiary care in healthcare delivery system
CO3 :	Demonstrate the healthcare system in private sector
CO4 :	Demonstrate the National Health Policy
CO5 :	Discuss about the issues in healthcare delivery system

UNIT I :Introduction	12Hrs.
Introduction to healthcare delivery system	

UNIT II : Levels of Healthcare delivery system in India	12Hrs.
Healthcare delivery system in India at primary, secondary and tertiary care, Community participation in healthcare delivery system	

UNIT III: Health Systems	12Hrs.
Health system in developed countries ,Private Sector.	

UNIT IV: Policies	12Hrs.
National Health Mission ,National Health Policy.	

UNIT V:Issues	12Hrs.
Issues in Health Care Delivery System in India.	

TEXT BOOKS :

1.	Essentials in Community health practice(4th reprint,2024)
2.	India's Public Health Care delivery: Policies for Universal Health Care
3.	Park's textbook of preventive and Social Medicine(Latest edition)
4.	Kozier & Erb's Fundamentals(10th ed.)

REFERENCE BOOKS :

1.	Health care Delivery System in India- Mohammed Rizwan
2.	Essentials in Community health Practice(4th reprint,2024)- kamalam S. et al.
3.	Park's textbook of Preventive and social Medicine(latest edition)

WEB REFERENCES :

1.	https://onlinelibrary.wiley.com/doi/abs/10.1002/9781118410868.wbehibs491
2.	https://onlinelibrary.wiley.com/doi/abs/10.1002/9781405165518.wbeosh006
3.	https://pubmed.ncbi.nlm.nih.gov/12264582/
4.	https://www.apa.org/about/policy/guidelines-health-care-delivery-systems.pdf
5.	https://de.slideshare.net/slideshow/16-health-care-delivery-systems-in-india-ppt/274351877

K. N. Jena
BoS Chairman

U25PT08P	Clinical Orientation and visit (Cor)-I	L	T	P	C	Total
		0	0	4	2	30

The objective of this particular section of the foundation course is to sensitize potential learners with essential knowledge; this will lay a sound foundation for their learning across the under-graduate program and across their career. Innovative teaching methods should be used to ensure the attention of a student and make them more receptive such as group activities, interactive fora, role plays, and clinical bed-side demonstrations.

The community orientation and clinical visit will include visit to the entire chain of healthcare delivery system -Sub centre, PHC, CHC, SDH, DH and Medical College, private hospitals, dispensaries and clinics.

The student will also be briefed regarding governance at village level including interaction and group discussion with village panchayat and front line health workers. Clinical visit to their respective professional department within the hospital.

K. N. Teera
BoS Chairman

VAC	Computers and Information Science (IT)-I	L	T	P	C	Total
		0	0	4	2	60

COURSE OUTCOMES:

After completion of the course, the students will be able to

CO1 :	Explain the basic characteristics, block diagram, history, and various generations of computer systems.
CO2 :	Distinguish between various input/output devices (like scanners, plotters, and voice response systems) and understand the roles of the CPU and memory
CO3 :	Explain the differences between sequential and direct access devices, including magnetic and optical storage media
CO4 :	Demonstrate proficiency in using the Windows interface, including taskbar navigation, file management (creating/moving folders), and basic window operations
CO5 :	Create, format, and edit professional documents using MS-Word, including the use of tables, mail merge, and print settings.

UNIT I :Introduction to computer	12Hrs.
Introduction, characteristics of computer, block diagram of computer, generations of computer, computer languages	

UNIT II : Input output devices	12Hrs.
Input devices (keyboard, point and draw devices, data scanning devices, digitizer, electronic card reader, voice recognition devices, vision-input devices), output devices(monitors, pointers, plotters, screen image projector, voice response systems), Processor and memory: The Central Processing Unit (CPU), main memory.	

UNIT III: Storage Devices	12Hrs.
Sequential and direct access devices, magnetic tape, magnetic disk, optical disk, mass storage devices.	

UNIT IV: Introduction of windows	12Hrs.
History, features, desktop, taskbar, icons on the desktop, operation with folder, creating shortcuts, operation with windows (opening, closing, moving, resizing, minimizing and maximizing, etc.).	

UNIT V: Introduction to MS-Word:**12Hrs.**

Introduction, components of a word window, creating, opening and inserting files, editing a document file, page setting and formatting the text, saving the document, spell checking, printing the document file, creating and editing of table, mail merge.

PRACTICAL:

Practical on fundamentals of computers -Learning to use MS office: MS word, MS PowerPoint, MS Excel, **To install different software**, Data entry efficiency .

TEXT BOOKS :

1. The Architecture of Computer Hardware, Systems Software, and Networking: An Information Technology Approach
2. Information Technology: An Introduction for Today's Digital World
3. Computing EssentialsAuthors: Timothy O'Leary, Linda O'Leary, Daniel O'Leary

REFERENCE BOOKS :

1. Microsoft Office 2021 Inside OutAuthors: Ed Bott, Carl Siechert
2. Computer FundamentalsAuthors: Pradeep K. Sinha, Priti Sinha
3. Computer NetworksAuthor: Andrew S. Tanenbaum

WEB REFERENCES :

1. microsoft.com
2. edu.gcfglobal.org/en/topics/office/
3. geeksforgeeks.org/computer-network-tutorials/

K. N. Teja
BoS Chairman

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AEC	English, Communication and Soft Skills (EG)-I	L	T	P	C	Total
		0	0	4	2	60

COURSE OUTCOMES:

After completion of the course, the students will be able to

CO1 :	Demonstrate proficiency in fundamental grammar, usage, and vocabulary to ensure technical accuracy in professional communication
CO2 :	Apply effective oral communication techniques, including active listening and presentation skills, for successful interpersonal interactions in business settings.
CO3 :	Compose various professional documents such as emails, formal letters, and reports using appropriate structures, styles, and etiquette.
CO4 :	Evaluate and apply core principles—such as the 7cs (clarity, conciseness, etc.)—to overcome communication barriers and ensure effective message delivery.
CO5 :	Utilize specialized communication strategies within healthcare contexts to improve patient interactions, education, and overall health outcomes.

UNIT I : Basic Language Skills	12Hrs.
Basic Language Skills: Grammar and Usage	

UNIT II : Business Communication Skills	12Hrs.
Business Communication Skills: With focus on speaking - Conversations, discussions, dialogues, short presentations, pronunciation	

UNIT III: Different methods of writing	12Hrs.
Teaching the different methods of writing like letters, E-mails, report, case study, collecting the patient data etc. Basic compositions, journals, with a focus on paragraph form and organization	

UNIT IV: Concepts & principles of good communication	12Hrs.
Basic concepts & principles of good communication	

UNIT V: Characteristics of health communication	12Hrs.
Special characteristics of health communication	

TEXT BOOKS :

1.	English Communication Skills for Physiotherapy Students
2.	Therapeutic Communication for Health Care Professionals by Carol Tamparo and Wilburta Lindh
3.	Effective Communication Skills for Health Professionals by Philip Burnard

REFERENCE BOOKS :

1.	Business Communication by R.C. Bhatia
2.	Communication Skills by Sanjay Kumar and Pushp Lata (Oxford University Press)

WEB REFERENCES :

1.	K-Hub E-Library Portal:
2.	PubMed Central (PMC)
3.	The NPTEL Digital Archive

K.N. Seena
BoS Chairman