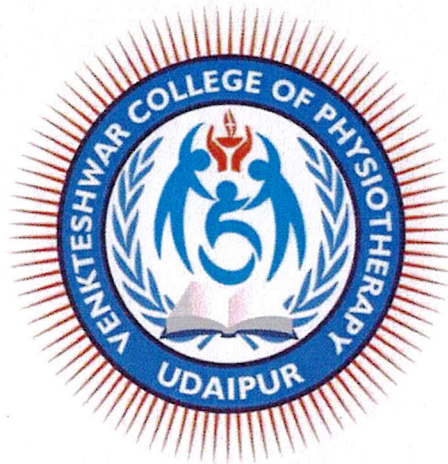




Bachelor of Physiotherapy

Rules-Regulations & Curriculum

(w.e.f. 2017-18)

Lehry
REGISTRAR
Sai Tirupati University
Udaipur (Raj.)



Venkateshwar College of Physiotherapy

(A Constituent Unit of Sai Tirupati University, Udaipur)

NAME OF COURSE OFFERED
BACHELOR OF PHYSIOTHERAPY: - B.P.T.

ADMISSION CRITERIA:-

Name of course:	BACHELOR OF PHYSIOTHERAPY (B.P.T.)
Duration of course:	4 & half year course, which includes 6 months Compulsory Rotatory Internship Training. Internship training is provided in our own Multi Super Specialty Hospital.
Eligibility:	Candidate should have passed 10+2 examination i.e. 12 th std. or equivalent examination with science stream (Physics, Chemistry, Biology & English) with • 45 % for general candidate, • 40 % for SC/ST candidate.
Age:	Minimum 17 years & Maximum 25 years for male candidate Minimum 17 years & Maximum 28 years for female candidate (As on 31 st December of the year admission to B.P.T. course)
Medium of Instruction:	English, for all subjects of study & examinations

COURSE OBJECTIVES:-

- To Promote/impart basic professional education in physiotherapy through medium of Medical Physiotherapy Sciences, Clinical Medicine with reference to specialty exposure and Clinical Physiotherapy.
- To train the student's excellence in academics through compulsory lectures, classes, seminars, case presentation, continuing medical education and group discussions.
- To provide quality Physical Therapist to the health care profession by making the students to observe the Physiotherapy practice.
- To train the students, initially to work under the supervision of the experts and then to make them work independently.

- To equip the students with skills, so that they can provide proper cure and care and also aid the patients with maximum possible independence at home, work place and in community.
- To enable the students to diagnose the condition differentially and to implement physical therapy techniques appropriately to the patients with the global aim of improving quality of life by manipulating the pain, spasm, movement dysfunction, paralysis and breathing difficulties.

CURRICULUM:-

- The Curriculum and Syllabus for course shall be prescribed by the Academic Council **Sai Tirupati University** from time to time.
- Course of study along with Details of Examination & Marks Distribution are shown in **Table No- I to IV**
- The detailed syllabus in respect of the course is given in **Appendix –I**

ATTENDANCE:-

A candidate is required to attend at least 75 percent of the total classes conducted in a year in all subjects prescribed for that year, separately, in theory and practical / clinical to become eligible to appear for the **Sai Tirupati University** examination in the first attempt.

INTERNAL ASSESSMENT:-

The Internal Assessment Marks once allotted shall not be changed even if a candidate fails to pass in the concerned subject. The same Internal Assessment Marks shall be allotted for the concern subject/ subjects in the subsequent attempts.

UNIVERSITY EXAMINATIONS:-

There will be two examinations in a year i.e.

1. An Annual Examination
2. A supplementary examination and shall be conducted as pre notification issued by the University time to time. 1st, 2nd, 3rd& 4th year examination of B.P.T. Course shall be held at the 1st, 2nd, 3rd& 4th year respectively.

PROMOTION TO THE NEXT YEAR:-

Promotion to the next year is subjected to the eligibility condition stipulated by the **Sai Tirupati University**, satisfactory attendance, internal assessment marks, students overall general report, all fees paid clearance from the administrative office.

CRITERIA TO PASS:-

A candidate is declared to have passed university examination in a subject, if she/he secures 50 % of the marks in theory aggregate and 50 % in practical aggregate separately. For computation of 50 % marks in theory, the marks scored in the internal assessment [theory] shall be added to the University conducted written and viva voce examination and for a pass in practical, the marks scored in University conducted practical examination and internal assessment [practical] shall be added together.

DECLARATION OF CLASS:-

- A candidate having appeared in all the subjects in the same examination and passed that examination in the first attempt and secures 75% of marks or more of grand total marks prescribed will be declared to have passed the examination with Distinction.
- A candidate having appeared in all subjects in the same examination and passed that examination in the first attempt and secures 60% of marks or more but less than 75% of grand total marks prescribed will be declared to have passed the examination in First Class.
- A candidate having appeared in all the subjects in the same examination and passed that examination in the first attempt and secures 50% of marks or more but less than 60% of grand total marks prescribed will be declared to have passed the examination in Second Class.
- A candidate passing the university examination in more than one attempt shall be placed in Pass class irrespective of the percentage of marks secured by him/her in the examination.

[Please note fraction of marks should not be rounded off clauses (a), (b) and (c)]

EXEMPTION FROM RE-EXAMINATION:-

Candidate who have failed in the examination, but obtained pass marks in any subjects shall be exempted from re-examination in that subject.

GRACE MARKS:-

A student may be provided with 5 (Five Only) grace marks, provided after providing these given marks he/she is pass in all subjects. The grace marks are provided in main exam only.

CARRY OVER OF FAILED SUBJECTS:-

Carry Over of failed subjects of B.P.T. Examinations:

- A. A candidate who has passed in 1st year in at least one subject is permitted to undergo study and training in 2nd year and shall have to pass three subjects before appearing for the 2nd year examinations.

- B. A candidate passed in at least two subjects in 2nd year is permitted to carry over the failed subject and has to pass the minimum four subjects before appearing for the 3rd year examinations and has to clear 1st year completely to appear in 3rd year examination.
- C. A candidate who has passed in at least three subjects in 3rd year is permitted to carry over the failed subjects & has to clear all the papers of 1st, 2nd & 3rd before appearing for final year examinations.
- D. The candidate will be permitted by **Sai Tirupati University** to appear in the failed subjects in the subsequent attempts maximum of four attempts after that he / she shall be required to appear in all the subjects of that year.

RE-TOTALING / RE-VALUATION OF ANSWER BOOKS:-

A candidate can apply for Re-totalling / Re-evaluation within 15 days from the declaration of results.

COMPULSORY PAYABLE INTERNSHIP TRAINING:-

There shall be six months Compulsory Payable Internship in PIMS after the final year examination for candidates declared to have passed the examination in all the subjects.

No candidate shall be awarded degree certificate without successfully completing six months of Internship.

The Internship should be Rotatory and cover clinical branches concerned with Physiotherapy such as Orthopedics, Cardiothoracic including ICU, Neurology, Neurosurgery including ICU, Pediatrics, General Medicine, General Surgery, Obstetrics and Gynecology both inpatient and outpatient services.

Areas of internship training are as follows:-

- CARDIOLOGY
- NEUROLOGY & NEUROSURGERY
- GENERAL MEDICINE & GENERAL SURGERY
- ORTHOPAEDICS
- PAEDIATRICS & PAEDIATRIC SURGERY (PICU)
- OBSTRETRICS & GYANAECOLOGY
- PHYSICAL THERAPY OUT PATIENT DEPT.
- SPORTS MEDICINE & REHABILITATION
- NEPHROLOGY & UROLOGY
- ICU, SICU, MICU, PICU.

Successful Completion: – The student must maintain a logbook. On completion of each posting, the same will have to be certified by the faculty in charge of the posting for both attendance as well

as work done. On completion of all six postings, the duly completed logbook will be submitted to the Principal/Head of program to be considered as having successfully completed the internship program. Also candidate must complete a project work under the guidance of concern Physiotherapy faculty within 6 months period of time duly submitted before completion date of Internship training.

ISSUE OF INTERNSHIP COMPLITION CERTIFICATRE:-

Every candidate, after successful completion of six month of Rotatory Internship would be eligible for Internship Completion Certificate, issued by the Head of the Department Physiotherapy.

AWARD OF THE DEGREE:-

The degree shall be awarded by the esteemed **Sai Tirupati University** only after submission of Internship Completion Certificate.

**Course of study : Subjects and Teaching Schedule and Scheme of
Examination Of Bachelor of Physiotherapy**

TABLE – I : First Year Bachelor of Physiotherapy [0 – 12 Months]

S.No	Subject	Theory	I.A. Theory	Practical	I.A. Practical	Total
1.	Human Anatomy	80	20	80	20	200
2.	Human Physiology	80	20	80	20	200
3.	Biochemistry	40	10	NA	NA	50
4.	Exercise Therapy - 1	80	20	80	20	200
5.	Electro Therapy - 1	80	20	80	20	200
6.	Biomechanics and Kinesiology	80	20	NA	NA	100
7.	Sociology	40	10	NA	NA	50
Total Marks - 1000						
NON UNIVERSITY EXAM						
8.	English / Computer	40	10	NA	NA	50
Total Marks - 50						

TABLE – II : Second Year Bachelor of Physiotherapy [13-24 Month]

S.No	Subject	Theory	I.A. Theory	Practical	I.A. Practical	Total
1.	Exercise Therapy - 2	80	20	80	20	200
2.	Electro Therapy - 2	80	20	80	20	200
3.	Pharmacology	80	20	NA	NA	100
4.	Pathology & Microbiology	80	20	NA	NA	100
5.	Community Medicine	80	20	NA	NA	100
6.	Psychology & <u>Psychiatry</u>	40	10	NA	NA	50
Total Marks - 750						
NON UNIVERSITY EXAM						
8.	Clinical Training	NA	NA	400		400
Total Marks - 400						

TABLE – III: Third Year Bachelor of Physiotherapy (25-36 Month)

<u>S.No</u>	<u>Subject</u>	<u>Theory</u>	<u>I.A. Theory</u>	<u>Practical</u>	<u>I.A. Practical</u>	<u>Total</u>
1.	Orthopedics & Traumatology	80	20	80	20	200
2.	Neurology & Neurosurgery	80	20	80	20	200
3.	General Surgery / OBS & Gynecology	80	20	80	20	200
4.	General Medicine / Pediatrics	80	20	80	20	200
5.	Allied Health & Yoga Sciences	80	20	80	20	200
Total Marks - 1000						
NON UNIVERSITY EXAM						
6.	Clinical Training	NA	NA	400		400
Total Marks - 400						

TABLE – IV : Fourth Year Bachelor of Physiotherapy (37- 48 Month)

<u>S.No</u>	<u>Subject</u>	<u>Theory</u>	<u>I.A. Theory</u>	<u>Practical</u>	<u>I.A. Practical</u>	<u>Total</u>
1.	PT in Orthopedics & Traumatology	80	20	80	20	200
2.	PT in Neurology & Neurosurgery	80	20	80	20	200
3.	PT in General Surgery / OBS & Gynecology	80	20	80	20	200
4.	PT in General Medicine / Pediatrics	80	20	80	20	200
5.	Community Based Clinical Rehabilitation	80	20	80	20	200
6.	Research Methodology & Biostatistics	80	20	NA	NA	100
Total Marks - 1100						
NON UNIVERSITY EXAM						
7.	Clinical Training	NA	NA	400		400
TOTAL MARKS - 400						

APPENDIX – I

COURSE OF STUDY

SECTION – ONE: 1ST YEAR B.P.T.

1. HUMAN ANATOMY

Theory

1. Histology – cell tissues of the body, epithelium, connective tissue, cartilage, bone, lymphoid tissue.
2. Embryology – a) Ovum, spermatozoa, fertilization and formation of the Germ layers and their derivations (b) development of skin, Fascia, blood vessels, lymphatic, (c) Development of bones, axial and appendicular skeleton & muscles, (d) Neural tube, brain vessels & spinal cord, (e) Development of brain and brain stem structures, Development anomalies. (Brief)
3. Musculo- skeletal anatomy –(All the topics to be taught in details)
 - Anatomical Positions of body, axis, planes common anatomical terminologies (groove, tuberosity, trochanters etc.)
 - Connective tissue classification.
 - Bones – Composition & function, classification & types according to morphology & development.
 - Joints – definition – classification, structure of fibrous, cartilaginous joints, blood supply and nerve supply of joints,
4. Regional Anatomy -
 - Skin and its appendages (Brief outline)
 - Cardiovascular system – Heart, (Gross Anatomy and Functions) Arteries, Veins, Collateral Circulation
 - Respiratory system – Thoracic Cage, Brief outline of respiratory passages, brief gross Anatomy of lungs and pleura, broncho – pulmonary segments (Details of intercostal muscles, muscles and mechanism of respiration)
 - Digestive system (Brief outline of gastrointestinal tract and associated glands)
 - Excretory system (Brief outline of Kidney, Ureters, Urinary bladder & urethra in male and female)
 - Male and Female reproductive system (Brief outline of genital organs)
 - Endocrine system (Brief outline and classification of glands sites & secretion)
 - Lymphatic system (Brief outline)
 - Upper Extremity

- a) Osteology Clavicles, Scapula. Humerus, Radius, Ulna, Carpals, Metacarpals, Phalanges
 - b) Soft parts Breast, pectoral region, axilla, front of arm, back of arm, cubital fossa, front of forearm, back of forearm, palm, dorsum of hand, muscles, facial nerves, vessels and lymphatic drainage of upper extremity
 - c) Joints Shoulder girdle, Shoulder joint, elbow joints, Radio ulnar joint, wrist joint and joints of the hand
 - d) Arches of hand, skin of the palm and dorsum of hand.
- Lower Extremity
 - a. Osteology : Hip bone, femur, tibia, Fibula, patella, tarsals, metatarsals, and phalanges.
 - b. Soft Parts: Gluteal region, front and back of the thigh [femoral triangle, femoral and inguinal canal], medial side of the thigh [adductor canal], lateral side of the popliteal-fossa, anterior and posterior compartment of leg, sole of the foot, lymph drainage of lower limb, venous drainage of the lower limb, arterial supply of the limb, arches of foot, skin of foot.
 - Trunk
 - a. Osteology: Cervical, thoracic, lumbar, sacral and coccygeal vertebrae and ribs.
 - b. Soft tissue: pre and para vertebral muscles, intercostal muscles, anterior abdominal wall muscles, intervertebral disc.
 - c. Joints: Hip joint, Knee joint, Ankle joint, joints of the foot.
 - Head and Neck
 - d. Osteology: Mandible and bones of the skull
 - e. Soft parts: Muscles of the face and neck and their nerve and blood supply, ocular muscles, salient points about the eye ball and internal ear.

5 Neuroanatomy

- Organisation of Central Nervous System – Spinal nerves & autonomic nervous system mainly pertaining to cardiovascular, respiratory & urogenital systems.
- Cranial nerves
- Peripheral nervous system.

Central Nervous System:- Peripheral nerve, Sensory end organs, Brain stem, Inferior Colliculi, Hypothalamus, Cerebral hemisphere, Internal Capsule, The pyramidal system, Anatomic integration, Neuromuscular junction, Spinal segments & areas, Cerebellum, Superior Colliculi, Thalamus, Corpus Striatum, Lateral ventricles, Blood supply of Brain, Basal Ganglia, Pons & Medulla, Extra pyramidal system.

Practical / Demonstrations

1. Upper extremity including surface Anatomy
2. Lower extremity including surface Anatomy
3. Head & Spinal cord and Neck and Brain including surface Anatomy
4. Thorax including surface anatomy, abdominal muscles, joints
5. Histology – Elementary tissue including surface Anatomy
6. Embryology – models, Charts & X – Rays
7. Demonstration of the muscles of the whole body and organs in thorax and abdomen in a cadaver. Demonstration of movements of important joints.
8. Surface marking of the lung, pleura fissures and lobes of lungs, heart, liver, spleen, kidney, cranial nerves and important blood vessels.
9. Identification of body prominence on inspection and by palpation especially of extremities.
10. Points of palpation of nerves and arteries.
11. General Viva
12. Practical Record

2. HUMAN PHYSIOLOGY

Theory

General physiology (details not required)

Cell structure and organelle, general principals of biophysics and body compartments

1. Blood
 - Composition and functions of blood, plasma and their formation.
 - Structure and formation and function of **RBC, WBC**, and platelets
 - Haemoglobin
 - Coagulation, bleeding time. Clotting time and their defects.
 - Blood groups and their significance.
 - Reticulo – endothelial system, structure and functions.
2. Digestive System
 - General introduction, organizational plan and digestive system
 - Composition, function and regulation of salivary, gastric, pancreatic, intestinal and biliary secretion
 - Movements of G.I. Tract.
 - Digestion and absorption of carbohydrate, protein and G R F
3. Urinary System - Functions and General introduction
4. Endocrine – Secretion, regulation and functions of pituitary, thyroid, adrenal,

pancreas, parathyroid, testies and ovaries. Influence of hormones on growth & development, blood sugar and its regulation, blood calcium regulation.

- 5 Respiratory System
 - Introduction, general organization.
 - Mechanics of respiration.
 - Pulmonary volumes and capacities
 - Transport of respiratory gases
 - Nervous and chemical, control, of respiration.
 - Pulmonary function tests.
 - Effect of exercise on respiratory system.

- 6 Cardiovascular System
 - Structure and properties of Cardiac muscle
 - Cardiac cycle
 - Regulation of heart rate
 - Cardiac output
 - Blood Pressure and its regulation
 - Regional circulation – coronary, skin, muscle, cerebral circulation
 - Cardio respiratory changes during exercise and cardiac performance during exercise
 - Normal ECG

- 7 Vision
 - General outline of image formation and visual perception
 - Pupillary and conjunctival reflexes
 - Errors of refraction and correction of refractive errors
 - Extra ocular muscles and eye movements
 - Nutritional deficiency and blindness

- 8 Audition
 - General outline of mechanism of hearing and perception of sound
 - Test for hearing, Types of deafness and hearing aids
 - Speech and its disorders
 - Vestibular apparatus

- 9 Reproductive System
 - Changes during puberty, classification of male sex hormones and their functions, spermatogenesis
 - Changes during puberty, classification and functions of female sex hormones, menstrual cycle, ovulation and contraception.
 - Physiology changes during pregnancy, child birth, functions of placenta and physiology of lactation.

- 10 Neuromuscular Physiology
 - Nerve & muscle – structure and function of muscle and nerve cells, classification of muscle and nerve fibers. Cell membranes, ionic and potential and its propagation evoked potential factors affecting muscle

tension, neuromuscular transmission motor units, synapse, reflex physiology, degeneration and regeneration of the nerve fiber, reaction of degeneration muscle contraction mechanics, chemistry and biophysics.

- Central Nervous System
 - a) Physiology of Synapse
 - b) Physiology of receptor organs for general special sensation
 - c) Physiology of touch, pain and temperature sensations
 - d) Physiology of reflex action, Classification and properties of reflexes (excluding conditioned reflexes)
 - e) Sensory and motor tracts of spinal cord and effects of complete & incomplete transaction of spinal cord at various levels
 - f) Cerebral Cortex – characteristics, areas and functions.
 - g) Cerebellum and basal ganglia – upper and lower motor neurone type of paralysis structure, functions and connections
 - h) Sensory and motor cortex
 - i) Physiology of Labyrinthine
 - j) Regulation of equilibrium and posture
 - k) Physiology of equilibrium and balance
 - l) Learning, Memory.
 - m) Golgitendon organ
- Autonomic Nervous System.

11 Physiology of exercise

- Introduction to Exercise therapy
- Effect of exercise on
 - a) Oxygen transport
 - b) Muscle strength / Power & Endurance
 - c) Mobility
 - d) Neuromuscular system
 - e) Body composition
 - f) Body temperature and basal metabolic rate
 - g) Hormonal system
 - h) Body fluid and electrolyte balance
 - i) Cardiovascular function
 - j) Respiratory functions

12 Physiology of Pain and Re – Education

- Types of muscle and nerve fibers and their properties and response to various electronic stimulation
- Generation of action potential and its propagation
- Neuromuscular function and transmission of impulse
- Physiology of pain
- Psychosomatic Physiology of pain
- Physiology of Biofeed back

13 Neurophysiology of Exercise

- Normal human developmental process
- Reflex and reaction maturation
- Sensory – motor integration

- Rotation
- Perception and motor learning
- Growth, development and maturation

Practical / Demonstrations

1. Haematology
 - RBC count,
 - WBC count,
 - Differential Count,
 - ESR
 - Bleeding & clotting time
 - Estimation of haemoglobin
 - Blood groups
2. Human Physiology
 - Examination of
 - a) respiratory system
 - b) heart and arterial pulse
 - c) deep and superficial reflexes,
 - d) Cranial nerves,
 - e) Motor system
 - f) Sensory system including higher functions
 - Measurements of blood pressure
 - Demonstration (only)
 - (a) Pulmonary Function test (Spiro meter)
 - (b) Ergography and work done
3. General Viva.
4. Practical Record

3. BIOCHEMISTRY

Theory

1. BIO- PHYSICS

Concepts of PH and buffers: Acid – base equilibrium, osmotic pressure and its physiological applications.

2. CELL

Morphology, structure and functions of cell, cell membrane, nucleus, chromatin, Mitochondria, endoplasmic reticulum & Ribosome

3. GENERAL CARBOHYDRATES, LIPIDS & PROTEINS & METABOLISM:

Definition, functions, sources, classification & metabolism

4. VITAMINS

Classification, Fat soluble vitamins A, D, E, K, water soluble vitamins – B complex and vitamin ‘C’ Daily requirement physiological functions and disease of vitamin deficiency.

5. BIO- ENERGETICS

Concept of free energy change, energetic reaction and concepts regarding energy rich compounds, respiratory chain and biological oxidation

6. WATER AND ELECTROLYTES

Fluid compartments, daily intake and output, Dehydration, sodium and potassium Metabolism.

7. MINERAL METABOLISM

Iron, Calcium, Phosphorous, Trace elements

8. NUTRITION

Nutritional aspects of carbohydrate, fat and proteins, Balanced diet, Metabolism in exercise and injury, Diet for chronically ill and terminally ill patients.

9. CONNECTIVE TISSUE

Mucopolysaccharides, connective tissue proteins, Glycoprotein chemistry and Metabolism of bone and teeth

10. NERVE TISSUE

Composition, Metabolism, Chemical mediators of nerve activities

12. HORMONES

General Characteristic and mechanism of Hormone actions

4. EXERCISE THERAPY – 1

Theory

1. Basic physics in exercise therapy. Mechanics : Force, Gravity, line of gravity, center of gravity in human body , Base, equilibrium , Axes and planes , mechanical principles of lever , order of lever , Examples in human body , Pendulum , spring.

2. Massage: Definition of massage, type of massage, general effects and used of massage, local effects of individual manipulation (physiological effects), contra- indications, techniques of application of all manipulations – stroking, Effleurage, kneading and picking up , skin rolling (back), clapping, tapping , friction etc.
3. Suspension Therapy : Principal of suspension, types of suspension therapy , effects and uses of suspension therapy their application either to mobilize a joint to increase joint range of motion or to increase muscle power – explaining the full details of components used for suspension therapy .
4. Introduction to exercise therapy.
5. Starting positions – Fundamental starting positions – standing, sitting, kneeling, lying and – hanging. All the derived positions of the above five fundamental starting positions.
6. Classification of movements in details :
Active – voluntary in definition involuntary movements; Passive movements.
7. Voluntary movements : Free exercise , assisted exercises , resisted exercise
Active – Assisted and Resisted exercise.
8. Assisted Exercise: Technique and uses.
9. Free exercise – Classification, technique, effects of frequent exercise on various systems etc.
10. Resisted exercises- Techniques and types of resistance, Set system (Heavy resisted exercises, Oxford method, De-Lorme method, and Mc queen method.
11. Relaxed passive movements, basic knowledge of classification of relaxed passive movements, definition, technique effects and uses of relaxed passive movement.
12. Muscles strength: Anatomy and physiology of muscle tissue causes of muscle weakness paralysis, prevention of muscle weakness/ paralysis types of muscle work and contraction ranges of muscle work, prevention of muscle atrophy.
Muscle assessment M.R.C. grading principles of muscle strengthening/ re- education of a paralyzed muscle etc.
13. Joint Movement: Classification of joint movements causes of restriction of joint movement, prevention of restriction of restriction joint range of motion, etc. principles of mobilization of a point in increasing its range of motion Technique of mobilization of a stiff joint, Goniometry.
14. Bed Rest – its necessity & Complication.
15. Posture: Types, factors responsible for good posture, factors for poor posture, principles of development of good posture.

16. Breathing exercises: Physiology of respiration, types of breathing exercise, techniques of various types of breathing exercises, its effects and uses.
17. Hydrotherapy: Introduction, various types of hydrotherapy units, construction and equipments used in hydrotherapy principles, Indications Contraindication, effects and uses of hydrotherapy. Precautions towards patient, towards therapist, equipment unit etc.

Practical / Demonstrations

1. Massage Therapy
2. Suspension Therapy
3. Relax passive movement/ types of exercise.
4. MMT
5. Goniometry
6. Breathing exercise
7. Practical record
8. General Viva

5. ELECTRO THERAPY - 1

Theory

1. Electrical Fundamentals Physical Principles:- Structure and Properties of matter” molecular Atom, Proton, Neutron, Electron, Ion, etc.
2. Electrical Energy:- Ohm’s law, Joule’s law.
3. Magnetic Energy:- Nature and Property of a Magnet, Electromagnetic induction, Principle of working of choke Coiltransformer- rectification of A.C. to D.C. Metal oxide Rectifier, Semi conductor – Diode and Triode.
4. Valves – principle working- condenser – principle – Details of charging and discharging, etc. Transistors, measurement of current intensity, EMS and power – moving coil millimeter and Voltmeter.
5. Wiring of components in series and parallel Distribution of Electrical energy – Earth Shock and electrical shock Safety Devices.
6. Low Frequency Currents - Nature and Principles of production of muscle stimulating current- Types of Low frequency currents used for treatment. High voltage Galvanic Current, Rectifying currents.

7. Principles of Electro diagnosis – strength duration curve Chronaxie and Rheobase- Their relationship, etc.
8. Faradic Under Pressure.
9. Faradic Galvanic Test.
10. Nerve Conduction Velocity (NCV) Test.
11. Medium Frequency Current- Definition, Production (Brief), Physiological effects and therapeutic effects of Interferential Current, Russian Current.
12. High Frequency Current- Definition, Production (Brief)
13. Actino Therapy- Definition, Production (Brief), Physiological & Therapeutic effect of the following – Infrared radiation, ultraviolet Radiation.
14. Therapeutic Heat- Definition, Principles, Physiological & therapeutic effects of moist heat, Paraffin Wax Bath, Contrast Bath, Whirl Pool bath, Fluido Therapy, Electric Heating Pads.
15. Cryotherapy- Principles, Physiological effects, Uses of cold packs, Ice massage, commercial cold packs, Ice Towels, cold compression Units, Evaporating sprays.
16. Traction.

Practical / Demonstrations

1. Galvanic Current
2. Faradic Current
3. Cold pack
4. Paraffin wax bath
5. Hot pack
6. Motor point stimulation
7. Practical record
8. Traction
9. General Viva

Technique of application: to various conditions and to various parts of the body.

6. BIOMECHANICS & KINESOLOGY

Theory

1. ESSENTIAL CONCEPTS

- Motion and forces, Axis and planes, Mechanical lever, Lever in human body.

- Force distribution- linear force, Resultant force& equilibrium, parallel forces in one plan concurrent force.
- Newton's laws- Gravity and its effects on human body
- Moments
- Forces and moments in action
- Concepts of static equilibrium and dynamic equilibrium
- Composition and resolution of forces
- Friction

2. KINEMATICAL CONCEPTS

3. KINETIC ASPECTS OF LIMB MOVEMENT

- Biomechanics of upper extremity
- Scapulo- shoulder joint
- Elbow joint
- Wrist joint & hand
- Motion of hip & pelvis
- Forces of hip knee joint
- Patello femoral joint
- Ankle and foot kinematics
- Motion of ankle
- Forces of ankle joint
- Stability of ankle joint
- Temporo Mandibular Joint

4. BIO MECHANICS OF GAIT:

- Gait cycle
- Parameters of gait
- Myokinetics of human gait
- Gait deviations
- Crutch and cane exercises

5. POSTURE

- Anatomical aspects of posture
- Factors affecting posture

- Assessment of posture
- Types of posture
- Postural deviation

7. SOCIOLOGY

Theory

1. Introduction
Definition of Sociology, Sociology as a science, uses of study of Sociology, application of knowledge of sociology in physiotherapy
2. Sociology and health
3. Social factors affecting health status, social consciousness and perception of Illness, social consciousness and meaning of illness, decision making in taking treatment Institution of health, their role in the improvement of health and the people.
4. Socialization
Meaning of socialization, influence of social factors on personality, Socialization in hospital and socialization in rehabilitation of patients
5. Social groups
Concepts of social groups & influence of formal and informal groups on health and sickness, the role of primary groups and secondary groups in the hospital and rehabilitation setting
6. Family
Influence of family on human personality, discussion of changes in the functions of a family, influence of family on the individual's rehabilitation
7. Social problems of the disabled
8. Consequences of the following social problems in relation to sickness and Disability, remedies to prevent these problems to prevent these problems.
 - Prevent these problems
 - Population explosion
 - Poverty and unemployment
 - Beggary
 - Juvenile delinquency
 - Prostitution
 - Alcoholism
 - Problems of Women in employment.

SECTION – TWO: 2nd YEAR B.P.T.

1. EXERCISE THERAPY – 2

Theory

1. P.N.F: Detail theory of proprioceptive –Neuro muscular facilitation
Techniques Functional re-education and demonstration
2. Coordination Exercise: Definition of coordinated movements, in coordinated movements,
Factors for coordinated movement's technique of coordination exercises
3. Gait: Analysis of normal gait with muscle work, various pathological gaits.
4. 2 point, 3 point & 4 point gait: Introduction, crutch measurement, crutch balance, various types of crutch gait in details.
5. Individual, group and mass exercises, maintenance exercises, plan of exercise- therapy tables and schemes.
6. Therapeutic exercises – impact on physical function
7. Strategies for effective exercise instruction
8. Independent learning activities
9. Range of motion & types of ROM exercises
10. Resistance exercises and adaptation of skeletal muscles
11. Principles of aerobic exercises & its physiological response
12. Determinants of exercise program
13. Testing as basis of aerobic program
14. Stretching & its determinants
15. Manual stretching techniques
16. Peripheral joint mobilization techniques
17. Aquatic exercises
18. Application of therapeutic exercises to different regions of body
19. Pulmonary exercises & postural drainage
20. Yoga: Definition- History- Principles – concepts, General effects of yogic posture on the body

Practical / Demonstrations

1. Gait and crutch walking
2. Resistive exercise.

3. Range of motion exercise.
4. Stretching.
5. Mobilization techniques.
6. Breathing exercise and postural drainage.
7. Practical record.
8. General Viva

2. ELECTRO THERAPY – 2

Theory

1. Electrophysiology & thermal principles
2. Electrical properties of cell & tissue
3. Tissue repair
4. Sensory & motor nerve activation
5. Pain & role of physical modalities
6. Thermal effect
7. low energy treatment
8. Stimulative effect
9. Conduction agents of heat & cold
10. Electromagnetic agents: IRR, Diathermy, Laser, UV therapy
11. Ultrasound
12. Low frequency current: IFT, TENS
13. Diagnosis & assessment applications: Electrophysiology testing.
14. Healing & Wound Healing./Repair

Practical / Demonstrations

1. Practical applications of the above.
2. Practical record
3. General Viva

3. PHARMACOLOGY

Theory

1. General pharmacology:- Introduction and definitions, Nature and sources of drugs; Dosage forms of drugs' Routes of drug administration, Pharmacokinetics (Absorption, Bioavailability, Distribution, Metabolism Excretion, First order zero order Kinetics); Pharmacodynamics (Sites and mechanisms of drug action in brief, Adverse drug reactions, Margin of safety of drugs and factors influencing dosage and drug response)
2. Drugs Affecting ANS:- General introduction, Drug affecting parasympathetic nervous system, Drugs affecting sympathetic nervous systems,
3. Drugs Affecting Peripheral (Somatic) nervous System: - Skeletal Muscle Relaxants; Local Anesthetics.
4. Renal and CVS: Diuretics; Renin- angiotension system and its inhibitors, Drugs treatment of Hypertension, Angina pectoris, Myocardial infarction Heart failure, and hypercholesterolemia.
5. Anti- inflammatory drugs and related autacoids: Histamine, Bradykinin, 5-HT and their antagonists; prostaglandin's and leukotrienes; Nonsteroidal – Anti-inflammatory drug, Anti-rheumatic drugs and drugs used in gout.
6. Drugs Affecting CNS: General anesthetics, Anxiolytics and hypnotics; Alcohol, Opioid analgesis Drug dependence and abuse Antiepileptic drugs, Drugs therapy for Neurodegenerative disorders.
7. Endocrines: Parathyroid hormone, vitamin D, calcitnin and drugs affecting calcium balance, Thyroid and antithyroid drugs; Adrenocortical and anabolic steroids, Insulin's and Oral Hypoglycaemic agents.
8. Drugs Affecting Respiratory system: Drug therapy of bronchial asthma and chronic obstructive pulmonary disease.
9. Chemotherapy: Introduction; sulfonamides, fluoroquinolones, penicillin's, cephalosporin's, newer B-Lactam antibiotic, Tetracycline's chloramphenicol, chemotherapy of Tuberculosis and leprosy, antiseptics- disinfectants.
10. Miscellaneous Topic: Management of stroke, Toxicology and heavy metal poisoning, special aspects of paediatric and geriatric pharmacology; Drugs interactions with drugs commonly used by physiotherapists; Hematinics, vitamins and antioxidants.

4. PATHOLOGY & MICROBIOLOGY

Theory

PATHOLOGY

1. Aims and objectives of study of pathology.
2. Brief outline of cell injury, degeneration, necrosis and gangrene.
3. Inflammation: Definition, vascular and cellular phenomenon difference between Transudate and Exudates. Granuloma.
4. Circulatory disturbances: Hemorrhage, Embolism thrombosis infarction, Shock, Volkmann's ischemic contracture.
5. Blood disorder: Anemia, Bleeding disorder.
6. CVS: Heart and blood vessels, coronary heart disease
7. Respiratory system: Ch. Bronchitis, Asthma Bronchiectasis, Emphysema, COPD etc.
8. Bones and joint: Arthritis & Spondyloarthropathy
9. PNS and Muscles: Neuropathies, Poliomyelitis & Myopathies etc.
10. CNS Infection, Demyelinating disease, Degenerative disease etc.
11. Neoplasia
12. Growth and its disorders like hypertrophy hyperplasia & atrophy.
13. Autoimmune diseases.
14. Healing and repair.
15. Diabetes mellitus and gout.

MICROBIOLOGY

1. Introduction, Microbiology terminology & History of Microbiology
2. General lectures on microorganisms:
 - Difference between prokaryotes & eukaryotes
 - General Characteristics of Bacteria, Parasites, Fungi & Viruses
 - Bacterial Morphology & Bacterial anatomy – cell wall & cell structure (Flagella, Fimbriae & Pilli)
 - Basic staining in bacteriology (Gram & ZN)
 - Bacterial spores & Bacterial Motility
 - Basic knowledge of culture media
 - Bacterial toxins- Exotoxins & Endotoxins
3. Bacterial growth / Reproduction : Growth Curve

4. Sterilization and disinfection
 - Physical methods
 - Chemical methods
 - Mechanism of Sterilization
 - Difference between Sterilization and Disinfection
 - Asepsis & Aseptic techniques
5. Hospital waste disposal & universal safety precaution
6. Infection-
 - Source of infection, Entry and Spread
 - Hospital Acquired Infections (HAI) & bacteria responsible for HAI
7. Immunity-
 - Active, Passive, Innate & Acquired Immunity
 - Antigen & Antibody
 - Antigen & Antibody reaction
 - Hypersensitivity
 - immunization
8. systemic bacteriology
 - List of Gram positive cocci (Staphylococci, Streptococci, Pneumococci)
 - List of Gram positive bacilli (Diphtheria, Clostridia)
 - List of Gram negative bacilli (Vibrio Cholera, Shalmonella, Shiegella, E.coli)
 - List of Gram negative cocci (Gonococci, Meningi cocci)
 - Mycobacterial infections: Tuberculosis, Lepa bacilli, Atypical Mycobacteria
9. Applied Microbiology
 - Respiratory tract infections
 - Sexually transmitted diseases
 - Meningitis
 - Urinary tract infections
 - Enteric infections
 - Anaerobic infections
10. Viral Disease
 - HIV
 - Hepatitis
 - Poliomyelitis
 - Rabies

11. Fungus – classification & common disease (Candidacies, Cryptococcosis, Aspergillosis)
12. Parasites:- classification & common disease (Amoebiasis, Malaria)

5. COMMUNITY MEDICINE

Theory

1. General concepts of health diseases, With reference to natural history of disease with pro pathogenic and pathogenic phases. The role of socio- economic and cultural environment in health and disease, Epidemiology, definition and scope
2. Public health administration an overview of the health administration set up at central and state levels.
3. The national health program- highlighting the role of social, economic and cultural factors in the implementation of the national program.
4. Health problems of vulnerable groups- pregnant and lactating women, infants and pre-school children, Occupational groups.
5. Occupational Heath- definition, scope occupational disease prevention of occupational diseases and hazards.
6. Social security and other measurement for the protection from occupational hazard accident and diseases. Details of compensation acts
7. Family planning- Objectives; of national family planning program and family methods. A general idea of advantage and disadvantages of the methods
8. Mental health emphasis on community aspects of mental, role of physiotherapy in mental health problems such as mental retardation etc.
9. Communicable disease- an overall view of communicable disease classified according to principle mode of transmission role of insect and other factors.
10. International health agencies.
11. Community medicine and rehabilitation epidemiology, habitat, nutrition, environment anthropology.
 - a) The philosophy and need of rehabilitation
 - b) Principles of physical medicine
 - c) Basic principles of administration of organization.
12. Introduction to community health.
13. CBR and institutional based rehabilitation and strategies to intervene in rural health system.
14. CBR in relation to different medical & surgical condition

6. PSYCHOLOGY & PSYCHIATRY

Theory

GENERAL PSYCHOLOGY

1. Definition of Psychology
 - Science of mind, consciousness and behavior
 - Scope and branches of psychology
2. Methods of introspection, observation and experimentation
3. Hereditary and Environment
 - Relative importance of heredity and environment
 - Physical characteristics intelligence and personality.
 - Nature vs. Nurture controversy
4. Learning: Types of learning
 - Trial and error
 - Classical learning
 - Instrumental learning
 - Insight for learning
5. Memory
 - Steps of memory
 - Measurement of memory
 - Causes of forgetting
 - Concept of STM and LTM
6. Perceptual process
 - Nature of perceptual process
 - Structural and functional factors in perception
 - Illusion and hallucination
7. Emotion
 - Emotion and feeling
 - Physiological changes
 - Theories of emotion (James–Lange and Cannon –Bird)
8. Motivation
 - Motive; need and Drive
 - Types of motive: Physiological, Psychological and social

9. Intelligence
 - Definitions: Theory and assessment
10. Personality: Definition; Types and measurements
11. Child Psychology:
 - Concept of child psychology
 - a) Meaning; nature, and subject matter of child psychology
 - b) Practical importance of studying child psychology for rehabilitation professionals
 - Methods of studying of child development
 - a) Baby Biography
 - b) Case History
 - c) Behavior rating

APPLIED PSYCHOLOGY

Section–A:

Industrial Psychology

1. Human Engineering
 - Importance of human engineering
 - Development of human engineering
 - Problems in human engineering
2. Decision making
 - Process and steps indecision making
 - Individual decision- making
 - Decision making in organization
3. Stress and mental health
 - Causes and reaction to stress
 - Stress management
4. Work culture, moral and rewards of work discipline
5. Guidance and counseling

Meaning, Types and objectives of counselor

Section–B:

Rehabilitation Psychology

Interpersonal Relationships, familial & Social relationships, acceptance about the disability-
 Its outcome in relation to different diagnostic categories – Psychological aspects of multiple
 handicapped, contribution of Psychology in total Rehab.

PSYCHIATRY

1. Definition/ criteria of Normality and Abnormality and factor contributing to normal mental health.
2. Neurotic Disorders.
3. Psychotic Disorders
4. Psychosomatic disorders
5. Organic mental disorders
6. Substances abuse disorders
7. Problems in adjustment in old age
8. Psychot 9. Child psychiatry

SECTION – THIRD: 3rd YEAR B.P.T.

1. ORTHOPEDICS & TRAUMATOLOGY

The course enables students to understand the common traumatic and orthopedic conditions which cause disability.

Theory

Section –1

1. General Orthopedics': Clinical examination of an orthopedic patient, common investigations, Radiological and Imaging techniques [salient features]
2. Deformities – Acquired deformities, causes – principles of Management Splinting
3. Traction Procedures – Materials Preventive orthopedics Geriatric orthopedics Congenital disorders
4. Common disorders: Congenital Torticollis, Congenital CLUB FOOT, CDH, Congenital scoliosis, flat foot.
5. Rare disorders: Congenital construction bands, Congenital Pseudo ankylosis of tibias, Congenital Radioulnar Synostosis, Congenital limb deficiencies.
6. Uncommon Disorders:-Coxsack, Congenital Vertical talus, Osteogenesis Imperfecta AG.
MC

Infection of bones and joints

1. Pyogenic – Acute osteomyelitis, complicating open fractures, chronic osteomyelitis Brodie's abscess.
2. Tuberculosis of spine, major joints and other joints (Hip, Knee, Ankle Elbow, Shoulder & Wrist) Tuberculosis Osteomyelitis – Dactylitis, Caries rib.
3. Arthritis – Acute pyogenic Arthritis – septic arthritis of infancy, small pox arthritis – Chronic arthritis – Syphilitic infection of joints – Rheumatoid arthritis, Osteoarthritis.
4. Bone Tumors – classification Primary Bone Tumors – Osteosarcoma, Giant Cell Tumor, Ewing's Sarcoma
5. Bone Metastasis
6. Neurological and Muscular disorders.
7. Anterior poliomyelitis stages, management, surgery
8. Cerebral Palsy – types, treatment
9. Leprosy: Classification, management foot drop, claw hand tropic ulcer
10. Muscular dystrophy: types and treatment:
11. Birth injury: Erb's palsy, Klumpke's palsy Peripheral Nerve injury and its management

Section II

Traumatology

1. Fracture and Dislocation: Briefly mention – Types of fracture and dislocation, symptoms and signs of above injuries and their principle of management and complication, healing of fracture.
2. Spinal Injury – Paraplegia, Quadriplegia.
3. Pre and post operative management of tendon transfer.
4. Tendon operation, External fixation, Limb re-attachment, spinal stabilization Ligament & Meniscus Injury of Knee.

Lower Limb

1. Backache: Lumbosacral strain, Intervertebral Disc prolapse, Lumbar Canal stenosis, sacroiliac strain spondylosis
2. Foot : Painful Heel, Metatarsalgia, Foot strain, Flat Foot. Regional conditions of neck and upper limb
3. Neck Cervical spondylosis Cervical rib Torticollis Brachialgia
4. Shoulder: Rotator Cuff Injury Periarthritis shoulder Tendinitis – Supraspinatus
5. Infraspinatus, Bicipital Tendinitis
6. Elbow: Tennis elbow, Golfers elbow
7. Wrist and Hand: Describe Quervain's Disease
8. Hand Trigger finger & thumb, Ganglion Carpal tunnel Syndrome
9. Mallet finger Dupuytren's contracture

Practical / Demonstrations

1. The students will be exposed to a variety of clinical cases, with case, demonstration and ward rounds.
2. General Viva
3. Practical Record

Theory

Subject Description: - This subject follows the basic science subjects to provide the knowledge about relevant aspects of neurology & neurosurgery. The student will have a general understanding of the diseases the therapist would encounter in their practice. The objective of this course is that after lectures and discussion the student will be able to list the etiology, pathology, clinical features and treatment methods for various neurological conditions.

1. Disorders of function in the context of Pathophysiology, Anatomy in Neurology and Cortical Mapping.
2. Classification of neurological involvement depending on level of lesion.

3. Neurological assessment: Principles of clinical diagnosis, higher mental function, assessment of brain & spinal cord function, evaluation of cranial nerves and evaluation of autonomic nervous system.
4. Investigations: principles, methods, views, normal/abnormal values/features, types of following investigative procedures- skull x-ray, CT, MRI, evoked potentials, lumbar puncture, CSF examination, EMG, NCV.
5. Neuro-ophthalmology: Assessment of visual function – acuity, field, colour vision, Pupillary reflex, accommodation reflex, abnormalities of optic disc, disorders of optic nerve, tract, radiation, occipital pole, disorders of higher visual processing, disorders of pupil, disorders of eye movements, central disorders of eye movement.
6. Deafness, vertigo, and imbalance: Physiology of hearing, disorders of hearing, examination & investigations of hearing, tests of vestibular function, vertigo, peripheral vestibular disorders, central vestibular vertigo.
7. Lower cranial nerve paralysis – Etiology, clinical features, investigations, and management of following disorders - lesions in trigeminal nerve, trigeminal neuralgia, trigeminal sensory neuropathy, lesions in facial nerve, facial palsy, bell's palsy, hemi facial spasm, Glossopharyngeal neuralgia, lesions of Vagus nerve, lesions of spinal accessory nerve, lesions of hypoglossal nerve. Dysphagia – swallowing mechanisms, causes of dysphagia, symptoms, examination, and management of dysphagia.
8. Cerebro-vascular diseases: Define stroke, TIA, RIA, stroke in evolution, multi infarct dementia and Lacunar infarct. Classification of stroke – Ischemic, hemorrhagic, venous infarcts. Risk factors, cause of ischemic stroke, causes of hemorrhagic stroke. Classification of hemorrhagic stroke, classification of stroke based on symptoms, stroke syndrome, investigations, differential diagnosis, medical and surgical management.
9. Head injury: Etiology, classification, clinical signs & symptoms, investigations, differential diagnosis, medical management, surgical management and complications.
10. Higher cortical, Neuro psychological and neurobehavioral disorders: Causes of blackouts, physiological nature of Epilepsy, classification, clinical features, investigations, medical & surgical management of following disorders – Non-epileptic attacks of childhood, Epilepsy in childhood, Seizures, and Epilepsy syndromes in adult. Classification and clinical features of Dyssomnias, Parasomnias, Dementia, Obsessive-compulsive disorders. Neural basis of consciousness, causes & investigations of Coma, criteria for diagnosis of Brain death. Etiology, pathophysiology, classification, clinical signs & symptoms, investigations, differential diagnosis, management of Perceptual disorders and Speech disorders.

11. Movement disorders: Definition, etiology, risk factors, pathophysiology, classification, clinical signs & symptoms, investigations, differential diagnosis, medical management, surgical management and complications of following disorders – Parkinson's disease, Dystonia, Chorea, Ballism, Athedosis, Tics, Myoclonus and Wilson's disease.
12. Cerebellar and coordination disorders: Etiology, pathophysiology, classification, clinical signs & symptoms, investigations, differential diagnosis, management of Congenital ataxia, Friedreich's ataxia, Ataxia telangiectasia, Metabolic ataxia, Hereditary cerebellar ataxia, Tabes dorsalis and Syphilis.
13. Spinal cord disorders: Functions of tracts, definition, etiology, risk factors, pathophysiology, classification, clinical signs & symptoms, investigations, differential diagnosis, medical management, surgical management and complications of following disorders – Spinal cord injury, Compression by IVD prolapse, Spinal epidural abscess, Transverse myelitis, Viral myelitis, Syringomyelia, Spina bifida, Sub acute combined degeneration of the cord, Hereditary spastic paraplegia, Radiation myelopathy, Progressive encephalomyelitis, Conusmedullaris syndrome, Bladder & bowel dysfunction, and Sarcodosis.
14. Brain tumors and spinal tumors: Classification, clinical features, investigations, medical and surgical management.
15. Infections of brain and spinal cord: Etiology, pathophysiology, classification, clinical signs & symptoms, investigations, differential diagnosis, medical management, surgical management and complications of following disorders – Meningitis, Encephalitis, Poliomyelitis and Postpolio syndrome. Complications of systemic infections on nervous system – Septic encephalopathy, AIDS, Rheumatic fever, Brucellosis, Tetanus, and Pertussis.
16. Motor neuron diseases: - Etiology, pathophysiology, classification, clinical signs & symptoms, investigations, differential diagnosis, medical management, and complications of following disorders - Amyotrophic lateral sclerosis, Spinal muscular atrophy, Hereditary bulbar palsy, Neuromyotonia and Post-irradiation lumbosacral polyradiculopathy.
17. Multiple sclerosis - Etiology, pathophysiology, classification, clinical signs & symptoms, investigations, differential diagnosis, medical management, and complications.
18. Disorders of neuromuscular junction – Etiology, classification, signs & symptoms, investigations, management, of following disorders Myasthenia gravis, Eaton-Lambert syndrome, and Botulism.
19. Muscle diseases: Classification, investigations, imaging methods, Muscle biopsy, management of muscle diseases, genetic counselling. Classification, etiology, signs & symptoms of following disorders – Muscular dystrophy, Myotonic dystrophy, myopathy, Non-dystrophic myotonia.

20. Polyneuropathy – Classification of Polyneuropathies, Hereditary motor sensory neuropathy, Hereditary sensory and Autonomic neuropathies, Amyloid neuropathy, Acute idiopathic Polyneuropathies. Guillain-Barre syndrome – Causes, clinical features, management of GBS, Chronic Idiopathic Polyneuropathies, diagnosis of polyneuropathy, nerve biopsy.
21. Focal peripheral neuropathy: Clinical diagnosis of focal neuropathy, neurotmesis, Axonotmesis, Neuropraxia. Etiology, risk factors, classification, neurological signs & symptoms, investigations, management, of following disorders – RSD, Nerve tumors, Brachial plexus palsy, Thoracic outlet syndrome, Lumbosacral plexus lesions, Phrenic & Intercostals nerve lesions, Median nerve palsy, Ulnar nerve palsy, Radial nerve palsy, Musculocutaneous nerve palsy, Anterior & Posterior interosseous nerve palsy, Axillary nerve palsy, Long thoracic nerve palsy, Suprascapular nerve palsy, Sciatic nerve palsy, Tibial nerve palsy, Common peroneal nerve palsy, Femoral nerve palsy, Obturator nerve palsy, Pudental nerve palsy.
22. Paediatric neurology: Neural development, Etiology, pathophysiology, classification, clinical signs & symptoms, investigations, differential diagnosis, medical management, surgical management and complications of following disorders - Cerebral palsy, Hydrocephalus, Arnold-chiari malformation, Basilar impression, Klippel-Feil syndrome, Achondroplasia, Cerebral malformations, Autism, Dandy walker syndrome and Down's syndrome.
23. Toxic, metabolic and environmental disorders: Etiology, risk factors, classification, neurological signs & symptoms, investigations, management, of following disorders – Encephalopathy, Alcohol toxicity, Recreational drug abuse, Toxic gases & Asphyxia, Therapeutic & diagnostic agent toxicity, Metal toxicity, Pesticide poisoning, Environmental & physical insults, Plant & Fungal poisoning, Animal poisons, & Complications of organ transplantation.
24. Introduction, Indications and Complications of following Neuro surgeries: Craniotomy, Cranioplasty, Stereotactic surgery, Deep brain stimulation, Burr-hole, Shunting, Laminectomy, Hemilaminectomy, Rhizotomy, Microvascular decompression surgery, Endarterectomy, Embolization, Pituitary surgery, Ablative surgery - Thalamotomy and Pallidotomy, Coiling of aneurysm, Clipping of aneurysm, and Neural implantation.

Practical / Demonstrations

1. The students will be exposed to a variety of clinical cases, with case, demonstration and ward rounds.
2. General Viva
3. Practical Record

3. GENERAL SURGERY & OBS GYNECOLOGY

Theory

Subject Description: - This subject follows the basic science subjects to provide the knowledge about relevant aspects of general surgery. The student will have a general understanding of the surgical conditions the therapist would encounter in their practice. The objective of this course is that after lectures and discussion the student will be able to list the indications for surgery, etiology, clinical features and surgical methods for various conditions.

1. Fluid, Electrolyte and Acid-Base disturbances – diagnosis and management ; Nutrition in the surgical patient ; Wound healing – basic process involved in wound repair, basic phases in the healing process, clinical management of wounds, factors affecting wound healing, Scars – types and treatment. Hemostasis – components, hemostatic disorders, factors affecting bleeding during surgery. Transfusion therapy in surgery – blood components, complications of transfusion ; Surgical Infections ; General Post – Operative Complications and its management
2. Reasons for Surgery; Types of anaesthesia and its affects on the patient; Types of Incisions; Clips Ligatures and Sutures; General Thoracic Procedures – Radiologic Diagnostic procedures, Endoscopy – types, Biopsy – uses and types. Overview and Drainage systems and tubes used in Surgery.
3. 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.
4. Surgical Oncology – Cancer – definition, types, clinical manifestations of cancer, Staging of Cancer, surgical procedures involved in the management of cancer.
5. Disorders of the Chest Wall, Lung and Mediastinum – Definition, Clinical features, diagnosis and choice of management for the following disorders – chest wall deformities, chest wall tumors, Spontaneous Pneumothorax, Pleural Effusion, Empyema Thoracis, Lung abscess, Bronchiectasis, Tuberculosis, Bronchogenic Carcinoma, Bronchial Adenomas, Metastatic tumors of the Lung, tracheal Stenosis, Congenital tracheomalacia, Neoplasms of the trachea, Lesions of the Mediastinum. Carcinoma of the female breast.
6. Disorders of the Heart – Definition, Clinical features, diagnosis and choice of management for the following disorders: Congenital Heart diseases – Acyanotic congenital heart disease & Cyanotic congenital heart disease : Patent Ductus Arteriosus, Coarctation of Aorta, Atrial Septal Defect, Ventricular Septal Defect, Tetraology of Fallot, Transposition of Great

- Vessels ; Acquired Heart Disease – Mitral Stenosis & Insufficiency, Aortic Stenosis and Insufficiency, Ischemic Heart Disease – Coronary Artery Disease, Cardiac tumors.
7. Thoracic surgeries – Thoracotomy – Definition, Types of Incisions with emphasis to the site of insision, muscles cut and complications. Lung surgeries: Pnumonectomy, Lobectomy, segmentectomy – Indications, Physiological changes and Complications; Thoracoplasty, Pleurectomy, Pleurodesis and Decortication of the Lung. Cardiac surgeries – An overview of the Cardio-Pulmonary Bypass Machine – Extracardiac Operations, Closed Heart surgery, Open Heart surgery. Transplant Surgery – Heart, Lung and Kidney – Indications, Physiological changes and Complications.
 8. Diseases of the Arteries and Veins : Definition, Etiology, Clinical features, signs and symptoms, complications, management and treatment of following diseases : Arteriosclerosis, Atherosclerosis, Aneurysm, Buerger's disease, Raynaud's Disease, Thrombophlebitis, Deep Vein Thrombosis, Pulmonary Embolism, Varicose Veins.
 9. Definition, Indication, Incision, Physiological changes and Complications following Common operations like Cholecystectomy, Colostomy, Ileostomy, Gastrectomy, Hernias, Appendicectomy Mastectomy, Nephrectomy, Prostatectomy.
 10. Burn: Definition, Classification, Causes, Prevention, Pathological changes, Complications, Clinical Features and Management. Skin Grafts – Types, Grafting Procedures, Survival of Skin Graft ; Flaps – Types and uses of Flaps.
 11. WomensHealth : Menstrual cycle and its disorders. Hormonal disorders of females-obesity and female hormones.Cancer of the female reproductive organs-management Infections and sexually transmitted disease in female Menopause - its effects on emotions and musculoskeletal system.Malnutrition and deficiencies in females.Sterility-pathophysiologyinvestigations- management.Maternal physiology in pregnancy.Musculo skeletal disorders during pregnancy.Prenatal complications-investigations-management.Child birth- Stages - complications-investigations-management – Pain relief in labour - Purperium - Post Natal care.Surgical procedures involving child birth.Incontinence – Types, Causes, Assessment and Management.Definition, Indications and Management of the following surgical procedures – Hysterosalphyngography, Dilatation and Curettage, Laparoscopy, Colposcopy, Hysterectomy.
 12. ENT: Common problems of ear, otitis media, Otosclerosis, functional achonia and deafness, management facial palsy classification, medical and surgical management of lower motor neuron type of facial palsy.

13. Ophthalmology: Ophthalmologic surgical conditions, refraction's, conjunctivitis, glaucoma, corneal ulcer, iritis, cataract, retinitis, detachment of retina, defects of extra-ocular muscle surgical management

Practical / Demonstrations

1. The students will be exposed to a variety of clinical cases, with case, demonstration and ward rounds.
2. General Viva
3. Practical Record

4. GENERAL MEDICINE & PEDIATRICS

Theory

This course follows the basic science subjects to provide the knowledge about relevant aspects of general medicine

1. Infection: Infectious diseases including AIDS, poisons & venoms, emphasis in common diseases.
2. Deficiency diseases in adults and malnutrition.
3. Diseases of metabolism – special emphasis to be given to Diabetes mellitus its varieties and management.
4. Endocrine diseases, special emphasis to be given to obesity and its related disorders – management – Diet exercise and medication.
5. Diseases of the blood (anaemia, clinical manifestation common anaemia's and management haemophilia)
6. Diseases of the digestive system (in brief) management.
7. Rheumatic Fever, Common Rheumatic conditions
 - Rheumatoid Arthritis – pathology – classification – clinical manifestations, medical management.
 - Polyarthritis, Juvenile R.A., Ankylosing spondylitis, Psoriatic arthritis, polyarteritis nodosa, scleroderma
 - Degenerative – primary / secondary Osteoarthritis, pseudo joint, Avascular necrosis, Perthes disease.
 - Calcium metabolism and its disorders: Osteomalacia, Osteoporosis: symptoms. Management.

Cardio – Thoracic Conditions

Brief idea of Anatomy and Physiology of Cardio respiratory system

Outline Aetio Pathogenesis of Cardio – respiratory disorders, Investigations, Diagnosis, Differential diagnosis and principles of Management

Cardio –Vascular system

1. Cardiac failure –Definition, Causes, Symptoms and signs and Brief management of Cardiac failure
2. Rheumatic fever– Definition,Brief description of etiology, Clinical features, Complications and treatment
3. Congenital Heart Diseases – Classification and brief outline of diseases like ASD, VSD,. PDA. Fallot's Tetralogy with complication.
4. Ischemic Heart Disease –Aetio pathogenesis classifications Symptoms, Diagnosis, Medical and Surgical treatment
5. Hypertension – Definition, Classification, Symptomatology, complication and treatment
6. Infective Endocarditis – Brief aetiopathogenesis, Clinical features, Diagnosis and treatment.
7. Brief description of Deep Vein thrombosis and pulmonary embolism.
8. Vascular Disease Atherosclerosis, Burgers disease, Phlebitis etc.
9. Cardiac Muscle disorder: Cardiomyopathies, Myocarditis
10. Cardiac Tumors

Respiratory System

[Respiratory disease including diseases of chest wall]

1. Chronic Bronchitis and Emphysema; Definition; Clinical features diagnosis and Treatment
2. Bronchial Asthma; Definition, Aetiopathogenesis, Clinical features, Diagnosis and Treatment
3. Pneumonia ; Definition ,Classification, Clinical tests of pulmonary tuberculosis, Diagnosis Complications and Treatment
4. Tuberculosis; Aetiopathogenesis, Clinical tests of pulmonary tuberculosis. Diagnosis, complication and treatment.
5. Lung abscess and bronchiectasis; Definition, Clinical features, Diagnosis and treatment.
6. Chest Wall deformities; Describe various deformities of chest wall and effect and Pulmonary diseases associated with it.
7. Occupational lung diseases –Clinical features, diagnosis and treatments.
8. Respiratory failure – classification, causes and treatment.
9. A R D S

Intensive & Emergency Care: (First Aid)

1. Review of anatomy & Physiology related to acute care – cardio – vascular system, pulmonary system nervous system & musculoskeletal system.
2. Common emergencies (surgical and medical)
3. Trauma – Accidents : explosions: riots: gunshots – shock haemorrhage - DIC Burns, septicemia – acute respiratory failure, pulmonary oedema / pulmonary embolism – A.R.O.S. Cardiac failure / Myocardial infarction, Cardiac arrhythmias unconsciousness /Coma / cerebral hypoxia – drug overdose, poisoning, Tetanus,
4. respiratory paralysis (Polio – G.B. Syndromes) Renal Failure – obstetrical emergencies – Paediatric emergencies.
5. Intensive / metabolic emergencies

6. Anaesthetics – types – indications – merits – demerits – effect of Gen – Anaesthesia on cardiopulmonary function.
7. Special procedures in intensive care, cardio pulmonary resuscitation and airway care – bronchoscope – throacentesis – tracheotomy – intubations – chest tubes (Nasogastric tubes and trachicals incubation) –Skeletal and skin tractions.
8. Bioelectric instrumentation / interpretation – E.C.G. Cardio pulmonary monitoring – Radiological evaluation – A & C. Analysis. Fluid & electrolyte balance – haematological studies.
9. Therapeutics – Mechanical Ventilators – Medical gas therapy I.P.P.B.
10. Psychosocial aspect of critical care.

Pediatric Conditions

1. C.N.S. Involvement in children - Tubercular meningitis & other infective conditions.
2. Birth trauma / intrauterine and early infancy conditions. Cerebral palsy – types – methods of evaluation – management.
3. Learning disorders – perceptual disorders.
4. Mental retardation – etiological factors, types symptomatology treatment.
5. Problems in emotional development – nail biting, bed wetting behavioral problems, thumb sucking, aggressive & harmful behaviour, relationship of child – parent – teacher.
6. Childhood obesity and its complications.
7. Hereditary neuromuscular disorders- Down's syndrome.
8. Congenital neuromuscular disorders including spinal dystrophism.
9. Peripheral neuromuscular disorders including polio, spinal muscular atrophies, muscular dystrophics, myopathy.
10. Malnutrition and vitamin deficiency – associated systemic conditions – Rickets, skin conditions, deficiency neuromuscular conditions.
11. Respiratory conditions, Asthma T.B. Bronchiectasis and neuromuscular conditions.
12. Acute paediatric respiratory distress syndrome – intensive paediatric care.
13. Intensive neonatological and paediatric surgical care.
14. Congenital cardiovascular problems – management.
15. Cardio – respiratory rehabilitation in children.

Dermatology Conditions

Diseases of the skin: common diseases of skin – leprosy, vasomotor disorders, trophic ulcers, their classifications and management, coccal and fungal parasitic and viral infections, skin diseases related to Rheumatology, and tropical skin diseases

Subject Description: - This subject follows the basic science subjects to provide the knowledge about relevant aspects of general surgery. The student will have a general understanding of the surgical conditions the therapist would encounter in their practice. The objective of this course is that after lectures and discussion the student will be able to list the indications for surgery, etiology, clinical features and surgical methods for various conditions.

1. Fluid, Electrolyte and Acid-Base disturbances – diagnosis and management ; Nutrition in the surgical patient ; Wound healing – basic process involved in wound repair, basic phases in the healing process, clinical management of wounds, factors affecting wound healing, Scars – types and treatment. Hemostasis – components, hemostatic disorders, factors affecting bleeding during surgery. Transfusion therapy in surgery – blood components, complications of transfusion ; Surgical Infections ; General Post – Operative Complications and its management
2. Reasons for Surgery; Types of anaesthesia and its affects on the patient; Types of Incisions; Clips Ligatures and Sutures; General Thoracic Procedures – Radiologic Diagnostic procedures, Endoscopy – types, Biopsy – uses and types. Overview and Drainage systems and tubes used in Surgery.
3. 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.
4. Surgical Oncology – Cancer – definition, types, clinical manifestations of cancer, Staging of Cancer, surgical procedures involved in the management of cancer.
5. Disorders of the Chest Wall, Lung and Mediastinum – Definition, Clinical features, diagnosis and choice of management for the following disorders – chest wall deformities, chest wall tumors, Spontaneous Pneumothorax, Pleural Effusion, Empyema Thoracis, Lung abscess, Bronchiectasis, Tuberculosis, Bronchogenic Carcinoma, Bronchial Adenomas, Metastatic tumors of the Lung, tracheal Stenosis, Congenital tracheomalacia, Neoplasms of the trachea, Lesions of the Mediastinum. Carcinoma of the female breast.
6. Disorders of the Heart – Definition, Clinical features, diagnosis and choice of management for the following disorders: Congenital Heart diseases – Acyanotic congenital heart disease & Cyanotic congenital heart disease : Patent Ductus Arteriosus, Coarctation of Aorta, Atrial Septal Defect, Ventricular Septal Defect, Tetralogy of Fallot, Transposition of Great Vessels ; Acquired Heart Disease – Mitral Stenosis & Insufficiency, Aortic Stenosis and Insufficiency, Ischemic Heart Disease – Coronary Artery Disease, Cardiac tumors.
7. Thoracic surgeries – Thoracotomy – Definition, Types of Incisions with emphasis to the site of insision, muscles cut and complications. Lung surgeries: Pnumonectomy, Lobectomy, segmentectomy – Indications, Physiological changes and Complications; Thoracoplasty, Pleurectomy, Pleurodesis and Decortication of the Lung. Cardiac surgeries – An overview of the Cardio-Pulmonary Bypass Machine – Extracardiac Operations, Closed Heart surgery,

- Open Heart surgery. Transplant Surgery – Heart, Lung and Kidney – Indications, Physiological changes and Complications.
8. Diseases of the Arteries and Veins : Definition, Etiology, Clinical features, signs and symptoms, complications, management and treatment of following diseases : Arteriosclerosis, Atherosclerosis, Aneurysm, Buerger's disease, Raynaud's Disease, Thrombophlebitis, Deep Vein Thrombosis, Pulmonary Embolism, Varicose Veins.
 9. Definition, Indication, Incision, Physiological changes and Complications following Common operations like Cholecystectomy, Colostomy, Ileostomy, Gastrectomy, Hernias, Appendicectomy Mastectomy, Nephrectomy, Prostatectomy.
 10. Burn: Definition, Classification, Causes, Prevention, Pathological changes, Complications, Clinical Features and Management. Skin Grafts – Types, Grafting Procedures, Survival of Skin Graft ; Flaps – Types and uses of Flaps.
 11. WomensHealth : Menstrual cycle and its disorders. Hormonal disorders of females-obesity and female hormones.Cancer of the female reproductive organs-management Infections and sexually transmitted disease in female Menopause - its effects on emotions and musculoskeletal system.Malnutrition and deficiencies in females.Sterility-pathophysiologyinvestigations- management.Maternal physiology in pregnancy.Musculoskeletal disorders during pregnancy.Prenatal complications-investigations-management.Child birth- Stages - complications-investigations-management – Pain relief in labour - Puerperium - Post Natal care.Surgical procedures involving child birth.Incontinence – Types, Causes, Assessment and Management.Definition, Indications and Management of the following surgical procedures – Hysterosalpingography, Dilatation and Curettage, Laparoscopy, Colposcopy, Hysterectomy.
 12. ENT: Common problems of ear, otitis media, Otosclerosis, functional deafness and deafness, management facial palsy classification, medical and surgical management of lower motor neuron type of facial palsy.
 13. Ophthalmology: Ophthalmologic surgical conditions, refraction's, conjunctivitis, glaucoma, corneal ulcer, iritis, cataract, retinitis, detachment of retina, defects of extra-ocular musclesurgical management

Practical / Demonstrations

1. The students will be exposed to a variety of clinical cases, with case, demonstration and ward rounds.
2. General Viva
3. Practical Record

SECTION – FOURTH : 4th YEAR B.P.T.

1. PT IN ORTHOPAEDICS

Theory

Section –I

1. Arthritis and Allied conditions [in details] Physiotherapy Management of
 - Osteo-arthritis – Generalised, Degenerative and traumatic, Spondylosis.
 - Rheumatoid Arthritis, Still's disease. Infective Arthritis.
 - Spondilitis Ankylosing Spondylitis.
 - Non-Articular Rheumatism-Fibrositis, Myalgia, bursitis.
2. Common Conditions of skin
 - Acne,
 - Psoriasis,
 - Alopecia,
 - Lucoderma
3. Common Vascular diseases
 - Thrombosis,
 - Embolism,
 - Berger's disease,
 - Arteriosclerosis.
 - Thrombophlebitis,
 - Phlebitis,
 - Gangrene,
 - Hypertension.
4. Deficiency Diseases: Rickets, nutritional disorders
5. Traumatology and Orthopedics
 - Classification of fracture, causes and types.
 - Signs and symptoms of fractures.
 - Complications of fracture.
 - Healing and fracture affecting it.
 - Principles of fracture management.
 - Principles of Physiotherapy management in fracture
 - Physiotherapy management of complications
 - Dislocations –Common sites, sign and symptoms
6. Specific fractures and their complete Physiotherapy Assessment and management.
Upper Limb - Scapula, Clavicle, Humerus, Ulna and Radius, Colle's Fracture and crush injuries of Hand.
Lower Limb - Fracture of pelvis, Neck of femur, Shaft of femur

Patella, Tibia and fibula, Pott's fracture, fractures of tarsal and Metatarsal bones.

Spine - Management of fracture of spine with or without neurological deficit

Soft tissue injuries - Soft tissue injuries, Synovitis, Capsulitis, Volkmann's ischemic contracture etc. Tear of semi lunar cartilage and cruciate ligament of knee.

7. Principles of Physiotherapy Assessment and Management in dislocation.

Section –II

1. Degenerative and Infective Conditions

- Osteoarthritis of major joints,
- Spondylosis, spondylitis,
- prolapsed intervertebral disc-lesion,
- spondylolisthesis,
- Periarthritis,
- Rotator Cuff Lesions of shoulder, etc.
- Tuberculosis of spine, bone and major joint,
- perthes disease.
- Rheumatoid arthritis,
- Ankylosing spondylitis etc.
- And other miscellaneous orthopedic conditions commonly treated by physiotherapy and physiotherapist

2. Deformities

- Congenital : Torticollis and Cervical Rib, C.T.E.V.; Pes cavus and planus and other common deformities
- Acquired : Scoliosis, Kyphosis, Lordosis, Coxavara, Genuvalgum, Genu Varum and Genu recurvatum etc.

3. Orthopedic Surgery

Pre and post operative assessment and management of surgeries like Arthroplasty, Arthodesis, and Osteotomy. Tendon transplant, Soft tissue release, Grafting, Partial and complete joint replacement, Arthroscopy, spinal stabilisation, Reattachment limbs. Ilizarov technique, surgeries in C.P. and polio and External Fixators.

4. Amputations

Levels of amputation of upper and lower extremity, stump care, setup bandaging, pre and post prosthesis fitting assessment and management [check out of prosthesis, Training etc.] Complications of amputations and their management.

5. Manipulation / Mobilization / Therapy

Assessment, Principles and techniques of therapy and factors considered in therapy – [Mckenzie Mait Land mention only].

6. Ergonomic measures [in brief]

Practical / Demonstrations

1. The students will be exposed to a variety of clinical cases, with case, demonstration and ward rounds.
2. General Viva
3. Practical Record
- 4.

2. P.T. IN NEUROLOGY AND NEUROSURGERY

Description

Following the basic science and clinical science, this course introduces the student to the neurological conditions which commonly cause disability.

Objectives

The objective of this course is that after 150 hours of lectures & practical demonstrations, in addition to clinics, the student will be able to demonstrate and understanding of neurological conditions causing disability and their management.

In addition the student will be able to fulfill with 75% accuracy (as measures by written, oral & practical internal evaluation) the following objectives of the course.

Outline

1. Neuroanatomy

Review the basic anatomy of the brain and spinal cord including: Blood supply of the brain and spinal cord, anatomy of the visual pathway, connections of the cerebellum and extrapyramidal system, relationship of the spinal cord segments, long tracts of the spinal cords, the brachial and lumbar plexuses and cranial nerves.

2. Neurophysiology

Review in brief the Neurophysiological basis of: tone and disorders of tone and posture, bladder control, muscle contraction and movement and pain.

3. Clinical Features & Management.

Briefly outline the clinical features and management of the following neurological

Disorders:

1. Congenital and childhood disorders
 - Congenital and childhood disorders
 - Hydrocephalus
 - Spina Bifida
 - Arnold Chiari malformation, Dandy

2. Cerebrovascular accidents
 - General classification, thrombotic, embolic, haemorrhagic and inflammatory strokes.
 - Gross Localization and sequelae.
 - Details rehabilitative programme.
3. Trauma- Broad localization, first aid and management of sequelae of head injury and spinal cord injury.
4. Diseases of the spinal cord
 - Cranio- vertebral junction anomalies.
 - Syringomyelia
 - Cervical and lumbar
 - Tumors
 - Spinal arachnoiditis
 - T.B. spine
5. Demyelinating diseases(central and peripheral)
 - Guillain- Barre syndrome
 - Acute disseminated encephalomyelitis
 - Transverse myelitis
 - Multiple sclerosis
6. Degenerative disorders
 - Parkinson's disease
 - Dementia
7. Infections
 - Pyogenic meningitis sequelae
 - Tuberculosis infection of central nervous system
 - Poliomyelitis
 - Brain abscess
8. Diseases of the muscle including myopathies: Classification , sign, symptoms, progression and management.
9. Peripheral nerve disorders
 - Epilepsy; Definition, classification and management.
 - Myasthenia gravis; Definition, course and management
 - Intracranial tumors; Broad classification, signs and symptoms.
 - Motor neuron disease
 - Herniation of brain

10. Clinical assessment of Neurological Functions to be taught through bedside or demonstration clinics spread over at least 5 sessions.
 - Basic history to determine whether the brain, spinal cord or peripheral nerve is involved.
 - Assessment of higher mental function such as orientation, memory, attention, speech & language.
 - Assessment of cranial nerves.
 - Assessment of Motor power.
 - Assessment of sensory functions touch, pain & position
 - Assessment of tone-spasticity, rigidity and hypotonia
 - Assessment of cerebellar functions
 - Assessment of higher cortical functions – apraxia etc.
 - Assessment of gait abnormalities.

Practical / Demonstrations

1. The students will be exposed to a variety of clinical cases, with case, demonstration and ward rounds.
2. Assessment planning & management of Neurological conditions
3. General Viva
4. Practical Record

3. P.T. IN GENERAL SURGERY & OBS GYNECOLOGY

1. Brief review of the following surgical conditions and various physiotherapeutic modalities, aims, means and techniques of physiotherapy should be taught.
2. Pre and Post Operative physiotherapy management of following abdominal surgical conditions including incisions. Pre and postoperative complications.
3. Herniorraphy
4. Nephrectomy
5. Redical Mastectomy etc
6. Postural drainage & respiratory physiotherapy in CTVS
7. Physiotherapy in patients in ventilators
8. Pre and Post Operative physiotherapy management of following Conditions
9. Thorectomy
10. Lobectomy
11. ThoracoPlasty
12. Pneumonectomy

13. Orientation about atelectasis, pneumothorax, pre and post operative physiotherapy management of cardiac surgery, open- heart surgery.
14. Burn & its classification physiotherapy management.
15. Pre and postoperative physiotherapy of skin grafting
16. Physiotherapy of cases after reconstructive surgery of hand.
17. Physiotherapy in obstetrics
18. Physiotherapy in PID. Stress incontinence, Prolapse uterus, etc.
19. Pre and Post operative physiotherapeutic management of neuro-surgical conditions and complication. Peripheral Nerve Injuries, Pre and post operative physiotherapeutic in management of Nerve Repair/ Grafting. Physiotherapy in Head Injury

Practical / Demonstrations

1. The students will be exposed to a variety of clinical cases, with case, demonstration and ward rounds.
2. Assessment planning & management of Surgical conditions
3. General Viva
4. Practical Record

4. PT IN GENERAL MEDICINE & PEDIATRIC

1. Introduction: Brief review of the following medical condition and various modalities of physiotherapy, aims, mean and techniques of physiotherapy should be taught.
2. Physiotherapy in diseases of respiratory system.
Prior to beginning with various conditions brief introduction of breathing exercises and postural drainage in detail to be taught.
3. Physiotherapy in relation to
 - Edema,
 - Non Articular Rheumatism Rickets vitamin Deficiency syndrome,
 - Myopathy
 - Various types muscular dystrophy,
 - Diabetic neuropathy,
 - Rheumatoid Arthritis and General debility.

4. Physiotherapy in relation To

- Congestive heart failure,
- myocardial Infarction
- Peripheral vascular diseases

5. Physiotherapy in relation to Hemiplegia

- Cerebral palsy
- Tetraplegic syndrome
- Multiple Sclerosis
- Tabes dorsalis
- Transverse myelitis
- Polio myelitis
- Parkinson's Disease
- Motor Neuron Disease
- Poly Neuritis Ataxia
- Extra pyramidal lesion
- Peripheral Neuropathy
- Peripheral Nerve Injuries
- Sciatica
- Brachial Neuritis and Neuralgia
- Facial palsy and Bell's palsy
- Syringomyelia
- Monoplegia
- Myopathy and Muscular Dystrophy
- Sub-acute Combined Degeneration of spinal cord
- General and physiotherapeutic management of psycatric patients

Practical / Demonstrations

1. The students will be exposed to a variety of clinical cases, with case, demonstration and ward rounds.
2. Assessment planning & management of Surgical conditions
3. General Viva
4. Practical Record

5. COMMUNITY BASED REHABILITATION

Subject Description: - The subject serves to integrate the knowledge gained by the students in Community Medicine and other areas with skills to apply these in clinical situations of health and disease and its prevention. The objective of the course is that after the specified hours of lectures and demonstrations the student will be able to identify Rehabilitation methods to prevent Disabilities and Dysfunctions due to various disease conditions and plan and set treatment goals and apply the skills gained in Rehabilitating and Restoring Functions.

1. Rehabilitation: Definition, Types
2. Community: Definition of Community, Multiplicity of Communities, and The Community based approach, Community entry strategies, CBR and Community development, Community initiated versus community oriented program, Community participation and mobilization
3. Introduction to Community Based Rehabilitation: Definition, Historical review, Concept of CBR, Need for CBR, Difference between Institution based and Community based Rehabilitation, Objectives of CBR, Scope of CBR, Members of CBR team, Models of CBR
4. Principles of Community based Rehabilitation. W.H.O.'s policies-about rural health care concept of primary /tertiary health centers-district hospitals etc-Role of P.T.-Principles of a team work of Medical person/P.T./O.T. audiologist/speech therapist /P.&O./vocational guide in C.B.R. of physically handicapped person , Agencies involved in rehabilitation of physical handicapped - Legislation for physically handicapped, concept of multipurpose health worker, role of family members in the rehabilitation of a physically handicapped.
5. Planning and management of CBR Programs, CBR Programmed planning and management, Ownership and Governance, Decentralization and CBR, Management of CBR, Programmed sustainability, Communication and Coordination, Community participation, mobilization and awareness, CBR program influence on promoting and developing public policies
6. Disability: Definition of Impairment, Handicap and Disability, Difference between impairment, handicap and disability, Causes of disability, Types of disability, Prevention of disability, Disability in developed countries, Disability in developing countries. Disability Surveys: Demography. Screening: Early detection of disabilities and developmental disorders, Prevention of disabilities- Types and levels
7. Disability Evaluation: Introduction, What, Why and How to evaluate, Quantitative versus Qualitative data, Uses of evaluation findings
8. Role of Government in CBR: Laws, Policies, Programs, Human Rights Policy, Present rehabilitation services, Legal aspects of rehabilitation

9. Role of Social work in CBR: Definition of social work, Methods of social work, History of social work, Role of social worker in rehabilitation
10. Role of voluntary Organizations in CBR: Charitable Organizations, Voluntary health agencies – National level and International NGO's, Multilateral and Bilateral agencies. International Health Organizations: WHO, UNICEF, UNDP, UNFPA, FAO, ILO, World bank, USAID, SIDA, DANIDA, Rockefeller, Ford foundation, CARE, RED CROSS.
11. National District Level Rehabilitation Program: Primary rehabilitation unit, Regional training center, District rehabilitation center, Primary Health center, Village rehabilitation worker, Anganwadi worker
12. Role of Physiotherapy in CBR: Screening for disabilities, Prescribing exercise program, Prescribing and devising low cost locally available assistive aids, Modifications physical and architectural barriers for disabled, Disability prevention, Strategies to improve ADL, Rehabilitation programs for various Neuro-Musculo Skeletal and Cardiothoracic disabilities.
13. Screening and rehabilitation of pediatric disorders in the community: Early detection of high risk babies, Maternal nutrition and education, Rehabilitation of Cerebral Palsy, Polio, Down's Syndrome, Muscular Dystrophies etc., Prevention and rehabilitation of mental retardation and Behavioral disorders, Immunization programs, Early intervention in high risk babies, Genetic counseling
14. Extension services and mobile units: Introduction, Need, Camp approach
15. Vocational training in rehabilitation: Introduction, Need, Vocational evaluation, Vocational rehabilitation services
16. Geriatrics - Physiology of Aging /degenerative changes-Musculoskeletal /Neuro motor /cardio – respiratory-/Metabolic, Endocrine, Cognitive, Immune systems. Role of Physiotherapy in Hospital based care, Half-way homes, Residential homes, Meals on wheels etc. Home for the aged, Institution based Geriatric Rehabilitation. Few conditions: - Alzheimer's disease, Dementia, Parkinson's disease, Incontinence, Iatrogenic drug reactions, etc. Ethics of Geriatric Rehabilitation
17. Industrial Health & Ergonomics –
Occupational Hazards in the industrial area - Accidents due to
 - Physical agents-e.g.-Heat/cold, light, noise, Vibration, U.V. radiation, Ionizing radiation,
 - Chemical agents-Inhalation, local action, ingestion,
 - Mechanical hazards-overuse/fatigue injuries due to ergonomic alteration & ergonomic evaluation of work place-mechanical stresses per hierarchy –

- Sedentary table work –executives, clerk,
- Inappropriate seating arrangement- vehicle drivers
- Constant standing- watchman- Defense forces, surgeons,
- Over-exertion in laborers,-common accidents –Role of P.T.-Stress management,
- Psychological hazards- e.g.-executives, monotonicity & dissatisfaction in job, anxiety of work completion with quality, Role of P.T. in Industrial setup & Stress management relaxation modes.
- Biological Hazards

Practical / Demonstrations

This will consist of Field visits to urban and rural PHC's., Visits to regional rehabilitation training center, Regular mobile camps, Disability surveys in villages, Disability screening, Demonstration of Evaluation and Physiotherapy prescription techniques for musculoskeletal, neuromuscular, cardio-respiratory, pediatric, gynecological and geriatric problems in community, Demonstration of evaluation and prescription techniques for ambulatory and assistive devices, Fabrication of low cost assistive devices with locally available materials.

6. RESEARCH METHODOLOGY AND BIOSTATISTICS

1. Introduction to Biostatistics .
2. Measure of central value of Median, Mode, Mean.
3. Measure of Variability – Range , Semi inter – Quartile Range (S.I.Q.R.) standard deviation.
4. Variance coefficient of variation.
5. Finding Percentile Norms Percentile bank by interpolation in commulative distributions.
6. Covelation product moment coefficient of coverlliation difference corvelation.
7. Reliability and significance standard error of mean and its interpretation, reliability of difference between means.
8. Testing Hypotheses, T & F Tests.
9. Computation of Chi squate from contingents table and its interpretation.
10. Introduction to research Methdology.
11. Role of Research in Physiotherapy
12. Principles of Conducting Research
 - Defining a Problem.
 - Review of Literature.
 - Formation of Hypothesis.
 - Testing Hypothesis.
 - Analysing & Reporting.
13. Concepts of Measurement.
 - Types of data.

- Tabulator of data.
- Graphic representation of data.
- Measure of dispersion standard error and standard deviation. E-sampling Technique.

Sampling and

14. Statistical tests, χ^2 Tests, Concept of Z, S.E. of proportion.

Notes