SYLLABUS FOR BACHELOR OF PHYSIOTHERAPY

(FOUR AND HALF YEARS DEGREE COURSE)

SECTION-I

GENERAL RULES

1. The degree of Bachelor of Physiotherapy shall comprise a course of study spread over a period of 4 academic years followed by six months internship and the candidates will be full time regular students of the course

2. THE ELIGIBILITY OF ADMISSION SHALL BE AS FOLLOW:

a. Candidates must have passed 10+2 or H.S.C. Per-university of Equivalent there to with physics, Chemistry and Biology as the main subjects.
b. Minimum marks for eligibility in above subjects in aggregate should be 50% however for sc/ st / obc candidates, the percentage will be relaxed to 40%.
c. the candidate must have complete 17 years of age at the time of admission.

3. Medium of instructions/Examination shall be English

4. The total number of seats shall be a 50+N.R.I. seat. Out of 50 seats for SC/ST/OBC/PH/etc. Shall be as per State Governments Rules/Instructions.

5. The schedule of fee for the above course shall be as per decision M.P. Paramedical Council.

6. Details of subjects to be taught the four year course, curriculum pattern, staff examination scheme for each year is given here in Details for each year's course shall be subject to approval of the concerned board of studies/Faculty.

7.ELIGIBLITY FOR THE DEGREE:

A candidate shall be eligible for the Degree of Bachelor of Physiotherapy when he /she has undergone the prescribed course of study for a period of not less than four years in an institution approved by the University and has passed the prescribed examination in all subjects. Commencement of exam. There will two sessions of University exam in one academic year.

8. REQUIEMENTS FOR EXAMINATIONS AND ATTENDANCE:

A. Examination will be conducted by the university, to which the college is affiliated as follows:

i. 1st year at the end of the 1st year
ii. 2nd year at the end of the 2nd year
iii. 3rd year at the end of the 3rd year]
iv. B.P.T Final Examination at the off the 4th year.

Examination shall be with Theory and Practical. A candidate will be permitted to appear for the University examination in the subject only if.

a. He secures not less than 75% of attendance in theory and Practical in each subject.
b. He earns a Progress Certificate from the Head of the Institution of Having satisfactory completed the course of study prescribed in the subject as required by the regulations and his conduct has been satisfactory.

(B) Students may carry over two subjects from one year to the following year and must pass in the failed subject before appearing in the next year exam.

(C) Students may carry two subjects from 2nd year to 3rd year and must pass in failed subject before appearing in 3rd year annual exam.

(D) Students may carry two subjects from 3rd year to 4th year and must pass in failed subjects before appearing in the 4th year exam.

(E) There will be two examinations in a year with an interval of four to six months between the two examinations.

9. INTERNAL ASSESSMENT

A. It shall be based on day-to-day assessment (see note). Evaluation of student assignment, preparation for seminar, clinical case presentation etc.
B. Regular periodical examination shall be conducted through the course. The question of number of examination is left to the institution.
C. Day-to-Day records should be given importance during internal assessment.
D. Weightage for the internal assessment shall be 20% of the total marks in each subject.

Note: Internal assessment shall relate to different ways in which students participation in learning process during semesters is evaluated, some examples are as follows.

I. Preparation of subjects for student's seminar.
II. Preparation of a clinical case for discussion.
III. Clinical case study/problem solving exercise.

IV. Participation in project for health care in the community (planning stage to evaluation)
V. Proficiency in carrying out a practical or a skill in small research project.
VI. Multiple-choice question (MCQ) tests after completion of a system/teaching.

Each item tested shall be objectively assessed and recorded. Some of the items can be assigned as home work/Vacation work.

10. RESULTS AND GRADES:

A candidate who secures in each subject prescribed for each year not less than:

a. 50% of the marks in the aggregate of each subject of the Sessional and University Examination in Theory and Oral taken together wherever prescribed with not less than 50% of the marks in the University Examination in theory and Oral taken together, and
b. 50% of the marks in the Practical Examination where prescribed shall be declared to have passed the Examination in the subject.

A candidate who completes the course of study and passes in all the subjects of the 4-year with:

(I) Not less than 75% of the marks in any subjects shall be declared to have passed the Examination in that subject with Distinction provided he has passed all the subjects in the first attempt.

(ii) Grade is given to those who pass in all the subjects in first attempt.

Candidate who will be successful in final B.P.T. Examination shall be required immediately to undergo Compulsory Rotating Full Time Internship for a period of 6 months in the same Hospital. Only after successful completion of the Compulsory Rotating Internship, a candidate shall be admitted to Degree and Degree will be awarded to him.

11. The provisions of this ordinance in respect of requirements for Examination, Attendance, Sessional Work, Result and Grade are subject to alteration from time.

12. Merit list will be decided ad per the aggregate total of four years, and the candidate must pass all the subjects, in first attempt.

BACHELOR OF PHYSIOTHERAPY

THE OVERALL AIM OF THE COURSE

The course aims at imparting in depth both the theoretical basis as well as the therapeutic skills in the art science of Physical Diagnosis and Physiotherapeutic, so as to practice the profession in a competent manner towards those who need such services, with autonomy in quality care assurance and maintaining the humanitarian approach of service with compassion.

SPECIFIC COURSE OBJECTIVES

The training programme is meeting the following specific objective.

i. Acquisition of adequate theoretical and the practical knowledge foundation in the basic medical subjects.
ii. Proficiency in the skills of basic physiotherapy procedures and techniques with adequate theoretical basic of allied science.
iii. Ability to detect patho-physiological impairment of structural and functional deviations by using methodology of physical diagnosis to evaluate the disability prognosis.
iv. Competency in imparting the physiotherapeutic measure of specific choice towards preventive, curative, symptomatic and restorative or rehabilitative goals.
v. Acquisition of moral and ethical codes and conduct of professional practice in a dedicated manner with the patient welfare as the primary responsibility.
vi. After achieving competency and skill a physiotherapist should practice physiotherapy, and carry out treatment as an independent practitioner or in consultation & reference with other medical practitioners.

BACHELOR OF PHYSIOTHERAPY (B.P.T.) SYLLABUS

MEDICAL SUBJECTS

1. Anatomy
2. Physiology
3. Pathology
4. Microbiology
5. Psychology
6. Pharmacology
7. Biochemistry
8. General surgery
9. Obstetrics and gynecology
10. E.N.T.
11. Ophthalmology
12. General medicine
13. Orthopedics
14. Community
15. Neurology
16. Microsurgery
17. Cardio thoracic medicine
18. Cardio thoracic surgery
19. Dermatology
20. Radiology

PHYSIOTHERAPY SUBJECTS

1. Bio electrical modalities (medical electronics and electro- theraprutics modalities)
2. Bio-mechanical modalities (mechanics and exercise therapeutics modalities)
3. Physiotherapy-(electrotherapy)
4. Physiotherapy-(therapeutic exercise and massage)
5. Bio-mechanics
6. Physiotherapeutics- I (orthopedics)
7. Physiotherapeutics- II (neurology and microsurgery)
8. Physiotherapeutics- III (cardio thoracic condition)
9. Physiotherapeutics- IV (sports)
10. Physiotherapeutics- V (general)
11. Physical evaluation
12. Physical diagnosis and prescription
13. Community physiotherapy
14. Physiotherapy ethics
15. Yoga

ALLIED PROFESSIONAL SUBJECTS

1. Biostatistics
2. Computer science
3. Rehabilitation therapy
4. Psychology
5. Bio-engineering
6. Medical electronics
7. Sociology
8. Occupational therapy
9. Speech therapy

SCHEME FOR FIRST YEAR

Code		Theory	Practical	Theory	Viva	Practical	Total
BPT-101T	**Human Anatomy**	**20**	**20**	**100**	**20**	**40**	**200**
BPT-102T	**Human Physiology**	**20**	**20**	**100**	**20**	**40**	**200**
BPT-103T	**Bioelectrical Modalities**	**20**	**-**	**80**	**-**	**-**	**100**
BPT-104T	**Biomechanical Modalities**	**20**	**-**	**80**	**-**	**-**	**100**
BPT-105 T	**Psychology and Sociology**	**20**	**-**	**80**	**-**	**-**	**100**
TOTAL							**700**

Note

Passing mark in all subject candidate must obtain 50% in aggregate with minimum of 50% inTheory, Including viva and minimum 50%in practical.

B.P.T. FIRST YEAR

STAFF PATTERN FOR FIRST YEAR B.P.T.

Subjects Staff Required

1.Anatomy 1 M.S. Anatomy, Lecturer/Asst. prof.

2.Physiology 1 M.D. Lecturer/Asst. prof

3.Bioelectrical modalities Physics lecturer/biomedical engineer

(medical electronics & and 1 Asst. professor of physiotherapy

4.eletro-therapeutic moda-lities)

Biomechanical modalities 1 Asst. professor of physiotherapy

(mechanics & exercise- 1 M.Sc. physics lecturer/bio-medical engineer

Therapeutic modalities)

5.Sociology 1 M.A. Sociology/Medical social-worker

6.Psychology 1 Psychologist, M.A.(psychology) and D.M And

S.P. (diploma in medical and social Psychology

PAPER I

HUMAN ANATOMY

Subject code BPT 101

GENERAL ANATOMY

1. Introduction scope of anatomy cell as a structural and fundamental unit, Organization of tissue organs and system, Anatomical position of the body, Anatomical terms.
2. Skin and the appendages of the skin.
3. Muscles: Voluntary and Involuntary and cardiac muscles, short description of the structure of different muscles.
4. Muscles: Classification of voluntary muscles. Origin and Insertion, Tendon, Aponeurosis, Isometric and Isotonic contraction of muscles.
5. Bones: composition and functions, classification of bones according to morphology and development, various terms and markings on the bones.
6. Bones: Development of bones, parts of long bones and blood supply of bones, general remarks about bones of skull, thorax, vertebral column and bones of extremities in detail.
7. Joints: Definition, classification of joints structure and cartilaginous joints.
8. Joints: Structure of synovial joints, Movements of joints, blood supply of bones and joints and Bursae, close pack and loose pack position of the joints.
9. Nervous system: Nerve cell, Synapse and reflex.
10. Nervous system: organization of central nervous systems Spinal nerve endings.
11. Cardiovascular system: Arteries Veins, Capillaries, and Collateral circulation.
12. Cardiovascular system :Blood as a connective tissue, anatomy of Heart, large bloodvessels
13. Respiratory system: General outline of respiratory passages, anatomy of Lung, Pleura.
14. Respiratory system: Broncho-pulmonary segments, Inter-costal muscles and Mechanism of respiration.
15. Digestive system: General idea or outline of gastro- intestinal tract and associated glands.
16. Excretory system structure and function of kidney, general outline of Ureters Urinary bladder and Urethra.
17. Reproduction system: general outline of male and female general organs.
18. Endocrines: Definition, Stricture in general.

19. Lymphatic system: Lymph circulation, Lymph nodes and Lymphoid tissue.

20 Neuro anatomy - Gross structure of ,Sulci and Gyri and various areas of cerebral hemispheres,Thalamus, Hypothalamus, Basal Ganglia.

(I) Cerebellum.

(ii) Pons, Medeulla

(iii) Spinal Cord.

(iv) Ascending tracts.

(v) Descending tracts

(iv) Clinical application of Knowledge of the tracts.

(vii) Autonomic nervous system.

(viii) Nervous control of the urinary Vander and bladder dysfuction.

Lecture-Demonstration

1. Muscles of the whole body.
2. Demonstration of organs in thorax and abdomen.
3. Demonstration of viscera in head, face and neck.
4. Demonstration of all the glands in the body.
5. Identification of bony prominences on inspection and palpation in the body, especially of extremities.
6. Points to palpate nerves and arteries.
7. Identification of prominent muscles.
8. Extra-ocular muscles and salient points about the eye ball.
9. Demonstration on Brain.

KINESIOLOGY

1. Basic Concepts
2. Muscular system
3. Joints
4. Machinery Musculo skeletal system
5. Principles of Motion
6. Principles of force and work
7. Basic for the development of motor skill
8. Principles of stability

9. Postural principles

REGIONAL ANATOMY

1. **Superior Extremity:**

   Osteology: Clavicle, Scapula, Humerus,Radius, Uina Carpals Metacarpals

   Soft parts: Breast, Pectoral region, Front of arm, Back of arm, Cubital fossa, front of forearm, back of foream, nerves and vessels of forearm, paim, Dorrsum of Hand, Shoulder gridle, joints of hand.

2. **Inferior Extremity**

   Osteology: Hip bone, Femur, Tibia, Fibula and Patella, Tarsals, Metatarsals.

   Soft parts: Front of thigh- Femoral canal and femoral hernia, Adductor canal, medical compartment of thigh, glutel region, Back of thigh Popliteal fossa, Anterior compartment of leg, posterior compartment of leg, sol of foot, venous drainage of leg, hip joint, ankle joint, tarsal joints.

3.Trunk:

Osteology: Cervical, Thoracic and Lumbar Vertebra, Sacrum, Coccyx and Ribs.

Soft tissue: Inter-vertebral joints, costo-vartebral joints, Inter-vertebral Disc; Ligaments and Muscles.

Skull as a whole and mandible.

Demonstration of Dissected parts.

Parts of Limbs. Trunk, Brain, Thorax and Abdominal Contents.

Books Recommended:

1. An Introduction to fundamental of anatomy by David Sindair (Blackwell Publication0.
2. Gray's Anatomy
3. Cunningham's Manual of Practical anatomy
4. Anatomy and physiology by Smout and Macdonald(Edward Arnold)
5. Kinesiology by Katherine (Saunders Co).
6. Clinical Kinesiology by Brunnstrome.
7. Kinesiology and Applied Anatomy by Resch-Bruke(Lee & Febigar)

8. Applied anatomy and Kinesiology by W. Bower & H. Stone(Lee & Febigar)
9. Caties primary anatomy by Bestmaji J
10. 10. Principles of anatomy and Physiology by Tortora & Grabowski (Harper Collons College Publishers)

11. Anatomy by B.D. Chourasia.

PAPER II

HUMAN PHYSIOLOGY [200 HRS]

Subject code BPT 102

DIDACTIC -140 HRS. practical / laboratory- 60 hrs

Objectives: At the end of the course, the candidate will-

1. Acquire the knowledge of the relative contribution of each organ system in maintenace of the milieu interior [Homeostasis]
2. Be able describe physiological functions of various systems, with special reference to Musculo-skeletal, Neuro-motor,Cardio-respiratory, Female urogenital funcion and alteration in functions with ageing.
3. Analyze physiological response & adaptation to environmental stresses with special emphasis on physical activity and temperature.
4. Acquire the skill of basic clinical examination, with special emphasis to Peripheral & Central Nervous system, cardiovascular & Respiratory system, & Exercise tolerance/ Ergography.

Note: Group discussions, seminars and tutorial will be on the topics covered in didactic lectures.

Syllabus-

1. **GENERAL PHYSIOLOGY**
    1. Structure of cell and its functions
    2. Transport across cell membrane
    3. Body fluids- Homeostasis
2. **BLOOD**

1. Composition, function and physical properties of blood
2. Plasma protein and their functions
3. Erythropoiesis, leucopoiesis and thrombopoiesis in brief
4. Hemoglobin and its functions
5. Structure and function of leukocytes
6. Immunity
7. Physiology of clothing mechanism and fibrinolysis
8. Blood group and physiological basis of transfusion medicine

3. **NERVE**
    1. Structure, classification & properties.
    2. R.M.P.
    3. Action potential
    4. Propogation of nerve impulse.
    5. Degeneration & regenaration
    6. Reaction of degeneration [retrograde]
4. **MUSCLE**
    1. Structure-properties-classification-excitation/contraction coupling
    2. Motor unit- Electromyography
    3. Neuro-muscular transmission
    4. Physiological basis of myopathies.
5. **NERVOUS SYSTEM**
    1. Organization of Nervous system.
    2. Neuron and Neurolgia
    3. Synapse: Properties and Synaptic transmission.
    4. Reflex arc, its components, properties, type and neurological impairments.
    5. General sensations and their properties.
    6. Ascending tracts of the Spinal cord and effects of their lesions.
    7. Pain and physiological Analgesia.
    8. Motor neurons, Descending tracts and their applied aspects.
    9. Regulation of Muscale Tone by Spinal and Supra-spinal mechanism.
    10. Function of Brain -stem, Cerebellum, Basal Ganglia and Motor cortex.
    11. Control of Voluntary movement
    12. Regulation of posture and equilibrium vestibular apparatus.
    13. Broad functions of Thalamus, Hypothalamus, Major lobes of Cerebral cortex and Ascending Reticular Activation System
    14. Limbic System
    15. Learning, memory, speech and conditional reflexes.
6. **SPECIAL SEMSES**
    1. Function anatomy of the Eye
    2. Optics of Vision
    3. Retinal Function
    4. Visual Pathways
    5. Mechanism of Heating.
    6. Sensation of Taste and Smell.

7. AUTONOMIC NERVOUS SYSTEM

1. Functioning of Autonomic Nervous System with soecial reference to micturition defecation and labour
2. Higher neural regulation of ANS.

8. SKINS AND BODY TEMPERATURE REGULATION

1. Functional anatomy of the Skin and its function
2. Different mechanisms involved in body temperature regulation.
3. Physiological basis of Pyrexia and Hypothermia.

9. CARDIOVASCILAR SYATEM

1. General introduction of cardiovascular ystems.
2. Structure and properties of Cardiac muscle.
3. Cardiac cycle and Heart sounds.
4. Interpretation of normal Electrocardiogram.
5. Cadiac output and cardic failure.
6. Venous retun,
7. Heart rate and its regulation.
8. Structure and organization of vascular tree.
9. Arterial blood pressure and pathophysiology of Hypertension.
10. Charactriteesaa of Cordnary ciraculation and pathophysiology of Coronary artry disese
11. Capillary circulation and physiology basis of Edema.
12. Pathophysiology of Shock.

10. RESPIRATORY SYSTEM

1. Functional anatomy of Respiratory System.
2. Mechanics of breathing: Mechanism of inspiration and Expiration, intrapleural and intra-alveolar pressures, Conmpliance, Surfactant, Air-way resistance and work of breathing.
3. Respiratory membrane and diffusion of gases.
4. Composition of gases and Partial pressures.
5. Oxygen and Carbon-dioxide transport.
6. Lung Volume, Capacities and Lung function tests.
7. Nervous and Chemical control of breathing.
8. Physio-clinical aspects of Dyspnoea, Apnoea, Asphyxia, Hypoxia, Cyanosis, Breath holding, high and Low atmospheric pressures.

11. DIGESTIVE SYSTEM.

1. Functions of (a) Saliva, (b) Gastiric juice, (c) Pancreatic juice (d) Succus entericus, (e) Bile.
2. Movements of G.I.T.
3. Functions of Liver.

12. RENAL SYSTEM

1. Functions of Kidney
2. Formation of Urine.
3. Physiology of Micturition- Neurogenic bladder.

13. ENDOCRINE AND REPRODUCTIVE SYSTEM

1. Role of Hypothalamus as an endocrine gland.
2. Functions and hypo & hyper secretion of hormones of
    a. Pituitary
    b. Thyroid
    c. Parathyroid
    d. Adrenal
    e. Endocrine part of pancreas.
3. Spermatogesis. Functions of Testosterone.
4. Ovarian and Menstrual Cycle and their hormonal control.
5. Hormones of Ovary and their functions.
6. Physiological basis of Fertilization, Implantation, Pregnancy, Parturitution and Lactation.
7. Contraception.

14. EXERCISE PHYSIOLOGY

1. Effects of acute & chronic exercises
2. Oxygen/CO2 transport – O2 debt.
3. Effects of Excises on muscle strength, power, endurance, B.M.R., R.Q.- hormonal & metabolic effects- respiratory & cardiac conditioning.
4. AGING.
5. Training, fatigue & recovery.
6. Fitness- related to age, gender,& body type.

Text Books

1. Textbook of physiology- vol. & II – A.K. Jain.
2. Medical physiology – R.L. Bijani.
3. Concise medical physiology – S.Choudhari.

Reference Books

1. Textbook on medical physiology – Guyton & Hall.
2. Review of medical physiology – Ganong.

Practicals

1. Haematology –[Demonstration only]
2. Study of Graphs

a. Skeletal muscies-

i. Simple muscle twitch
ii. Effect of increasing strength on SMT.
iii. Effect of increasing load on SMT.
iv. Effect of free load & after load (Starting' aw).
v. Effect of temperature.
vi. Effect of two successive stimuli.
vii. Effect of fatigue.
viii. Effect of multiple stimuli & tetanus

b. Cardiac muscles-

i. Simple myocardiogram.
ii. Effect of temperature on the myocardiogram.
iii. Effect of drugs.
iv. All of none law.
v. Staircase phenomenon.

3. Physiology Fitness

- Breath holding

- mercury column test,

- cardiac efficiency test – Harvard step tast – Master step test

-Recording of arterial blood pressure – effects of change in posture & exercise on A.B.P.

-Stethography

i. Effect of deglutition.
ii. Effect of voluntary hyperventilation
iii. Effect of exercise.

-Spirometry

Lung volumes and capacities.

4. Mosso's finger ergography and bicycle ergography

5.Perimetry

6. Clinical examination of

- Respiratory system.
- Cardiovascular system.
- Central Nervous system.
- Special senses.

PAPER III

BIOELECTRICAL MODALITIES

Subject code-BPT 103

Course description

This course will enable the student to understand the basic electricity and medical electronics and its application in electrotherapy instruments.

Course objective

The objective of this course is that after 180 hours of lectures, demonstrations, practical and clinics, the student will be able to describe the principles of generation, circuit diagram and testing of electrotherapy apparatus.

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

Medical Electronics

1. A.C. Electricity

Sinusoidal wave from: Frequency, Wavelength, Amplitude and phase of a sine wave, Average & RMS value of a sine wave.

2. D.C. Electricity

Modern concept of electricity: Fundamental of electric charges (Proton and electron), Bound and free electrons, conductors and insulators, current, Static electric charges, charging of an

object, potential and capacitance, potential difference and EMF, Quantity of electricity, magnitude of current, Resistance of conductor and Ohm's law, Resistances in series and parallel, Discharging charged object.

Capacitor (condenser):

Electric around a capacitor, charging and discharging a capacitor, type of capacitor with application of each physiotherapy Department.

Rheostat: Series and shunt rheostat with application of each in the physiotherapy department

Effect of electric current: Thermal effect, chemical effect (ionization) and magnetic effect, electric shock, causes and its prevention.

3. Therapeutic Current

Impulse: Definition, types, pulse duration and pulse Repetition time, Interrupted Galvanic Currents faradic current and surged faradic currents.

4. Magnetism

Magnetic and non- magnetic materials, magnet and its poles, the basis of magnetism (Dipole theory), Magnetic lines of force and their properties.

Electromagnetism: Magnetic field around a current carrying conductor, electromagnetic induction, Lenz's law strength of induced EMF, Inductor and inductance, type of inductor, reactance and impedance, Static transformer, mutual inductance.

Even ratio, step-up, step-down and earth free transformers.

Precautions against Earth shock variable and auto transfer.

5. Thermionic valves

Thermionic emission, Diode valves and triode valves and their characteristics and constants.

6. Semi-conductor devices

Intrinsic and extrinsic semi-conductors, advantage of semi-conductors devices over

Thermionic valves, semi-conductor diode and transistor.

Biasing of Diode and Diode characteristics.

Light emitting Diodes, Integrated circuits.

7.Electronic circuits

Rectifiers and smoothing circuits.

Sinusoidal and Non-sinusoidal Oscillators.

Pulse generator circuits, short wave diathermy and ultrasound apparatus.

8. A.C. and D.C. Meters

Functions and applications of D.C. current meter, D.C. Voltage meter, series and shunt Ohmmeters, Wheat stone bridge and multi-meter, construction and application of cathode ray oscilloscope.

(Emphasis should be given to theoretical part without mathematical derivations; however, final formula must be written).

ELECTRO-THERAPEUTIC MODALITIES

Introduction to generation, Circuit diagram, testing of apparatus, Indications and Contraindications of.

1. Low frequency currents
2. D.C. currents
3. Medium frequency currents
4. S.W.D. and Pulsed S.W.D.
5. M.W.D.
6. Ultra-Sonics
7. Infrared
8. U.V.R.
9. Laser

(**Note:** Emphasis is given only to generation, circuit diagram and testing of above apparatus).

Practical (Demonstration only)

Diode and triode valves, transistor, ammeter, voltmeter, Galvanometer, Rheostat, Resistance box, Transformer.

Demonstration of possible electrotherapy unit circuits like stimulator, SWD and testing of apparatus etc.

Book References

1.Basic radio by M. Tepper Vol. I' II' III' and V.

2.Fundamentals of physics by verghese, parvathy Sebastian and anatomy (VAS Publication).

3.Modern College Physics by Harvey E. White (CBS Publication).

4.Electronic Principles by A.P. Malvino (Tata McGraw-Hill Publication).

5.Handbook of electronics by Gupta and Kumar (Pragati Prakashan).

6.Technique of Electrotherapy and its physical and physiological basis by Stafford L. Osborne and Harold J. Holmquest.

7.Clayton's Electrotherapy by Angel Forster and Nigel Palestanga.

PAPER IV

BIOMECHANICAL MODALITIES

Subject code-BPT104

Course Description

This course will enable the students to understand the basic mechanics and their application in physiotherapy in restoration of physical function.

Course Objective

The objective of the course is that after 180 hours lectures. Demonstration, practicals and clinics, the student will be able to describe the mechanics and their application in physiotherapy.

In addition, the student will be able to fulfill the 75% accuracy (as measured in written, oral and practical internal evaluation) the following objectives of the course.

MECHANICS

1.Mechanics and Mechanical Principles.

Definition of Mechanics, force, Diagrammatic representation of forces, Measurement of forces, classification of forces, Coplanar and parallel forces, Composition and Resolution of forces.

Momentum, Action and Reaction, Friction, Rotation about a Pivot.

Angle of Pull of Muscle.

Assistance and Resistance of Movements.

Moment of a force and practical application.

Gravity

Definition, Line of gravity, Center of Gravity.

Equilibrium.

Supporting base, Stability of equilibrium.

Energy Work and Power

Energy (Potential and Kinetic), work and Power.

Levers

Lever, Action of the lever, Position of the fulcrum, Orders of Levers, Tools and Other Mechanical devices Pulley block.

Elasticity

Definition, Stress, Strain, Hook's law, springs, Properties of Springs, springs in series and parallel.

2. Hydrostatics and Hydrodynamics

Archimede's principle

Properties of water, liquids, pressure.

Buoyancy, Laws of Floatation.

Apparent loss in weight, factors determining up-thrust, effect of buoyancy on movement performed in water.

Movement of force, further effects of apparent loss in weight.

Equilibrium of floating body, movement of water, Inertia, Movement of Objects in water.

Bernoulli's theorem and its application in Atomiser or syrayer.

(Only qualitative explanation of the above).

EXERCISE THERAPEUTIC MODALITIES

1.Introduction

2.Aim and scope of biomechanical modalities, examples of different type of modalities.

3. Mechanics and Mechanical principles

a. Mechanical Principles applied in physiotherapy like force, momentum, torque etc.
b. Mechanics of position, gravity, line of gravity and center of gravity in human body, base equilibrium, fixation and stabilization.
c. Mechanics of movement – axes and planes, the plane of movement and gravity
d. **Lever:** definition, order of lever, examples in human body, levers at home and its work, levers in physiotherapy.
e. **Pulleys:** Different type of pulleys and their uses in physiotherapy.
f. **Elasticity:** Elastic materials used in physiotherapy like springs (in detail), Rubber elastic and Sorbo rubbers.
g. Hydrostatic and hydrodyamic principles used in Hydrotherapy.

Praticals

(Demonstration of the following)

1.Mechanical principles applied in physiotherapy like force, Torque center of Gravity etc.

2.Demonstration of different types of lever in human body

3.Demonstration of different types of pulleys and springs used in physiotherapy.

4.Demonstration of axial and pendular.

5.Demonstration of Archimedes's principle of floatation and Bernoulli's Therrem's application in Hydrotherapy.

Book Reference

1.Principles of exercise therapy by Dena Gardner.

2.Practical exercise therapy by Margaret hollies.

3.Krusen's textbook of physical medicine and rehabilitation by krusen kortke.

4.Muscle testing by Daniel.

5.Clayton's electrotherapy.

PAPER V

SOCIOLOGY AND PSYCHOLOGY

Subject code-BPT105

SOCIOLOGY

Course description

This course will introduce students to the basic sociological concepts principles and social processes, social institutions (in relation to the individual, family and community) and the various social factaffecting the family in rural and urban communities in India.

A. Introduction Meaning, Definition and scope of sociology. 2. Its relation with anthropology, psychology, social psychology and ethics. 3.Methods of sociology – case study, social survey, Questionnaire, Interview and opinion poll methods. 4. Importance of its study with special reference to health care professional.

B. Social Factors in health and disease1.The meaning of social factors,

2. The role of social factors in health and illness.

C. Socialization 1.Meaning and natural of socialization.

2. Primary secondary and anticipatory socialization.

3. Agencies of socialization.

D. Social Groups

Concepts of social group, influence of formal and informal group on health and sickness. The role of primary group and secondary group in hospital and rehabilitaion setting.

E. Family

1. The family,
2. Meaning and definition,
3. Functions,
4. Types,
5.Changing family,
6. Influence of family on the individual's health, family and nutrition, the effects of sickness on family and psychosomatic disease and their importance to physiotherapy.

F. Community

1.Rural community – Meaning and features, health hazards of ruralites, 2.Urban community – meaning and features, health hazards of Urbanites.

G. Culture and Health

1. Concepts of culture,

2. Cultures and Behaviuor,

3. Cultural meaning of sickness,

4. Culture and Health disorders.

H. Social change

1. Meaning of social change,
2. Factors of social change,
3. Human Adaptation and social change,
4. Social change and stress,

5. Social change and deviance,
6. Social change and health programme,
7. The role of planning in the improvement of health and in rehabilitation.

I. Social Problems of Disabled

Consequences of the following social problems in relation to sickness and Disability, remedies to prevent these problems.

1. Population Explosion,
2. Poverty and Unemployment,
3. Beggary,
4. Juvenile Delinquency,
5. Prostitution,
6. Alcoholism,
7. Praoblems of Women in employment.

J. **Social Security** Social Security and Social Legislation to the disabled.

K. Social Worker

Meaning of social Work,
The role of a medical social worker.

PSYCHOLOGY

GENERAL PSYCHOLOGY: THEORY.

1.What is psychology! Field of application and methods of study of psychology.
2.The respective influences of heredity and environment on the individual.
3.Development and growth of behaviour in infancy and childhood.
4.Motivation: Achievement, affiliation and aggression Maslow's theory**.**
5.Emotions and emotional development.
6.Learning theories, methods of learning (Pavlov, Thorndike, hull- Toleman).
7.Learning and maturation – special reference to conditioning positive and negative reinforcement interest and in learning.
8.Sensation, perception.
9.Social psychology, influence of individual or groups on behavior of others leadership and group psychology.

10.Memory, thinking and causes of forgetting.

CLINICAL PSYCHOLOGY: THEORY

1.Introduction: Field of application and short history of clinical psychology.
2.Concept of mind: Conscious and unconscious mind (psychological approach).
3.Intelligence and intelligence testing, kinds of mental deficiency.
4.Personality: Concept, influencing factors and tests.
5.Major psychological disorders: Psychoneurosis

. Anxiety
a. Phobia
b. Obsessive-compulsive reaction.

6.Major psychological disorders: Psychosis

. Schizophrenia
a. Depression

7.Psychosomatic disorders, personality disorders
8.Frustration and conflict.
9.Stress: Coping mental mechanism with special reference to normal and abnormal conditions.

10. Counseling: Process, approaches Directive, Non-directives, Counseling skills.

Book References

Clinical Psychology by Koleman.

B.P.T SECOND YEAR

STAFF PATTERN FOR SECOND YEAR B.P.T COURSE

SUBJECT STAFF REQUIRED

1. Pharmacology 1M.D.Pharmacology,Lecture/Asst.Prof
2. Biochemistry 1 M.D. Biochemistry, Lecture/Asst.Prof
3. Pathology 1 M.D. Pathology
4. Microbiology 1 M.D Microbiology
5. General Surgery 1,M.S. in Surgery, Lecture/Asst.Prof
6. E.N.T 1 M.S. in E.N.T, Lecture/Asst.Prof
7. Ophthalmology 1 Ophthalmology, Lecture/Asst.Prof
8. Obstetrics & Gynecology 1M.D. in Obst. Gynec. Lecture/Asst.Prof
9. General medicine 1 M.D. in Medicine, Lecture/Asst.Prof

1 M.D. in Skin & V.D., Lecture/Asst.Prof

1 M.D. in Radiology, Lecture/Asst.Prof

10. Orthopedics 1 M.S. in Orthopedics, Lecture/Asst.Prof
11. Physiotherapy 1 Asst.Prof. Physiotherapy
12. Physiotherapy –II 1 Physiotherapist, Lecture/Asst.Prof

(Exercise Therapy and Massage)

13. Yoga 1 Lecturer in Physiotheraphy/Yoga

SCHEME FOR SECOND YEAR

		Internal Assessment		University Examination			
Code	**Title ofPapers**	**Theory**	**Practical**	**Theory**	**Viva**	**Practical**	**Total**
BPT-201T	**Biochemistry & Pharmacology**	**20**	**-**	**80**	**-**	**-**	**100**
BPT-202T	**Pathology & Microbiology**	**20**	**-**	**80**	**-**	**-**	**100**
BPT-203T	**Gen. Surgery, obstetrics &Gynaecology, ENT &Ophthamology**	**20**		**80**	**-**		**100**
BPT- 204T	**General Medicine**	**20**		**80**	**-**		**100**
BPT-205 T	**Orthopaedics**	**20**	**20**	**100**	**20**	**40**	**200**
BPT-206T	**Electrotherapy**	**20**	**20**	**100**	**20**	**40**	**200**
BPT-207T	**Exercise Therapy Including Yoga**	**20**	**20**	**100**	**20**	**40**	**200**
TOTAL							**1000**

Note

Passing marks in all subject candidate must obtain 50% in aggregate with minimum of 50% inTheory, Including viva and minimum 50%in practical.

PAPER I

PHARMACOLOGY AND BICHEMISTRY

Subject code-BPT 201

PHARMACOLOGY

The course in Pharmacology and Biochemistry provides the student basic knowledge of Biochemistry and Pharmacology in order to understand the general biochemical process of drugs in the body and their importance in physiotherapy treatment.

Course Objective

The objective of the course in Pharmacology is that after 40 hours of lectures and demonstration, the students will be able to understand and correlate the biochemical process involved with drugs in human body and their clinical importance especially in physiotherapeutic, in addition, the students will be able to fulfill with 75% accuracy (as measured by written, oral, practical and internal evaluation) the following objectives of the courses.

Theory

A. General Pharmacology

- Definition of drug, Phyarmacokinetics and Pharmacodynamics.
- Broad categories of adverse drug reactions.
- Alcohols.
- Analgesics and Antipyretics, anti-inflammatory drugs.
- Sedatives.
- Stimulants.
- Drugs acting on muscles- Muscle relaxants, Muscle stimulants.
- Anti-parkinsonian agents
- Drugs modifying B.P.
- Hypolipidemia.
- Anticoagulants.
- Thyroxin and Anitthyroid drugs.
- Anti-diabetics.
- Glucocortics.
- Calcium, Phosphorus, Calcitonin and Parathormone.

- Narrow spectrum antibiotics.
- Broad-spectrum antibiotics.
- Anti-cancer drugs.

B. Drugs acting on respiratory systems: Respiratory stimulants and respiratory depressants, Bronchodilators, Expectorants. Anti-Asthmatics, Anti-tussive.
C.Vitamines.
D.Overinhormones,Anabolic steroids,Estrogem,Progesterone,Androgen.
E.Locally acting drugs: Anodies ,Local anaesthetic drugs,Counter-irritants Rubefacient,Soothing agent,Anti-microbials.

Book Reference.

Pharmacology by Satoskar
Clinical Pharmacology by Lawrence.
Textbook of Pharmacology by B.N. Ghose.
Essentials of medical Pharmacology by K.D. Tripathi.

BIOCHEMISTRY

Course Objective

After 60 hours lecture and demonstration in Biochemistry this course will provide the student with students basic Biochemistry knowledge with special emphasis on clinical understanding of biochemistry process. Students will be able to relate these process with underlying mechanism of physiotherapeutic.

I. Basic Biophysics:

Concept of Acid base, buffer, Henderson- Hasselbach equation, brief knowledge of biophysical process such as Osmosis. Viscosity, Surface tention, Dialysis with special emphasis on their biomedical implication. A brief study of Radio-isotopes and their. Clinical applications.

II. General Biochemistry with Biomedical functions

Carbohydrates: Definition, Classification with example and General functions.
Lipids: Definition Classification and General functions. Essential Fatty Acids, Cholesterol, boold lipids, Brief review of Lipoproteins.

Proteins: Definition, Classification and Biomedical importance, Study of Hemoglobin and Immunoglobins with function, plasma and Functions.
Nucleic Acids: Brief overview of the structure of RNA and DNA including Nucleosides and Nucleotides. Study of few biologically important nucleotides.
Enzymes: Definition, Classification with example Factors affecting enzyme action, brief study of enzyme inhibition, clinical importance of enzymes.
Vitamins: Definition, Classification and function. Dietary source, Daily requirements and Deficiency Disorders.

III. Bioenergetics

Study of Plasma Membrane. Review of laws of thermodynamics as application to biological system. Concept of free energy charge. High-energy compounds and Respiratory chain.

IV. General Metabolism

(Note: A brief outline of metabolic pathway herein is indicated>Details and Structure are to be avoided).

1.Carbohydrate metabolism: Glycolysis, TCA,Glycogen metabolism, bolld sugar regulation,Diabetes and Diabetic Ketoacidosis.
2.Lipids Metabolism: Beta-oxidation of Fatty acids, Fatty ancid synthesis, cholesterol synthesis, Ketosis and Fatty liver.
3.Protein Metabolism: General reaction of Amino acids, Formation and fate of Ammonia, Urea cycle.
4.Purine and Pyrimidine : Only catabolism of Purine to be Stessed in detail with special emphasis on Gout. General breakdoun of Pyrimidine and associated disorders.

V. Water and Electrolyte Balance

General outline of fluid compartments of the body with their water and electrolyte content and balance. Dehydration.

VI. Nutrition

Basic principal of Nutrition of carbohydrates, Protein and lipids. Caloric requirement and Balance diet.

Book References

0. Textbook of Biochemistry by West and Todd.
1. Textbook of Medical Biochemistry by Chatterjee and Shinde.
2. Principles of Biochemistry by A. Lehninger.

3. Textbook of Biochemistry by A.C. Deb.

PAPER II

PATHOLOGY AND MICROBIOLOGY

Subject code-BPT202

PATHOLOGY

Theory

1.Concept of Diseases, Classification of Lesions.
2.Clean & Brief concepts of inflammation and Repair, Degeneration Necrosis and Gangrenes.
3.Deficiency Diseases vitamin, vitamin B12, vitamin C, vitamin D.
4.Vascular disturbances: Oedema, Thrombosis, Embolism, Haemorrhage and Shock.
5.In brief: About Anaemia, Leukaemia, Haemorrhagic disorders.
6.Clear Concepts about Tumours, Definition, Classification, Aetiology and spread of tumours, Benign versus Malignant tumours.
7.In brief about:

(a)Resp.diseases-Pneumonia,BronchitisAsthaEmphysema,Tuberculosis,Lung cancers& Occupational Lung diseases.

(b) C.V.S. – Rheumatic heart diseases, myocardial infarction, Atherosclerosis, congenital heart disease.

(c) Alimentary system – Peptic ulcer, Carcinoma of stomach,

Ulcerative lesions of Intestine.

(d) Liver – Hepatitis, Cirrhosis and Hepatoma.

(e) Pancreas – Pancreatitis, Carcinoma of Pancreas, Diabetes.

8.Details about:

a) Central nervous system – Meningitis and Encephalitis, brief outline of C.N.S. Tumours and peripheral nerve lesions.
b) Bones and Joints – Osteomyelities, Osteoarthritis, Septic, Arthritis, Gout, Rheumatic Arthritis and Bone Tumours.
c) Muscle – Poliomyelitis, Myopathies, Volkman's ischemic contracture.
d) Skin – Scleroderma, Psoriasis, Autoimmune disorders.

9.In brief about

(a) Urinary system – Nephrotic syndrome, Nephritis, lomerulonephiritis.

(b) Prostate –Prostatitis, BPH, Carcinoma of Prostate.

(c) Enodocrine – Thyroid, Thyroiditis, Thyroid Tumours.

(d) Salivary gland – Salivary gland tumours.

Practical

A.Normal total and differential WBC count, Haemoglobin, RBC.
Demonstration of slides:

- Anaemia
- Leukaemia
- Acute inflammation – Appendix
- Chronic inflammation – Non – specific.
- Tuberculosis of lymph Node – specific inflammation.
- Leprosy – Skin and Leprabacilli.
- Squamous cell carcinoma – skin.
- Osteogenic sarcoma – Bone tomour.
- Osteoclastoma – Bone tumour.
- Ewings – Bone tumour.
- Multiple Myeloma – Bone tumour.

MICROBIOLOGY

I. General Microbiology

1. Introduction and historical background.
2. Classification of Microorganisms.
3. Morphology of bacteria.
4. Sterilization and disinfect ion.
5. Immunity – Antigens and Antibodies, General overview of antigen antibody reaction and practical applications.

II. Systemic Microbiology

6.Gram Positive cocci – Staph, Strepto, Pneumnococci.

7.Gram-negative cocci –Goncocci and Meningococci.

8.Gram positive bacilli – Tubercule bacilli, Lepra bacilli, Clostridium tetani,

Clostridium perfrigens etc.

9.Gram negative bacilli – Salmonella, Coloforms, pseudomonas, proteus etc.

10.Anaerobic non – sporing cocci and bacilli.

11.Virology – General introduction, brief description of polio virus, Rubella Hepatitis-B and AIDS (diagnosis, prevention and treatment).

12Spirochetes- Syphilis (congenital and acquired).

13.Malaria

14.Mycology – Actinomycosis, Maduramycosis, Mucosal Candidosis etc.

15. Applied microbiology as relevant to diseases of bones, joints, Muscles, Skin, Infection and Bums.

III. Demonstration

1.Demonstration of collection of clinical specimen.

2.Demonstration of morphology and culture of organisms.

3.Demonstration of simple, Gram's and Ziehi- Neelsen stsining.

4.Sterilization and Disinfection techniques.

5.Demonstration of serological tests for syphilis, Hepatitis etc.

PAPER III

GENERAL SURGERY,OBSTETRICS GYNAECOLOGY,E.N.T & OPHTHALO - MOLOGY

Subject code- BPT203

Course Description

This course follows the basic course on Anatomy, Physiology, Psychology, Sociology, Pathology and Microbiology and provides knowledge about relevant aspects of general surgery, Plastic surgery, Pediatrics, E.N.T. Ophthalmology, Obstetrics and Gynecology and Radiology with emphasis on physiotherapeutic.

Course Objectives

The objective of this course is that students at the end of course should have a broad understanding about common medical diseases, which they would be handing as a physiotherapist. They should have a brief idea about etiology, pathology and type and degree of disability the patient will have as a result of the disease, so that he/she as a Physiotherapist with physician should help the patient to achieve cure and/or ameliorate his/her illness and sufferings

Course outline – Theory

1.Introduction: Description of events frequently accompanying general Anesthesia, Blood transfusion and physiological response of the body.

2.Wounds, scars, ulcers, boils, carbuncles etc.

3.Principles of pre- and post –operative physicalexamination, investigations, postoperative complications and their management.

4.Abdominal surgery: Incisions, complications and management of following:

Nephrectomy, Apendicectomy, Herniorrhaphy, Mastectomy, Thyroidectomy, Colostomy, Adrenalectomy, Cystectomy, Hysterectomy, Prostatectomy, Cholecystectomy, llleostomy, Incisional hemia and its prevention.

5.Burns: Causes, Classification, Medical management and precautions in the acute stage, complications of burns and their management.

6.Plastic Surgery:

a. Principles of plastic surgery, post – operative management and complications.
b. Cineplasty.
c. Principles of cosmetic surgery.
d. Skin grafting.

e. Surgery of Hand with emphasis on management of traumatic & leprosy hand.
f. Burns and plastic surgery management

7.Ophthalmology: Etiology, symptomatogy and treatment of visual defects emphasis on Errors of Refraction, Squint, Conjunctivitis, Trachoma,Corneal ulcers, lritis, Cataract, Retinitis, Detachment of retina and Glaucoma (lecture demonstration only)

8.E.N.T: Aetiology, sysptomatology and treatment of sinusitis, Rhinitis, Acute and Choronic Otitis, Otosclerosis, Mastoldectomy and loss of hearing.

9.Obstetrics and Gynecology:

g. Anatomy and physiology of female reproductive system.
h. Principles of clinical examination, investigation, diagnosis and prognosis in female reproductive and system disorders.
i. Menstruation and disorders of menstruation.
j. Physiological changes during pregnancy.
k. Antenatal care and diagnosis of pregnancy including high-risk pregnancy.
l. Labour, stage of labour, normal and abnormal labour and management of neonate.
m. Puerperium & postnatal care, socialobstetrics- maternal & perinatal mortality.
n. Pelvic pain and its management.
o. Importance Gnaecological condition, a short review of PID, Tumors, malignancies, infertility, Endometriosis, Ectopic pregnancym, Vesicular mole.
p. Prolapse Uterus, causes of incontinece of urine, type and management.
q. Abortion and Birth control.
r. Surgical considerations in obstetrics and Gynecology.

Practical

Students will be posted for one month in General Surgery, plastic and burns, obstetrics and Gynecology & Radiology units. They will do clinical checking and ward work to acquaint themselves to General Surgical conditions.

Book References

1.Surgery by Nan.

2.Baily & Love – Short Practice of Surgery by Rain & Ritelife.

3.Gynaecology and Obstetrics in the Health care of a Woman by Seymoul L. Romney, Mary Jane Gray, J. A. Merrill.

PAPER IV

GENERAL MEDICINE

Subject code- BPT204

Course Description

This course follows the basic course on Anatomy, Physiology, Psychology, Sociology, Pathology and Microbiology and provides knowledge about relevant aspects of General Medicine with emphasis on physiotherapeutics.

Course Objective

The objective of this course is these students at the end of course should have a broad understanding about common medical diseases, which they would be handing as a physiotherapist. They should have a brief idea about Aetiology, pathology, Type and Degree of Disability the patient will have as a result of the disease, so that he/she as a physiotherapist with physician should help the patient to achieve cure and/or ameliorate his/her illness and sufferings.

Course Outline – Theory

A) Infections

1. Outline briefly the Aetiology, sysptoms and brief management of the following disease.
2. Bacterial – Tetanus, Typhoid.
3. Viral – Herpes simplx, Herpes Zoster, Measles, Hepatitis –B. and HIV.

4. Protozal – Filariasis, Malaria, Amoebiasis.

B) Diseases of blood.

1. Define and describe clinical aspects of Nutritional Anaemias.
2. Brief description of Bleeding Disorder with emphasis to Haemophilia.
3. Lymphadenopathy and splenmegaly.
4. Leukaemia – acute and Chronic.

C) Diseases of Liver

1. Jaundice
2. Viral Hepatitis.
3. Cirrhosis of Liver

D) Renal Diseases

1. Brief description of acute and Chronic renal Failure.
2. Urinary Tract Infection.
3. Acute Nephritis, Nephrotic Synodrome.

E) GIT Diseases

Peptic Ulcer Diarrhoea and Dysentery.

F) Nutritional and Metabolic Diseasea.

1. Balanced normal diet.
2. Protein Calorie Malnutrition
3. Avitaminosis of both water and fat-soluble vitamins.
4. Diabetes mellitus – Definition, diabetes, Classification and complications, brief description of management of diabetes mellitus.
5. Obesity – Aetiology and management.
6. Hyper and Hypo-thyroidsm.
7. Calcium Homeostasis.
8. Gigantism and Acromegaly.

G). Diseses of Bones, Joints and Connective tissue

1. Brief introduction to understanding of Autoimmune diseases.

2. Rheumatic fever and Rheumatoid arthritis – pathogenesis, Clinical features, complications, diagnosis and briefly outline the management.
3. Brief description of SLE
4. Polyarthri itis Nodosa, Dermato myosities, Scleroderma.
5. Osteoarthritis – Aetiopathogenesis, clinical feature, diagnosis, complication and management.

H. Genetics and Diseases

1. Common inherited disorders.
2. Prevention of genetic disorders.

I. Miscellaneous

1. Allergy
2. Drug reactions.

J. Dermatology

1. Common skin infections.
2. Psoriasis
3. Leprosy- pathogenesis, clinical features and treatment.
4. Venereal diseases – Syphilis, HIV etc., brief description and prevention (lecture demonstration only).

K. Geriatrics

Common Geriatric Disorders and their management

L. Radiology

(Both in normal and Pathology conditions).

Radiology of Bone and Joints.
Radiology of chest including Heart.

(Lecture demonstration only)

M. Paediatics

Common Paediatric diseases and their management.

(Lecture demonstration only)

Practicals

Students will be posted for one month in general Medicine ward. They will do clinical checking and ward to acquaint themselves to General Medicine.

Book References

Davidso's Principles and Practice of Medicine (Churchill Livigstone)
Medicine and Neurology by Davidson.
Medicine by Golwala.

PAPER V

ORTHOPAEDICS

Subject code-BPT205

Course Description

This specially marks the students to understand the common traumatic and orthopedic conditions, which commonly cause disability. The syllabus us made keeping in mind to avoid details of diagnosis and pathology, which are bevond, their scope.

Objective of Course

At the end of syllabus and instructional course and demonstrations, the student will be able to understand orthopedic conditions causing disability and manage them by physiotherapy point of view. Theory – 100 hours and Practical 50 hours.

Theory

Details of the Subjects

Introduction to Orthopeaedics: Terminology, types of common outhology, clinical examination, Common investigation, Outline of management – Operative & Non-Operative.
Principles of operative Managements: Osteotomy, Arthrodesis, Spinal Stabilization, Tendon operations, External fixation, Arthtoscopy, total joint replacements, limb re-attachments.
Spratures and Strains: Common sites of sprains and muscle strains, their clinical manifestations and treatment.
Fractures and Dislocations: Briefly mention Types of fracture and dislocations, symptoms and signs of above injuries and their Principle of management and Complications.
Prevention and treatment of common complications: Fracture disease, Volkmans ischaemic contracture, Sudeck's osteo dystrophy, Myositis ossificans, Ligament injuries,Shoulder- hand syndrome etc.
Spinal column: fractures, management and complications of Spinal injures spinal deformities like Scoliosis, Kyphosis, and Lordsis etc.
Injuries of upper limb and lower limb, enumerate major fracture and joint injuries, brief description of principle of management and complications.
Amputations: Classification, indications, pre-operative, operative and post-operative management.
Arthritis: Outline of Pathology, clinical features, management, complications of Rheumatoid arthritis, osteo- arthritis and Ankylosing spodylitis.
Bone and Joint infections: Aetiology, clinical feature, management and complications of Septic arthritis, Osteomyelitis, Tuberculosis and leprosy.

Congenital anomalies and other deformities: C.D.H, CTEV, Scoliosis etc.(Salient features only).
Bone and Joint Tumors: Classification, clinical features and management of Osteoma, Osteosarcoma, Osteoclastoma, Ewings tumor, Multiple myeloma and Secondaries.
Low backache: Causes, management.
Frozen shoulder and other painful conditions of shoulder, Painful heel conditions, Tendinitis and Fascilis.
Poliomyelitis: common deformities due to PPRP and their management.
Miscellaneous condition: Spondylitis, Prolaose inter-Vertbral disc, Tennis elbow. Carpal tunnel syndrome, Spondylolisthesis etc.

Practicals

Students does clinical checking, ward work, hospital posting for a period of one month to acquaint himself about traumatology and orthopaedic conditions.

Book References

Outline of fracture by Adams.
Outline of Orthopaedics by Adams.
Orthopaedics and Traumtology by Natarajan.
Aplay's Orthopaedics.

PAPER VI

ELECTROTHERAPY

Subject code-BPT206

Course Description

In this course the student well learn the principles, techniques and effects of electrotherapy as a therapeutic modality in the restoration of physical function.

Course Objective.

The objective of this course is that after 200 hours of lectures, demonstration, practical and clinics, the students will be able to list the indications and contraindications of various types of electrotherapy, modalities and demonstrate the different techniques and describe their effect.

Theory

I. Low Frequency Current

A. Nerve Muscle Physiology

Reasting potential, Action potential, propagation of action potential, Motar unit, Synapse and Syanaptic transmission of Impulse. Effect of negative and positive electrodes on nerve and accommodation.

B. Faradic Current.

Definition, Characteristic and modified Faradic current, sinusoidal current.

Parameters of Faradic stimilation.

Physiological and Theraprutic effects of Faradic stmulation.

Indications, contraindication and precautions.

Techniques of stimulations & Group muxcle stimulation.

Faradic foot bath, faradic under pressure and pelvic floor muscle re-education.

C. Galvanic Current
Introduction and characteristics

Parameters of Stimulation

Physiological and Therapeutic effect of stimulation.

Indications and Contraindications.

Principles of tratment and Techniques of stimulation.

Precautions.

D. Electro-Diagnosis

F.G. Test

S.D. Curve

Chronaxae and Rheobase

Nerve Conduction

EMG

Nerve conduction Velocity Measurement(outline only).

E. Iontophoresis

Definition, Principles of lontophoresis, Physiological and Therapeutic effects, Indications, Techniques of lontophoresis, Principles of treatment, Contraindications and Dangers.

F. TENS

Definition, pain Gate theory, theories of Modulation, principle of I.F.current Indications, Techniques of application, Contraindication and precaution.

II. **Medium Frequancy Current(InterferentialCurrent).**

A. Short Wave Diathermy

Introduction, Physiological effects and therapeutic effects of SWD.Methods of application (Capacitor field method and cable method etc.) Techniques of treatment, indications, Contraindications and Dangers.

B. Pulsed SWD

Definition, Characteristic, Mechanism of work, physiological effects and Therapeutic effects, Indications, Technique of application, Principles of Treatment and Contraindications.

C. Microwave Diathermy

Introduction and characteristics
Physiological effects
Therapeutic effects
Techniques of application and principles of treatment.
Danger of Microwave diathermy.

D. Ultraviolet Radiation

Introduction, Physiological effect of UVR, Indications, Contraindications,Dangers of UVR, Techniques of application, Dodage.

E. Infra-Red

Introduction, Theraprutic uses ofIR, Techniques of apllication, Dangeres and Contraindications

F. Intriduction and Characteristics, Effects on tissue, Therapeutic effects,

Pricnciples of application, Inducation, Contraindications and Dangers.

IV. Ultrasonic Therapy

Introduction and cCharacteristics, U.S. therapy parameters, Coupling media, Therapeutic effects, Indications,Contraindication and Dangers, Testing of Apparatus, Techniques of application and dosage.

V. Pther Heating Modalities.

Wax-bath- Introduction,Preparation, Method of application, Effects , Indications and Contraindications, heating pad, Moist heat.

VI. Cryotherapy

Introduction, Physical Priciples, Physiological effects, Indications, Contraindications.Therapeutic effects & Techniques of Appliction.

VII. Bio Feedback

Introduction, principles od Bio feedback, therapeutic effects of Bio Feedback, Indication and Contraindications, Techniques of Treatment.

VIII. Advanced Electrotherapy

Computerization in Electrotherapy, Programming of Parameters of treatment, appropriate selection of parameters and combination in therapy, Combined therapy – Principle, Therapeutic uses and indications like U.S. Therapy with stimulation or TENS etc.

Practical.

Testing of above apparatus.
Techniques of application of above treatment modalities(Demonstration & Practice)

Electro diagnosis (demonstration and Practice of following electrodiagnostic Measures)

F.G. Test

S.D. Curve. Chronaxae and Rheobase

Nerve conduction

EMG and NVC – emonstration.

BOOK Reference

Clayton's Electrotherapy.
Theapeutic Electricity by Sydney Litch.
Clinical Electritherapy By Kahn.
Clinical Electrotherapy by Currier.
Electrotherapy by Wolf.

PAPERVII

PHYSIOOTHERAPHY IN EXERCISE THERAPY(INCLUDING YOGA)

Subject code-BPT207

Course Description

In these courses, the student will learn principles, techniques and effects of exercise as a therapeutic modality in the restoration of physical function.

Courses Objective

The objectives of this course is that after 200 hours of lectures, demonstrations, practical and clinical, the students will be able to list the indications and contraindications of various types of exercise and demonstrate the different techniques and describe their effects. In addition, the students will be able to fulfill with 75% accuracy (as measured by written, oral and practical internal evaluation) the following objective s of the cours

Theory

1.Introduction to Exercise Theapy.

2.Exercise and physiology of body.

3.Psychogenic aspects of exercise.

4.Pharrmacological aspects of exercise.

5.Starting positions- Fundamental starting positions.

6.Standing, sitting, Kneeting, Lying and Hanging, All the devrived positions of the above five fundamental starting. Muscle work for all the fundamental starting positions.

7.Classification of movements in details.

Active voluntary movements, involuntary movements, passive movements.

8.Assisted exercises- Classification, Free exercises, Assisted exercises, Resisted on various systems etc.

9.Free exercises – Classification technique effects of free exercise on various systems etc.
10.Resisted exercises – technique and types of resistance, SET system (heavy resisted exercise, Oxford method, Delorme method, Macqueen's method)

11.Relaxed passive movement- Definition, Classification of relaxed passive movements,Technique, effects and uses of relaxed passive movements.

12. Passive stretching- Aim, Principles, Indications, Techniques & contraindications.

13. Muscle strength – anatomy and Physiology of muscle tissue, Causes of muscle weakness/paralysis, Prevention of muscle weakness/paralysis. Type of muscle works and contractions, range of muscle work, Principles of muscle strrengthning/re-education, Early re-education of a paralysed muscle etc.

14. Joint movement-Classification of joint movements, Causes for restrictions of joit movement, prevention of restriction of joint range of motion etc. principles of mobilization of joint increasing its range of motion, technique of mobilization of stiff joint.

15. Relaxation: Technique of relaxation, Principle to obtain relaxation in various positions.

16. Posture.

17.Neuromuscular coordination and P.N.F.

18.Functional Re-education Exercises.

19.Suspension Therapy: Principles of suspension, Type of suspension, Therapeutic effects and uses of suspension therapy, their application either to mobilize a joint or to increase muscle power.

20.Hydrotherapy.

21.Massage: Definition of massage, local effects of individual manipulation (physiological effects), Contraindications, Techniques of application of manipulations, Kneading and picking up, rolling (back) Clapping, Tapping, Friction.

22.Isometric exercise and Isotonic exercise.

23.Exercises of the shoulder and hip and evaluation.

24.Exercise of hand, food and evaluation.

25.Exercise of the knee and elbow and evaluation.

26.Spinal exercises including neck exercises.

27.Normal gait analysis.

28.Pathological gaits.

29.Gait training.

30.Crutch walking.

31.Types of paraplegic gaits.

32.Oedema: Types and treatment.

33.Manipulation therapy: Introduction, Principles of therapy, Indications and Contraindication (no clinical application of these techniques).

34.Traction: Types, Principles, Indications and Contraindications.

35.Group Therapy: Indication, contraindication, types.

36.Therapeutic Gymnasium.

37.Endurance training.

38.Strengthening technique.

39.Goniometry.

40.Manual muscle assessment.

41.Walking aids and crutch walking.

42.Yoga

1. Yogasanas and their scientific studies.
2. Concept of total yoga discipline.
3. Psycho physiological aspects yoga procedures.
4. Psychological aspects of yoga
5. Psycho-social aspects of yoga.
6. Yagasanas for physical culture, relaxation and meditation.
7. Application of Yogasana in physical fitness, flexibility, cardio-respiratory rehabilitation.
8. Neuro motor learning.
9. Yoga – A holistic approach.

Book References

1. Science and medicine of exercise and sports by Warren R. Johnson.

2.Basic Athletic training by Cramer.

3.Anatomy and physiology of yogic practice by M.M. Gone.

4.The yogi philosophy of physical well being by Yogi Tamacharaka.

5.Yoga stretching and relaxation for sports men by Capt. M. Rajan.

Practicals

1Demonstration and practice of movement to Upper limb. Lower limb, Cervical and Lumbar spine.

2.Massage: Demonstration and practice of all types of massage manipulation, stroking, Effuerage, Kneading – Circular Kneading. Thumb kneading., Finger kneading, Picking up. Skin rolling (back) Clapping etc.

The above various types of manipulations should be demonstrated and practiced to Upper limbs. Lower Limbs. Nack and Face appropriately.

3.Suspension Therapy

Demonstration and practice of putting suspension to shoulder & Elbow joint in Upper limb, hip joint and knee joint in lower limb for all movements (except cirumduction at shoulder and hip joint).

Demonstration of total suspension.

Demonstration and Practice of Techniques of all joints of Upper limb and LoWer limb.

Demonstration and Practice of Techniques of Strengthening.

Demonstration of exercises at different joints of Upper limb, Lower limb and Spine.

Demonstration of normal and pathological gaits and crutch walking.

Demonstration and Practice of Functional Re-education Technique.

Book Reference

1. Principles of Exercise therapy by M.Dena Gaeder.

2. Practical Exercise Therapy by Hollis M.Aids to P.T. by J.M. Lee.

3.Therapeitic Exercise by Basmajian.

STAFF PATTERN FOR B.P.T THIRD YEAR COURSE

SUBJECT STAFF REQUIRED

Neurology 1M.D/D.M Neurology, Lecturer

Neuro Surgery 1M.D/D.Ch Neuro-Surgery,Lecturer

Cardio-Thoracic Medicine 1M.D in Medicine, Lecturer

Cardio-Thoracic Surgery 1M.S in Surgery, Lecturer

Physiotherapeurics-I 1 Asst. Professor of Physiotherapy

(Physiotherapy in Orthopaedics)

Physiotherapeutics-II (Physiotherapy in 1 Professor of Physiotherapy

Neurology and Neuro-Surgery) Associate Prof. Of Physiotherapy/

Asst. prof. Of Physiotherapy with 5

Years experience.

Physical Evaluation 1 Assit. Professor of Physiotherapy

Biomechanics 1Lecture/AsstProf.Of Physiothearapy

Bio-engineering 1Prosthetic & Orthotic Engineer

SCHEME FOR THIRD YEAR

		Internal Assessment		University Examination			
Code	**Title ofPapers**	**Theory**	**Practical**	**Theory**	**Viva**	**Practical**	**Total**
BPT-301T	**Neurology, neurosurgery ,Cardiothoracic Disease & surgery**	**20**	**-**	**80**	**-**	**-**	**100**
BPT-302T	**Physiotherapy in Orthopedic**	**20**	**20**	**100**	**20**	**40**	**200**
BPT-303T	**Physiotherapy in Neurology& Neurosurgery**	**20**	**20**	**100**	**20**	**40**	**200**
BPT- 304T	**Physical Evaluation**	**20**	**20**	**100**	**20**	**40**	**200**
BPT-305 T	**Bio-mechanics and Bio-Engineering**	**20**	**20**	**100**	**20**	**40**	**200**
TOTAL							**900**

Note

Passing marks in all subject candidate must obtain 50% in aggregate with minimum of 50% inTheory, Including viva and minimum 50%in practical.

PAPER I

1.NEUROLOGY AND NEUROSUROERY

Subject code-BPT301

Course Description

Following the basic science and clinical science courses, this course introduces the student to the neurological conditions which commonly cause disability Particular effort is made in this course to avoid burdening the student with any details pertaining to diagnosis which will not contribute to their understanding of the limitations imposed by neurological pathology on the individual.

Course Objective

The objective of this course is that after 80 hours of lectures and demonstration, in addition to clinical, the students will be able to demonstrate an understanding of neurological conditions causing disability and their management.

NEUROLOGY

Basic Neurophysiology

a) Motor (Pyramidal, extrapyramidal & cerebellar)

b) Sensory

c) Reflexes, Bladder and Bowel Control.

d)Principle of Clinical Examination, Diagnosis, Differential diagnosis and Prognosis of Neurological disorders,Salient clinical Feature and Management of Common Neuiological Disorders

I. Cerebral Palsy
II. Strokes
III. Neuro-infections - Meningitis, Encephalitis, Poliomyeiitis
IV. Movement disorders (Parkinsonism, Dystonia, Chorea, Tremors
V. Writer’s Cramps, Cerebellar Ataxia, Friedreich's Ataxia etc.)

e) Motor Neuron Disease.

f) Dementia.

g) Diseases of Spinal Cord - Compressive (Spondylotic, Tumors); Non-compressive.

h) Peripheral Neuropathies - G.B. Syndrome, Diabetic; Entrapment neuropathies.

i) Muscle Disorders - Dystrophies; Polymyositis; Myasthenia Gravis.

NEUROSURGERY

THEORY

A) Neurophysiology

Reviews in brief the neurophysiological basis of tone and Disorders of tone and Posture, Bladder control, Muscle convection, Movement and Pain.

B)Clinical Features and Management

Briefly outline the clinical features and management of the following neurological disorders.

1. Congenital and Childhood disorders

    a) Hydrocephalus.

    b) Spinal Bifida.

2. Trauma - Broad localization, first aid and management of sequelae of Head injury and Spinal Cord injury.

3. Diseases of the Spinal Cord:

    a) Craniovertebral junction anomalies.

    b) Syringomyelia.

    c) Cervical and lumbar disc disease

    d) Tumours.

    e) Spinal arachnoiditis.

4. Peripheral Nerve Disorders:

a) Peripheral nerve injuries: Localization and Management

b) Entrapment Neuropathies.

5. Intracranial tumours: Broad Classification, Signs and Symptoms.

6. Miscellaneous:

7. Pre-operative assessment, Indications and Contraindications for Neurosurgery.

8. Management of Pain, Electrical Stimulation of Brain and Spinal cord.

Practical

Clinical assessment of neurological function to be taught through bedside or demonstration in clinics, of the following

1 Basic history taking to determine whether the brain, spinal cord or peripheral nerve is involved.

2.Assessment of higher mental function such as Orientation, Memory, Attention, Speech and Language

3. Assessment of Cranial nerves.

4. Assessment of Motor system.

5. Assessment of Sensory function, Touch, Pain and Position.

6. Assessment of Tone-Spasticity, Rigidity and Hypotonia.

7. Assessment of Cerebral function.

8. Assessment of Higher cortical function - Apraxia etc.

9. Assessment of Gait Abnormalities.

Book References

1. Davidson's Principles and Practice of Medicine

2. Brains Clinical Neurology.

3. Medicine and Neurology by Golwala.

4. Surgery by Nan.

5. Baily & Love's - Short Practice of Surgery.

CARDIO - THORACIC DISEASES AND SURGERY

Course Description

Following the basic science and clinical science courses, this course introduces the student to cardio-thoracic conditions, which commonly cause disability. Particular effort is made in this course to avoid burdening the student with any detail pertaining to diagnosis which will not contribute to their understanding of the limitations, imposed by Cardio-thoracic pathology on the functioning of the individual.

Course Objective

The objective of this course is that after 80 hours of lectures and demonstrations, in addition to clinics, the student will be able to demonstrate an understanding of Cardio-thoracic conditions causing disability and their management.

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

CARDIO - THORACIC DISEASES

Theory

A) Brief idea of Anatomy and Physiology of Cardio- respiratory systems.

B) Outline Aetiopathogenesis of Cardio-respiratory disorders, Investigations, Diagnostic, Differential diagnosis and principles of management.

C) Cardio - Vascular System

i) Cardiac failure - Definition, Causes, Symptoms and Signs and Brief management of Cardiac failure.

ii) Rheumatic Fever - Definition, Brief description of Aetiology, Clinical features, Complication and Treatment.

iii) Congenital Heart Diseases: Classification and brief outline of diseases like ASD, VSD, PDA, Fallots's Tetrology with complication.

iv) Ischaemic Heart Disease - Aetiopathogenesis, Classification. Symptoms, Diagnosis and Medical and Surgical treatment.

. Hypertension - Definition, Classification, Symptomatology, Complications and Treatment,
i. Infective Endocarditis - Brief aetiopathogenesis, clinical features, Diagnosis and Treatment.

vii) Brief description of Deep Vein Thrombosis and Pulmonary embolism.

viii) Vascular Disease: Atherosclerosis, Burgers disease, Phlebitis etc.

D) Respiratory System

(Respiratory diseases including diseases of chest wall)

1) Chronic Bronchitis and Emphysema, Definition. Clinical features, and investigation, complication and treatment.
2) Bronchial asthma - Definition, Aetiopathogenesis, clinical features, Diagnosis and Treatment.
3) Pneumonia - Definition, Classification, clinical features, Complications and Treatment.

4) Tuberculosis - Aetiopathogenesis, clinical test of pulmonary tuberculosis, Diagnosis Complication & Treatment.

5) Lung abscess and Bronchiectesis - Definition, clinical features, Diagnosis and Treatm

6) Chest wall deformities- Describe various deformities of chest waU, its effect and Pulmonary diseases associated with it.

7) Occupational Lung Diseases - Clinical features, Diagnosis and Treatment.

8)Respiratory failure - Classification, Causes and Treatment.

Cardiothoracic surgery

Theory

(1) Introduction

types of incision, pre and post operative assessment, management and com0plicationa of cardio thoracic surgery and their management.

(2) Cardiac Surgery

Outline indication, contra indication, site of incision, pre and post Operative management and complications of the following:

I. Valvotomy and Valve Replacement.
II. Open heart surgery/ cardiac by pass surgery
III. Surgery of pericardium
IV. Heart transplantation
V. Pacemaker
VI. Coronary angioplasty
VII. Balloon angioplasty and vascular surgery

(Outline surgery and artery and veins)

(3) Thoracic Surgery

1) Outline clinical features and management of the following; fracture of ribs, Flail chest, stove in chest, Pneumothorax, Haemothorax, Lung contusion and Lacerration and injury to vessels and brounchus.
2) Outline indications, contradiction, site of incision, pre and post operative management and complication of following- Lobectomy, Pneumonectomy, segentectomy, pleuro-pneumonectomy, Thoracoplasty, decortion, Tracheostomy.
3) Outline clinical features and management of carcinoma of lung.
4) Describe in detail the following procedure: management of endotracheal tubes, tracheal Suction, Weaning the patient from ventilator, Extubation and Post-extubation care.
5) Describe the principles of cardio-pulmonary Resusciation, cardiac Massage, Artificial respiration, defribrillators and their use.

Book References

Medicine

Davidson’s Principles and Practice of Medicine.
Harrison’s internal Medicine.

Surgery

Geneva Surgical Operations - by Kirk! Williamson.

Surgery by Nan.
Baily and Love's - Short Practice of Surgery

PAPER II

PHYSIOTHERAPEUTICS -I(Physiotherapy in Orthopedic Conditions)

Subject code-BPT302

Course Description

This course serves **to** integrate the knowledge gained by the students in clinical Orthopedics with the skills gained in Exercise therapy, Electrotherapy and Physical evaluation, thus enabling them to apply these in clinical situations of dysfunction due to musculoskeletal pathology.

Course objective

The objective of this course is that after 170 hours of lectures, demonstrations, Practicals and Clinics, the student will be able to identify disability due to musculoskeletal Dysfunction, set treatment goals and apply their skills in Exercise therapy and Electrotherapy in Clinical Situations to restore musculoskeletal function. In addition, the student will be able to fulfill with 75% accuracy (as measured by written, oral and practical internal evaluation), the following objectives of the course.

1. Traumatology and Orthopaedics

a) Classification of feature causes and Types.
b) Signs and symptoms of fracture,
c) Complications of Fracture.
d) Healing and factors affecting it.
e) Principles of fracture management.
f) Principles of Physiotherapy management.
g) Physiotherapy management of complication.
h) Dislocation - Common sites, signs and symptoms.
Principles of physiotherapy Assessment and Management in shoulder dislocation, Hip dislocation etc.
i) Specific fractures and their complete physiotherapy Assessment and management.
Upper Limb: Scapula, Clavicle, Humerus, Ulna and Radius, Colles 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.

j) Management of Fracture of Spine with or without neurological deficit.

k) Soft Tissue injuries

Soft tissue injuries. Synovitis, Capsulitis, Volkmans ischamic contracture etc. Tear of semilunar cartilage and cruciate ligament of knee. Rotator cuff tendinitis, Ankle sprains, Tennis elbow, Golfer's Elbow, CT. Bursitis, Retrocalcaneal bursitis

2. Degenerative and infective Conditions

Osteoarthritis of major joints. Spondylosis, spondyiitis, Prolapsed intervertebral disc. Lesion, Spondylolisthesis, periarthritis, Rotatorcuff lesion of shoulder. Tuberculosis of spine, Bone and Major joints, perthes disease, Rheumatoid arthritis, Ankylosing spondylities, etc. and other miscellaneous orthopaedic conditions commonly treated by physiotherapy.

Deformities

Congential: Torticolllis and Cervical rib, C.T.E.V., Pescavus and Pes Planus and Other common deformities.

Acquired: Scoliosis, Kyphosis, Lordosis, Coxa vara, Genu Valgum, Genu varum and Genu recurratum etc.

Orthopaedic Surgery: Pre and Post operative assessment and management of surgeries like Arthroplaty, Arthrodesis, Osteotomy, Tendon transplant, Soft tissue release, Grafting, Partial and complete joint replacement, Arthroscopy, spinal Stabilisation, reattachment of limbs, Illizarove techniques, operation in C.P. and Polio.

Amputations: Levels of Amputation of upper and lower extremity, stump bandaging, Pre and Post Prosthesis fitting assessment and management (check-out of Prosthesis Training etc.) CompliCations of Amputations and their management.

Manipulation Therapy) Assessment, Principles and Techniques of Therapy and Factores considered in therapy.

Practicals

Various physiotherapy modalities and treatment techniques for the above-mentioned cond~ions to be demonstrated and practiced by the students.

Book References

1. Cash's textbook of Orthopaedics and Rheumatology.

2. Physiotherapy in Rheumatology.

3. Physiotherapy in disorders of brain.

4. Clinical Orthopaedics for Physical Therapy - by Campbell

5. Tidy's Physiotherapy.

6. Clinical Orthopaedics for Physical Therapy - by Richardson's & Sadowsky.

PAPER III

PHYSIOTHERAPEUTICS -II

(PHYSIOTHERAPY IN NEUROLOGY AND NEUROSURGERY)

Subject code-BPT303

Course Description

This course serves to integrate the knowledge gained by the student in normal neurology with the skills gained in exercise therapy and Electrotherapy enabling them to apply these in clinical situations of dysfunction due to pathology in the nervous system

Course objective

The objective of this course is that after 170 hours of lectures. Demonstration, Practical, and clinics, the student will be able to identify, Disability due to neurological dysfunction, Set treatment goals and apply their skills in exercise therapy and electrotherapy in clinical situation to restore neurological function.

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

Theory

1. Review of Basic Neuro-anatomy and Physiology.

2. Symptomatology of Neurological disorders, Role of investigations in differential diagnosis, diagnosis and clinical examination of C.N.S. functions including cranial nuclei,

3. Principles of examination of higher function and applicability in training.

4. Developmental disorders of C N S Early detection of brain damaged child, Risk babies, Neuro - Paediatric examination.

5. Developmental programmes and Delayed milestones. Neuro - developmental screening test. Minimum Brain Damage.

6. Sensory, Motor, Functional Psycho-social behaviours of a child, Perception development and training.

7. Neuro developmental approaches (like Bobath technique, Rood's approach, Vojta technique, Biofeed-back. Yoga etc.), Primftive patterns and abnormal motor behaviour due to brain damage, its control and training with reference to gait and hand function.

8. Assessment and Treatment techniques in Stroke, Meningitis, Encephalitis, Parkinson's diseases. CR., Cerebellar Ataxia. Friedreich's Ataxia, Head Injury, Brain tumours.

9.Assessment and Treatment of spinal cord lesions such as Motor Neuron Disease, Disseminated sclerosis, Transverse myelitis, spinal tumors) poliomyelitis, syringomyelia, Spinal cord injury and Subacute combined degeneration of spinal cord.

10. Assessment and treatment of neuropathies and Nerve injuries.

11. Assessment and treatment of Myopathies.

12. Pre and Post surgical assessment and treatment in Neurosurgery.

13. Electro-diagnostic procedures and prognosis in neurological disorders.

Book References

1. Cash's Textbook of Neurology for Physiotherapist by John Cash.

2. Key issue in Neurological Physiotherapy by Ada/Canning.

3. Elements of Paediatric Physiotherapy by Eckers~y.

Tidy's Physiotherapy.

PAPER IV

PHYSICAL EVALUATION

Subject code-BPT304

Course Description

These course servers to Integrate the knowledge gained by the student in basic and clinical medical science with the skills gained by basic Physiotherapy subjects. Thus enabling them to apply these in Evaluation of functions and Measurements in General and in Clinical situations of dysfunction of different systems.

Course Objective

The objective of this course is that after 160 hours of lectures, Demonstrations, practical and clinics, the students will he able to acquire concept of Evaluation of functions and Measurements in general and in disorders of different systems. Thus physical abnormality can be identified and measured by the students to facilitate physiotherapy management programme

In addition, the student will be able to fulfill with 75% accuracy (As measured by written oral, practical and Internal evaluation) the following objective of the course.

Theory

(A) Introduction.

(B) General considerations

(C) Cardio-respiratory system. Physical evaluation of cardio respiratory normal and pathological condition.

Posture (recumbent, erect orthopnoeic)

Breathing pattern and breath hold (rate, rhythm, use of accessory muscle) Chest deformity, Cough, Sputum, Tactile and vocal fremitus, Mobility of thoracic spine and rib cage, Percussion, Breath sound.

Chest expansion measurements

Measurement of lungs volumes and lung capacities, blood gas level exercise tolerance test etc.

Heart rate, blood pressure, heart Sound, pulse rate (volume and pressure) exercise tolerance test

(D) Nervous system

Evaluation of function and measurement in general and with reference to:

Upper motor and lower motor neuron lesions.

Myotomes and Dermatomes

Nerve entrapments

Muscle Tone Voluntary movement and voluntary control tests (isolated and skilled)

Test for disorder of programmes (i.e. cerebellum basal ganglia lesions) etc. and

co-ordination tests.

Abnormal movements -Clonus, Tremor, Chorea Athetosis etc.

Reflexes (Superficial Reflexes and Deep Reflexes, Primitive Reflexes etc)

Neural control of bladder

(E) Musculoskeletal System

Goniometry, manual muscle assessment
Postures and postural disorder evaluation
Physical examination of joints in non-vial and patho-mechanical conditions.
Muscle strength and endurance.
Range of motion at joints flexibility.
Measurement of muscle girth. leg-length. pelvic inclination, segmental
Measurement of body part (femur, tibia etc.)
Angle of scoliotic curve etc.
Gait analysis in pathological conditions and measurement of gait parameters
Assessment of pelvic floor muscle strength and function
(i) Digital evaluation of Vagina

(ii) Perionometer
(iii) Pad Test

Disabllity Evaluation

Gart and Gait parameter percentage of disability, temporary or permanent

Functional Evaluation

(i) Mobility in bed. Transfer, Ambulation.

(ii) Personal care - Eating. Dressing. Washing, Bathing etc.

(iii) House hold Jobs

(iv) Work and Recreation

Book References

1. Rehabilitation Medicine - Rusk
2. Tidy's Physiotherapy
3. Cash's Text Book for Physiotherapist (all volumes).
4. Physical Rehabilitation Assessment and Treatment by Osulivion

PAPER V

BIOMECHANICS AND BlO-ENGINEERING

Subject code-BPT305

Course Descriptions

This course supplements the knowledge of anatomy and enable the student to have a better understanding of the principals of biomechanics and their applications in musculoskeletal function and dysfunction and bioengineering appliances manufacture and uses

Course Objective

The objective of this course is that after 120 hours of lectures demonstrations and practical, the student will be able to demonstrate an understanding of the principles of biomechanics and kinesiology and their applications in health, disease and bioengineering.

In addition, the student will be able to fulfill with 75 % accuracy ~as measured by written and oral evaluation), the following objectives of the courses:

BIOMECHANICS

1 Introduction Definition and Aim, Scope and Importance in physiotherapy bioengineering. Force axes and planes, center of gravity, levers classifications of force system.

The linear force system, resultant force equilibrium Development of Biomechanics.

Definition of kinetics and kinematics Origin of human movements and ~s significance

Forms of human movements.~~ their characteristics and factor affecting them

2. Biomechanios of Bone tissue collagenous tissue and muscle

3. Biomechanics of Spine

4. Biomechanics of Upper extremity joints

5. Biomechanics of Lower extremity joints.

6. Biomechanics of Locomotion.

7. Biomechanics of Activities of daily living and Sports, and Work analysis.

BlO-ENGINEERING

1. Introduction.

Prosthesis and Orthosis - Definition, Biomechanical Principles and Design Materials used in manufacturing.

2. Designing and Manufacturing of Upper and Lower extremity Orthosis and Spinal orthosis including indications and Check Out.

3. Upper Extremity and Lower Extremity Prosthesis, Indications, Biomeohanical principles of Design, fitting and Checkout,

4. Prescription and Design of foot wear and modification.

5. Wheel Chairs.

6. Design and Construction of Adoptive devices.

Book References

1 Normal Human Locomotion - Published by ALIMCO

2. Applied Kinesiology and Biomechanics.

3. A Premier of Orthopaedic Biomechanics by George van B. Cochran.

4. Basic Biomechanics of the skeletal system by Victor H. Frankel. Margareta Nordin.

5. Structural Kinesiology by E.P. Braham U.N. Wooten.

Atlas of Orthotics.

B.P.T. FINAL YEAR

STAFF PATTERN FOR FINALYEAR B.P.T. COURSE

SUBJECT STAFF REQUIRED

1.Physical Daignosis 1 Prof. of Physiotherapy/Associate Prof.

and Prescription of Physiotherapy/Asst. Prof. of

Physiotherapy with 10 years experience

2.Physiotherapeutics - III 1 Asst. Prof. of Physiotherapy

(Physiotherapy in cardiothoraoicCondition)

3.Physiotherapeutics - IV 1. Asst. Prof. of Physiotherapy &

1. M.S Orthopaedics Lecturer

4.Physiotherapeutics - V 1 Asst. Prof. of Physiotherapy(PT in Gynaec. condition

PT in Pediatric condition,PT in geriatric condition)

5.Community Medicine 1 Asst. Prof. Community Medicine

Community Physiotherapy 1 Physiotherapy Lecturer/ Asst. Prof.

6.Physiotherapy Ethics 1 Lecturer in Physiotherapy

7.Rehabilitation Therapy 1 MS. in Orthopaedics, Lecturer 1 M.S. in ENT/ Asst, Prof. Lecturer,1 Physiotherapist,1 Occupational Therapist,1 Speech Therapist.

8 Biostatistics 1 M.Sc, in Statistics

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SCHEME FOR FINAL YEAR

Code	Title ofPapers	Theory	Practical	Theory	Viva	Practical	Total
BPT-401T	Physical Diagnosis & Prescription	20	20	100	20	40	200
BPT-402T	Physiotherapy in Cardiothoracic condition	20	20	100	20	40	200
BPT-403T	Sports Physiotherapy	20	20	100	20	40	200
BPT- 404T	Community medicine community PT, Field Visits & Physiotherapy Ethics	20	-	80	-	-	100
BPT-405 T	Rehabilitation Therapy & Biostatistics	20	-	80	-	-	100
TOTAL							800

Note

Passing marks in all subject candidate must obtain 50% in aggregate with minimum of 50% inTheory, Including viva and minimum 50%in practical.

PAPER I

PHYSICAL DIAGNOSIS AND PRESCRIPTIONS

Subject code-BPT401

Course Description

This course serves to integrate the knowledge gained by the students in both basic and Clinical Medical science subjects and physiotherapy subjects, thus enabling them to apply these in evaluation of functions and measurements in general and in clinical situations of dysfunctions of systems in order to reach a state of diagnosing the physical problems presented by the patients.

Course Objectives

The objective of this course is that after 200 hr of Lectures Demonstration. Practicals and Clinics, the student's wilt is able to acquire the concept of evaluation of functions and measurements in general and in disorders of different systems. Thus, the student shall be able to diagnose and measure the physical problems presented by the patients. In addition, the student will be able to fulfill with 75% accuracy (as Measured by written, oral, Practical and Internal Evaluation) of the following objectives of the course

Theory

1. Developmental Disorders;

a) Neonatal behaviour abnormalities.

b) Sensory motor integration and infant behaviour

c) Perceptual motor dysfunction.

d) Movement disorders in brain damaged children

2. Developmental deformities and congenital abnormalities:

a) Persistence of Embryonic attitudes and alignments.

b) Congenital dislocation of hip and congenital foot deformities

c) Deformities in poliomyelitis.

d) Menigo Myelocele and Hydrocephalus.

e) Arthrogryposis.

3. Posture and Alignment, (Biomechanical and Neural factors),

4. Pulmonary function test, Spirornetry and Gas analysis.

5. Cardiac Efficiency Tests:

a) Principles of E. CO. Ultrasonography.

b) Clinical Efficiency Tests:

c) Clinical Monitoring.

d) Stress EGG, Treadmill and Ergometrv.

6. Work Physiology and Exercise prescription:

a) Ergonomics considerations for Exercise

b) Work Physiology Considerations.

c) Exercise Analysis and Planning

d) Work adjustment as per Biomechanical and Clinical ConsKieration

7. Electro-diagnosis:

a) Review of Electro-physiology.

b) Surface and Needle Electromyograpv.

c) Nerve conduction velocity Test (Motor and Sensory),

d) Reflex Study.

e) ‘H’ and ‘F Waves.

f) Cerebral Evoked Potential S.D. curve and E.M.C.

g) Analysis in Nonral and Pathological conditions. Like peripheral Nerve Injuries, Myopathy etc.

8. Principles of Investigative Methods in Medern Medicine like EEC, MRI, CT Scan etc.

9. Biophysical Measurements.

10. Prescription Writing

Principles of writing Prescriptions and Therapeutic Modalities.

Book References

1. Text Book of Physical Diagnosis —. by Mark M. Swartz.

2. Rehabilitation medicine — by Joel A. Delisa.

3. Differential Diagnosis in Physical Therapy — Goodman and Snyder.

4. Manual of Exercise Testing — CRDET

5. Clinical Electromyography — by Basmajian.

PAPER II

PHYSIOTHERAPEUTICS - III

(Physiotherapy in Cardio thoracic Conditions)

Subject code-BPT402

Course Description

This course serves to integrate the knowledge gained by the students in clinical cardio respiratory conditions with the skills gained in Exercise therapy Electrotherapy thus enabling them to apply those in clinical situations of dysfunction due to cardio respiratory pathology.

Course Objective

The objective of this course is that after 170 hr. of lecture, Demonstration, Practicals and Clinics, the student will be able to identify cardio respiratory dysfunction. treatment goals and apply their skills in Exercise therapy and Electrotherapy in clinical ~tuations to restore cardio respiratory function.

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

Theory

1. Review of basic cardio-Respiratory anatomy and Physiology.

2. Symptomatology of Cardio-Respiratory disorders, nvestigations, Diagnosis Differential Diagnosis and Prognosis.

3. Clinical examination of respiratory system Disorders.

4. Principles and techniques of physiotherapy in diseases of Respiratory system.

5. Physiotherapy assessment and management technique in the following:

Bronchitis Asthma, Bronchiectasis. Pulmonary Embolism, Pulmonary Tuberculosis, Emphysema, Pleurasy & Empyema, Atelectasis, Pneumothorax, Bronchopiulmonary. Fistula etc.

6. Pulmonary Rehabilitation:

Definition Aims and Objectives.

Patho-Physiology of Diseases, Physiotherapy Assessment

Techniques of Rehabilitation including Bio-feedback

7. Clinical Examination of Cardio-vascular systems Disorders. Principles and Techniques of Physiotherapy in Cardio-vascular diseases.

8.Physiotherapy Assessment and Techniques of Management in the following Cardio-vascular diseases.

Congestive heart failure, Myocardial infarction, Endocarditis. Valvular diseases of heart, congenital vascular diseases, PtA. Hypertension, Thrombosis, Phlebitis and Phlebothrombosis, Burger's Disease Varicose Veins and ulcers.

9. Cardio-Thoracic Surgery, Incision. Types, Indications & Contra Indications.

10. Pre and Post Operative Evaluation. Principles and techniques of Physiotherapy management of Heart and Vascular surgery.

11. Evaluation, Principles and Techniques of Physiotherapy, Management in Traumatic and Surgical conditions of Chest, Lung, Pleura and Mediastinum.

12. Principles of chest Physiotherapy in I.T.U. and l.C.C.U.

13. Pre and Post Operative Physiotherapy assessment and management in the following conditions, Segmental Resection, Lobectomy, Pneumonectomy, Decortication, Thoracoplasty, Pneumothorax, Bronchopulmonary Fistula, Valvotomy and Valve Replacement, Surgery on Pericardium, Open Heart Surgery and Heart Transplant, Congenital Abnormalities of Heart, Peripheral Vascular Disorders.

14. Cardiac Rehabilitation:

Definition, Aims and Objectives, Patho-Physiology of Diseases, Physiotherapy Assessment, Techniques of Cardiac Rehabilitation including Yoga and Biofeedback.

Practical

Various physiotherapy modalities and treatment techniques for above mentioned Surgical and Medical conditions should be demonstrated and practiced by the student.

Book References

1. Cash's text Book of General Medical and Surgical conditions for Physiotherapist.

2. Cash's Text Book of Chest, Heart and Vascular disorders for Physiotherapist.

3. The Brompton Guide to chest physiotherapist — D.U. Gasked (Completed)

4. Physiotherapy of Paediatrics — Shepherd.

5. Elements of Paediatric Physiotherapy by Pamel M. Eckersly.

6. Essentials of Cardiac-pulmonary Physical Therapy by Hillegass and Sandowsky.

7. Cardiac pulmonary Symptoms in physical Therapy practice Cohen and Michael.

8. Chest Physiotherapy in Intensive care Unit by Mackenzie.

PAPER III

PHYSIQTHERAPEUTICS — IV

(Sports Physiotherapy)

Subject code-BPT403

Course Description

This course enables the student to understand about basic principles of Sports training, Mechanism of Sports injuries and their management in physiotherapy.

Course Objectives

The objectives of this course s that after 170 hours *of* Lectures, Demonstrations, Practical and Clinics, the student will be able to acquire concept of evaluation of sports and Sports injuries, and also will be able to provide Sports Training and Physiotherapy in particular to Sports injuries.

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

Theory

1. Introduction

2. Sports

a)Ealualtionofsports
b) Evaluation of Physical, Cardio-respiratory Psycho-social and Emotional
aspect of sports.
c) Dietics and Nutrition in sports.

3. Sports and Sports Training
a) Evaluation of Pre-requisite for sports and sports Training.
b) Principles of Sports Training.
c) Instrumentation in sports Training. Isokinetic Exercise, Treadmill with Cardio respiratory evaluation apparatus etc.
d) Modern Principles of Sports Analysis and Training.

4. Sports and Sports Injuries

a) Introduction.

b) Frequency and site of injury.

c) Aetiological Factors.

d) Investigation in sports injury.

e) Diagnosis and prognosis.

5. Sports Injuries Management.

a) Principles of sports injuries managements at the following stages

i) Immediately after injury

ii) Acute stage

iii) Chronic stage

iv) Rehabilitation stage

6. Soft tissue injury management.

7 Injuries and management in the following.

a) Hip, Knee, ankle and Foot injuries.
b) Shoulder, Elbow, wrist and Hand injuries
c) Spine, Head and Neck Injuries.
d) Chest, abdomen and Pelvic Injuries.

8. Pharmacology in Sports.

9. Rehabilitation in Sports.

Book References

1. Cash's Text Book of Rheumatology for Physiotherapist.

2. Modern Principles of Athletic Training — by Corl E. Klafs and Physiotherapist.

3. Sports Injuries: Diagnosis and Management for Physiotherapist

4 The Children's Sports injuries by David Kennedy.

S Dynamics of Clinical Rehabilitative Exercise by Order

6. Basic athletic Training by Cramer.

PAPER IV

COMMUNITY MEDICINE

Subject code-BPT404

Course Description

This course enables the student to understand the effects of the environment and the community dynamics on the health of the individual with special emphasis on disability limitation specific protection and rehabilitation.

Course Objective

The objective of this course is that after 60 hours of lectures, demonstrations, practical, clinics and filed visits, the student will be able to demonstrate and understanding of the influence of social and environmental factors on the health of the individual and society. In addition, the student will be able to fulfill with 75% accuracy (as measured by written, oral and practical evaluation), the following objectives of the course.

Community Medicine Theory

1. General Concepts of health and diseases with reference to natural history of disease with pre-pathologenic and pathogenic phase. The role of soclo-economic and cultural environment in health and disease. Epidemiology and scope. Role of Epidemiological investigation in public health,

2. Public Health Administration — Overall view of the health administration setup at Central State and Local self-government levels. Role of Non-Government Organisations in public health care delivery system.

3. The National Health Programmes — Highlighting the role of social, economic and cultural factors in the implementation of the National Programmes, Primary Health Care, objectives and implementation.

4. Health Problems of vulnerable groups — Pregnant and Lactating women Infants and Pre-school children, Occupational groups (see below) and Geriatrics.

5. Occupational Health: Definition, scope, occupational diseases, prevention of occupational diseases and hazards. Role of E S .5. In occupational health of industrjal workers.

6. Social security and other measures for the protection of occupational hazards, accidents and diseases. Details of Factory Act, Environmental safety and Compensation acts, ES. .5. Acts.

7. Family Welfare Programme — Objectives of National Family Welfare Programme and Family Planning Methods. A general idea of advantages and disadvantages of methods Reproductive Child Health Services, Concept, of plan d pregnancies, population dynamics.

8. Mental Health — Community aspects of Mental Health: Role of Physiotherapists. Therapist in Mental Health Problems such as Cerebral Palsy, Mental retardation etc.

9. Communicable diseases — Diseases transmission concepts, an overall view of communicable diseases (Malaria, Filaria, Tuberculosis, Leprosy, Poliomyelitis, and Viral Encephalitis etc.) classified according to principal mode of transmission, Role of Insects and other Vectors in disease transmission. Control and prevention of communicable diseases, universal immunizatEon programme, Programmes such as ARI, Diarrhoea and Polio Control Programmes.

10. International Health Agencies and National NGOs.

11. Non-communicable diseases, Blindness, Accidents, Cancer, IHD, Hypertension, Stroke (CVA).

12. Vital and health statistics — Basic concepts, Morbidity and Mortality rates, Period, Age and Cause of specific death rates and role of these rates as indicators of health and diseases.

Health Education

1. Health education philosophy, Main principles and objectives, Health education versus health legislation, Education versus Propaganda.

2. Review of Beliefs, Values, Norms, Habits and Taboos among practices. Mores in human groups and their importance in learning and change process.

3. Review of concepts of perception, Attitudes, socialization process, Learning and Theories of learning, social change and change process, Motivation needs and drives.

4. Principles and process of communication.

5. Methods and tools of health education, individual and group methods, A critical evaluation of the theories, toll and health education

6. Role of health personnel in Health Education, Coordination and Cooperation, Health Education with other members of the health team. Health education component in National Health Programmes

7. Elements of planning a Health Education Programme with special emphasis on community participation.

Book Reference

1. Textbook of Preventive and Social Medicine by Dr J E Park.

COMMUNITY PHYSIOTHERAPY, FIELD VISIT AND PHYSIOTHERAPY ETHICS

Course Description

This course provides knowledge about health care delivery programmes in Rural and urban areas and role of Physiotherapy in both Rural & Urban set ups with special emphasis to various community awareness programmes and preventive aspects of health disorders causing disability.

Course Objective

This objective of this course is that after 60 hrs, of Lectures, Demonstrations, Practical and Clinics the students will be able to understand the various community awareness programmes and health disorders causing disability and the role of physiotherapy in community awareness and prevention of health disorders causing disability

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

COMMUNITY PHYSIOTHERAPY

Theory

Health care delivery programme in Urban and Rural areasPopulation studies and Health statistics.

Disabilities surveys, Epidemiological aspects and demands or' Physiotherapy services, Concept of rural camps and integration of infrastructural service and voluntary agencies. Extension services and mobile units.

Parental education programmes.

Home exercise programme packets in various physiotherapy conditions, Community awareness and participation in preventive aspects of health disorders, disability evaluation and screening for deformities and developmental disorders, pediatric disorders screening and advice, maternal care and home advice, Sports, Industrial and Occupational disorders, and preventive programme, Geriatric diseases.

FIELD VISITS

1. Visit to different physiotherapy colleges.
2. Visit to different National and Regional Rehabilitation Centre,
3. Visit to different Health Institutions. Book References

Book References

1. Rehabilitation Medicine by Joel A. Delosa.

2. Krusens, Handbook of Physical Medicine and Rehabilitation by Stiwell and Lehmann.

PHYSIOTHERAPY ETHICS

Course Description

This course enables the students to have knowledge about the ethical consideration in health care in particular to Phydiotherapy and Laws and Legal concepts related to Physiotherapy.

Course Objectives

The objectives of this course is that after 20 hours of Lectures, Demonstrations, Practicals and Clinics, the students will be able to understand the ethics of Physiotherapy practice and Laws and Legal concepts related to Physiotherapy Practice.

Theory

History of Physiotherapy.
Philosophy and Philosophical Statements.
Major Ethical principles applied to moral issues in health care.
Rules of professional conduct scope of practice.
Relationship with patient
Relationships with medical colleagues
Relationships between professionals with careers
Relationships with the profession.
Confidentially and Responsibility
Provision of Services and Advertising
Sale of Goods.
Personal and Professional Standard.
Professional and Governmental Licensing, Accreditation and Education Standards.
Laws and Legal concepts.
Protection from Malpractice claims, Consumer Protection Act
Liability and Documentations.

Book References

British Journal of Physiotherapy – 1994 Issue.
Medical Ethics by C.M. Francis.

PAPER V

REHABILITATION THERAPY& BIOSTATISTICS

Subject code-BPT405

REHABILITATION THERAPY

1) (i) The Philosophy and need of rehabilitation.

Principles of Physical medicine.

Basic principles of Administration and Organisation.

2. (i) The evaluation process and treatment planning

Principles of prescription writing.

3. Principles of Orthotics:

Lower Extremity Orthotic

Upper Extremity Orthotic

Spinal Orthotic

4. Principles of Prosthetics

Lower Extremity Prosthetics

Upper Extremity Prosthetics

5. Principal of Rehabilitation

Nursing

Communication problems.

Social Problems.Vocational Problems and Vocational Placement

BIOSTATISTICS

Objectives

The objectives of this course are to install a deep sense of data appreciation and to develop basic statistical skills in collection, compilation, analysis and interpretation of data. After undergoing this course, a student is expected to plan and execute a statistical project quite independently.

Syllabus

1. Introduction – uses of statistical methods of Physiotherapy – measurement scales, variables & their measurements, symbolic Data, operations.

2. Statistical data – Tabulation – Calculation of Central tendency & dispersion – Linear regression & correlation – presentation of data in diagrammatic & graphic form.

3. Probability & sampling as a mathematics system – population & samples – sampling distribution – sampling methods.

Books Recommended

1. Statistics: Theory, methods and application by Sancheti and Kapoor.
2. Statistical Methods by S.P. Gupta.

Bio-Statistics by Dr. Mahajan.

Collateral Reading

1. Statistical methods by Snedecor
2. Research methods by C.R. Kothari
3. Statistics in biology by N.T.J. Beiley

A short textbook of medical statistics by A.B. Hills.