BACHELOR OF PHYSIOTHERAPY

Year	Subject Code	Subject
First Year	BPT-101	Anatomy
First Year	BPT-102	Physiology
First Year	BPT-103	Biochemistry
First Year	BPT-104	Electrotherapy
First Year	BPT-105	Exercise Therapy
First Year	BPT-106	Sociology & Community Health
First Year	BPT-107	General Punjabi/ Basic Punjabi
First Year	BPT-108	Problem of Drug Abuse: Management and Prevention (Compulsory)
Second Year	BPT-201	Pathology & Microbiology
Second Year	BPT-202	Pharmacology
Second Year	BPT-203	Electrotherapy – II
Second Year	BPT-204	Exercise therapy – II
Second Year	BPT-205	Biomechanics
Second Year	BPT-206	Psychology
Second Year	BPT-207	* Environmental Study
Third Year	BPT-301	Orthopeadics
Third Year	BPT-302	General Medicine
Third Year	BPT-303	PT in Ortho Condition
Third Year	BPT-304	PT in Medical Condition – I
Third Year	BPT-305	Research Methodology and Biostatistics
Third Year	BPT-306	Neurology
Fourth Year	BPT-401	General Surgery
Fourth Year	BPT-402	Community Physiotherapy & Rehabilitation
Fourth Year	BPT-403	Pediatrics & Geriatrics
Fourth Year	BPT-404	PT in Medical Conditions – II
Fourth Year	BPT-405	PT in Surgical Conditions
Fourth Year	BPT-406	Rehabilitation, Organization and Administration
Fourth Year	BPT-407	Computer Applications
Fourth Year	BPT-408	Clinical Training

LESSON PLAN FOR B.P.T.- 1st Year
SUBJECT- SOCIOLOGY

TOPIC	NOTES/STRATEGIES/RESOURCES	TIME
Introduction to sociology	-Definitions of sociology -sociology as a science of society -uses of the study of sociology -application of knowledge of sociology in physiotherapy and occupational therapy.	10 hrs
Sociology & Health	-Social factors affecting health status - social consciousness and perception of illness -social consciousness and meaning of illness -decision making in taking treatment -Institutions of health -their role in the improvement of the health of the people.	10 hrs
Socialization	-Meaning of socialization - influence of social factor on personality -socialization in hospitals - socialization in the rehabilitation of patients.	10 hrs
Social Groups	-Concept of social groups -influence of formal and informal groups on health and sickness -the role of primary groups and secondary groups in the hospitals and rehabilitation settings.	10 hrs
Family	-Influence of family on human personality -discussion of changes in the functions of a family -family and nutrition -the effects of sickness on family -psychosomatic disease.	10 hrs
Community	-Concept of community -role of rural and urban communities in public health -role of community in determining beliefs -practices and home remedies in treatment.	10 hrs
Culture	-Components of culture - Impact of culture on human behavior -cultural meaning of sickness -response & choice of treatment (role of culture as social consciousness in moulding the perception of reality) -culture induced symptoms and disease -sub – culture of medical workers.	10 hrs
Caste System	Features of modern caste system and its trends.	5 hrs
Social Change	-Meaning of social change -factors of social change -human adaption and social change -social change and stress -social change and deviance -social change and health programmes - the role of social planning in the improvement of health and in rehabilitation.	10 hrs

Social Control	-Meaning of social control - role of norms, folkways, customs, morals, religion, law and other means of social control in the regulation of human behavior -social deviance and disease	10 hrs
Social Problems of the Disabled	Consequences of the following social problems in relation to sickness and disability; remedies to prevent these problems: a) Population explosion b) Poverty and unemployment c) Beggary d) Juvenile delinquency e) Prostitution f) Alcoholism g) Problems of women in employment	10 hrs
Social Security	-Social security -social legislation in relation to the disabled.	6 hrs
Social Worker	The role of medical social worker.	4 hrs
Community Health	-Introduction to Community Health - community and rehabilitation. -Community based rehabilitation in relation to different medical and surgical conditions e.g. a.Cholera b.Typhoid c. Diptheria d.Leprosy e. Poliomyelitis f. HIV & AIDS g. Hepatitis etc. -Prevention of diseases at different levels. -Community based rehabilitation -institutional based rehabilitation -comparison and different aspects -Community resources and their uses.	10 hrs
Books recommended	1.Mcgee - Sociology - Drydon Press Illinois. 2. Kupuswamy - Social Changes in India - Vikas, Delhi. 3. Ahuja - Social Problems - Bookhive, Delhi. 4. Ginnsberg - Principles of Sociology - Sterling Publications. 5. Parter & Alder - Psychology & Sociology Applied to Medicine - W.B. Saunders. 6. Julian - Social Problems - Prentice Hall. Text book of	

LESSON PLAN FOR B.P.T 1ST YEAR

SUBJECT-Exercise Therapy-1

TOPIC	NOTES/STRATEGIES/RESOURCES	TIME
Introduction to Exercise therapy	-Introduction to Exercise therapy - Principles, techniques and general areas of its application -Assessment & its importance Reference:- Principle of Exercise Therapy –Kisner colby	18 Hours
Fundamental starting positions	-Description of fundamental starting positions -Description of derive position including joint positions, muscle work, stability, effects and uses References:- Principle of Exercise Therapy –Kisner colby	18 Hours
Neuro –muscular co – ordination	-Introduction to Movements including analysis of joint motion, muscle work and Neuro –muscular co – ordination. References:- Principle of Exercise Therapy –Kisner colby	18 Hours
Classification of movements	-Types, technique of application, indications, contraindications, effects and uses of the following: a) Active movement b) Passive movement c) Active assisted movement c) Resisted movement References:- Principle of Exercise Therapy –Kisner Colby	18 Hours
Suspension Therapy.	-The principles, techniques of application indication, Contraindication, precaution, effects and uses of Suspension Therapy References:- Practical Exercise Therapy - Hollis	18 Hours
Manual Muscle Testing	-Principles and application techniques of Manual muscle testing. - Testing position, procedure and grading of muscles of the upper limb, lower limb and trunk etc References:- Daniels and Worthingham's - Muscle Testing	18 Hours
Goniometery	-Principles, techniques and application of Goniometery. -Testing position, procedure and measurement of R.O.M. of the joints of upper limbs, lower limbs and trunk References:- Measurement of Joint Motion: A Guide to Goniometry - Norkins	18 Hours
Soft Tissue Manipulation (Therapeutic Massage)	-History, various types of soft tissue manipulation techniques. - Physiological effects of soft tissue manipulation on the following systems of the body; Circulatory, Nervous, Musculoskeletal, Excretory, Respiratory, Integumentary system and Metabolism. - Classify, define and describe: - effleurage, stroking,	18 Hours

	kneading, petrissage, deep friction, vibration and shaking etc. - Preparation of patient: Effects, uses, indications and contraindications of the above manipulation. References:- Beard's Massage - Wood	
Motor Learning	-Introduction to motor learning - Classification of motor skills. -Measurement of motor performance. - Introduction to motor control - Theories of motor control. - Applications. - Learning Environment - Learning of Skill. - Instruction & augmented feed back. - Practice conditions. References:-Motor Control: Theory and Practical Applications Shumway - Cook	18 Hours
Relaxation	-Describe relaxation, muscle fatigue, muscle spasm and tension (mental & physical). - Factors contributing to fatigue & tension. -Techniques of relaxation (local and general). - Effects, uses & clinical application. - Indication & contraindication. References:- Principle of Exercise Therapy -Gardiner	18 Hours
Therapeutic Gymnasium	-Setup of a gymnasium & its importance. - Various equipments in the gymnasium. -Operational skills, effects & uses of each equipment References:- Therapeutic Exercises Foundations and Techniques - Kisner	18 Hours

LESSONPLAN FOR BPT 1ST year

BIOCHEMISTRY

TOPIC	NOTES/STRATEGIES/RESOURCES	TIME
Introduction To Biophysics **Cell** **Water and Electrolyte** **Connective Tissue** **Nerve Tissue** **Isotopes**	*Concepts of pH and buffers, acid base equilibrium osmotic pressure and its physiological applications *Morphology, structure & kinetics of cell, cell membrane, Nucleus, chromatin, Mitochondria, Endoplasmic Reticulum, Ribosomes. * Fluid compartment, daily intake and output sodium and potassium metabolism. *Mucopolysaccharide connective tissue proteins, glycoproteins, chemistry & Metabolism of bone and tooth, metabolism of skin *Composition, metabolism, chemical mediators of Nerve activity * Isotopes and their role in treatment and diagnosis of diseases	20 Days
Carbohydrates **Lipids** **Proteins** **Nucleic Acid** **Enzymes**	*Definition, functions, sources, classifications, Monosaccharides, Disaccharides, Polysaccharides, mucopolysaccharide and its importance *Sources, classification, simple lipid, compound lipid, derived lipid, unsaturated and saturated fatty acid, Essential fatty acids and their importance,Blood lipids and their implications, cholesterol and its importance. *Definition, sources, kinetics, classification, simple protein conjugated protein,derived proteins, properties Structure and function of DNA and RNA, Nucleosides, nucleotides,Genetic code Definitions, classification, mode of action, factor affecting enzyme action	20 Days
Vitamins **Nutrition** **Hormones**	*Classification, fat soluble vitamins, A, D, E & K, water soluble vit. B complex & C, Daily Requirements, Physiological functions and diseases of Vitamin deficiency. * Balance, diet, metabolism in exercise and injury, Diet for chronically ill and terminally ill patients *General characteristics and mechanism of Hormone action insulin, glucagone Thyroid and Parathyroid hormones, cortical & sex hormones.	10 Days
Bioenergetics	* Concept of free energy change, Exogenic and endogenic reactions, concepts energy rich compounds, Respiratory chain and Biological oxidation	15 Days

Carbohydrate Metabolism **Lipid Metabolism** **Protein Metabolism**	*Glycolysis, HMP shunt pathway, TCA cycle, glycogenesis, glycogenolysis, Glucogenesis, Maintenance of Blood Glucose, interconversions of different sugar *Fatty acid oxidation, Fatty acid synthesis, Metabolism of cholesterol, Ketone bodies, Atherosclerosis and obesity. *Transamination, Transmethylation, Deamination, Fate of ammonia,urea synthesis and synthesis of creatine, inborn errors of metabolism.	
Books Recommended	Text book of Biochemistry Clinical Biochemistry – Metabolic & Clinical aspects - Marshall & Bangert – Churchill Livingstone. Lehninger priniciples of biochemistry Fundamental of Biochemistry-Donald Voet Judith G.Voet	

LESSON PLAN FOR BPT 1ST year

ELECTRO THERAPY- I

TOPIC	NOTES/STRATEGIES/RESOURCES	TIME
Physical Principles:	Structure and properties of matter – solids, liquids and gases, adhesion, surface tension, viscosity, density and elasticity. Structure of atom, molecules, elements and compounds. Electron theory, static and current electricity. Conductors, Insulators, Potential difference, Resistance & Intensity. Ohm's Law – Its application to AC & DC currents. a) Rectifying Devices – Thermionic Valves, Semiconductors, Transisters, Amplifiers, Transducers Oscillator circuits. b) Capacitance, condensers in DC and AC Circuits. c) Display devices & indicators – analogue & digital.	23 hours
Effects of Current Electricity:	1. Chemical effects – Ions and Electrolytes, Ionisation, Production of a E.M.F. by chemical actions. 2. Magnetic effects, Molecular Theory of Magnetism, Magnetic fields, Electromagnetic Induction. 3. Mili ammeter and Voltmeter, Transformers and Choke Coil. Thermal Effects – Joule's Law and Heat production. 4. Physical Principles of Sound and its Properties. 5. Physical Principles of Light and its Properties. 6. Electromagnetic Spectrum – Biophysical Application.	20 hours
Electrical supply:	a) Brief outline of main supply of electric current. b) Dangers – short circuits, electric shocks. c) Precautions – safety devices, earthing, fuses etc. d) First aid & initial management of electric shock.	5 hours
Low Frequency Currents:	1. Introduction to Direct, Alternating & Modified Currents. 2. Production of direct current – Physiological and Therapeutic Effects of Constant Current, Anodal and Cathodal Galvanism, Ionisation and Their Application in Various Conditions. 3. Iontophoresis – Principles of Clinical Application, Indication, Contraindication, Precaution, Operational Skills of Equipment & Patient	25 hours

	Preparation. 4. Modified Direct Current – various pulses, duration and frequency and their effect on Nerve and Muscle tissue. Production of interrupted and surged current & their effects. 5. Modified Direct Current – Physiological and therapeutic effects, principles of clinical application, indications, contra indications, precautions, operational skills of equipment & patient preparation.	
Transcutaneous Electrical Nerve Stimulations (TENS):	a) Types of Low Frequency, pulse widths, frequencies & intensities used as TENS applications. b) Theories of pain relief by TENS. c) Principle of clinical application, effects & uses, indications, contraindications, precautions, operational skills of equipment & patient preparation.	7 hours
Electrical Reactions and Electro – diagnostic tests:	Electrical Stimuli and normal behaviour of Nerve and muscle tissue. Types of lesion and development of reaction of degeneration. Faradic – Intermittent direct current test. S.D. Curve and its application. Chronaxie, Rheobase & pulse ratio.	10 hours
1. Infra red rays AND 2. Ultra – Violet Rays (UVR):	1. Infra red rays – Wavelength, frequency, types & sources of IRR generation, techniques of irradiation, physiological & therapeutic effects, indications, contraindications, precautions, operational skills of equipment & patient preparation. 2. Ultra – Violet Rays (UVR): a) Wavelength, frequency, types & sources of UVR generation, techniques of irradiation, physiological & therapeutic effects, indications, contraindications, precautions, operational skills of equipment & patient preparation. b) Dosimetry of UVR.	20 hours
Superficial heat	Paraffin wax bath, moist heat, electrical heating pads. a) Mechanism of production. b) Mode of heat transfer. c) Physiological & therapeutic effects. d) Indications, contraindications, precautions, operational skills of equipment & patient preparation.	15 hours

Books Recommended:

1. Electrotherapy Explained: Principles & Practice – Low & Reed – Butterworth Heinemann.
2. Clayton's Electrotherapy, (9th Ed.) Forster & Palastanga Bailliere Tindal

LESSON PLAN FOR B.P.T.-1st Year
SUBJECT- PHYSIOLOGY

TOPIC	NOTES/STRATEGIES/RESOURCES	TIME
Cell Introduction . **Skin** **Blood and Lymph**	Outline of basic concepts of cell structure, functions of components and transport across membranes Functions, blood flow and temperature regulation Cell renewal system, haemoglobin, erythrocyte granulocyte,lymphocyte, coagulation, regulation of hydrogen within concentration of body fluids, fluid distribution and exchange.	45 hours
Digestion . **Circulation** **Excretion** **Respiration** **Endocrine system** **General Metabolism**	Control of food and water intake and secretion and absorption movements of the alimentary canal. Cardio-vascular system, mechanical and electro-physiological activity of the heart, regulation of heart, coronary circulation, haemodynamics, circulation through brain,skin and skeletal muscle Renal functions including formation of Urine & Micturition Respiratory gases, pulmonary gas exchange, control and mechanics of breathing, hypoxia, asphyxia, dyspnoea, oxygen therapy and resuscitation Outline of various hormones and their actions, pituitary gland, thyroid, parathyroid, adrenal glands & Gonads Carbohydrate, Protein & Fat Metabolism	45 hours
Neuro – physiology	1 Neuron: Properties and functions. 2. Action Potential 3. Special properties of nerve trunks and tracts. 4. Motor units. 5. Reflex physiology 6. Synapse and synaptic transmission. 7. Supraspinal Control. 8. Cerebellum and basal gangila. 9. Autonomic nervous system. 10. Somatic sensation.	55 hours

	11. Pain 12. Taste, Olfaction, Auditory and Vision. 13. Neuro physiological psychology.	
Muscle Physiology	Gross and Microscopic 1. Structure and function of Muscle tissue – skeletal and cardiac. 2. Chemical processes involved in muscle contraction. 3. Physiology of muscle contraction.	35 hours
Physiology of exercise and work	1. Neuromuscular activity, human movement, physiological mechanism in movement behaviour, strength, endurance, analysis of movement. 2. Circulatory and respiratory response to exercise including effects on the heart blood circulation, body fluid changes, pulmonary ventilation, gas exchange and transport, etc. 3. Effects of exercise and work on other body functions. 4. Metabolic and environmental aspects of exercise and work – metabolism, energy requirement, efficiency of muscular work, nutritional aspects, heat and body temperature regulation & environmental factors. 5. Effects of Exercise training – endurance, fatigue and recovery. 6. Fitness and health – age, sex, body type, race, stress and medical aspects of exercise	45 hours
Books Recommended	1. Text book of Medical Physiology–Arthur Guyton (Mosby.) 2. Human Physiology by Dee Unglaub Silverthorn 3. Principles of Anatomy and Physiology. Tortora & Grabowski–Harper Collins. 4. Berny and Levy principles of physiology .	

LESSON PLAN FOR B.P.T.-1st Year
SUBJECT- ANATOMY

TOPIC	NOTES/STRATEGIES/RESOURCES	TIME
General Histology Introduction **Osteology**. **General Embryology**	Cell, tissues of the body, epithelium, connective tissue, cartilage, bone, lymph,muscle, nerve etc. Formation, function, growth and repair of bones- Ovum, spermatozoas, fertilization, differentiation, development of various systems and foetal circulation.	25hours
Systems of Human body **Blood Vascular System** **Respiratory System** **Digestive System** **Urogenital System** **Endocrine System** **Integumentary System** **Surface Anatomy**	 Arteries, capillaries, veins, heart, lymphatic system Anatomy of upper and lower respiratory tract including nose, larynx, trachea, bronchi, pleura and lungs. Anatomy of the gastro-intestinal tract Anatomy of Urinary system, male and female reproductive system The various organs and production of hormones including definition,structures in general, control of secretions and role of hypothalamus	25hours
Neuro-anatomy: Microscopic and gross study of	1. Peripheral Nerves 2. Neuromuscular Junction 3. Sensory End Organs 4. Spinal Cord Segments & Areas 5. Brainstem 6. Cerebellum 7. Inferior colliculi 8. Superior Colliculi 9. Diencephalon 10. Hypothalamus 11. Epithalamus 12. Thalamus 13. Cerebral hemispheres 14. Corpus striatum 15. Rhinencephalon 16. Lateral ventricles 17. Meninges 18. Bloody supply of the brain 19. Internal Capsule 20. Visual radiation	25hours

	21. Auditory radiation 22. Thalamocortical radiations 23. Pyramidal systems 24. Extra-pyramidal systems 25. Sympathetic system 26. Para-sympathetic system 27. Crainal nerves	
Upper Extremity **Osteology** **Myology**	Outime the anatomical features, attachments, ossification and side determination of the bones of U/L : Clavicle, Scapula, Humerus, Radius, Ulna, Carpals, Metacarpals, Phalanges– Fascia and Muscles of front and back of upper arm : origin, insertion, nerve supply and action. – Muscles of front and back of forearm : origin, insertion, nerve supply and action. – Mention the small muscles of hand with their origin, insertion, nerve supply and action. – Identify the nerves of upper units and mention their position course, relations and distribution. – Detail explanation of joints of upper limb : shoulder guide, Shoulder joint, Elbow, Wrist and joints of hand. – Indicate the blood vessels of upper limb and mention their position course, relations, distribution and main branches. – Lymphatic damage of upper limb – Applied anatomy of all structures of U	25hours
Regional Anatomy	Detailed explanation of the following with their applied anatomy. Pectoral Region Scapular Region Cubital Fossa Axilla Insatiate formation of Brachial Plexus Spaces of the hand	20hours
TRUNK-THORAX **ABDOMEN** **Osteology**	– Vertebral columns: Identify the parts of typical vertbera and state the main features, attachments and ossification. – Intervertebral disc and mention its part. – Ribs: Parts and main features of typical rib and define true, false and floating ribs. – Stenum: State the parts and anatomical features– Fascia and muscles of bank	35hours

Myology **Joints of Thorax**	– Fascia and muscles connecting U/L with vertebral column: origin, insertion, nerve supply, action. – Intercostal muscles and diaphragm: origin, insertion, nerve supply and action. – List layers of anterior Abd wall and mention its origin, insertion, nerve supply and action of these muscles. – Fascia and muscles of post abd. Wall: origin, insertion, nerve supply and action Identify the various joints and explain in detail: – Manubriosternal joint – Costo vertebral joint – Costo transverse joint – Costo Chondral joint – Chondro sternal joints – Inter vertebral joint – Movements of vertebral column – Respiratory movements Mention the course and branches and nerves, blood vessels and lymphatic drainage of trunk-thorax-abdomen. Lumbar Plexus: Position, formation and branches. Rectus sheath: formation and contents. Contents of vertebral canal Intercostal space and its contents Diaphragm-structures passing through it. Applied Anatomy of structures of trunk – thorax - abdomen	
PELVIS	Features of pubic symphysis and sacroiliac joints. Muscles of pubic floor and mention their attachments, action and nerve supply. Difference between male and female pelvis. Main features of subdivision, boundaries, walls and floor of pelvis. Urogenital diaphagm (outlines only) – Applied anatomy of plexus – Lymphatic damage – Nerve supply – Sacral Plexus – Mention the blood vessels of the region with course, variations, distribution and main branches.	15hours
LOWER EXTREMITY **Osteology**	– Hip bone, femur, Tibia, Fibula, Patella, and bones of the foot	25hours

Myology:	Fascia and muscles in front of thigh: Origin, Insertion, Nerve Supply, Action – Fascia and muscles of medial side of thigh: Origin, Insertion, Nerve Supply, Action – Fascia and muscles of back of thigh – Fascia and muscles of gluteal region – Fascia and muscles of front of leg and dossum of foot – Fascia and muscles of lateral side of leg – Fascia and muscles of back of leg and role of foot – Detailed explaination of joints of Lower Leg: Pelvic Givdle, Hip, joint, Knee joint, Ankle joint, joints of foot. – Identify the nerves of Lower Leg and mention their position course, relations distribution – Indicate the blood vessels of Lower Leg a mention their position course, relation, distribution and main branches – Lymphatic drainage of Lower Leg – Explain Femoral triangle and subsartorial canal – Poptileal fossa – Anatomy of structures of Lower Leg	
Radiological Anatomy	Radiographic appearance of Musculo-skeletal system of Upper limb, Lower limb, Spine.	10hours
Books Recommended	1. L. Williams & Warwick, Gray's Anatomy-Churchill Livingstone. 2. Inderbir Singh, Textbook of Anatomy with Colour Atlas–Vol. 1, 2, 3 Jaypee Brothers 3. B.D. Chaurasia, Human Anatomy–Volume 1, 2, 3 CBS Publishers & Distributors. 4. Mcminn's Last's Anatomy–Regional and applied, Churchill Livingstone. 5. Mcminn's et al–A Colour Atlas of Human Anatomy, Mosby. 6. Cunningham Manual of Practical Anatomy Vol. I, II, III, Churchill Livingstone. 7. Inderbir Singh, A Textbook on Human Neuro	

LESSON PLAN FOR B.P.T. 2ND YEAR
SUBJECT: EXERCISE THERAPY -II

TOPIC	NOTES/STRATEGIES/RESOURCES	TIME
Therapeutic exercise	-Principle -classification -techniques -physiological & therapeutic effects - indications & contraindications of therapeutic exercises.	10 hrs
Therapeutic exercise program	Assessment & evaluation of a patient (region wise) to plan a therapeutic exercise program.	5 hrs
Peripheral joint mobilization	-Etiogenesis of Joint stiffness - general techniques of mobilization -effects -indications -contraindications & precautions.	10 hrs
Strengthening exercises	-Etiogenesis of muscle insufficiency (strength, tone, power -endurance & volume) - general techniques of strengthening - effects - indication,contraindications & precautions.	10 hrs
Neuromuscular Inco-ordination	-Review normal neuromuscular coordination - Etiogenesis of neuromuscular in co-ordination -general therapeutic techniques -effects -indications, -contraindications & precautions.	10 hrs
Functional re-education	General therapeutic techniques to re-educate ADL function	10 hrs
Posture	-Normal Posture -Overview of the mechanism of normal posture. -Abnormal Posture – Assessment -Types -etiogenesis - management -including therapeutic exercises.	10 hrs
Balance	-Static and Dynamic Balance -Assessment - management including therapeutic exercises.	10 hrs
Gait	-Gait – Overview of normal gait & its components. -Gait deviations - Assessment - Types -etiogenesis - management - including therapeutic exercises.	10 hrs

Walking aids	-types, indications -training techniques	10 hrs
Hydrotherapy	-Basic principles of fluid mechanics as they relate to hydrotherapy. Physiological & therapeutic effects of hydrotherapy Types of Hydrotherapy equipment - indications - contraindications -operation skills & patient preparation.	10 hrs
Special mobilization and manipulation techniques	-Introduction to special mobilization & manipulation techniques - effects -indications &contraindications.	5 hrs
Traction	-Principles of traction -physiological & therapeutic effects - classification -indications, -, techniques of application -skills & precautions	10 hrs
Breathing exercises	-Review normal breathing mechanism - types -techniques -indications - contraindications, -therapeutic effects & precautions of breathing exercises.	5 hrs
Group therapy	-types - advantages -disadvantages	5 hrs
Yoga	-Conceptual framework - various "asanas", the body – mind Relationship - effects -precautions.	5 hrs
Muscle energy technique	-Introduction -types -muscle makeup -indications -precautions -contraindications	10 hrs
Books recommended	1) Practical Exercise Therapy - Hollis - Blackwell Scientific Publications. 2) Therapeutic Exercises - Basmajian - Williams & Wilkins. 3) Therapeutic Exercises Foundations and Techniques - Kisner & Colby -F.A. Davis. 4) Proprioceptive Neuromuscular Facilitation - Voss et al - Williams and Wilkins.	

	5) Principle of Exercise Therapy - Gardiner - C.B.S. Delhi. 6) Orthopaedic Physical Therapy - Woods - Churchill Livingstone. 7) Manipulation ad Mobilisation Extremities and Spinal Techniques - Edmond - Mosby. 8) Aquatic Exercise Therapy - Bates and Hanson-W.B. Saunders. 9) Manual Examination and Treatment of Spine and Extremities - Wadsworth - Lippincott. 10) Hydrotherapy: Principles and Practices - Campion - Butterworth Heinmann.	

LESSON PLAN FOR B.P.T. 2ND YEAR
SUBJECT: PATHOLOGY AND MICROBIOLOGY

TOPIC	NOTES/STRATEGIES/RESOURCES	TIME
General Pathology Aims and objectives Causes of disease and cell injury Inflammation REPAIR Fluid and hemodynamic derangements Immunity Neoplacia Nutritional Disorders	 Meaning of terms, etiology, pathogenesis and lesions. causes of cell injury features of cell injury mechanism of cell injury – hypoxia, free radical injury. Necrosis and gangrene definition, events of acute inflammation, chemical mediator of inflammation, morphological types of acute inflammation ,chronic inflammation difference between acute and chronic inflammation primary healing, secondary healing, factors affecting healing and repair healing of skin, muscle and bone oedema, hyperemia, Haemorrhage, shock, embolism, thrombosis, infarction natural and acquired. immunological mechanisms of tissue injury,hypersensitivity reactions, general features of autoimmune diseases andimmunodeficiency diseases characteristic of benign and malignant tumors ,grading and staging of malignant tumors, a brief outline of the carcinogenic agents and methods of diagnosis of malignancy and general effects of malignancy on the host deficiency disorders (protein deficiency, vitamin deficiency(A,B,C,D,E,) causes , features , a brief outline of the methods of diagnosis (details not required).	50 hrs
Systemic pathology Blood Blood Vessels Disease of heart Respiratory System Joints disorders. Bone Disorders	 disorders of RBC,WBC, platelets atherosclerosis, thromboangitis obliterence, vericose vein, DVT,thrombophlebitis, lymphoedema congestive cardiac failure, ischemic heart disease, rheumatic heart disease, infective heart disease (pericarditis, myocarditis, endocarditis Pneumonias, Bronchiactesis, Emphysema, Chronic bronchitis, Asthma, Tuberculosis. Arthritis- types and their features osteoporosis, pagets disease, osteogenesis imperfecta,	50 hrs

Muscles Nervous System	osteomylitis,tumors–osteosarcoma, chonrosarcoma, ewings sarcoma, multiple myloma (a brief outline) muscular dystrophy, mysthenia gravis meningitis, encephalitis, vascular diseases of brain, poliomyelitis, nerve injuries	
Part–I Microbiology An introduction to microbiology Infection Prevention and control of infection	Classification of microorganisms types, source, portals of entry, spread. Disinfection and antiseptics Sterilization	50 hrs
infectious diseases	Chicken Pox, Measles, Mumps, Influenza, Diphtheria, Whooping Cough, Tetanus, Tuberculosis, Leprosy, Rubella, Cholera, Gastroenteritis, Food Poisoning, Hepatitis, AIDS, Typhoid, Rabies, STD, Ameobiasis Kalaazar, Malaria, Filaria	50 hrs
Books Recommended	1. Robbins Pathological Basis of Disease - Cotran, Kumar & Robbins - W.B. Saunders. 2. General Pathology - Walter & Israel - Churchill Livingstone. 3. Muirs Textbook of Pathology - Anderson - Edward Arnold Ltd. 4. Text book of Pathology - Harsh Mohan - Jaypee Brothers. 5. Pathology: Implications for Physical Therapists - Goodmann and Boissonnault - W.B. Saunders. 6. Essential of Medical Microbiology - Bhatia & Lal - Jaypee Brothers. 7. Medical Microbiology - Mims - Jaypee Brothers. 8. Microbiology: An Introduction for the Health Sciences – Ackerman and Richards - W.B. Saunders Co.	

LESSON PLAN OF B.P.T 2ND YEAR

SUBJECT: PHARMACOLOGY

TOPIC	NOTES/STRATEGIES/RESOURCES	TIME
General action of drugs	-Factors affecting routes of drug administration -Review of pharmacodynamics and pharmacokinetics -Principles of drug action -Adverse effects of drugs -Study of various vitamins and there defeciencies -Study of drugs acting on respiratory tract	15 Hours
Drugs acting on CNS	-Overview of various drugs used in the treatment of disorders related to CNS - Overview of various drugs used in the treatment of disorders related to PNS -Classification of all drugs -Pharmacological actions -Mechanism of action -Adverse effects - Interations with other drugs -Uses ans application of drugs in various conditions	25 Hours
Drugs acting on PNS	-Overview of various drugs used in the treatment of disorders related to PNS - Overview of various drugs used in the treatment of disorders related to PNS -Classification of all drugs -Pharmacological actions -Mechanism of action -Adverse effects - Interations with other drugs -Uses ans application of drugs in various conditions	20 Hours
Drugs acting on CVS	-Overview of various drugs used in the treatment of disorders related to CVS -Classification of all drugs -Pharmacological actions -Mechanism of action -Adverse effects - Interations with other drugs -Uses ans application of drugs in various conditions	15 Hours
Hormones functions	-Overview of various drugs used in the treatment of disorders related to Hormones -Classification of all drugs -Pharmacological actions -Mechanism of action	15 Hours

	-Adverse effects - Interations with other drugs -Uses ans application of drugs in various conditions	
Endocrine functions	-Overview of various drugs used in Endocrine functions -Classification of all drugs -Pharmacological actions -Mechanism of action -Adverse effects - Interations with other drugs -Uses ans application of drugs in various conditions	10 Hours
	References:- Pharmacology and Pharmacotherapeutics - R.S. Satoskar -The Pharmacologic Principles of Medical Practice - Krantg & Jelleff	

LESSON PLAN OF B.P.T. 2nd YEAR

SUBJECT- ELECTROTHERAPY- 2

TOPIC	NOTES/STRATEGIES/RESOURCES	TIME
Review of Neuro – muscular Physiology including effects of electrical stimulation	-Physiological responses to heat gain or loss on various tissues of the body. - Therapeutic effects of heat, cold and electrical currents. - Physical principles of Electro – magnetic radiation. - Physics of sound including characteristics and propagation.	12 Hours
High Frequency Currents (S.W.D. and M.W.D.)	Production, biophysical effects, types, therapeutic effects, techniques of application, indications, contraindications, precautions, operational skills and patient preparation.	12 Hours
Medium Frequency Currents (Interferential Therapy)	Conceptual framework of medium frequency current therapy, production, biophysical effects, types, therapeutic effects, techniques of application, indications, contraindications, precautions, operational skills and patient preparation.	12 Hours
High Frequency Sound Waves (Ultrasound)	Production, biophysical effects, types, therapeutic effects, techniques of application, indications, contraindications, precautions, operational skills and patient preparation.	12 Hours
Therapeutic Light in Physiotherapy (LASER)	Definition, historical background, physical principles, biophysical effects, types, production, therapeutic effects, techniques of application, indications, contraindications, precautions, operational skills and patient preparation.	12 Hours
Therapeutic Cold (Cryotherapy)	Sources, biophysical effects, types, therapeutic effects, indications, contraindications, precautions, application techniques and patient preparation.	10 Hours
Therapeutic Mechanical Pressure (Intermittent Compression Therapy)	Principle, biophysical effects, types, therapeutic effects, indications, contraindications, precautions, operational skills and patient preparation.	10 Hours
Electro – diagnosis	Instrumentation, definition & basic techniques of E.M.G. and E.N.G.	10 Hours
Bio–feedback	Instrumentation, principles, therapeutic effects, indications, contraindications, limitations, precautions, operational skills and patient preparation.	10 Hours

LESSON PLAN OF B.P.T. 2nd YEAR

SUBJECT- BIOMECHANICS

TOPIC	NOTES/STRATEGIES/RESOURCES	TIME
Mechanics	a) Introduction to mechanics including motion, forces, parallel forces system b) Newton's law of motion, concurrent force systems – composition forces, muscle action line etc. c) Centre of Gravity, line of gravity, stability and equilibrium. d) Introduction to Bio-Mechanics and terminology.	30 HOURS
Joint Structure and Function:	a) Basic principles of Joint design and a human joint. b) Tissues present in human joint including fibrous tissue, bone cartilage and connective tissue. c) Classification of joints. d) Joint function, Kinematics chains and range of motion. e) Recall anatomy and study the biomechanics of the spine, shoulder girdle, joints of the upper extremity, pelvic girdle and the joints of the lower extremity.	40 HOURS
Muscle Structure and function:	a) Mobility and stability functions of muscle. b) Elements of muscle structure and its properties. c) Types of muscle contractions and muscle work. d) Classification of muscles and their functions. e) Group action of muscles, Co-ordinated movement.	5 HOURS
Posture & Gait:	a) Posture – Definition, factors responsible for posture, relationship of gravity on posture. b) Postural imbalance – factors responsible for imbalance in Static and dynamic positions Including ergonomics. c) Description of Normal gait, determinants of gait, spatio temporal features and analysis. d) Gait deviations – Types, Causative factors and analysis.	15 HOURS

Books Recommended:

1. Joint Structure and Function – A Comprehensive Analysis - Norkins & Levangie - F.A. Davis.
2. Measurement of Joint Motion – A Guide to Goniometry - Norkins & White - F.A. Davis.
3. Brunnstrom's Clinical Kinesiology - Smith et al - F.A. Davis.

LESSON PLAN OF B.P.T. 3RD YEAR

SUBJECT- P.T.O

TOPIC	NOTES/STRATEGIES/RESOURCES	TIME
Introduction	Brief review of the following surgical condition and various physiotherapeutic modalities, aims, means and technique of physiotherapy should be taught.	3 HOURS
Traumatology	General physiotherapeutic approach for the following conditions: Fracture and dislocations; Classification and type of displacement, method of immobilisation, healing of fractures and factors affecting union, non union, delayed union etc. common sites of fractures. Specific fractures and their complete physiotherapeutic management. Upper Limb; Clavicle, humerus, ulna, radius, crush injuries of hand. Lower Limb; fracture neck of femur, shaft of femur pattilla tibia fibula, pott's fracture, fracture of tarsal and metatarsals. Spine; fracture and dislocations of cervical, thoracic and lumbar vertebrate with and without neurological deficits.	30 HOURS
Surgical procedures	Pre and post operative management of common corrective procedure like arthroplasty, arthrodesis, osteotomy, tendon transplants, soft tissue release grafting, including polio residual paralysis and leprosy deformities corrections.	15 HOURS
Injuries	Soft tisse injuries, synovitis, capsulitis volkman's ischemic contracture etc. tear of semilunar cartilage and cruciate ligaments of knee, menisectomy, patellectomy, internal derangement of knee.	15 HOURS
Amputation	level of amputation of upper limb and lower limb, stump care, stump bandaging, pre and post prosthetic management including check out of prosthesis, training etc.	5 HOURS
Deformities	congenital torticollis and cervical rib, CTEV, Pes cavus, pes planus and other	10 HOURS

	common deformities. Acquired – Scoliosis, kyphosis, lordosis, coxa vara, genu valgum, genu varum and recurvatum.	
Degenerative and infective conditions	osteoarthritis of major joints, spondylosis, spondylitis, spondylolisthesis, PIVD, Periarthritis of shoulder, Tuberculosis of spine, bone and major joint, perthes disease. Rheumatoid arthritis, Ankylosing spondylitis etc. and other miscellaneous orthopaedic conditions treated by physiotherapy.	15 HOURS
Principles of sports physiotherapy	causes of sports injury, prevention of sports injuries, management of acute sports injury, common occurred injuries. Role of physiotherapist in sports, Principle & advanced rehabilitation of the injured athlete.	7 HOURS

Books Recommended:

1. Cash text book of Orthopaedics and Rheumatology for Physiotherapists – Downie - Jaypee Brothers.
2. Tidy's Physiotherapy - Thomson et al -Butterworth Heinmann.
3. Essentials of orthopaedics and applied physiotherapy – Joshi and Kotwal - B.L. Churchill Livingstone.
4. Tetraplegia & Paraplegia - Bromley - W.B. Saunders.
5. Orthopaedic Physiotherapy - Donatelli & Wooden - W.B. Saunders.
6. Rheumatological Physiotherapy - David - Mosby.
7. Orthopaedic Physiotherapy - Tids well - Mosby.
8. Physiotherapy for Amputee - Engstrom & Van de van - Churchill Livingstone.
9. Sports Injuries: Diagnosis and Management - Norris Butterworth Heinmann.

LESSON PLAN OF B.P.T. 3RD YEAR

SUBJECT- P.T.M.-I

TOPIC	NOTES/ STRATEGY/RESOURCES	TIME
Inflammation	-Inflammation – acute, chronic and supprative. -physiotherapy management of inflammation	10 hrs
Oedema	-Types- Traumatic, obstructive, Paralytic, Oedema due to poor muscle and laxity of the fascia. -physiotherapy management	5 hrs
Arthritis and Allied Conditions	a) Osteo – arthritis – generlised, Degenerative and traumatic, Spondylosis and disorders. b) Rheumatoid Arthritis, Still's disease, infective Arthiritis. c) Spondylitis, Ankylosing Spondylitis. d) Nonarticular Rheumatism – Fibrositism, Myalgia, bursitis, Periarthritis etc.	10 hrs
Common conditions of Skin	Acne, Psoriasis, Alopecia, Leucoderma, Leprosy, Sexually transmitted diseases.	10 hrs
Deficiency diseases	Rickets, Diabetes, Obesity, Osteoporosis and other deficiency disorders related to Physiotherapy.	10 hrs
Psychiatric Disorders	Psychosis, Psychoneurosis, Senile dementia.	5 hrs
Respiration introduction	Review of mechanism of normal respiration.	5 hrs
Auscultation and percussion	Chest examination, including auscultation, percussion.	5 hrs
Investigative procedures	Knowledge of various investigative procedures (invasive & noninvasive) used in the diagnosis of various respiratory disorders.	5 hrs
Respiratory conditions	1) Bronchitis, Asthma, Lung abscess, Bronchiectasis, Emphysema, COPD. 2) Pleurisy and Empyema, Pneumonia. 3) Bacterial Disease. 4) Rheumatic fever, Carcinoma of respiratory tract. 5) Paralysis of diaphragm & vocal cords. 6) Chest wall deformities.	20 hrs
Cardiovascular system introduction	Review of anatomy & physiology of the cardiovascular system.	5 hrs
Investigative procedures	Knowledge of various investigative procedures (invasive & noninvasive) used in the diagnosis of various cardiovascular disorders.	5 hrs
Cardiovascular disorders	-Thrombosis -Embolism -Buerger's diseases -Arteriosclerosis - Thrombophlebitis	20 hrs

	- Phlebitis -Gangrene -Congestive Cardiac failure. Hypertension - Hypotension -aneurysm.	
Books recommended	1. Cash Textbook of General Medical and Surgical Conditions for Physiotherapists – Downie - Jaypee Brothers. 2. Essentials of Cardiopulmonary Physical Therapy - Hillegass & Sadowsky - W.B. Saunders. 3. Cash Textbook of Chest, Heart and Vascular Disorders for Physiotherapists - Downie - J.P. Brothers. 4. The Brompton Guide to Chest Physical Therapy. 5. Cardiopulmonary Physical Therapy - Irwin and Tecklin - Mosby. 6. Cardiovascular / Respiratory Physiotherapy - Smith & Ball - Mosby. 7. ACSM Guidelines for Exercise Testing and Prescription - ACSM - Williams and Wilkins. 8. Chest Physiotherapy in Intensive Care Unit - Mackenzie et al - Williams and Wilkins.	

CLASS: B.P.T FOURTH YEAR

SUBJECT: PHYSIOTHERAPY IN MEDICAL CONDITIONS-2

TOPIC	NOTES/STRATEGIES/RESOURCES	TIME
Examination of Neurological disorders	Examination of Neurological disorders and principles of treatment	3 Hours
Investigative procedures	Knowledge of various investigative procedures (invasive & noninvasive) used in the diagnosis of various neurological disorders	3 Hours
Hemiplegia, Paraplegia, Tabes dorsalis, cerebellar ataxia, extra pyramidal lesions, Gullian Barre Syndrome, Parkinsonism	Review of pathological changes and principle of management by physiotherapy	12 Hours
Disseminated sclerosis, Amgotrophic lateral sclerosis, Syringomyela subacute combined degeneration of cord motor neuron disease	Review of pathological changes and principle of management by physiotherapy	12 Hours
Peripheral Nerve and cranial Nerve lesions.	Review of pathological changes and principle of management by physiotherapy	6Hours
Neuritis and Neuralgia	Review of pathological changes and principle of management by physiotherapy in Brachial, sciatic etc	3 Hours
Infections	Review of pathological changes and principle of management by physiotherapy in Poliomyelitis, meningitis, Encephalitis, Polyneuritis Transverse myelitis	6 Hours
Examination & assessment	Review of the examination & assessment of a Paediatric patient	3 Hours
Common congenital & acquired muscle-skeletal disorders.	Review of pathological changes and principle of management by physiotherapy of a Paediatric patient	12 Hours
Common congenital & acquired neurological disorders (CNS & PNS).	Review of pathological changes and principle of management by physiotherapy of a Paediatric patient	12 Hours
Common heredity disorders.	Review of pathological changes and principle of management by physiotherapy of a Paediatric patient	6Hours
examination & assessment	Review of the examination & assessment of a Geriatric patient	6 Hours
Musculo skeletal disorders.	Review of pathological changes and principle of management by physiotherapy of a Geriatric patient	3 Hours

Cardiopulmonary disorders	Review of pathological changes and principle of management by physiotherapy of a Geriatric patient	3 Hours
Neurological disorders (CNS & PNS).	Review of pathological changes and principle of management by physiotherapy of a Geriatric patient	3 Hours
Injuries & accidents specific to the aged.	Review of pathological changes and principle of management by physiotherapy of a Geriatric patient	3 Hours
	References:- Cash's Textbook of Neurology for Physiotherapists - Downi . - Adult Hemiplegia – Evaluation & Treatment - Bobath - Neurological Rehabilitation – Carr & Shepherd - Tetraplegia & Paraplegia – A Guide for Physiotherapist - Bromley - Churchill Livingstone. -Neurological Physiotherapy – A Problem Solving Approach - Susan -Neurological Rehabilitation – Umpherd - Geriatric Physical Therapy - Gucciona -. Paediatric Physical Therapy	

LESSON PLAN FOR B.P.T 4TH YEAR

SUBJECT-REHABILITATION

TOPIC	NOTES/STRATEGIES/RESOURCES	TIME
Rehabilitation	-Conceptual framework of rehabilitation - roles of rehabilitation team members, -definition -various models of rehabilitation	10 days
Disability	-Epidemiology of disability with emphasis on locomotor disability -its implications –individual, family, Social, economic and the state. -Preventive aspects of disability and organizational skills to manage it. -statutory provisions and scheme of assistance to persons with disability	20 days
Community based rehabilitation	-introduction -area of expertise -aims of CBR -criteria for CBR -Aspects of CBR -members of CBR team -models of CBR	15 DAYS
Institutional based rehabilitation	-Introduction -area of expertise - role of IBR -members of IBR	10 DAYS
Non governmental organizations	-Role of N.G.Os in rehabilitation of the persons with disabilities.	10 days
Administration	-Basic principles of administration and finance including - personnel management - budget preparation and procurement etc.	10 days
Orthotics	-Principles of Orthotics - types, indications, contra-indications, assessment (check out), uses and fitting – region wise. - Fabrication of simple splints and self help devices for upper and lower extremity -indications and application	15 days
Prosthetics	-Principles of Prosthetics - types - indications -contra-indications	15 days

	-assessment (check out) - uses and fitting – upper and lower extremity.	
Disorders of speeech	Principles and mechanisms of Communication including speech. 2. Common disorders of speech– etiogenesis, clinical features, assessment and principles of management.	10 days
Disorders of hearing	Principles and mechanisms of Communication including hearing. 2. Common disorders of hearing – etiogenesis, clinical features, assessment and principles of management.	10 days
Vocational rehabilitation	-Principles in the management of vocational problems - including evaluation and vocational goals for people with disability.	10 days
Rehabilitation nursing	-Principles of rehabilitation Nursing -including function of Nursing personnel -Nursing practice in rehabilitation.	10 days
Mentally subnormal	-Identification - assessment - classification of mentally subnormal. - Etiogenesis and principles of management including prevention. -Rehabilitation of the mentally subnormal - including vocational training & a home education programme.	15 days
Activities of daily living	-Definition - scope -importance of Activities of Daily Living (ADLs).	5 days
Teaching and training of various activities	-The teaching and training of (a) wheel chair activities, (b) bed activities (c) transfer activities (d) Locomotor activites (e) self care activities, such as toilet, eating, dressing etc.	15 days
Books recommended	1. Physical Rehabilitation – assessment & Treatment - Sullivan & Schmitz - F.A. Davis. 2. Occupational Therapy and Physical disfunction: Principles, Skills & Practices – Turner, Foster & Johnson - Churchill Livingstone. 3. Hand Splitting - Wilson – W.B. Saunders. 4. Orthotics in Rehabilitation: Splinting the hand and the boby - Mckee & Morgan - F.A. Davis. 5. Atlas of Limb Prosthetics - American Academy of Orthopaedic Surgeon - Mosby. 6. Atlas of Orthotics - American Academy of Orthopaedic Surgeon - Mosby.	

LESSON PLAN OF B.P.T. 4TH YEAR

SUBJECT- PTS

TOPIC	NOTES/STRATEGIES/RESOURCES	TIME
Thoracic Surgery	Review of pathological changes and principle of pre and post operative management by physiotherapy of the following conditions: 1) Lobectomy, Pneumonectomy, Thoracotomy, Thoracoplasty, Endoscopy & eye hole surgeries. 2) Corrective surgeries of congenital heart defects, angioplasties, blood vessel grafting, open heart surgeries & heart transplant.	25 HOURS
General, Gynaecology and Obsterics and ENT	Review of pathological changes and principle of pre and post operative management by physiotherapy of the following conditions: 1) Common abdominal surgeries, including GIT, liver, spleen, kidney, bladder etc. 2) Common operation of reproductive system, including surgical intervention for child delivery. Ante natal & post natal, physiotherapy 3) Common operations of the ear, nose, throat & jaw as related to physiotherapy. 4) Common organ transplant surgeries – heart, liver, bone marrow etc.	25 HOURS
Wounds, Burns & Plastic Surgery	Review of pathological changes and principle of pre and post operative management by physiotherapy of the following conditions: 1) Wounds, ulcers, pressure sores. 2) Burns & their complications. 3) Common reconstructive surgical proceedings of the management of wounds, ulcers, burns & consequent contractures & deformities.	25 HOURS
Neurosurgery	Review of pathological changes and principle of pre and post operative management by physiotherapy of the following conditions: 1) Common surgeries of the cranium & brain. 2) Common surgeries of vertebral column & spinal cord. 3) Common surgeries of peripheral nerves. 4) Surgical interventions in traumatic head injuries.	25 HOURS

Books Recommended:

1. Cash Textbook of General Medical and Surgical Conditions for Physiotherapists – Downie - Jaypee Brothers.
2. Cash Textbook of Heart, Chest and Vascular Disorders for Physiotherapists – Downie – Jaypee Brothers.

LESSON PLAN OF B.P.T. 4TH YEAR

SUBJECT- CPR

TOPIC	NOTES/STRATEGIES/RESOURCES	TIME
Surveillance, Monitoring & Screening in Occupational Health	□ Types & purposes of work place health examination □ Ethical Issues in health examination in the work place	5 HOURS
Work Disability	□ Definition □ Causes & Prevention □ Management	5 HOURS
Ergonomics & Work related Musculoskeletal disorders	□ Fatigue □ Chronic work related musculoskeletal disorders □ Occupational low back pain □ Management of Work related Musculoskeletal disorders Role of physiotherapy in occupational disorders	20 HOURS
Industrial Hygiene	□ Recognition of Occupational & Environmental Hazards □ Hazard Evaluation □ Hazard Control	7 HOURS
Women's Occupational Health Problem	□ Musculoskeletal disorders □ Stress	5 HOURS
Community Obstetrics	Social Obstetrics Maternal & Child Health □ Health indicators □ Goals of MCH services Role of Physiotherapy in women health related disorders	13 HOURS
Nutrition in Public Health & Preventive Medicine	□ Nutritional deficiencies : Causes & Consequences □ Dietary Recommendations □ Nutritional disorders in women	15 HOURS
Family Planning Programs & Practices	□ Goals □ Policies & Laws □ Effects □ Family Planning Problems in Public Health	15 HOURS