MANAV BHARTI UNIVERSITY

MPT MASTER OF PHYSIOTHERAPY (ORTHO) COURSE STRUCTURE 2009

Submitted by:

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Dr.Pooja

MANAV BHARTI UNIVERSITY

Code No.
FIRST SEMESTER
BPT:101: ANATOMY
BPT Code No.102:BIOCHEMISTRY
BPT Code No.103:PRINCIPLES OF BIO-ELECTRICAL MODALITIES
BPT Code No.104:COMMUNICATION

SECOND SEMESTER
BPT Code No.201: ANATOMY
BPT Code No.202:PHYSIOLOGY
BPT Code No.203:SOCIOLOGY
BPT Code No.204:FUNDAMENTALS OF BIOMECHANICS & EXERCISE THERAPY

THIRD SEMESTER
BPT Code No.301: PATHOLOGY & MICROBIOLOGY
BPT Code No.302:PSYCHOLOGY
BPT Code No.303:PHARMACOLOGY
BPT Code No.304:EXERCISE THERAPY

FOURTH SEMESTER
BPT Code No.401:ELECTROTHERAPY
BPT Code No.402:MEDICINE & PAEDIATRICS
BPT Code No.403:GENERAL SURGERY

FIFTH SEMESTER
BPT Code No.501: NEUROLOGY INCLUDING PSYCHIATRY
BPT Code No.502:OBSTETRICS AND GYNECOLOGY
BPT Code No.503:PHYSIOTHERAPY IN NEUROLOGY

SIXTH SEMESTER
BPT Code No.601:ORTHOPAEDICS
BPT Code No.602:APPLIED BIO-MECHANICS & KINESIOLOGY
BPT Code No.603:PHYSIOTHERAPY IN ORTHOPAEDIC

SEVENTH SEMESTER
BPT Code No.701: COMMUNITY REHABILITATION & DISABILITY PREVENTION
BPT Code No.702:PHYSIOTHERAPY IN SPORTS

EIGHTH SEMESTER
BPT Code No.801:PHYSIOTHERAPY IN GENERAL & CARDIOTHORACIC
BPT Code NO.802:RESEARCH METHODOLOGY & BIO-STATISTICS

MANAV BHARTU UNIVERSITY
BPT:101
(1ST YEAR)
FIRST SEMESTER

ANATOMY

Courset Description

It is designed to provide students with the working knowledge of the structure of the human body which is essential foundation for their clinical studies. Studies are concerned with the topographical and functional anatomy of the limbs and thorax. Particular attention is paid to the muscles, bones and joints of the regions. The abdomen, pelvis, perineum, head and neck and central nervous system (CNS) are studied with particular reference to topics of importance to physiotherapists. The study of the CNS includes detailed consideration of the control of motor function.

THEORY

1. Histology

General Histology, study of the basic tissues of the body;
Microscope, Cell, Epithelium, Connective Tissue, Cartilage, Bone, Muscular tissue, Nerve Tissue – TS & LS, Circulatory system – large sized artery, medium sized artery, large sized vein, lymphoid tissue, Skin and its appendages.

2. Embryology

a) Ovum, Spermatozoa, fertilization and formation of the Germ layers and their derivations.
b) Development of skin, Fascia, blood vessels, lymphatic,
c) Development of bones, axial and appendicular skeleton and muscles,
d) Neural tube, brain vessels and spinal cord,
e) Development of brain and brain stem structures

3. Musculo Skeletal Anatomy -(All the topics to be taught in detail)

a) Anatomical positions of body, axes, planes, common anatomical terminologies (Groove, tuberosity, trochanters etc)
b) Connective tissue classification.
c) Bones- Composition & functions, classification and types according to morphology and development.
d) Joints-definition-classification, structure of fibrous, cartilaginous joints, blood supply and nerve supply of joints.
e) Muscles – origin, insertion, nerve supply and actions

f) Upper Extremity :

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

g) Lower Extremity

a. **Osteology :** Hip bone, femur, tibia, fibula, patella, tarsals, metartarsals and phalanges.
b. **Soft parts**: Gluteal region, front and back of the thigh (Femoral triangle, femoral canal and inguinal canal), medial side of the thigh (Adductor canal), lateral side of the thigh, popliteal fossa, anterior and posterior compartment of leg, sole of the foot, lymphatic drainage of lower limb, venous drainage of the lower limb, arterial supply of the lower limb, arches of foot, skin of foot.
c. **Joints**: Hip Joint, Knee joint, Ankle joint, joints of the foot.

Regional Anatomy

h) Thorax:

a) Cardio – Vascular System

Mediastinum: Divisions and contents

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

b) Respiratory system

Outline of respiratory passages

Pleura and lungs: position, parts, relations, blood supply and nerve supply; Lungs – emphasize on bronchopulmonary segments

Diaphragm: Origin, insertion, nerve supply and action, openings in the diaphragm.

Intercostal muscles and Accessory muscles of respiration: Origin, insertion, nerve supply and action.

Recommended Text books:

1. SNELL [Richard S], **Clinical Anatomy for Medical students :** Ed. 5. Little Brown and Company Boston. 1995, p898, $26.50
2. B.D CHAURASIA'S HUMAN ANATOMY – REGIONAL AND APPLIED; VOLUME I, VOLUME II AND VOLUME III.
3. MOORIE [Kieth L], **Clinically Oriented Anatomy.** Ed.3., Williams and Wilkins, Baltimore, 1992, p917,$30
4. DATTA[A.K], **Essentials of human Anatomy: Thorax and Abdomen** Ed 2. Vol. I Current Book International, Culcutta 1994.
   1995.
5. SINGH [Inderbir], **Text book of anatomy with colour atlas: Introduction, Osteology, upper extremity, lower extremity.** Vol I. P Brothers, New Delhi 1996, Rs. 200/-
6. SINGH [Inderbir], **Text book of anatomy with colour atlas: Thorax and abdomen.** Vol II. JP Brothers, New Delhi 1996.
7. SINGH [Inderbir],**Human Osteology.** JP Brothers, New Delhi 1990

MANAV BHARTI UNIVERSITY
BPT Code No.102
BIOCHEMISTRY
(1ST SEMESTER)

THEORY

1.Nutrition

Introduction, Importance of nutrition
Calorific values,
Respiratory quotient – Definition, and its significance
Energy requirement of a person -
Basal metabolic rate: Definition, Normal values, factor affecting BMR
Special dynamic action of food
Physical activities - Energy expenditure for various activities.
Calculation of energy requirement of a person
Balanced diet
Recommended dietary allowances
Role of carbohydrates in diet: Digestible carbohydrates and dietary fibers
Role of lipids in diet
Role of proteins in diet: Quality of proteins - Biological value, net protein utilization, Nutritional aspects of proteins-essential and non essential amino acids. Nitrogen balance
Nutritional disorders

2. Carbohydrate Chemistry

Definition, general classification with examples, Glycosidic bond
Structures, composition, sources, properties and functions of Monosaccharides, Disaccharides, Oligosaccharides and Polysaccharides.
Glycosaminoglycans (mucopolysaccharides)

3. Lipid Chemistry

Definition, general classification
Definition, classification, properties and functions of Fatty acids, Triacylglycerol, Phospholipids, Cholesterol
Essential fatty acids and their importance
Lipoproteins: Definition, classification, properties, Sources and function
Ketone bodies

4. Amino-acid Chemistry

Amino acid chemistry: Definition, Classification, Peptide bonds
Peptides: Definition, Biologically important peptides
Protein chemistry: Definition, Classification, Functions of proteins

5. Enzymes

Definition, Active site, Cofactor (Coenzyme, Activator), Proenzyme. Classification with examples, Factors effecting enzyme activity, Enzyme inhibition and significance, Isoenzymes, Diagnostic enzymology (clinical significance of enzymes)

6.Nucleotide and Nucleic acid Chemistry

Nucleotide chemistry: Nucleotide composition, functions of free nucleotides in body.
Nucleic acid (DNA and RNA) chemistry: Difference between DNA and RNA, Structure of DNA (Watson and Crick model), Functions of DNA. Structure and functions of tRNA, rRNA, mRNA.

7. Digestion and Absorption

General characteristics of digestion and absorption, Digestion and absorption of carbohydrates, proteins and lipids. Disorders of digestion and absorption – Lactose intolerance,

8. Carbohydrate Metabolism

Introduction, Glycolysis – Aerobic, Anaerobic
Citric acid cycle, Substrate level phosphorylation
Glycogen metabolism – Glycogenesis, Glycogenolysis, Metabolic disorders glycogen,
Gluconeogenesis, Cori cycle
Hormonal regulation of glucose, Glycosuria, Diabetes mellitus,

9. Lipid Metabolism

Introduction to lipid metabolism, Lipolysis, Oxidation of fatty acids β-oxidation of fatty acids,
Lipogenesis - Denovo synthesis of fatty acids, chain elongation, desaturation, triacylglycerol synthesis, fat metabolism in adipose tissues
Ketone body metabolism: Ketone body formation (ketogenesis), utilization (ketolysis), ketosis, Rothera's test
Cholesterol metabolism: synthesis, degradation, cholesterol transport
Hypercholesterolemia and its effects (atherosclerosis and coronary heart diseases) Hypocholesterolemic agents, Common hyperlipoproteinemia, Fatty liver

10.Amino acid and Protein Metabolism

Catabolism of amino acids - Introduction, transamination, deamination, Fate of ammonia, transport of ammonia, Urea cycle
Specialized products formed from amino acids - from glycine, arginine, methionine, phenylalanine and tyrosine.

11. Vitamins

Definition, classification according to solubility,
Individual vitamins - Sources, Coenzyme forms, functions, RDA, digestion, absorption and transport, deficiency and toxicity

12. Mineral Metabolism
Definition, Sources, RDA, Digestion, absorption, transport, excretion, functions, disorder of Individual minerals - Calcium, phosphate, iron, Magnesium, fluoride, selenium, molybdenum, copper. Phosphate, calcium and iron in detail

13. Muscle Contraction
Contractile elements in muscle, briefly on the process of muscle contraction, Energy for muscle contraction.

14. Biochemistry of Connective tissue
Introduction, various connective tissue proteins: Collagen, elastin - Structure and associated disorders. Glycoproteins, Proteoglycans

15 Hormone Action
Definition, classification, Mechanism of hormone action. Receptors, signal transduction, second messengers and cell function

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

18 Water balance
Water distribution in the body, Body water, water turnover, Regulation of water balance: role of ADH and thirst centre

19 Electrolyte balance
Osmolarity. Distribution of electrolytes
Electrolyte balance: Role of aldosterone, rennin angiotensin system and ANF

20 Clinical Biochemistry
Normal levels of blood and urine constituents, Relevance of blood and urine levels of Glucose, Urea, Uric acid, Creatinine, Calcium, Phosphates, pH and Bicarbonate. Liver function tests, Renal function tests

Recommended books

1. MURRAY [ROBERT KK], **Harper's Bio Chemistry** Ed 24, Prentice Hall. 1996
2. RAMAKRISHNA [S], PRASANNA [KG], RAJAN [R], **Text Book of Medical Biochemistry,** Ed 1, orient Langman, Bombay 1980
3. VASUDEVAN [DM] and SREE KUMARI [S], **Text Book of Bio Chemistry for Medical students,** Ed 1, Jaypee Brothers, New Delhi, 1995, p637
4. DAS [Debajyothi], **Biochemistry,** Ed. 7, Academic Publishers Calcutta, 1992, p648
5. PRASAD RM, RM's Physiotherapy Textbook Series, **Text book of Biochemistry for Bachelor of Physiotherapy** First Edition, RM Publications, Mangalore.

MANAV BHARTI UNIVERSITY
BPT Code No.103
PRINCIPLES OF BIO-ELECTRICAL MODALITIES
(1ST SEMESTER)

Section – A

Fundamentals of Electricity & Magnetism

1. DC Currents -Modern concept of electricity: fundamental electric charges (proton and electron), bound and free electrons, free electrons and current, static electric charge, charging of an object potential and capacitance, potential difference and EMF

2. A. C. currents: Sinusoidal wave from, frequency, wavelength, Amplitude and phase of a sine wave, Average & RMS value of a sine wave

3. Quantity of electricity, magnitude of current, conductors and insulators, resistance of conductor and Ohm's law, resistances in series and parallel

4. Capacitors: Electric field around a capacitor, charging and discharging a capacitor, types of capacitor with application of each in Physiotherapy department

5. Rheostat: series and shunt Rheostat with application of each in the Physiotherapy Department

6. Effects of electric Current: Thermal effect, chemical effect (ionization) and magnetic effect. Electric shock, Earth shock, causes and its prevention

7. Magnetism: Magnetic - non-magnetic substances and their properties, properties of magnet, molecular theory, poles of magnet and its properties, magnetic lines of force and their properties, Electromagnetism, magnetic effects of electric current, Electromagnetic induction, Lenz's law, Inductor and Inductance types of inductor, reactance and impedance.

Section – B

1. **Thermionic Valves**: Thermionic emission, Diode and Triode valves and their characteristics, Construction and application of Cathode Ray Oscilloscope

2. Semiconductor Devices: Intrinsic and extrinsic semiconductors, advantages of diode and transistors devices. Basing of Diode and their characteristics, Light Emitting Diodes, integrated circuits

3. Electronic Circuits: Rectifiers & smoothing circuits, Oscillators - Sinusoidal and nonsinusoidal
Types

4. A.C. AND D.C. meters: Functions and applications of Ammeter and volt meters, Ohmmeters, Wheat stone bridge

5. Introduction to Therapeutic Energies – Thermal, Mechanical, Electrical, Electromagnetic and magnetic - Definition, description, physiological effect.

Section – C

6. Medical Instrumentation For Physical Therapy: Brief description of generation, circuit diagrams and testing

7. Low frequency currents, Direct currents, Medium frequency currents

8. Short wave Diathermy-continuous and pulsed

9. Microwave Diathermy

10. Ultrasound

11. Actino-therapy - Infrared, UVR and Lasers

Note: emphasis is given only to generation circuit diagram and testing of the various electrotherapy apparatus.

Suggested Readings:

Froster, A. and
Palastanga, N.
Clayton's Electrotherapy:
Theory and Practice
AITBS, Delhi 1999

2. Jhon, Low and Ann,
Reed
Electrotherapy Explained:
Principles
Butterworth Heine,
Oxford
2000

3.Nelson, R.M. and
Currier, D.P.
Clinical Electrotherapy Appleton and Lange 1987

4 Chemeron, M.H.
Physical Agents in
Rehabilitation
W B Saunders, London 1999

5 Michlovitz, S L
Thermal Agents in
Rehabilitation
F A Davis, Philadelphia 1996

MANAV BHARTI UNIVERSITY
BPT Code No.104
COMMUNICATION
1st SEMESTER

INTERODUCTION: Meaning and important of communication in business, the process ofcommunication, models of communication, types of information-order, advise,suggestion, motivation, persuasion, warning and education.
Channels of communication, their effectiveness, limitations.
Media of communication, barriers of communication, approaches to effective communication, tools of communication, Dictation, sentence, paragraph, punctuation and report writing. Group communication through committees, conference and other formal communication with public at large, interviews, seminar, symposia and conferences.
Specific business communication: essentials of effective business communicationstructure of business correspondence: inquires and replies, orders and theirexecutions, complaints and adjustment, credit and status inquires, agency letters and sales letters.Process for drafting Effective Business Message
Letter writing: Good news, Bad news, Informative news, Persuasive news, Memorandum drafting E-mail writing Report writing – Short & Long Formal ReportsStrategies to improve - reading skills, speaking skills, listening skills
Guidelines to effective public speaking ,Developing job application – Covering letter, Resume,Interviewing: Negotiating the job offer

Recommended Text Books

S.No.	Author	Title	Publisher
1	Lesikar, Petit & Lesikar's	Basic Business	Tata McGraw
2	Flately	Communication	Hill

Reference Books

S.No.	Author	Title	Publisher
1	Poe & Fruchling	Basic Communication	AITBS
2	Taylor	English Conversion Practice	Tata McGraw
3	Diwan & Aggarwal	Business Communication	Excel
4	Baugh, Frayer &Thomas		

MANAV BHARTI UNIVERSITY
(FIRST YEAR)
BPT Code No.201
SECOND SEMESTER

ANATOMY

Section – A

Head and neck:

- Cranium
- Facial Muscles
- Central nervous system – disposition, parts and functions
- Cerebrum
- Cerebellum
- Midbrain & brain stem
- Blood supply & anatomy of strokes
- Spinal cord- anatomy, blood supply, nerve pathways
- Pyramidal, extra pyramidal system
- Thalamus, hypothalamus
- Ventricles of brain, CSF circulation
- Development of nervous system & defects (Brief Description)
- Cranial nerves – special emphasis on V, VII, X, XI, XII (course, distribution and palsies)
- Sympathetic nervous system, its parts and components (Brief Description)
- Parasympathetic nervous system (Brief Description).

Miscellaneous:

a. Embryology in brief covering neuromuscular developmental aspects

b. Endocrine - system – Pituitary, Thyroid, parathyroid (Brief Description)

c. Special senses (Brief Description): Nerve receptors, Eye, Ear, Labyrinth

d. Abdomen and pelvis (Brief descriptions only):

- Abdominal cavity – divisions
- Muscles of abdominal wall, pelvic floor, innervations
- Bony Pelvis
- Digestive system (Liver & pancreas, Alimentary canal)
- Urinary system – Kidney, Ureter, bladder, urethra
- Genital system – male and female

Recommended Text books:

SNELL [Richard S], **Clinical Anatomy for Medical students :** Ed. 5. Little Brown and Company Boston. 1995

B.D CHAURASIA'S HUMAN ANATOMY – REGIONAL AND APPLIED; VOLUME I, VOLUME II AND VOLUME III.

MOORIE [Kieth L], **Clinically Oriented Anatomy.** Ed.3., Williams and Wilkins, Baltimore

DATTA[A.K], **Essentials of human Anatomy: Thorax and Abdomen** Ed 2. Vol. I Current Book International, Culcutta 1994.-1995.

SINGH [Inderbir], **Text book of anatomy with colour atlas: Introduction, Osteology, upper extremity, lower extremity.** Vol I. P Brothers, New Delhi 1996

SINGH [Inderbir], **Text book of anatomy with colour atlas: Thorax and abdomen.** Vol II. JPBrothers, New Delhi 1996.

SINGH [Inderbir],**Human Osteology.** JP Brothers, New Delhi 1990

MANAV BHARTI UNIVERSITY
BPT Code No.202
PHYSIOLOGY
(2ND SEMESTER)

Section – A

1**. General Physiology**
- Structure of cell membrane
- Transport across cell membrane
- Functional morphology of the cell
- Intercellular communication
- Homeostasis

2.Cardiovascular System
- Dynamics of blood & lymph flow
- Anatomical, biophysical consideration of arterial, arteriolar & capillary venous level, Lymphatic circulation
- Origin and spread of cardiac excitation
- Basic idea of Electrocardiogram
- Mechanical events of Cardiac cycle, Cardiac output, its regulation
- Local & systemic regulatory mechanisms of CVS, humeral & neural
- Cerebral, coronary, splanchnic, skin, Placental & Fetal circulation

3.Respiratory System
- Physiological anatomy of lungs, mechanics of respiration
- Pulmonary circulation, Gas exchange in lungs
- Oxygen & Carbon dioxide transport
- Other function of respiratory system
- Neural & chemical control of breathing
- Regulation of respiratory activity, non-chemical influences on respiratory activity

4.Cardio respiratory adjustments in health & disease
- Exercise, high altitude, deep sea diving
- Hypoxia, hypercapnia, hypocapnia, oxygen treatment
- Asthma, emphysema, artificial respiration

Section – B

5.Blood
- W.B.C., R.B.C., Platelets formation & functions
- Plasma, Blood Groups
- Haemostasis, Immunity

6. Renal System

- Glomerular filtration rate, clearance, Tubular function
- Water excretion, concentration of urine-regulation of Na, Cl, K excretion
- Physiology of urinary bladder

7. Nerve - Muscle and Synaptic & Junction Transmission

- Nerve – General Concept
- Nerve cell – structure
- Genesis of resting membrane potential & Action potential
- Their ionic basis, All or None phenomenon
- Ionic basis of nerve conduction
- Classification & types of nerve fibre
- Mixed nerves & compound action potential
- Concept of nerve injury & Wallerian degeneration
- Muscle properties and functions
- Electric & Mechanical responses & their basis
- Concept of isometric & isotonic muscle contraction
- Electrical events in postsynaptic neurons
- Inhibition & facilitation at synapses
- Chemical transmission of synaptic activity
- Principal neurotransmitter system
- Neuromuscular junction, structure & events occurring during excitation

Section – C

8. Digestive System

- Digestion & absorption of nutrients
- Gastrointestinal secretions & their regulation
- Liver & Exocrine Pancreas

9. Functions of Nervous system (descriptive)

- Reflexes, monosynaptic, polysynaptic, withdrawal reflex
- Properties of reflexes
- Sense organ, receptors, electrical & chemical events in receptors
- Ionic basis of excitation
- Sensory pathways for touch, temperature, pain, proprioception, others
- Control of tone & posture: Integration at spinal, brain stem, cerebellar, basal ganglion levels, along with their functions & clinical aspects
- Autonomic nervous system & Hypothalamus

Suggested Readings:

S.No. Author Title Publisher Year Vol.

1.Chatterji, C. C.
Human Physiology Medical Allied 1997 2V

2.Keele, Cyril A
Samson Wright's Applied
Physiology
Oxford University
Press 1998

3.Bijlani, R L
Understanding Medical
Physiology
Oxford University
Press 1998

4.Guyton, A.C. and
Hall, J. E.
Textbook of Medical
Physiology
W.B.Saunders,
Singapore,1998

MANAV BHARTI UNIVERSITY
BPT Code No.203
SOCIOLOGY
(2ND SEMESTER)

A-Introduction
1. 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 professionals.

B-Social Factors in Health and Disease:
1. The meaning of Social Factors. 2. The role of Social factors and illness.

C-Socialization:
1. Meaning and nature of Socialization.
2. Primary, Secondary, and Anticipatory Socialization.
3. Agencies of Socialization.

D. Social Groups:
1. Concepts of social groups.
2. Influence of formal and informal groups on health and sickness.
3. The roll of primary groups and secondary groups in the hospital and rehabilitation settings.

E- Family:
1. The family - Meaning and definition, Functions
2. Changing family Patterns
3. Influence of family on the individual health, family, and nutrition.
4. 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 rural population
2. Urban community – Meaning and features – Health hazards of urban population

G-Culture and Health:
1. Concept of culture
2. Cultures and Behaviour
3. Cultural meaning of sickness
4. Culture and health disorders

H-Social change:
1. Meaning of social changes & Factors of social change.
2. Human adaptation and social change.
3. Social change and stress.
4. Social and deviance.
5. Social change and health Program.
6. The role of social 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. Problems of women in employment.

J-Social security: Social security and social legislation in relation to the Disabled.

K-Social worker: Meaning of social work; the role of a medical social worker.

Suggested Readings:
1.Morgon, Clifford T
Introduction to Psychology Tata Mcg. Hill, Delhi 1999

2 Farnald, L.D. Introduction to Psychology AITBS, Delhi 1999

3 Korchin, Sheldon J.
Modern Clinical Psychology:
Principals
CBS, New Delhi 1999

4.McDavid, J.W. and
Harari, H.
Social psychology:
Individuals, Groups,
Societies
CBS, New Delhi 1999

5.Davison, G.C. and
Neale, J.M.

Abnormal Psychology Jhon Wiley, New York 1997
6 Mehta, Manju
Behavioral Sciences in
Medical Practice
Jaypee, New Delhi 1998

7.Bhusan, Vidya and
Sachdeva, D.R.
Introduction to Sociology
Kitab Mahal, New
Delhi,1999

8 Turner, J. H.
Structure of Sociological
Theory
Jaipur Publication 1995

MANAV BHARTI UNIVERSITY
BPT Code No.204
FUNDAMENTALS OF BIOMECHANICS & EXERCISE THERAPY
(2ND SEMESTER)

Course Objectives:

This course will enable the student to understand the basic principles of biomechanics & exercise therapy, basic principles and application of soft tissue manipulation

Course Contents: All sections carry equal weightage

Section – A

All topics are for a brief description only

1. Mechanics - Definition of mechanics and Biomechanics
2. Force - Definition, diagrammatic representation, classification of forces, concurrent, coplanar and co-linear forces, composition and resolution of forces, angle of pulls of muscle
3. Momentum - principles, and practical application
4. Friction
5. Gravity - Definition, line of gravity, Centre of gravity
6. Equilibrium - Supporting base, types, and equilibrium in static and dynamic state
7. Levers - Definition, function, classification and application of levers in physiotherapy & order of levers with example of lever in human body
8. Pulleys - system of pulleys, types and application
9. Elasticity - Definition, stress, strain, HOOKE'S Law
10. Springs - properties of springs, springs in series and parallel, elastic materials in use

Section – B

11. Aims and scope of various biomechanical modalities – shoulder wheel, shoulder ladder, shoulder pulleys, pronator-supinator instrument, static cycle, rowing machine, ankle exerciser, balancing board, springs, weights
12. Normal Posture - definition & description, static and dynamic, alignments of various joints, centre of gravity, planes & muscular moments, and Analysis of posture
13. Movements - Anatomical definition and description, Movements and exercise as therapeutic modality and their effects, Physiological reaction of exercise
14. Traction - Rationale, Technique, indications & contra-indications

Section – C

15. Normal Gait - definition & description, alignments, centre of gravity during gait

cycle, planes & muscle acting mechanisms, pattern, characteristics Normal gait cycle, time & distance parameters, & determinants of Gait
16. Starting positions - Description and muscle work, Importance of fundamental and derived types, Effects and uses of individual positions
17. Soft tissue manipulation - History, definition, types and their rationale, general effects, local effects of individual manipulation (physiological effects) and uses, contra-indications and techniques of application

Suggested Readings:

S.No. Author Title Publisher Year Vol.

1.Hollis, M. and
Cook, P.F.
Practical Exercise Therapy CBS, New Delhi 1999

2 Gardiner, Dena
Principles of Exercise
Therapy
CBS, New Delhi 1999

3 Lippert, Lynn
Clinical Kinesiology for
Physical Therapy
Jaypee New Delhi 1996

4 Pagliarulo, M.A.
Introduction to Physical
Therapy
Mosby, London 2001

5 Jones,
Human Movement
Explained
Butterworth Heine 2000

PRACTICAL LIST

ANATOMY

Learning of surface landmarks with special emphasis on bones, joints, muscles, and nerves.
The learning of anatomy is by demonstration only through dissected parts, slides, models, charts, etc.
Demonstration of dissected parts (upper extremity, lower extremity, thoracic& abdominal viscera, face and brain)
Demonstration of skeleton articulated and disarticulated.
During the training more emphasis will be given on the study of bones, muscles, joints, nerve
supply of the limbs.

PRACTICAL EXAMINATION

Students will by viva only based upon learning in theory, demonstration of bones, and joints,
muscles, nerves and major viscera.

PHYSIOLOGY

1. Examination of pulse, B.P., respiratory rate, & measure study the effect of posture & exercise.
2. Spirometery to measure various lung capacities & volumes, Respiratory rate, tidal volume, VC, timed VC, IRV, IC, ERV, EC on Spirometery (demonstration only)
3. Estimate of Haemoglobin, T.R.B.C., T.W.B.C. count (demonstration only)
4. Blood indices, Blood grouping, Bleeding & Clotting time (demonstration only)

PRACTICAL EXAMINATION

Students will be assessed by viva based upon learning in theory.
Demonstration of measurements of pulse, BP

FUNDAMENTALS OF BIOMECHANICS & EXERCISE THERAPY

Demonstration of Biomechanical principles
Study of structure, function and application of various Biomechanical modalities - shoulder
wheel, shoulder ladder, shoulder pulleys, pronator-supinator instrument, static cycle, rowing
machine, ankle exerciser, balancing board, springs, weights, etc.
Study of structure, function and application of suspensions,
Demonstration and practice of
- soft tissue manipulative techniques
- normal gait and posture
- starting and derived positions
- spinal mechanical traction

PRACTICAL EXAMINATION

Students will be assessed by viva based upon learning in theory, demonstrations of various
biomechanical modalities, suspensions, and manipulative techniques learned.

PRINCIPLES OF BIOELECTRICAL MODALITIES PRACTICAL

Demonstration of Bioelectrical principles
Demonstration of electrotherapy instruments, principles of their functioning, usage, and safety
implications for human beings

PRACTICAL EXAMINATION

Students will be assessed by viva based upon learning in theory and demonstration of various
components of the equipments.

MANAV BHARTI UNIVERSITY
BPT Code No.301
SECOND YEAR
(THIRD SEMESTER)

PATHOLOGY & MICROBIOLOGY

PATHOLOGY

Section – A

1. Inflammation, injury and repair
2. Oncology: Classification, gross pathological state, cancer pain syndrome (Brief description)
3. Skin: Etio-pathogenesis, gross pathology of commonly occurring skin Diseases, Burns,
Pressure ulcers (Brief description)
4. Cardiovascular system: Etio-pathogenesis, gross pathology of conditions- aging, IHD,
MI, CCF, HT, RHD, Congenital heart disease, Arteriosclerosis, Thrombo-angitis, Vasomotor-Raynaud's, venous thrombosis, Gangrene, Lymph edema
5. Haematology: (Brief description) – Etio-pathogenesis, gross pathology of conditionsanaemia,
polycythaemia, leukaemia, haemolytic disease, and haemophilia
6. Respiratory system: Etio-pathogenesis, gross pathology of conditions - aging, Pneumonia, Pulmonary TB, Bronchiectasis, COPD, Bronchial Asthma, Restrictive Lung disease, Occupational lung disease

Section – B

7. Musculoskeletal system: Etio-pathogenesis, gross pathology of conditions - osteomalacia,
Osteoporosis, Osteomyelitis, Osteoarthritis, rheumatoid arthritis, Gout, spondyloarthropathy, Osteonecrosis, Myofascial pain syndrome. Biological responses to trauma, bone and soft tissue immobilization
8. CNS AND PNS: Etio-pathogenesis, gross pathology of conditions - Aging, Meningitis,
Encephalitis, Parkinson's, Amyotrophic lateral sclerosis, Ataxias, Multiple Sclerosis, stroke, Neuropathies (Carcoat Marie Tooth's disease, Compression and entrapments, diabetic, G.B syndrome), Poliomyelitis and post-polio syndrome, Myasthenia Gravis.

MICROBIOLOGY

Section – C

9. Immunology: Brief description of immune system, immunity, immune responses & immune deficiency Immunology, Hypersensitivity disorders
10. Infectious diseases: Brief description of classification of microorganisms, identification,
Sterilization and disinfections with special reference to principles of antisepsis and prevention of communicable diseases in clinical practice
11. Brief description of identification of infectious diseases; principles of prevention of infectious diseases caused by common pathogens - streptococci, staphylococci, gonococci, Meningococci, salmonella, V. cholerae, E. coli, shigella, tetanus, Diphtheria, M. leprae, M. tuberculosis, Poliomyelitis, Rabies, Malaria, Amoebiasis, Helminthiasis, Scabies, ringworm, candidiasis

Suggested Readings:

1 Chakraborty, P. Textbook of Microbiology NCB, Calcutta 1999

2Ananth Narayan,
Text Book of Microbiology
Orient Longman,
Madras,1986

3 Chatterjee, K. D.
Parasitology: Protozoology
and helminthology
Chatterjee, Calcutta 1965

4 Cotran, Ramzi S
Pathologic Basis of
Disease
W. B. Saunders,
Singapore,1999

5 Vinay Kumar Basic Pathology Harcourt 1997

6 Nagalotimath, S.J. Textbook of Pathology CBS, New Delhi 1998

7 Talib, V. H. Essential Parasitology Mehta, New Delhi 2001

MANAV BHARTI UNIVERSITY
BPT Code No.302
PSYCHOLOGY
(3RD SEMESTER)

Section – A

1. **What is psychology**? Fields of application of psychology, influence of heredity and environment on the individual
2. **Learning** – theories & principles learning
3. **Memory,** Forgetting, theories of memory and forgetting, thinking & methods to improve Memory
4. **Thinking –** process, problem solving, decision making and creative thinking
5. **Motivation** - theories and types of Motivation
6. **Emotions** - theories of Emotions and stress
7. **Attitudes –** theories, attitudes and behaviour, factors in attitude change
8. **Intelligence** - theories of intelligence
9. **Personality**, theories of personality, factors influencing personality
10. Development and growth of behavior in infancy and childhood, adolescence, adulthood and old age
11. **Behavior** - normal and abnormal
12. **Counseling** - Definition, Aims and principles
13. **Psychotherapy** – brief introduction to paradigms in psychopathology and therapy

Section – B

14. Psychological need of children and geriatric patients
15. **Communication** – effective and faulty
16. Emotional and behavioral disorders of childhood and adolescence- (in brief)

a) Disorders of under and over controlled behavior
b) Eating disorders

17. **Mental deficiencya)**

a)Mental retardation,
b) Learning disabilities
c) Autistic behavior

18. Anxiety Disorders -

a) Phobias, panic disorder,
w.e.f. Academic Session 2006-07
b) Generalized Anxiety disorder,
c) Obsessive Compulsive Disorder,
d) Post –traumatic Stress Disorder

19. Somatoform and Dissociate Disorders -

a) Conversion Disorder,
b) Somatization Disorder,
c) Dissociate Amnesia & Dissociate Fugue

20. Personality Disorder
21. Patho-physiological Disorders – stress and health
22. Severe psychological disorders – Mood disorders, psychosis

Suggested Readings:

1 Chakraborty, P. Textbook of Microbiology NCB, Calcutta 1999

2.Ananth Narayan,R.
Text Book of Microbiology
Orient Longman,
Madras,1986

3 Chatterjee, K. D.
Parasitology: Protozoology
and helminthology
Chatterjee, Calcutta 1965

4 Cotran, Ramzi S
Pathologic Basis of
Disease
W. B. Saunders,
Singapore
1999

5 Vinay Kumar Basic Pathology Harcourt 1997

6 Nagalotimath, S.J. Textbook of Pathology CBS, New Delhi 1998

7 Talib, V. H. Essential Parasitology Mehta, New Delhi 2001

MANAV BHARTI UNIVERSITY
BPT Code No.303
PHARMACOLOGY
(3RD SEMESTER)

Section – A

1. General Pharmacology (brief description only):
a) Introduction & general concepts
b) Pharmaco-kinetics (routes of administration, metabolism & elimination)
c) Pharmaco-dynamics (mechanism of drug action, therapeutic & side effects, toxicity)

2. Autonomic Nervous System:
a) Brief outline of Sympathetic-parasympathetic nervous system
b) Therapeutic agents-uses, effects and interaction with physical therapy

3. Central Nervous System:
a) Anaesthetic agents- uses, side effects and interaction with physical therapy
b) Sedatives and hypnotics - uses, side effects and interaction with physical therapy
c) Anti epileptic drugs- uses, side effects and interaction with physical therapy
d) Analgesics - uses, side effects and interaction with physical therapy
e) Anti inflammatory drugs- uses, side effects and interaction with physical therapy
f) Psychotherapeutic agents- uses, side effects and interaction with physical therapy
g) Alcoholism and drug dependence and interaction with physical therapy
h) Therapeutic agents used for movement disorders- uses, side effects and interaction with physical therapy

Section – B

4. Cardio-vascular System:
a) Therapeutic agents (classification, effects on cardio-vascular system, uses & adverse reactions)
b) Drugs used in cardiac failure, hypertension & arrhythmias and interaction with physical therapy
c) Drug therapy in vascular disease & ischaemia and interaction with physical therapy

5. Respiratory system:
Therapeutic agents - uses, side effects and interaction with physical therapy

Section – C

6. Gastrointestinal system:
Therapeutic agents in Peptic ulcer, Diarrhoea- uses, side effects and interaction with physical therapy

7. Endocrinal hormones: Thyroid, adrenal, parathyroid hormones – uses, side effects and interaction with physical therapy

8.Diabetes mellitus:
Drug therapy and its interaction with physical therapy

9. Geriatrics:

Pharmacological challenges in geriatric age group and its effects on physical therapy

Suggested Readings:

1 Tripathi, K.D.
Essential of Medical
Pharmacology
New Delhi, 1985

2.Laurence,
D.R.
Clinical Pharmacology ELBS, London 1975

3 Eddy, Lynne
Physical Therapy
pharmacology
Mosby, London 1992

4 Barbar, F.S.K.
Essential. Of
Pharmacotherapeutics
S. Chand, New Delhi 2000

MANAV BAHRTI UNIVERSITY
BPT Code No.304
EXERCISE THERAPY
(3RD SEMESTER)

Section – A

1. Manual Muscle Testing:

Concept, introduction, significance and limitations.
Grade systems
Techniques of Muscle testing.
Emphasis on skills to grade upper, lower limb, neck and trunk muscles including trick movements.

2. Goniometry

Measurement of various joints range in normal and disease condition.
Different techniques of goniometry.
Limb length measurements

3. Passive movements:

Definition
Relaxed, forced and stretching type.
Indications, contraindications, advantages and Techniques of various passive movements.

4. Active movements:

Free, assisted and resisted
Indication, contraindications, advantages and techniques of various types of active exercises.
Special emphasis on: Shoulder abductors & flexors, Triceps brachii, Hip abductors & flexors, quadriceps femoris, Abdominal and back extensors.
Clinical methods of strengthening of various muscle groups.

Section – B

5. Muscle Stretching:

Stretching – definition, effects and uses of stretching, indications, contra indications, general techniques & group stretching techniques
Special emphasis on stretching of: Pectoral major, biceps brachii, triceps brachii, and long flexors of fingers. Rectus femoris, Ilio-tibial band, gastrocnemius-soleus, hamstrings, hip abductors, ilio-psoas. Sternocleidomstoid

6. Relaxation:

Description of fatigue and spasm & factors.
General causes, signs and symptoms of fatigue
Techniques of Relaxation- local and General with indication
Rationale of relaxation Techniques.

7. Joint Mobility:

Joint range, stiffness, range and limitations

Accessory movements- glides, traction and approximation
Mobilization of peripheral, spinal joints, techniques and grading in detail.

8. Re-education of muscles:
Concept, technique, spatial and temporal summation.
Various reduction techniques and facilitating methods.
Progressive strengthening of various muscle groups in Grade-I-Grade IV.
Muscle strengthening technique – PNF - Principles of PNF, indications, contra indications, techniques, limb patterns

9. Co-ordination:
Balance – static and Dynamic
Discoordination: LMNL & UMNL, cerebellar lesion, loss of kinesthetic sense (Tabesdorsalis, leprosy, syringomyelia)
Reeducation of balance and coordination: PNF and Frenkel's exercises.

Section – C

10. Crutch Walking:
Description of crutch - components, classification
Good crutch, measurements
Crutch use- Preparation, Training, counseling.
Crutch gaits- types, & significance.
Crutch complications- Palsy, dependency etc.

11. Hydrotherapy:

Indication, contraindication, benefits, dangers and precautions
Hydrotherapy regimes of exercises,
Hydrotherapy exercise for all age groups
Types of pools and baths

12. Suspension Therapy:
Principles of suspension & types
Components
Effects and uses & therapeutic application

13. Yogasanas and Pranayama:
Physiology and therapeutic principles of yoga,
Yogasana for physical culture, relaxation and medication.
Application of yogasana in physical fitness, flexibility.
Therapeutic application of yoga. Yoga a holistic approach

Suggested Readings:

1.Hollis, M. and
Cook, P.F.
Practical Exercise Therapy Blackwell, Oxford 1999

2 Gardiner, Dena M. Principles of Exercise Therapy CBS, New Delhi 1999

3 Lippert, Lynn

Clinical Kinesiology for
Physical Therapy
Jaypee, New Delhi 1996

4 Paliarulo, M. A.
Introduction to Physical
Therapy
Mosby, London 2001

5 Jones and Barker, Human Movement Explained Butter worth- Heine 2000

6 Thomson, Ann Tidy's Physiotherapy Varghese, Mumbai 1991

7.Hislop, H.J. and
Montgomery, J.
Daniels and Worthingham's
Muscle Testing: Techniques of
Manual Examination
W.B.Saunders,
Philadelphia,2002

8 Norkin Measurement of Joint Motion

9.Kisner, C. and
Kolby, L.A.
Therapeutic Exercise
Foundation and Technique
Jaypee, New Delhi 1996

MANAV BHARTI UNIVERSITY
SECOND YEAR
BPT Code No.401
ELECTROTHERAPY
(4TH SEMESTER)

Section – A

A. LOW FREQUENCY CURRENTS:

Nerve Muscle Physiology: brief outline

Faradic current:

Indications, contraindications, Techniques, parameters, Group muscle stimulation.
Faradic footbath, Faradism under pressure and muscle re-education.
Dosimetry

Galvanic current:

Indications, contraindications, precautions and therapeutic effects of stimulation.
Techniques, parameters, Dosimetry

Electro-Diagnosis:

S. D. Curve, Reaction of degeneration, Chronaxie & Rheobase
Outline of EMG & Nerve conduction velocity

Iontophoresis:

Definition and principles & factors
Indications, effects, techniques, contraindications, precautions and Potential harmful effects.

TENS therapy:

Principle of therapy, Parameters and therapeutic uses.
Theories of pain and pain control.
Indications and contra-indications, Dosimetry

B. MEDIUM FREQUENCY CURRENTS:

Definitions, effects, indications, techniques of application, contraindications

Interferential therapy:

Physiological, therapeutic effects & dangers, Indications & contra indications
Technique and method of applications, Dosimetry.

Section – B

C. THERMAL THERAPY MODALITIES:

1. Infrared Therapy:

Therapeutic effects and uses, Techniques of application.
Indications, contraindications precautions and Potential harmful effects.

2. Heating Modalities:

Therapeutic effects and uses, Techniques and applications
Indications, contraindications, precautions and Potential harmful effects of various

heat modalities:
Paraffin wax bath therapy, Hydro collator packs, Whirlpool and moist heat Heating pads, Hot air chambers.

3. Cold-therapy:
Indications, contraindications and therapeutic effects.
Technique, precautions and Potential harmful effects of treatment, Dosimetry

D. HIGH FREQUENCY CURRENTS:

Short wave Diathermy: Continuous & Pulsed
Indications, contraindications and therapeutic effects.
Methods of application-capacitor and induction electrode, precautions and Potential harmful effects of treatment, Dosimetry.
Microwave Diathermy:
Characteristics and therapeutic effects.
Application techniques, indications, contraindications, precautions and potential harmful effects, Dosimetry.

Section – C

E. ULTRASONIC THERAPY:
Physiological and therapeutic effects & potential harmful effects.
Indications, contraindications, methods of application and precautions, Dosimetry

F. ACTINOTHERAPY:
Laser:
Introduction, effects and potential harmful effects.
Indication, contraindications, precautions, method of application, dosimetry
Ultraviolet therapy:
Physiological and therapeutic effects- photosensitization
Indications and contraindications and Potential harmful effects.
Methods of application, Sensitizes, Filters, Dosage, wavelength, penetration, tolerance, Treatment / Application condition wise
Comparison between UVR & IR Therapy

G. Advanced electrotherapy:
Computerization of modalities
Programming of parameter.
Selection and combination of parameters.
Combined therapy-U.S.+TENS-Principles, uses, indications etc.
Principles of Bio-feed back, indications & uses.

H. Traction instruments:
Rationale, technique, indications, contraindications, precautions of electric traction Equipments

Suggested Readings:
1.Froster, A. and
Palastanga, N.
Clayton's Electrotherapy:
Theory and Practice
AITBS, Delhi 1999

2.Jhon, Low and Ann,
Reed
Electrotherapy Explained:

Principles
Butterworth Heine,
Oxford,2000
3.Nelson, R.M. and
Currier, D.P.
Clinical Electrotherapy Appleton and Lange 1987

4 Chemeron, M.H.
Physical Agents in
Rehabilitation
W B Saunders,
London,1999

5 Michlovitz, S L
Thermal Agents in
Rehabilitation
F A Davis,
Philadelphia

MANAV BHARTI UNIVERSITY
BPT Code No.402
MEDICINE & PAEDIATRICS
(4TH SEMESTER)

MEDICINE

Section – A

1. **Introduction:** Brief outline of subject of medicine, a medical patient, common signs & symptoms of disease
2. Infectious Diseases: Brief description of concept of infection, types, classification & common clinical manifestation of infection and general principle of management (No specific infections)
3. Nutritional & Metabolic Diseases: Brief description of following diseases along with outline of management: Diabetes Mellitus, Vitamins (A, B, C, D & K) and Minerals (iron, calcium phosphorus, iodine) deficiencies, and Obesity
4. Brief description of liver diseases along with outline of management: Hepatitis, & Jaundice
5. Diseases of the blood: Brief description of manifestations along with outline of management of common blood diseases - Anaemia, Leukaemia, Coagulopathy
6. Diseases of connective tissues: Brief description of manifestations along with outline of management of - SLE, polymyositis
7. Diseases of skin: Brief description of manifestations along with outline of management of common skin diseases - scabies, pediculosis, taeniasis, impetigo & psoriasis
8. Geriatrics- physiology of ageing, manifestations of diseases in old people and general principles of management. Implications of aging in physical therapy. lung disease, Pleurisy & Pulmonary embolism

Section – B

9. Cardio-vascular System: Manifestations of heart & vascular disease & general principle of diagnosis. Brief description of following diseases along with outline of management: Cardiac failure, Ischaemic heart disease, hypertension, atherosclerosis, Deep vein thrombosis
10. Respiratory System: Manifestations of respiratory disease & general principle of diagnosis. Brief description of following diseases along with outline of management: Obstructive Pulmonary diseases (Bronchial Asthma, COPD), pulmonary infections (Pneumonia, Bronchitis, Lung abscess, Tuberculosis), Respiratory failure, occupational

PAEDIATRICS

Section – C

1. Normal Growth and development of child – motor, mental, language and social
2. Pathological presentations of growth and development disorders
3. Common infectious diseases in children: Brief description of following infectious diseases along with outline of management: Tetanus, diphtheria, Mycobacterial, measles, chicken pox, gastroenteritis, HIV, and Malaria
4. Immunization programmes – WHO schedule, different vaccinations, rationale;

special consideration to various disease eradication programmes like Pulse-Polio
5. Child and nutrition - Nutritional requirements, malnutrition syndrome, Vitamins (A, B, C, D & K) and Minerals (iron, calcium phosphorus, iodine) deficiencies in children and management in brief
6. Clinical presentation, management & prevention of the following: - Cerebral palsy, Poliomyelitis, Muscular dystrophy
7. Childhood rheumatism-types, clinical presentation, & management in brief
8. Acute CNS infections: clinical presentation, complications and management of bacterial and tubercular infections in brief
9. Clinical presentation, management & prevention of the following respiratory conditions: URI, LRI, bronchiolitis, asthma, TB (in brief)
10. Clinical presentation, management & prevention of the following cardiac conditions: Rheumatic heart disease, SABE, Congenital heart disease - ASD, VSD, PDA (in brief)

Suggested Readings:

1.Chemberlin, E.N.
and Ogilvie, C.
Symptoms and signs in
Clinical Medicine
Jhon Wright,1974

2 Swash, Michael
Hutchison's Clinical
Methods
W B Saunders, London 2000

3 Ghai, O. P. Essential Pediatrics Interprint, New Delhi 1987

4 Haslett, C.
Davidson's Principal and
Practice of Medicine
Churchill Livingstone,
London,1999

5 Golwalla, Aspi F. Medicine For Student NBD, Mumbai 2003

6 Behrman, R.
Nelson's Text Book of
Pediatrics
W B Saunders, London 2001 2V

7 Kasper, D.L
Harrison 's Principles of
Internal Medicine
Mc-Graw Hill, New York 2005 2V

MANAV BHARTI UNIVERSITY
BPT Code No.403
GENERAL SURGERY
(4TH SEMESTER)

Section – A

1) Introduction to Surgery, surgical patient, principles of surgical examination (Brief description)
2) Anesthesia: Brief description of events of General Anesthesia, potential complications & outline of management
3) Common types of wounds, scars, ulcers, boils – clinical feature and out line of Treatment
4) Burns: causes, classification, complications, conservative management of patients. Management of burns & wound scars
5) Brief outline of nutritional support, pain relief of a surgical patient
6) Abdominal wall: brief surgical anatomy
a. Brief description of various types of abdominal incisions, external opening of abdominal viscera (colostomy) resultant potential complications and management
b. Brief description of causes, clinical presentation and management of various types of hernias
7) General principles of plastic surgery and postoperative management

Section – B

8) Cranium:
a. Head injuries – classification, clinical features, complications & management
b. Intra-cranial disorders – clinical features, complications & management of brain abscess, space occupying lesion, hydrocephalus, vascular malformation (brief)
9) Nerve injuries – causes, clinical features of Cranial (V, VII) & peripheral nerve injuries (major nerves), complications & management
10) Vertebral column injuries – classification, clinical features, complications & Management

Section – C

11) Vascular Disorders: clinical features, complication & management of Arterial occlusion, dilatations, arteritis, small vessel abnormalities
a. Gangrene – classification, brief clinical features & management
b. Amputations – causes & types
c. Superficial & deep vein thrombosis – pathogenesis, prevention & management. Lymph edema – brief outline of causes, clinical features & management
12) Thorax:
a. Chest injuries – classification, causes, clinical features, complications & management Pulmonary resection – causes, outline of surgical management, pneumothorax, haemo - pneumothorax
b. Heart: - brief description of various surgical heart diseases with respect to clinical presentation, complications and management - valvular heart disease, congenital heart disease –e.g., ASD, VSD, PDA, Ischaemic heart disease. Outline of postoperative complications in cardiac surgery and their management

Suggested Readings:

1.Russell,
R.C.G.
Short practice In Surgery Arnold, London 2000

2 Gupta, R. L. Text Book of Surgery Jaypee, New Delhi 1996

SECOND YEAR

EXERCISE THERAPY PRACTICAL

PRACTICAL

Demonstration and learning of active & passive movements of Limbs and spine
Demonstration and practice of Manual Muscle testing, Goniometry
Demonstration and practice of muscle stretching techniques
Demonstration and practice of muscle strengthening techniques
Demonstration and practice of muscle reeducation techniques
Demonstration and practice of coordination exercises (Frankel's)
Demonstration and practice of relaxation techniques
Demonstration and practice of mobilization of peripheral joints
Demonstration and practice of crutch gaits
Demonstration and practice of mechanical spinal traction
Demonstration and practice of suspension techniques

PRACTICAL EXAMINATION

Students will be assessed by viva & practical demonstrations based upon learning in theory & practical classes.

ELECTROTHERAPY PRACTICAL

PRACTICAL

Demonstration of Electrical Modalities functioning & Usage.
Demonstration and practice of various motor point stimulations.
Demonstration and practice of therapeutic application of different low frequency currents.
Demonstration and practice of Reaction of degeneration, SD curves plotting.
Demonstration and practice of therapeutic application of the following modalities:
Short-wave diathermy, Ultrasound, Infra red, Wax bath, Hydro collator, Electric muscle stimulator, Interferential currents, TENS, Ultraviolet, Microwave, Lasers, and Electrical Traction.
Note: All the demonstrations are done on normal persons.

PRACTICAL EXAMINATION

Students will be assessed by viva & practical demonstrations based upon learning in Theory

MANAV BHARTI UNIVERSITY
BPT Code No.501
THIRD YEAR
NEUROLOGY INCLUDING PSYCHIATRY
(5TH SEMESTER)

Section – A (Neurology)

1. Nervous system: Disorders of Neurological functions in the light of Anatomy and Physiology (Brief description only) - Cerebrum, Cerebellum, Spinal Cord, Major Nerve Tracts, Motor System, Sensory System, Autonomic System, Reflexes, Communication & CSF
2. Clinical examination of a neurological patient
3. General manifestations of nervous system disease & principles of diagnosis & Management
4. Brief Description of Headache, migraine, raised intra-cranial pressure
5. Cranial Nerves and special senses with major emphasis on V, VII, X, XI, & XII
6. Inflammatory conditions (brief description) – meningitis (bacterial, tubercular), viral encephalitis, syphilis, rabies
7. Disorders of cerebral circulation - ischaemia, haemorrhages (CVA), HT encephalopathy
8. Demyelinating diseases (brief description) - acute disseminated encephalomyelitis, multiple sclerosis
9. Extra pyramidal syndromes - Parkinson's disease, Chorea, Athetosis, Dystonia, Hemiballismus, Spasmodic Torticollis
10. Convulsive disorders (brief description) - epilepsy (GM, PM, Psychomotor), tetany
11. Developmental and degenerative syndromes – cerebral palsy, kernicterus, hereditary ataxias, motor neuron disease, Peroneal muscular atrophy

Section – B

12. Disorders of Spinal cord and Cauda Equina- spinal cord injury, paraplegia, quadriplegia, spina-bifida, transverse myelitis, Neurogenic bladder and bowel
13. Metabolic and intoxication disorders (brief description) - Alcoholism, Drug addiction, heavy metals poisoning (lead, mercury, copper), Organo-phosphorous poisoning, electric shock, tetanus, botulism
14. Peripheral nerve disorders – traumatic/ compression or entrapment neuropathy, polyneuritis, GB syndrome, diabetic polyneuropathy and spinal radiculopathies. Special emphasis on brachial and lumbo-sacral plexuses and major nerves – radial, ulnar, median, femoral, and sciatic nerve
15. Muscle disorders – Progressive muscular dystrophy, polymyositis, myasthenia gravis, floppy infant syndrome
16. Autonomic nervous system (brief description)– clinical features of autonomic disorders, autonomic dysreflexia, autonomic nervous system and pain

Section – C (Psychiatry)

(
A) Principles of psychiatric examination
B) Modalities of psychiatric treatment
C) Psychiatric illness and physical therapy link
D) Brief description of Etio-pathogenesis, manifestations, and management of psychiatric illnesses –
i. Anxiety neurosis

ii. Depression
iii. Obsessive compulsive neurosis
iv. Psychosis
v. Maniac-depressive psychosis
vi. Drug induced psychosis
vii. Post-traumatic stress disorder
viii. Psychosomatic reactions: Stress and Health, theories of Stress – Illness Link
E) Brief description of Etio-pathogenesis, manifestations, and management of psychiatric illnessesi.

Organic brain syndrome
ii. Dementia
iii. Drug dependence and alcoholism
iv. Somatoform and Dissociate Disorders – conversion reactions, Somatization, Dissociate Amnesia, and Dissociate Fugue
v. Multiple Personality & Depersonalization disorder
F) Child psychiatry: Brief descriptions of manifestations, and management of childhood disorders - attention deficit syndrome, and behavioral disorders
G) Geriatric Psychiatry
H) Mental deficiency- (descriptive)
a. Mental retardation,
b. Learning disabilities
c. Autistic behavior

Suggested Readings:

1 Bannister, R.
Brain and Bannister Clinical
Neurology
Oxford university
press, oxford
2002

2 Chamberlain, E.N.
Symptoms and Signs in
Clinical Medicine
John Wright, Bristol 1974

3 Friedman, H.H.
Problem-Oriented Medical
Diagnosis
Little Browne, Boston 1979 3V

4 Swash, Michael Hutchison's Clinical Method W B Saunders, London 2000

5 Rees, Lingford
New Short Text Book Of
psychiatry
Arnold, New Delhi 1988

6 Walton, John
Brain's Disease of the
Nervous System
Oxford university
press, Delhi
1998

MANAV BHARTI UNIVERSITY
BPT Code No.502
OBSTETRICS AND GYNECOLOGY
(5TH SEMESTER)

Section A

1. Brief Anatomy and physiology of female reproductive system

2. Basic principles of clinical examination, investigation, diagnosis, prognosis of female reproductive system disorders Menstruation and its disorders

3. Physiological changes during pregnancy

4. Labour, stages of labour & delivery

5. Musculo-skeletal problems in an obstetric patient, management

6. Prenatal and post-natal care

7. Pelvic inflammatory diseases

8. Prolapse uterus, urinary incontinence, causes & management

9. Abortion and birth control

10. Tumor of the reproductive systems, management

11. Surgical consideration in obstetrics and gynecology

Suggested Readings:

1 Howkins, John
Shaw's Textbook of
Gynecology
Orient-Longman, Bangalore 1971

2 Datta, D.C. Textbook of Obstetrics NCBA, Calcutta 2000

3 Mudaliar, A.L. Clinical Obstetrics
Orient-Long main,
Bangalore
1972
Percival,
Robert

MANAV BAHRTI UNIVERSITY
BPT Code No.503
PHYSIOTHERAPY IN NEUROLOGY
(5TH SEMESTER)

Section – A

A) Review of basic Neuro-Anatomy and Physiology
B) Physiotherapy evaluation of a neurological patient, electro diagnostic procedures, interpretations and prognosis in different neurological conditions
C) Spinal cord injury: review of anatomy and physiology
Physiotherapy Assessment of Spinal cord injury
Principles of Physiotherapy at various stages of Spinal cord injury
Rehabilitation goals and ADL training

Section – B

D) Assessment and principles of therapeutic management of following neurological conditions:
Stroke, meningitis, encephalitis, Parkinson's disease, Cerebral palsy, Ataxia, Brain tumors
Motor neuron disease, Disseminated sclerosis, transverse myelitis, tumors, polio, syringomyelia, spina bifida,
Neuropathies, neuromuscular junction disorders and myopathies

E) Developmental physiotherapy programs, reeducation and retraining techniques in neurological conditions, approaches like: Bobath's, Rood's, PNF, Vojta techniques, biofeedback, Brunnstorm, Motor Relearning programming

Section – C

F) Peripheral nerve injuries, surgical resection & repair:
Classification & types
Functional assessment, investigation, diagnosis & prognosis
Physiotherapeutic management

G) Traumatic brain injury:
Types and Mechanisms of head injury
Clinical features, potential complications
Physiotherapy principles of immediate and postoperative therapeutic Management

H) Neurosurgery: Post surgical Physical therapy in neurosurgical procedures – craniotomy, shunts, SOL resection, surgical treatment of spasticity, cervical cord decompression

Suggested Readings:

1.Hislop, H.J. and Montgomery, J. Daniels and Worthingham's Muscle Testing: Techniques of Manual Examination W.B.Saunders, Philadelphia 2002

2 Bobath, Berta Adult Hemiplegia: Evaluation and treatment Butterworth, Oxford 1990

3 Shepherd, R.B. Physiotherapy in Paediatrics Butterworth-Heinemann, Oxford 1995

4 Downie, P.A. Cash's Textbook of Neurology for Physiotherapy Jaypee, New Deli 1993

5.Swaner, K.A. and LaVigne, J.M. Brunnstom's Movement Therapy in Hemi Lippincott, New York 1992

MANAV BHARTI UNIVERSITY
BPT Code No.601
ORTHOPAEDICS
(6TH SEMESTER)

Section – A

1**. Introduction to Orthopaedics**: An Orthopaedic patient, history taking, clinical features, clinical examination, and investigation
2. **Fracture healing** (Normal & pathological)
Calcium-phosphorus metabolism - normal and pathological states
3. **Congenital malformations:**
Brief descriptions of following congenital conditions along with the outline of treatment:
Congenital Hip Displasia, Congenital Talipes Equinovarus / Calcaniovalgus, Arthrogryposis Multiplex Congenita, Congenital Torticolis, Acromelia, phocomelia, Amelia, Spina Bifida: all types, clinical presentation, sequel & management
4. **Development diseases** of skeleton: (Brief description only)
Osteogenesis imperfecta, heterotopic ossification, Osteochondritis, Perthes' disease
5. **Neuromuscular diseases:**
Volkmann's Ischaemic contracture, obstetrical paralysis, and peroneal muscular atrophy
Poliomyelitis – orthopaedic aspects and treatment of deformities
6. **Spinal deformities:** clinical features, diagnosis & Conservative management of Scoliosis, Kyphosis, and traumatic deformities
7. **Infections** of Musculoskeletal system with conservative management (in brief):
a. Bacterial infections
b. Tubercular infections
c. Leprosy, Pott's paraplegia
8. Neuro-vascular Diseases (Brief Description): orthopaedic aspects and treatment of - Nerve injuries (major nerves), Plexus injuries

Section – B

9. Arthritis & Rheumatic Diseases: Clinical features, evaluation & conservative management of various categories of arthritis
i. Rheumatoid arthritis, Juvenile Ch. Arthritis, Reiter's disease
ii. Polymyalgia rheumatica,
iii. Gout,
iv. Osteoarthritis,
v. Ankylosing spondylitis,
vi. Neuropathic- joints, haemophilic arthropathy,
vii. Avascular necrosis.

10. Bony & Soft tissue injuries: Injury & repair, Clinical presentation, evaluation & general principles of rehabilitation management (Brief Description)
11**. Upper Limbs**: Clinical presentation, evaluation & conservative management of rotator cuff injuries, adhesive capsulitis, bursitis, biceps tendonitis, shoulder dislocation, snapping & winged scapula, tennis and golfer elbow, olecranon bursitis, soft tissue injuries, sprains and strains, Arthritic conditions, tenosynovitis, Carpal tunnel syndrome, deformities Dupnytren's contracture, VIC, reflex sympathetic dystrophy, common fractures and dislocations

Section – C

12. Lower Limb: Clinical presentation, evaluation and conservative management of Arthritic conditions, soft tissue injuries, sprains and strains, achillis tendonitis, bursitis, plantar fascitis, deformities, reflex sympathetic dystrophy, neuropathic Joints, common fractures and dislocations

13. Spine: clinical presentation, evaluation and conservative management of – disc prolapse, cord compression, spondylosis, Ankylosing spondylosis, Spondylyolisthesis and Spinal Fractures

14. Amputations - Justification, outline of surgical approaches, incisions, procedures, indications, contraindications, complications & management.

Suggested Readings:

1.Joshi, J. and
Kotwal, P.
Essential Of Orthopedics
and Applied Physiotherapy
Elsevier, New Delhi 2004

2 Terke, Samual L.
Orthopedics: principles
and their application
Lippencott, New York 2000 2V

3 Magee, David J.
Orthopedic and Physical
Assessment
Saunders, Philadelphia 2002

4 Maheshwari, J Essential Orthopedics

5 Solomon, Louis
Apley's Systems of
Orthopedics and Fracture
Arnold, London 2001

6.McRae, R. and
Esser, Max
Practical Fracture
Treatment
Churchill Living stone,
London

MANAV BHARTI UNIVERSITY
BPT Code No.602
APPLIED BIO-MECHANICS & KINESIOLOGY
(6TH SEMESTER)

Section – A

A. Joint structure and function
1. Types of joints
2. Joint functions

B. Kinesiology:
1. Origin of human movement and its significances
2. Analysis of movement – kinetics and kinematics
3. Body links and motion parts

C. General effects of injury and disease on joint functioning
Brief surgical anatomy (structural components, and alignment)
Joint range of motion, axis and plane of motion
Joint movements, mobility and stability, restrictions and limitations, end feels
Abnormal deviations in joints in disease and injury
Of the following joint complexes:
_ Shoulder joint complex
_ Elbow joint complex

Section – B

D. General effects of injury and disease on joint functioning
Brief surgical anatomy (structural components, and alignment)
Joint range of motion, axis and plane of motion
Joint movements, mobility and stability, restrictions and limitations, end feels
Abnormal deviations in joints in disease and injury
Weight distribution (lower limb joints)
Of the following joint complexes:
_ Wrist and hand complex
_ Hip joint complex
_ Knee joint complex:
_ Ankle-foot complex:
_ Vertebral column

Section – C

C. Abnormal Posture:
1. Definition and description.
2. Analysis of postures (anterior, lateral and posterior), alignment of joints in different postural deviations.
3. Abnormal postures – biomechanical analysis and effects.
4. Principles of Postural correction

D. Pathological Gait:
1. Phases of gait – biomechanical analysis.
2. Time and distance parameters – biomechanical significance.
3. Joint motion – chains of movement

4. Effects of pain, deformity, weakness in pathological gaits
5. Management of pathological gaits.

Suggested Readings:

1.Norkin, C.C. and
Levangie P.K.
Joint Structure and
Function: Comprehensive
Ara
Jaypee, New
Delhi,1998

2 Magee, David J.
Orthopedic and Physical
Assessment
Saunders,
Philadelphia
2002

3 Donatelli, R.A.
Biomechanics of the Foot
and Ankle
Davis,
Philadelphia,1996

4.Mow, Van C. and
Hayes, W.C.
Basic Orthopedic
Biomechanics
Lippincott, New
York,1997

5.Norkin, C.C. and
White, J.
Measurement of Joint Motion
Jaypee, New
Delhi,1995

MANAV BHARTI UNIVERSITY
BPT Code No.603
PHYSIOTHERAPY IN ORTHOPAEDIC
(6TH SEMESTER)

Section – A

1. Physiotherapy evaluation of an orthopaedic patient
2. Manipulation therapy - general assessment, indications, contra indications, brief introduction to schools of manual therapy (Maitland, Kaltenborne, Cyriax, Mulligan, Mackenzie)
3. Spinal stabilization, scoliosis correction
4**. Assessment, management and treatment goals of:**
a. Osteoarthritis,
b. Spondylosis, spondylolisthesis
c. Proplapse intervertebral disc, Lumbar cord decompression
d. Adhesive capsulitis, rotator cuff lesions of shoulder
e. Tuberculosis of the spine, bone and major joints
f. Avascular bony necrosis at hip joint

Section – B

5**. Assessment, management and treatment goals of:**
a. Rheumatoid arthritis
b. Ankylosing Spondylitis
c. Deformities: - Torticollis, thoracic outlet syndrome, CTEV, pes cavus, pes planus, Scoliosis, kyphosis, lordosis, coxa vara, genu valgum-varum-recurvatum
6. General principles of physiotherapy in fracture management including complications at different stages
7. General principles of physiotherapy in dislocations management including complications
8. Post fracture - assessment and PT management of: various fractures of upper limb, lower limb, vertebral column

Section – C

9. Assessment and therapeutic management of: Soft tissue injuries – Sprains, strains, ligament and cartilage tear/rupture
10. Orthopaedic surgery: General principles of assessment, physiotherapy management in surgical conditions like – osteotomy, joint replacements, ORIF, arthodesis, Illizarov's technique
11. Tendon transfers, soft tissue releases & soft tissue repair
12. Surgeries in C.P. & Polio
13. Amputation – pre & postoperative evaluation & principles of management
Pre & post prosthetic assessment & principles of management

Suggested Readings:

1 Smith, Laura K
Brunnstrom's Clinical
Kinesiology
Jaypee, New Delhi 1996

2 Buckley, John Exercise on Prescription
Butterworth-Heinemann,
Boston,1997

3 Downie, Patricia A.
Cash's Textbook of
Orthopedics and
Rheumatology
Jaypee, New Delhi 1993

4.Donatelli, R. A. and
Wooden, M.J.
Orthopedic Physical
Therapy
Churchill- Livingstone, New
York,2001

5 Tidswell, Marian
Orthopedic
Physiotherapy
Mosby, London 2001

6 Jones and Barker,
Human Movement
Explained
Butter worth- Heine 2000

THIRD YEAR
PT – CLINICALS

Course Objective: Approach to patient, collection of demographic data, art of history taking and bedside / OPD manners in relation to patient, general assessment of patient from therapeutic point of view, reaching to provisional diagnosis, and testing of therapeutic skill learned
The student will be posted in the department of Physiotherapy & he/she will learn the assessment, diagnosis, & physiotherapy treatment of patients visiting the department.

EXAMINATION

There will be no university examination. The students will be awarded marks on the basis of his/her attendance & performance during clinical postings in the department of Physiotherapy etc.

PHYSIOTHERAPEUTIC IN NEUROLOGY

Practical demonstration of basic principles of physiotherapy assessment, functional assessment and application of physical therapy in treatment of neurological conditions

PRACTICAL EXAMINATION

Students will be assessed by viva & practical demonstration of application of Physical therapy based upon learning in theory.

PHYSIOTHERAPEUTIC IN ORTHOPAEDIC

Practical demonstration of basic principles of application of physiotherapy assessment, functional assessment and application of physical therapy treatment of orthopaedic conditions

PRACTICAL EXAMINATION
Students will be assessed by viva & practical demonstration of application of Physical therapy based upon learning in theory.

MANAV BAHRTI UNIVERSITY
BPT Code No.701
FOURTH YEAR
COMMUNITY REHABILITATION & DISABILITY PREVENTION
(7TH SEMESTER)

REHABILITATION

Section – A

1. Introduction of Rehabilitation & History
2. Epidemiology of disability (Impairment, disability, phases of disability process, etc.).
3. Principles of Rehabilitation & concept of team approach with rolls of each individual participant.
4. Organization of Rehabilitation unit.
5. Disability prevention evaluation & principles of Rehabilitation Management.
6. Role of Physiotherapy in Rehabilitation (Preventive, treatment & restoration)

Section – B

7. Brief outline of Communication disorder & its implications on Rehabilitation process.
8. Brief outline of psychosocial & vocational aspects of Rehabilitation.
9. Introduction to Occupational therapy.
10. Activities of daily living, functional assessment & training for functional independence.
11. Brief outline of basic community medicine with special reference to community based Rehabilitation, infrastructure and role of CBR
12. Assessment of disability in rural & urban setups. Health care delivery system & preventive measures with specific reference to disabling conditions. Community education programme.
13. Application of Physiotherapy skills at community level with special reference to the need at rural level.

DISABILITY PREVENTION

Section – C

1. Introduction to surgical anatomy and various pathological deviations with respect to brace fitting (brief outline only).

2. Rationale of prescribing Prosthetic and Orthotic devices.

3. Types of Prosthetic and Orthotic devices: Spinal, Lower limb, and Upper limb.

4. Checkout, usage advice, precautions, and follow-up.

4. Walking aids and wheel chairs: prescription, usage advice, and follow-up.

Suggested Readings:

1 Park, J.E.
Text Book of Preventive and
Social Medicine
Banarsidas, Jabalpur 1987

2 Pedretti, L.W.
Occupational Therapy: Practice
Skill,Harcourt-Brace, New
York,1990

3 Sunder, S. Rehabilitation Medicine Jaypee, New Delhi 1999

4 Bates, Barbara
Physical Examination and History
Taking
J.B.Lippincott,
Philedelphia,1995

5 Mackee, Pat Orthotics in Rehabilitation Jaypee, New Delhi 1998

6 W.H.O.
Disability Prevention and
rehabilitation In primary Health
Care: Guide for District Health
and Rehabilitation Managers
W.H.O 1995

7.Lusardi, M.M. and
Nielsen, C.C.
Orthotics and Prosthetics In
Rehabilitation
Butter worth- Heine,
Woburn,2000

MANAV BHARTI UNIVERSITY
BPT Code No.702
PHYSIOTHERAPY IN SPORTS
(7TH SEMESTER)

Section – A

A) Pre-exercise evaluation
B) Diet and nutrition
C**) Measurement of fitness components and sports skills**
Measurement of muscular strength
Measurement of muscular endurance
Measurement of flexibility
Determination exercise endurance
D) Physiological effects of exercise on body systems
Muscular system
Endocrine system
Cardio-respiratory system
Nervous system

Section – B

E) Sports injuries
Spine – PIVD, Kissing spine, cervical whiplash injuries, facet joint syndrome, SI joint dysfunction
Hip – muscle strain, piriformis syndrome, ITB syndrome, osteitis pubis
Knee – menisci, cruciate, collateral, osteochondritis, chondromalacia patellae, biceps femoris tendonitis, swimmers knee, patello-femoral pain syndrome
Leg & ankle – shin splint, achillis tendonitis & rupture, TA bursitis, ankle sprain, plantar fascitis, turf toe syndrome
Head & face – maxillo-facial injuries, helmet compression syndrome

Section – C

F) Sports injuries
Shoulder – instability, rotator cuff injury, biceps tendonitis and rupture, pectoralis major rupture, scapular dyskinesis and acromio-clavicular joint injuries
Elbow – tennis elbow, golfer's elbow
Wrist and hand – carpal tunnel syndrome, gamekeeper's thumb
G) Principles of injury prevention
H) Principles of training & Rehabilitation in sports injuries
I) Sports in Special age groups:
Female athletic triad
Younger athlete- Musculo-skeletal problems, management, children with chronic illness and nutrition
Older athlete- Physiological changes with aging, benefits, risks of exercise in elderly, exercise prescription guidelines for elderly

Suggested Readings:

1 Maheshwari, J Essential Orthopedics

2 Solomon, Louis
Apley's Systems of
Orthopedics and Fracture
Arnold, London 2001

3.Kolt, G.S and
Mackler S.
Physical Therapies in
Sports and Exercise
Livingston, London 2003

4.Starkey, and
Ryan,Evaluation of Orthopedic
and Athletic
F A Davis, Philedelphia 2002

5.Mclatchie, and
Lennox
Soft Tissues: Trauma and
sports Injury
Butterworth Heine,
Oxford,1993

6 Norris, C.M.
Sports Injuries: Diagnosis
and Management
Butterworth Heine,
Oxford
2001

7 Garrick, J.G.
Sports Injuries: Diagnosis
and Management
W.B.Saunders,
Philadelphia
1999

8 Guten, Gray N. Running Injuries W.B.Saunders, London 1997

9 James E.Z.
Athletic Injuries and
Rehabilitation

MANAV BAHRTI UNIVERSITY
BPT Code No.801
PHYSIOTHERAPY IN GENERAL & CARDIOTHORACIC
(8TH SEMESTER)

SECTION-A (GENERAL)

A) Principle of post surgical physical therapy management under following:
1 Chest physiotherapy
2 Abdominal wall care
3 Scar management
4 Pelvic Floor Care

B) Dermatology: Physical therapy in:
Chronic Ulcers,
Leprosy (including Neuro-muscular complications)
Other dermatological conditions: Psoriasis, Vitiligo, acne, burns and skin
Grafting

C) ENT: Physiotherapy management in- Maxillary Sinusitis, otitis media, rhinorrhoea
D) Obs. & Gynaecology: Principles of physical therapy management in an Obs. Gynae patient: Incontinence, Prolapse Uterus,
Pelvic Inflammatory disease,
Muscular-skeletal and other problems associated with pregnancy & labour, caesarean section.
Anti natal preparatory and post natal care

SECTION-B (CTVS)

A) Review of basic cardio-thoracic anatomy and physiology
B) Clinical examination including lung function tests in various pulmonary conditions
C) Principles of physiotherapeutic treatment in following conditions:
1. Bronchitis, asthma & bronchiectasis
2. Pulmonary embolism, tuberculosis, emphysema, pleural effusion, atelectasis, pneumothorax, haemothorax, broncho-pulmonary fistula, empyema,
3. Pulmonary rehabilitation – aims & objectives, principles, techniques including biofeedback.

SECTION-C (CTVS)

D) Clinical examination in cardiovascular conditions
E) Principles of physiotherapeutic treatment in following conditions:
1. CHF, MI, PDA, HT
2. Endocarditis, valve anomalies, congenital heart disorders, thrombosis, phlebitis, thrombosis, Thrombo angitis obliterans, varicose veins, ulcers
3. Cardio-thoracic trauma/surgery:
a) Principles, techniques of physical therapy management in traumatic and other surgical conditions of chest, lung, pleura, heart and mediastinum
b) Principles of chest physiotherapy in ICU & ICCU.

F) Physiotherapy care during bed-rest

G) Physiotherapy in cancer and AIDS (General principles of management)

Suggested Readings:

1 Chemeron, M.H.
Physical Agents in
Rehabilitation
W B Saunders,
London,1999

2 Polden, Margaret
Physiotherapy In Obstetrics
and Gynecology
Jaypee, New Delhi 1990

3 Downie, P.A.
Cash's Textbook Of Chest,
Heart and Vascular Disorder's
for Physiotherapists
Jaypee, New Delhi 1993

4Smith, H. and Ball,
V.Cardiovascular Respiratory
Physiotherapy

5 Frownfelter, D.
Principal and Practice of
Cardiopulmonary
Physiotherapy
Mosby, London 1996

6.Irwin, S. and
Tecklin, J.S.
Cardiopulmonary Physical
Therapy
Mosby, Philedelphia 1995

7.Froelicher, V.F.
and Myers, J.N.
Exercise and the Heart
W.B.Saunders,
London,2000

8 Aua, Ruth S.
Women's Health: Text Book
for Physiotherapy
Harcourt, Singapore 1998

MANAV BAHRTI UNIVERSITY
BPT Code NO.802
RESEARCH METHODOLOGY & BIO-STATISTICS
(8TH SEMESTER)

SECTION-A (BIOSTATISTICS)

1) Definition – Statistics, Biostatistics
2) Applications of Biostatistics
3) Data collection from experiments & surveys.
4) Variable – Qualitative & Quantitative, Discrete and continuous.
5) Presentation of Data: -
a) Tabular Presentation of Data – Statistical Table, Format of a Table.
b) Frequency Distribution – construction of Frequency Distribution, cumulative and relative frequency distribution, Exclusive and inclusive method of classification of Data.
c) Diagrammatic Presentation of Data: -
Bar Diagrams, Pie Diagram, Line Diagram, Pictogram, Cartogram or Statistical map.
d) Graphical representation of a Frequency distribution – Histogram, Frequency Polygon, Frequency curve, ogives or cumulative frequency curves.
6) Measures of central tendency or measures of Location – Mean, Median Mode in ungrouped & grouped series. Partition Values – Quartiles, Deciles, Percentiles in ungrouped & grouped series. Graphical Determination of Median, Mode & partition values.
7) Measures of Dispersion or Variation – Range, Mean Deviation, Standard Deviation.
8) Measures of Skew ness – Pearson's and Bowley's coefficient of Skew ness.
9) Probability – Random experiment, sample space, events, probability of an event, addition & multiplication laws of probability, use of permutations & combinations in calculation of probabilities, random variable, probability distribution of a random variable, Binomial Distribution.
10) Normal Distribution & Characteristics of Normal curve.

SECTION-B (BIOSTATISTICS)

11) Correlation – Bivariate distribution, scatter diagram, coefficient of correlation, calculation & interpretation of correlation coefficient.
12) Regression – Lines of regression, calculation of Regression coefficient.
13) Sampling – Methods of Sampling.
14) Sampling Variability & significance – Sampling Distribution, Standard error, null hypothesis, alternative hypothesis, Type I & Type II errors, tests of significance, acceptance 7 rejection of null hypothesis, level of significance, Z test, t test (paired & unpaired), chi-square test.
15) Vital Statistics
1) Rates & ratios of vital events.
2) Measures of Mortality: - Crude Death Rate, Specific Death Rate, Age Specific Death Rate, Standardized Death Rates, Infant Mortality Rate.
3) Measures of Fertility: - Crude Birth Rate, General Fertility Rate, Specific Fertility Rate, Age Specific Fertility Rate, And Total Fertility Rate.
w.e.f. Academic Session 2006-07
4) Measurement of Population Growth: - Crude Rate of Natural Increase & Pearli's Vital Index, Gross Reproduction Rate, Net Reproduction Rate.

5) Measures of Morbidity: - Morbidity Incidence Rate, Morbidity Prevalence Rate.
6) Life Tables or Mortality Table.

SECTION-C (RESEARCH METHODOLOGY)

A) Research in physiotherapy:
1. Introduction
2. Research – types, concept, definition.
3. Selection of aim and objectives.
4. Principles of methodology, analysis and report writing.

B) Concepts of Measurements:
1. Direct and indirect measurement variables.
2. Reliability and validity.
3. Application of physiotherapeutic tests and measurements.

C) Research Design:
1. Principles of designing.
2. Methods – Descriptive, Exploratory, single subject, others.
3. Design models utilized in physiotherapy.
4. Design of model for fundamental and clinical research.

D) Interpretation of experimental findings:
1. Collection and interpretation data theory.
2. Data review.
3. Interpretation of fundamental and clinical research.

Suggested Readings:

1.Armstrong,
H.B. Critical Moments in
Quantitative Research
Butter worth- Heine. ,
Oxford
2001

2.Hollis, M. and
Cook, P.F.
Practical Exercise Therapy CBS, New Delhi 1999

3.Gardiner,
Dena
Principles of Exercise
Therapy
CBS, New Delhi 1999

4 Lippert, Lynn
Clinical Kinesiology for
Physical Therapy
Jaypee New Delhi 1996

5.Pagliarulo,
M.A.
Introduction to Physical
Therapy

Mosby, London 2001

FOURTH YEAR

PT – CLINICALS

Course Objective: Assessment diagnosis, goal formulation, treatment plan formulation, and execution of therapeutic skills
The student will be posted in the department of Physiotherapy & he/she will learn the assessment, diagnosis, & physiotherapy treatment of patients visiting the department.

EXAMINATION

There will be no university examination. The students will be awarded marks on the basis of his/her attendance & performance during clinical postings in the department of Physiotherapy, etc.

PHYSIOTHERAPEUTIC IN GENERAL & CARDIOTHORACIC

PRACTICAL

Practical demonstration of basic principles of application of physiotherapy assessment, functional assessment and application of physical therapy of general & cardio thoracic conditions

PRACTICAL EXAMINATION

Students will be assessed by viva & practical demonstration of application of Physical therapy based upon learning in theory.

PHYSIOTHERAPEUTIC IN SPORTS

PRACTICAL

Practical demonstration of basic principles of physiotherapy assessment, functional assessment and application of sports physiotherapy

PRACTICAL EXAMINATION
Students will be assessed by viva based upon learning in theory.

PROJECT WORK

Course objective:
The student will be doing specific case studies allotted by their teacher/guide. Subject is for Case Presentations and evaluations.
Minimum 5- 10 cases are to be documented for discussion.

EXAMINATION

*There will be no university examination. Students will be assessed on the basis of Viva on his/her project work and the awards so secured by them will be sent to University.