S.N.D.T. Women's University

SYLLABI AND RULES
FOR THE COURSE OF
BACHELOR OF PHYSIOTHERAPY
(B.P.T.)

EFFECTIVE FROM: 2006 – 2007

SHREEMATI NATHIBAI DAMODAR THACKERSEY WOMEN'S UNIVERSITY

1, Nathibai Thakersey Road, Mumbai – 400 020. INDIA

Tel. : 091 – 022 – 2031879
Email : sndt@bom3.vsnl.net.in
Web Site : http / www.sndt.edu

S.N.D.T. WOMEN'S UNIVERSITY, MUMBAI.

TRANSCRIPT HOURS FOR THE COURSE OF BACHELOR OF PHYSIOTHERAPY (B.P.T.)

EFFECTIVE FROM: 2006 – 2007

Sr No	Subject	Transcript hours				
		Theory	Practical	Clinical training	Total Hrs.	
FIRST YEAR B.P.T.						
1	Human Anatomy	130 hrs.	70 hrs.	-	200 hrs.	FYBPT
2	Human Physiology	120 hrs.	30 hrs.	-	150 hrs.	
3	Fundaments of Exercise Therapy and Soft Tissue Mobilization	80 hrs.	120 hrs.	-	200 hrs.	
4	Fundaments of Electrotherapy	40 hrs.	-	-	40 hrs.	
5	English and Communication skills*	60 hrs.	-	-	60 hrs.	
6	Biochemistry*	55 hrs.	-	-	55 hrs.	
7	Sociology*	30 hrs.	-	-	30 hrs.	
	Supervised clinical practice only at physiotherapy OPD			400 hrs	400 hrs.	
FIRST YEAR TOTAL HOURS.		**515 hrs.**	**220 hrs.**	**400 hrs**	**1135 hrs.**	
SECOND YEAR B.P.T.						
1	Pathology	50 hrs	-	-	50 hrs.	SYBPT
2	Kinesiotherapeutics and Movement Therapy	100 hrs.	250 hrs.	-	350 hrs.	
3	Electrotherapeutics and Actinotherapeutics	100 hrs.	150 hrs.	-	250 hrs.	
4	Pharmacology*	50 hrs.	-	-	50 hrs.	
5	Microbiology*	20 hrs			20 hrs.	
6	Clinical Psychology and Psychiatry*		-		85 hrs.	
	[A] Clinical Psychology*	40 hrs.	-	-		
	[B] Psychiatry*	30 hrs.	15 hrs.	-		
	[Clinical Supervised practice in Physiotherapy]			565 hrs.	565 hrs.	
SECOND YEAR TOTAL HOURS.		**390 hrs.**	**415 hrs.**	**565 hrs.**	**1370 hrs.**	
THIRD YEAR B.P.T.						
1	Surgery - I	50 hrs.	.	-	50 hrs.	TYBPT
2	Surgery - II	50 hrs.		70 hrs	120 hrs.	
3	Medicine – I (Including Cardio Respiratory Condition)	50 hrs.	.	-	50 hrs.	
4	Medicine- II (neurology)	40 hrs.	-	60 hrs	100 hrs.	
5	Functional Diagnosis And Movement Therapy Skills	60 hrs.	100 hrs	140 hrs	300 hrs.	
6	Obstetrics and Gynecology and Pediatrics *	70 hrs.	-	10 hrs	80 hrs.	
7	Community medicine*	30 hrs.	-	15 hrs	45 hrs.	
8	Principles of bio-engineering*	30 hrs.	-	15 hrs	35 hrs.	
	[Clinical Supervised practice – 265 Hrs. each in Surgery – II, Medicine – II and Physiotherapy – I.]			590 hrs.	590 hrs.	
THIRD YEAR TOTAL HOURS.		**370 hrs.**	**100 hrs.**	**900 hrs.**	**1370 hrs.**	
FINAL YEAR B.P.T.						
1	Physiotherapy in Musculo skeletal conditions	60 hrs.		80 hrs	140 hrs.	FINAL YBPT
2	Physiotherapy in Neuro Sciences	60 hrs.		80 hrs	140 hrs.	
3	Physiotherapy in Cardio Respiratory conditions	60 hrs.		80 hrs	140 hrs.	
4	Physiotherapy in Community Health	60 hrs.		80 hrs	140 hrs.	
5	Physiotherapy in Mother and child care and General conditions	60 hrs.		80 hrs	140 hrs.	
6	Ethics, Management and Introduction to research methodology and Biostatistics*			-	50 hrs.	
	Ethics*	5 hrs				
	Management*	10 hrs				
	Introduction to research methodology and biostatistics*	25 hrs		10 hrs		
	[Clinical Supervised practice.]			627 hrs.	627 hrs.	
FINAL YEAR TOTAL HOURS.		**340 hrs.**		**1037 hrs.**	**1377 hrs.**	
INTERNSHIP:- Six months rotational Internship				**1194 hrs.**	**1194 hrs.**	
TOTAL TRANSCRIPT HOURS.		**1615 hrs.**	**735 hrs.**	**4096 hrs.**	**6446 hrs.**	

*** College level examination**

S.N.D.T. WOMEN'S UNIVERSITY, MUMBAI.

SCHEME OF EXAMINATION FOR THE COURSE OF BACHELOR OF PHYSIOTHERAPY (B.P.T.)

EFFECTIVE FROM: 2006 – 2007

Sr	SUBJECTS	THEORY MARKS			PRACTICAL MARKS			Hours
		External	Internal	Total	External	Internal	Total	
FIRST YEAR B.P.T. -								
1	Human Anatomy	80	20	100	80	20	100	3 hrs.
2	Human Physiology	80	20	100	80	20	100	3 hrs.
3	Fundaments of Exercise Therapy and Soft Tissue Mobilization	80	20	100	80	20	100	3 hrs.
4	Fundaments of Electrotherapy	40	10	50				1.5 hrs
5	English and Communication skills*****	40	10	50				1.5 hrs
6	Biochemistry*****	40	10	50				1.5 hrs
7	Sociology*****	40	10	50				1.5 hrs
SECOND YEAR B.P.T. -								
1	Pathology	80	20	100				3 hrs.
2	Kinesiotherapeutics and Movement Therapy	80	20	100	80	20	100	3 hrs.
3	Electrotherapeutics and Actinotherapeutics	80	20	100	80	20	100	3 hrs.
4	Pharmacology*****	40	10	50				1.5 hrs
5	Microbiology*****	40	10	50				1.5 hrs
6	Clinical Psychology and Psychiatry*****							3 hrs.
	[A] Clinical Psychology*****	40	10	50				
	[B] Psychiatry	40	10	50				
THIRD YEAR B.P.T. -								
1	Surgery - I	40	10	50				1.5 hrs
2	Surgery - II	80	20	100				3 hrs.
3	Medicine – I (Including Cardio Respiratory Condition)	40	10	50				1.5 hrs
4	Medicine- II (neurology)	80	20	100				3 hrs.
5	Functional Diagnosis And Movement Therapy Skills	80	20	100	80	20	100	3 hrs.
6	Obstetrics and Gynecology and Pediatrics *	80	20	100				3 hrs.
7	Community medicine*****	40	10	50				1.5 hrs
8	Principles of bio-engineering*****	40	10	50				1.5 hrs
FINAL YEAR B.P.T. -								
1	Physiotherapy in Musculo skeletal conditions	80	20	100	80	20	100	3 hrs.
2	Physiotherapy in Neuro Sciences	80	20	100	80	20	100	3 hrs.
3	Physiotherapy in General Medicine, Surgery – including Cardio Respiratory conditions	80	20	100	80	20	100	3 hrs.
4	Physiotherapy in Community Health	80	20	100				3 hrs.
5	Physiotherapy in Mother and child care and General conditions	80	20	100	80	20	100	3 hrs.
6	Ethics, Management and Introduction to research methodology and Biostatistics*****	40	10	50				1.5 hrs

*** College level examination**

S.N.D.T. WOMEN'S UNIVERSITY, MUMBAI.

STYLE OF QUESTION PAPER
BACHELOR OF PHYSIOTHERAPY (B.P.T.)
EFFECTIVE FROM: 2006 – 2007

Section I

QUESTION PAPER MARKS	TYPE OF QUESTION		
	QUESTION – 1	QUESTION - 2	QUESTION - 3
	Compulsory Multiple Choice Question (M.C.Q.)	Short Answer Question (S.A.Q.)	Long Answer Question (L.A.Q.)
40	10 X 1 = 10	3 X 5 = 15	1 X 15 = 15
	No choice	Three out of four	One out of two

Section II

QUESTION PAPER MARKS	TYPE OF QUESTION		
	QUESTION – 1	QUESTION - 2	QUESTION - 3
	Compulsory Multiple Choice Question (M.C.Q.)	Short Answer Question (S.A.Q.)	Long Answer Question (L.A.Q.)
40	10 X 1 = 10	3 X 5 = 15	1 X 15 = 15
	No choice	Three out of four	One out of two

Section I

QUESTION PAPER MARKS	TYPE OF QUESTION		
	QUESTION – 1	QUESTION - 2	QUESTION - 3
	Compulsory Multiple Choice Question (M.C.Q.)	Short Answer Question (S.A.Q.)	Long Answer Question (L.A.Q.)
20	5 X 1 = 5	3 X 3 = 9	1 X 6 = 6
	No choice	Three out of four	One out of two

Section II

QUESTION PAPER MARKS	TYPE OF QUESTION		
	QUESTION – 1	QUESTION - 2	QUESTION - 3
	Compulsory Multiple Choice Question (M.C.Q.)	Short Answer Question (S.A.Q.)	Long Answer Question (L.A.Q.)
20	5 X 1 = 5	3 X 3 = 9	1 X 6 = 6
	No choice	Three out of four	One out of two

S.N.D.T. WOMEN'S UNIVERSITY, MUMBAI.

SYLLABUS

FIRST YEAR BACHELOR OF PHYSIOTHERAPY

[applicable from the year 2006 - 2007]

F.Y.B.P.T. TRANSCRIPT HOURS – 1135

Sr.	SUBJECTS	THEORY	PRACTICAL	CLINICAL TRAINING	TOTAL
1	Human Anatomy	130 hrs.	70 hrs.	-	200 hrs.
2	Human Physiology	120 hrs.	30 hrs.	-	150 hrs.
3	Fundaments of Exercise Therapy and Soft Tissue Mobilization	80 hrs.	120 hrs.	-	200 hrs.
4	Fundaments of Electrotherapy	40 hrs.	-	-	40 hrs.
5	English and Communication skills*	60 hrs.	-	-	60 hrs.
6	Biochemistry*	55 hrs.	-	-	55 hrs.
7	Sociology*	30 hrs.	-	-	30 hrs.
	Supervised clinical practice only at out patient physiotherapy department			400 hrs	400 hrs.
	Total Transcript Hours	**515 hrs.**	**220 hrs.**	**400 hrs**	**1135 hrs.**

*** College level examination**

HUMAN ANATOMY

Total	**- 200 hrs.**
Theory	**- 130 hrs.**
Practical	**- 70 hrs.**

COURSE DESCRIPTION:

The study of anatomy will include identification of all gross anatomical structures. Particular emphasis will be placed on description of bones, joints, muscles, nervous system and cardio-pulmonary systems.

In addition student must observe dissections of human body to identify various organs and structures.

COURSE OBJECTIVES:

At the end of the course student will be able;

- To identify and describe the structure of musculo-skeletal system, central and peripheral nervous system.
- To identify and describe briefly the cardio vascular respiratory system, reproductory system.
- To identify bony land marks, muscle contour and major visceral organs.

SYLLABUS

GENERAL INTRODUCTION: (5 hrs.)

1. Definitions and subdivisions.
2. Planes of human body.
3. System of human body.
4. The cell – the unit of structure and function.
5. Types of connective tissue.

HISTOLOGY: (5 hrs.)

1. Cell, tissues of the body epithelium, connective tissue, cartilage, bone, blood, lymph, muscles and nerves.

SKELETAL SYSTEM: (34 hrs.)

A. Osteology:

1) Terminology - Anatomical position, Planes, surface relationship of parts of the body, proximal, distal etc.

2) Bones: Type of bones, formation, function, growth and repair, structure of long bone, vertebral column, types of vertebrae, bones of extremities and bony landmarks.

B. Arthrology:

1) Classification of joints.
2) Construction of joints.
3) Motions of joints.
4) Articulations - Articular Surfaces, types of joints, motions of upper and lower extremities. Trunk, head, Hip.

MYOLOGY: (In detail) (30 hrs.)

1. Types of muscle tissue. Classification of muscles.
2. Muscles of upper extremity, lower extremity, trunk, extra occular muscles, face.
3. Origin, Insertion, nerve supply and action.
4. Pelvic floor muscles.

CARDIOVASCULAR SYSTEM: (Gross anatomy) (5 hrs.)

1. Blood, lymph, tissue fluid – characteristics, composition, function.
2. The heart, main arteries, veins, capillaries.
3. Lymphatic circulation.

NERVOUS SYSTEM: (In detail) (30 hrs.)

1. Division and function of the nervous system.
2. Nerve tissue – neuron, nerve fibers, synapse, end-organs.
3. Spinal cord, Brain – their structures, divisions.
4. Peripheral and cranial nerves and their distribution, special emphasis on nerve supply to voluntary muscles, segmental distribution. 5^{th} and 7^{th} cranial nerves in details.
5. Sensory receptors.
6. Autonomic nervous system – sympathetic, parasympathetic (Gross anatomy.)

RESPIRATORY SYSTEM: (5 hrs.)

1. Anatomy of respiratory organs air passages, lungs, bronchial tree. Relation with diaphragm and thoracic cage.

DIGESTIVE SYSTEM: (Gross anatomy) (3 hrs.)

1. Anatomy of digestive organs – oesophagus, stomach, intestine, rectum.
2. The digestive glands.

URINARY SYSTEM: (Gross anatomy) (2 hrs.)

1. Anatomy of urinary organs – kidneys, ureter, urinary bladder.

ENDOCRINE SYSTEM: **(**1 hrs.)

1. Gross anatomy of glands.

REPRODUCTIVE SYSTEM: (Gross anatomy) (4 hrs.)

1. Reproductive system – male and female reproductive organs.

SPECIAL SENSORY ORGANS AND SENSATIONS: (4 hrs.)

1. Emphasis on skin, ear and eyes, less detail on smell and taste.

GENERAL EMBRYOLOGY: (Gross anatomy) (2 hrs.)

1. Ovum, spermatozoa, fertilization, differentiation, development of musculoskeletal system, central nervous system.

PRACTICAL WORK: - Surface Anatomy.

Dissection:

1. Demonstration of dissection of upper and lower Extremities and trunk musculature. (30 hrs.)
2. Identification and description of: (20 hrs.)
   a) Musculo - skeletal structures.
   b) Central nervous system and peripheral nervous system.
   c) Major visceral organs.
3. Surface Marking of: (20 hrs.)
   a) Bony Landmarks and muscle contour of the skeletal system.
   b) Thoracic and abdominal viscera.

REFERENCES: Text books:

1. Human Anatomy by B.D.Chaurasia Volume I,II & III.
2. Text book of Human Anatomy with Colour Atlas. Volume I,II & III.
3. Text book of Neuro Anatomy by Inderbir Singh.
4. Text book of Human osteology by Inderbir Singh.
5. Practical- Cunningham's - I,II & III.

Reference books:

1. Grays Anatomy.
2. Clinical Anatomy for medical students.

HUMAN PHYSIOLOGY

Total	**- 150 hrs.**
Theory	**- 120 hrs.**
Practical	**- 30 hrs.**

COURSE DESCRIPTION:

This course which runs concurrently with the anatomy course helps the students to understand the basis of normal human functions of various structures with special emphasis to cardio-respiratory, musculoskeletal and nervous system.

COURSE OBJECTIVES:

At the end of the course, the student will be able;

- To describe the functional classification of muscle, nerve and brain. Regulation of muscle tone, posture, equilibrium, co-ordination, Heart rate, Blood pressure, respiratory functions, cardiac functions.
- To demonstrate the skills of assessment of Breath sound, Blood pressure, sensations, Respiratory rate, Heart rate, superficial and deep reflexes, Pulmonary Function Tests, co-ordination.

SYLLABUS

INTRODUCTION TO PHYSIOLOGY: (1 hrs.)

BLOOD: (in brief) (5 hrs.)

1. Composition of blood, plasma, Protein formation and their functions.
2. Structure, formation and functions of R.B.C.
3. Structure, formation and function of W.B.C. and Platelets.
4. Coagulation and its defects of bleeding, clotting time.
5. Blood groups and their significance Rh factor.
6. Reticular Endothelial system. Structure and functions of spleen.

CARDIOVASCULAR SYSTEM: (17 hrs.)

1. Properties of Heart muscle and nerve supply of heart function of arteries, arterioles, capillaries and veins.
2. Cardiac cycle and heart sounds.
3. Factors affecting Cardiac output and its measurement.
4. Heart rate and its regulation, cardio vascular reflexes.
5. Blood pressure, its regulation and Physiological variations, Peripheral resistance, factors controlling blood pressure
6. Basics of ECG.

RESPIRATORY SYSTEM: (17 hrs.)

1. Mechanism of respiration, Intra-pleural and intra pulmonary pressure.
2. Lung volumes and capacities, pulmonary function test.
3. 02 and CO2 carriage and their exchange in tissues and lungs.
4. Nervous and chemical regulation of respiration – Respiratory Centers. Respiratory status – Anoxia, Asphyxia, Cyanosis, Acclimatization.

DIGESTIVE SYSTEM: (in brief) (5 hrs.)

1. General introduction.
2. Composition, function and regulation of salivary, gastric, pancreatic, intestinal and biliary secretion.
3. Movements of gastrointestinal tract.

NUTRITION: (in brief) (5 hrs.)

1. Digestion, absorption and metabolism of carbohydrates, fats, proteins
2. Sources, functions and resources of Vitamins and Minerals.
3. Balanced diet in different age groups and occupation.

ENDOCRINES: (3 hrs.)

Physiological functions in brief of the following:

1. Anterior Pituitary.
2. Post Pituitary and parathyroid.
3. Thyroid.
4. Adrenal Medulla. Thymus.
5. Adrenal Cortex.
6. Pancreas and Blood sugar regulation.

REPRODUCTION SYSTEM: (in brief) (5 hrs.)

1. Puberty.
2. Male sex hormones and their functions, spermatogenesis.
3. Female sex hormones and functions, menstrual cycle, ovulation and climacteric and menopause
4. Pregnancy, functions of placenta and lactation.

EXCRETORY SYSTEM: (in brief) (5 hrs.)

1. Functions of kidney and renal circulation.
2. Mechanism of formation of urine,.
3. Physiology of micturation.
4. Renal function test.

BODY FLUID AND ELECTROLYTE BALANCE AND TEMPERATURE REGULATION (2 hrs.)

NEURO MUSCULAR PHYSIOLOGY: (in detail) (50 hrs.)

1) Nerve and muscle
   a) Structure and function of muscle and nerve cells
   b) Classification of muscle and nerve fibers.
   c) Cell membranes, ionic transport and action potential and its propagation, factors affecting muscle tension.
   d) Neuromuscular transmission, motor units, synapse, reflex physiology.
   e) Degeneration and regeneration of nerve fibers, reaction of degeneration , muscle contraction mechanics.
   f) Muscle fatigue, Clonus, Tetanus.
2) Nervous System: (in detail)
   a) Types and properties of receptors, types of sensations and muscle spindle.
   b) Synapse and synaptic transmission, reflexes and properties of reflex.
   c) Tracts of spinal cord.
   d) Descending tracts and ascending tracts.
   e) Hemisection and complete section of spinal cord, Upper and lower motor neuron paralysis.
   f) Structure, connections and functions of various parts of brain.
   g) Physiology of muscle tone, posture and equilibrium and co-ordination.
   h) Functions of Autonomic Nervous system.
   i) Cerebrospinal fluid and its circulation.

SPECIAL SENSES: (5 hrs.)

1. Broad features of eye, errors of refraction, lesions of visual pathways.
2. Mechanism of hearing and vestibular apparatus.
3. Functions of the skin.

PRACTICAL

A. Demonstration only.
   1) Haemoglobinometer and total R.B.C. Count.
   2) Total W.B.C. Count.
   3) Preparation and staining of Blood smears, determination of differential W.B.C. Count.
   4) Blood Grouping.
   5) Erythrocyte Sedimentation rate.
   6) Bleeding and clotting time.

B. Demonstration and practice
   1) Artificial Respiration.
   2) Pulmonary function tests.
   3) Breath sounds, respiratory rate and chest expansion.
   4) Blood pressure and pulse rate.

C. Demonstration and practice.
   1) Assessment of superficial ,deep and cortical sensations,
   2) Superficial and deep reflexes.

REFERENCES:Text books:

1. Human physiology by Chattergee - I,II
2. Essentials of medical physiology by Sembulingam
3. Medical physiology by Mahapatra.
4. Concise Medical physiology by Chaudhary
5. Practical : Practical physiology – Vijaya Joshi.

Reference books:

1. Text book of physiology by – Guyton
2. Review of Medical Physiology by - Ganong.

FUNDAMENTALS OF EXERCISE THERAPY AND SOFT TISSUE MOBILIZATION

Total - 200 hrs.
Theory - 80 hrs.
Practical - 120 hrs.

COURSE DESCRIPTION:

In this course the student will learn the application of principles of physics to human movement and simple skills of assessment of skeletal joint movement and general physical exercise on models in the form of 120 hrs of practical.

COURSE OBJECTIVES:

At the end of the course the students will be able;

- To describe body levers and various physical principles and its applications to body movement.
- To identify and describe the various exercise equipment and its uses in exercise therapy practice.
- To demonstrate the different techniques on models and describe their effects.

A. FUNDAMENTALS OF EXERCISE THERAPY

Theory - 50 hrs
Practical - 80 hrs

BIOMECHANICS:

1. Introduction – Axes, planes, body levers, equilibrium, friction, pendular movements and physics of hydrotherapy.
2. Fundamentals of starting and derived position, muscle work to maintain this position.

JOINT MOBILITY:

1. Goniometry – types of goniometers.

THERAPEUTIC GYMNASIUM:

1. Suspension therapy – definition, point of suspension, type of suspension, application of suspension therapy to increase joint range and to increase muscle power.
2. Walking aids – introduction to crutches, walkers, tripods, canes, parallel bars.

CLASSIFICATION OF MOVEMENTS:

1. Active movements – definition, types, techniques, effects and uses.

2. Passive movements – definitions, types, techniques, effects and uses.
3. Free exercises – classifications, techniques, effects and uses.
4. Resisted exercise – applications of resistance, progression of exercise. Types of résistance, SET system – oxford, delormes, Mac queen methods.
5. Group exercise – advantages and disadvantages of group exercise.

RELAXATION:

- Various relaxation techniques, effects and uses.
- Limb length and girth measurement

B. SOFT TISSUE MOBILISATION

Theory - 30 hrs.
Practical - 40 hrs.

1. Introduction – brief history, definition, classification.
2. Physiological effects and therapeutics uses, contraindication.
3. Preparation of patients, basic points to be considered before and during massage procedure.
4. Technique, effects and uses of each manipulation and contraindications.
5. Massage for arm, leg, neck and upper back, face.

REFERENCES:

Text books:

EXERCISE THERAPY:

1. Principles of exercise therapy - Dena Gardiner
2. Therapeutic exercise – Carolyn Kisner
3. Practical exercise therapy – Margaret Hollis
4. Joint structure and function – Cynthia Norkins

SOFT TISSUE MANIPULATION;

1. Principles and practices of therapeutic massage – Akhonry Gourang Sinha.
2. Therapeutic massage - Margaret Hollis
3. Manual of massage and measurements – Edith.M.Prosser.

FUNDAMENTALS OF ELECTROTHERAPY

Theory - 40 hrs.

COURSE DESCRIPTION:

In this course the students will learn the principles of BIOMEDICAL physics and its application in various electrical modalities used in electrotherapy. Also includes physics related to Biomechanics and exercises.

COURSE OBJECTIVES:

At the end of this course the student will be able to:

- Describe all the physical agents and their use in electrotherapy modalities.
- Demonstrate the mechanics related to human body function.

SYLLABUS

1. GENERAL PHYSICS:

- Mechanics - Principles of work, definition, mechanical advantage, levers, pulley and springs.
- Fluid mechanics - Principle of Archimedes, law of floatation, hydrostatic pressure, surface tension, buoyancy flow and turbulent flow, physical properties of water.
- Friction - Static and dynamic friction
- Analysis of forces - Gravity, COG, LOG, BOS, Reaction forces, Newton's law of reaction, equilibrium, Newton's law of inertia, objects in motion, Newton's law of acceleration.
- Elasticity.

2. Heat:

Physical properties of heat, physiological transmission of heat, radiant energy, laws governing radiation, Joule's law of heat production, superficial heating agents.

3. Sound:

Physics of sound, resonance and velocity of sound, ultrasonic-production and application, recording and reproduction of sound.

4. Light:

Physical properties of light, electromagnetic spectrum, laser and its application, fiber optics.

5. Electricity:

Static electricity, PD and EMF, current electricity, units of electricity, Farad, Volt, Ampere, Columb, Watt, Resistance - Ohm's law, transmission of electrical energy through solids, liquids, gases and vacuum.

Types of currents- DC, AC, Modified currents, wiring of houses, switches, earth leakage, circuit breaker, fuse, electric shock

6. Magnetism:

Properties of magnets, Electromagnetic induction, Magnetic effect of an electric field, moving coil milliammeter, voltmeter, effects of magnetic field over human body.

7. Electronics:

Transformers, choke coil, electric and thermionic valves, semiconductors, metal valve rectifier, rectification of AC currents, transistor, amplifier, condensers.

8. Modern physics:

Production and properties of IRR and SWD, principles of high frequency currents, direct current for the treatment of patients, production of modified direct current, Faradic and Sinusoidal apparatus.

REFERENCES:

Text books:

1. Clayton's Electrotherapy- Fourth edition.
2. Electricity and magnetism- Brijal and subramanyam.
3. Therapeutic electricity by – Sydney Litch.

ENGLISH AND COMMUNICATION SKILLS

Theory - 60 hrs.

COURSE DESCRIPTION:

In this course the student will learn knowledge of prefixes and suffixes, medical terminology and the specialized vocabulary of the subjects in physical therapy and development of study skills needed for working and organizing thoughts in English.

COURSE OBJECTIVES:

At the end of the course the student will be able;

- To equip the students to comprehend lectures, text-books and reference materials on subjects in nursing.
- To equip the students with the knowledge of prefixes and suffixes, which can be used as combining forms in compounded words in medical terminology.
- To equip the students with the knowledge of medical terminology and the specialized vocabulary of the subjects in physical therapy.
- To equip the students with the knowledge of the terms used in reporting their observations of the symptoms and reactions of patterns.
- To help the development of study skills needed for working and organizing thoughts in English.
- To help the students to focus on the issues in conversation and documentation and to express themselves in precise terms.
- To widen the students horizons through an exposure to imaginative literature.

SYLLABUS

The course in language skills will be of the nature of English for special purpose (E.S.P.) course. The teaching material will have to be specially prepared by the teacher in charge and adapted and revised in the light of experience. Oral comprehension will be an integral part of the course. Short passages (Preferably talks) will be prepared related to topics in the other subjects being taught at the time. The listening texts must provide examples of precise scientific definitions clear and orderly sequence seen in physical therapy procedures, reporting in concise scientific terms of observation of patient's symptoms and reactions.

The question asked at the end of the listening text must provide practice in writing under and concise answer. Those questions must draw the student's attention to the main points in the passage and provide practice in note making. The answer to the questions will also provide practice in writing concise summaries of the listening texts. Listening texts can be drawn up to use of classifications lists and sequence of events in a procedure. These can be used both for testing short term memory and report after a week or two to test long term memory.

Literature "Nectar in a Sieve" by Kamala Markandeya is the text book used. The students will be required to read the novel by themselves. The teacher will comment on the attitudes and values depicted in it. Discussion of the various events must follow these comments.

REFERENCES:

Text books:

1) Grammer and composition by – Wren and Martin
2) Spoken English by Sashi kumar and Dhannija.

BIO - CHEMISTRY

Theory - 55 hrs.

COURSE DESCRIPTION:

This course follows the basics of biochemistry in nutrition (carbohydrate, fat, protein, minerals and vitamins) and biochemical reactions

COURSE OBJECTIVES:

At the end of the course the student will be able;

- To acquire knowledge about chemical composition of nutrients.
- To acquire knowledge about various metabolic reaction in the body.

SYLLABUS

1. Nutrition – importance of nutrition, nutritional aspects of Carbohydrates. Proteins, Fats and Fibers, Classification of fibers, calorimetry, energy values, respiratory quotient. Its Significance, B.M.R, definition, normal values factors affecting B.M.R. Energy requirements with age.
2. Chemical score, digestibility coefficient, Nitrogen balance and significance composition of food, balanced diet, dietary recommendation, nutritional Supplementation, Protein energy malnutrition.
3. Carbohydrates – Chemistry – Definition.
4. Metabolism – Digestion and absorption – Glycolysis, aerobic anaerobic Regulation and energetic, Gluconeogenesis. Glycogenesis, Glycogenolysis and their regulation. Role of muscle and Liver Glycogen. Hormonal regulation of sugar. Disorders of Glycogen, Lactose intolerance, Diabetes Mellitus.
5. Proteins–Chemistry, Classification of proteins, amino acids, denaturation, coagulation, iso – electric pH and its importance. Metabolism–Digestion and absorption, Decarboxylation, Deamination, transmethylation, transmutation, specialized products of phenylalanine, tyrosine, tryptophan, methionine, Neurotransmitter (nobiosynthesis), Detoxification of ammonia, including urea cycle. Nucleoproteins – D.N.A, R.N.A. Definition – structure and function of D.N.A. Types and functions of R.N.A. Genetic code Catabolism of purines, Gout.
6. Enzymes – Definition, Co-enzymes, factors affecting enzyme activity. Mechanism of action of enzyme. Inhibition types – Isoenzymes. Clinical and therapeutic use of enzymes.
7. Biologic Oxidation – Oxidative phosphorylation and (in brief)
8. Cell – Membrane structure, function of in organelles.
9. Hormones – Definition, classification, mechanism of action, 2^{nd} messenger (cAMP, Ca.IMP) Effects of hormones on various metabolites, metabolites (in brief) 6 Blood buffers, role of Lung and Kidney in acid-base balance.

10. Clinical Biochemistry – LFT.RFT normal levels of blood sugar. Urea, uric acid creatinine Triglycerides, cholesterol, enzymes, proteins, Glycosuria.
11. Lipids – chemistry, Definition, classification of lipids and fatty acids – with examples essential fatty acids and their importance. Metabolism – Digestion and absorption of fats B-oxidation of saturated fatty acids, its significance and energetics regulation Fatty acid biosynthesis, energetic regulation. Fat metabolism in adipose tissue, Role of Lipoprotein lipase, Cholesterol and its importance only precursor molecule, But no biosynthesis. Ketone body formation and functions. Lipoprotein lipase -separation broad outline of technique Composition and functions. Disorders of lipid metabolism Atherosclerosis, hyperlipidaemia.
12. Vitamins – water and fat soluble sources, coenzyme forms, function. RDA transport deficiency and toxicity.
13. Minerals – Calcium, phosphorus, iron (in details) Magnesium, Fluoride, Zinc, Copper, Selenium, molybdenum, and iodine – functions, RDA, absorption, transport, Excretion, and disorders.
14. Biochemical events of muscle contraction, biochemistry of connective tissue collagen, its arrangement, Glycoproteins and proteoglycans.

REFERENCES:

Text books:

1) Text book of Medical Bio-Chemistry – Dr. M.N.Chettergee.
2) Fundamental of Bio-Chemistry – Dr.Dr. A.C.Deb.
3) Bio-Chemistry introduction – Mekee.

SOCIOLOGY

Theory - 30 hrs.

COURSE DESCRIPTION:

The subject will introduce the student to the basic sociological concepts. Principles and social processes, social institutions in relation to the individual. Family and the community and the various social factors affecting the family in rural and urban communities.

COURSE OBJECTIVES:

At the end of the course the student will be able;

- To understand the role of family and community in the development of human behavior.
- To develop a holistic outlook toward the structure of the society snf community resources.
- To understand the social and economic aspects of community that influences the health of the people.
- To assess the social problem and participate in social planning.
- To identify social institution and resources.
- To understand the significance of social interaction in the process of rehabilitation.

SYLLABUS

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.

Social factors in Health and Disease:

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

Specialization:

1. Meaning and nature of socialization
2. Primary, secondary and anticipatory socialization.
3. Agencies of socialization.

Social groups:

1. Concept of social groups, influence of formal and informal groups on health and sickness. The role of primary groups and secondary groups in the hospital and rehabilitation settings.

Family:

1. The family.
2. Meaning and Definition.
3. Functions.
4. Types.
5. Changing family patterns.
6. Influence of family on the individuals health, family and nutrition. The effects of sickness on family are psychosomatic disease and their importance to physiotherapy.

Community:

1. Rural community – Meaning and features – Health hazards of ruralites.
2. Urban community – Meaning and features – Health hazards of Urbanites.

Culture and Health:

1. Concept of culture.
2. Culture and behavior.
3. Cultural meaning of sickness.
4. Culture and Health disorders.

Social Change:

1. Meaning of social changes.
2. Factors of social change.
3. Human adaptation and social change.
4. Social change and stress.
5. Social change and deviance.
6. Social change and health program.
7. The role of social planning in the improvement of health and in rehabilitation.

Social Problem 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.

Social Security:

Social security and social legislation in relation to disabled.

Social Worker:

Meaning of social work. The role of a medical social worker.

REFERENCES:

Text books:

1) An introduction to sociology by - Sachdeva and Bhushan.
2) Indian social problems by – Madan G.R.

S.N.D.T. WOMEN'S UNIVERSITY, MUMBAI.

SCHEME OF EXAMINATION FOR THE FIRST YEAR BACHELOR OF PHYSIOTHERAPY

Sr.	SUBJECTS	THEORY MARKS			PRACTICAL MARKS			Hours
		External	Internal	Total	External	Internal	Total	
1	Human Anatomy	80	20	100	80	20	100	3 hrs.
2	Human Physiology	80	20	100	80	20	100	3 hrs.
3	Fundaments of Exercise Therapy and Soft Tissue Mobilization	80	20	100	80	20	100	3 hrs.
4	Fundaments of Electrotherapy	40	10	50				1.5 hrs
5	English and Communication skills*	40	10	50				1.5 hrs
6	Biochemistry*	40	10	50				1.5 hrs
7	Sociology*	40	10	50				1.5 hrs

*College level Examinations.

S.N.D.T. WOMEN'S UNIVERSITY, MUMBAI.

SYLLABUS

SECOND YEAR BACHELOR OF PHYSIOTHERAPY

[applicable from the year 2006-2007]

S.Y.B.P.T. TRANSCRIPT HOURS - 1370

Sr	SUBJECTS	THEORY	PRACTICAL	CLINICAL TRAINING	TOTAL
1	Pathology	50 hrs	-	-	50 hrs.
2	Kinesiotherapeutics and Movement Therapy	100 hrs.	250 hrs.	-	350 hrs.
3	Electrotherapeutics and Actinotherapeutics	100 hrs.	150 hrs.	-	250 hrs.
4	Pharmacology*****	50 hrs.	-	-	50 hrs.
5	Microbiology*****	20 hrs			20 hrs.
6	Psychology and Psychiatric*****				85 hrs.
	[A] Psychology*****	40 hrs.	-	-	
	[B] Psychiatric*****	30 hrs.	15 hrs.	-	
	[Clinical Supervised practice in Physiotherapy]			565 hrs.	565 hrs.
SECOND YEAR TOTAL HOURS.		**390 hrs.**	**415 hrs.**	**565 hrs.**	**1370 hrs.**

*College level Examinations.

PATHOLOGY

Theory - 50 hrs.

COURSE DESCRIPTION:

This subject includes the theoretical aspects in depth, the understanding of pathology of muscle, bone, joints, cardiopulmonary and central nervous system and inflammation, repair and healing. In addition it also includes knowledge in brief of the pathology of other systems of human body.

COURSE OBJECTIVES:

At the end of the course the students will be able;

- To describe the pathology of disease and consequence of injury to the connective tissue in detail.
- To describe in brief regarding the pathology of other systems.

SYLLABUS

1. Aims and objects of study of pathology, meaning of the terms, etiology, pathogenesis, lesions and disease,
2. Concepts of Disease, various causes of disease an approach to laboratory study and diagnosis of process of disease classification of lesions.
3. Brief outlines of sick cells degeneration, necrosis, gangrene etc.
4. Inflammation: Definition, vascular and cellular phenomenon tissue changes, exudates and pus formation difference between acute and chronic inflammation.
5. Repair (Bone, skin. Nerves and muscles etc.)
6. Vascular disturbances with emphasis on ischaemia, thrombosis embolism, infarction, Haemorrhage, shock and oedema.
7. Brief about : Anemia, Leukemia Haemorrhagic disorders.
8. General approach to bacterial and viral infection Emphasis on tuberculosis, syphilis, leprosy; fungal infections and HIV.
9. General approach to immunity and allergy.
10. Clear concepts about Tumors - definition, classification, Etiology and spread of tumors, Benign versus malignant tumours.
11. Diseases of
    a) Central Nervous system – meningitis and Encephalitis brief outline of C.N.W. Tumors and peripheral nerve lesions and Degeneration of CNS.
    b) Bones and joints – Osteomyelitis, Septic Arthritis, Gout, Rheumatic Arthritis and bone tumors.

c) Muscles – Poliomyelitis, myopathies, Volkman's ischemic contracture, Fibromyalgia.

d) Skin – Scleroderma, Psoriasis, Autoimmune disorders.

12. In Brief about:

a) Respiratory diseases – Pneumonia, Bronchitis, Asthma, Emphysema, Lung cancers and occupational lung diseases.

b) C.V.S. Rheumatic heart disease, myocardial infection, Atherosclerosis, congenital heart diseases.

c) Alimentary system – Peptic ulcer, carcinoma of stomach, ulcerative lesions of intestine

d) Liver – Hepatitis, Cirrhosis

e) Pancreas–Pancreatitis, carcinoma of pancreas. Diabetes

13. General approach to immunity and allergy

14. Deficiency diseases, Pigments and pigmentation

15. Medical Genetics

16. In brief about

a) Urinary system – Nephrotic syndrome, Nephritis Glomerulonephritis

b) Prostate – Prostatitis, BPH Carcinoma of Prostate

c) Endocrine – Thyroid, tumors

d) Salivary gland – Salivary gland tumors

Practical (integrated in theory hours)

- Demonstrations of slides of muscle diseases, biopsy of nerve and muscle and cardiac muscle.

REFERENCES:

Text books:

1) Pathological basic of diseases by – Robins
2) Text book of pathology by – Anderson.
3) General and systemic pathology by – JCE Underwood.
4) Text Book of Pathology W Bag & Boyd

KINESIOTHERAPEUTICS AND MOVEMENT THERAPY

Total - 350 hrs.
Theory - 100 hrs.
Practical - 250 hrs.

COURSE DESCRIPTION:

This course mainly focuses on mechanical principles of physiotherapeutic and learning skills in the same aspect.

COURSE OBJECTIVES:

At the end of the course the student will be able:

- To analyze musculoskeletal movement in terms of biomechanics and will be able to apply such biomechanical principles to evaluation methods & treatment modes.
- To acquire skill to quantity group and individual muscle strength & power.
- To describe Kinesiological aspects of posture, gait and ambulation and various activities of daily living.
- To gain knowledge of Biophysical & Physiological effects; therapeutic uses, merits & demerits & contraindications and skills of application of stretching and traction to improve soft tissue mobility.
- To gain skill to apply modes of therapeutic exercise & tools of therapeutic gymnasium for assessment and treatment of muscle strength mobility & for correction of gait/ posture.
- To describe Mechanics and Physiology of Breathing and bronchial hygiene and demonstrate the skill of maintaining and improving the same.

SYLLABUS

A. KINESIOLOGY:

Theory - 50 hrs.

1) kinetics and kinematics of joints of extremeties, spine including breathing and temperomandibular joints
2) Posture – static and dynamic , Physiological deviations.
3) Gait and Ambulation [including running, climbing up and down.]
4) Gait with walking aids
5) Functional re-education of various activities of daily living and mat exercises.

B. MOVEMENT SCIENCE:

Theory - 50 hrs.
Practical - 250 hrs.

1) Assessment of muscle strength: Group and individual muscle, Trick movements.
2) Principles and methods of strengthening and maintenance.
3) Mobility : Biophysical properties of connective tissue and effects of various types of mechanical loading.
4) Methods of improving soft tissue mobility :- - Stretching –static , dynamic, auto stretching.
5) Traction
6) Co-ordination exercises.
7) Breathing exercises.
8) Postural drainage, bronchial hygiene, humidification.

REFERENCES:

Text books:

1. Principles of exercise therapy- Dena gardiner.
2. therapeutic exercise- Carolyn kisner
3. Practical exercise therapy- Margaret hollis.
4. Manual muscle testing- Kendall.
5. Joint structure and function- Cynthia norkins.

Reference books:

1. Therapeutic exercise – Basmajian.
2. Physiology of joints - kapandji.
3. Clinical kinesiology – Brunnstrom.
4. Biomechanics - Willian Lissner.

ELECTROTHERAPEUTICS AND ACTINO THERAPEUTICS

Total - 250 hrs.
Theory - 100 hrs.
Practical - 150 hrs.

COURSE DESCRIPTION:

At the end of the course the students will learn the physiological principles, therapeutic uses, indications, contraindications of therapeutic electrical agents.

COURSE OBJECTIVES:

At the end of the course the students will be able to:

- List the indications, contraindications of various types of electrical agents.
- Demonstrate the different electrotherapeutic technique and be able to describe their effects and uses.

TOPICS:

1. Therapeutic currents
   a) Low frequency currents – constant currents, micro currents, and iontophoresis, short and long pulse modified interrupted current, surged current, high voltage current.
   b) Basic electro diagnostic procedures, galvanic faradic test, test for tendon continuity, S.D. curves, sensory and pain threshold using therapeutic currents.
   c) Procedures of electrical re-education
   d) T.E.N.S.
   e) Medium frequency currents – beat frequency currents.
2. Thermal agents
   a) Cryotherapy
   b) Radiant heat
   c) Ultrasound and phonophoresis
   d) S.W.D.
3. Actino Therapeutics
   a) U.V.R.
   b) Therapeutic Laser

4. Principles of Biofeedback
    a) Motor points
    b) S.D. Curves
    c) Sensory and pain thresholds
    d) Application of S.W.D modes
    e) (Laser-treatment to local area)
    f) Application of beat frequency Medium frequency

REFERENCES:

Text books:

1. Electrotherapy Explained – John Low and Reed
2. Practical in Electrotherapy – Joseph Kahn
3. Electrotherapy for Physiotherapy – Virendra Khokhar
4. Physical Agents – Michlovitz
5. Clinical Electrotherapy – Nelson
6. Clayton's Electrotherapy (theory and practice) – Clayton's
7. Electrotherapy Practice – Shiela Kitchen

Reference books:

1. Electrotherapy Practice – Shiela Kitchen

PHARMACOLOGY

Theory - 50 hrs.

COURSE DESCRIPTION:

This subject includes the pharmacological treatment and effects of drugs on various pathological disorders.

COURSE OBJECTIVES:

The student will be able to understand the drug managements for the common diseases that therapists would encounter in their daily practice.

SYLLABUS

1. General action of drugs.
2. Routes of drug administration.
3. Drug Receptors.
4. Mechanism of drug action
5. Factor modifying drug effects.
6. Drugs Toxicity.
7. Drugs acting on C.N.S.: General Anaesthetics, Alcohols; Sedative and Hypnotics; Anti- convulsive; Narcotics Analgesics Non – Heretic Analgesics and Antipyretics, C.N.S. Stimulant: Psychotherapeutics.
8. Drug acting on peripheral nervous system Stimulating and inhibiting Cholinergic Drugs.
9. Drugs acting on muscles – muscle Relaxants, musclestimulants.
10. Drug Therapy in Parkinsonism.
11. Drug acting on C.V.S. Pharmacotherapy in Hypertension, Vasodilator Drug; Pharmacotherapy of cardiac Arrhythmia's Angina pectoris; Shock.
12. Drug acting on Respiratory system – Bronchodilators and Mucolytic agents
13. Chemotherapeutic agents.
14. Thyroid and Antithyroid drugs calcium: phosphorus, magnesium, Vitamins and iron supplements.
15. Insulin and Oral Antidiabetic drug.
16. Chemotherapy in malignancy
17. Locally acting drug: Anodynes, Local anaesthetic drug, Counter irritants, Soothing agents.
18. Tropical drugs – Tropical analgesics.

REFERENCES:

Text books:

1. Pharmacology & Pharmaco-therapeutics by Satoskar Bhandar
2. Medical Pharmacology : by Goth Anders
3. Essentials of medical pharmacology- Tripathi

Reference books:

1. Pharmacology by Gaddum
2. Medical Pharmacology by Drill
3. The Pharmacology principle of Medical practice by Krants & carr
4. The pharmacological basis of Therapeutics by Goodman, L.S. & Gilman A.

MICROBIOLOGY

Theory - 20 hrs.

COURSE DESCRIPTION:

This course follows the basics of microbiology of common diseases.

COURSE OBJECTIVES:

At the of the course the student will be able ;

- To demonstrate an understanding of the microbiology of common diseases that therapist would encounter in their daily practice.
- To understand how to protect themselves and the patients from nosocomial infections during their interactions.

SYLLABUS

1. General Microbiology
   a) Introduction
   b) Classification of micro-organisms
   c) Morphology of Bacteria
   d) Sterilization and disinfection
   e) Immunity – Antigen and Antibodies, General overview of antigen – antibody reaction and practical application ,natural & acquired immunity.
2.
   a) Classification Morphology and physiology of Micro-organisms. Bacteria, Viruses, HIV Protozoa, Spirochetes, Helminthes and Fungi Pathogenesis and Laboratory Diagnosis.
   b) Disinfection and Sterilization Hospital infection
   c) Immunology: Antigen Antibody reaction, Hypersensitivity reaction and auto – immune diseases.
   d) Immune – prophylaxis
   e) Hepatitis

REFERENCES:

Text books:

1. Text Book of Pathology W Bag & Boyd
2. General pathology : Bhende
3. Text Book of Bacteriology Day
4. Medical Microbiology : Cruikshank
5. Clinical pathology and clinical bacteriology : K.N sachdev

Reference books:

1. Text books of microbiology by – Jayaram panicker
2. Short text book of medical microbiology by – Satish gupta.
3. Essential of Microbiology: Jochu Panijni and Rajesh Bhatia.

CLINICAL PSYCHOLOGY AND PSYCHIATRY

Total - 85 hrs.
Theory - 70 hrs.
Clinical Training - 15 hrs.

A) CLINICAL PSYCHOLOGY — Theory - 40 hrs.

COURSE DESCRIPTION:

The aim of the course is to help the student to understand the interpersonal behaviour and to enable them to apply the principles of psychology in the practice of physiotherapy.

COURSE OBJECTIVES:

At the end of the course the student will be able;

- To understand the importance of psychology in personal and professional life.
- To know the biological and psychological basis of human behaviour.
- To understand the cognitive and affective behaviour.
- To develop an understanding of self and others.
- To identify psychological needs of patients.

SYLLABUS

1) INTRODUCTION

- Meaning of psychology.
- Development of psychology as a sciences.
- Scope, branches of psychology.
- Relationship with other subjects.
- Application of psychology in physiotherapy practice.
- Importance of psychology in interpersonal behavior.
- Significance of individual difference.

2) BIOLOGICAL BASIS OF BEHAVIOR

- In-heritance of behavior.
- Basic genetic mechanism.
- Sensory process – Normal and Abnormal.
- Attention and distraction.

3) COGNITION

- Perception
- Meaning of perception
- Perception of object, depth, distance and motion.
- Normal and abnormal perception.

4) PERSONALITY

- Meaning of personality
- Theories of personality.
- Adjustment and maladjustment.

5) MENTAL MECHANISMS AND MENTAL HEALTH

- Defence mechanism
- Frustration and conflict
- Mental hygiene

6) MOTIVATION

- Meaning and nature of motivation.
- Biological and special motives.
- Formation of special concepts.
- Self – actualization, self – awareness.

7) EMOTIONS

- Meaning of emotions.
- Theories of emotions.
- Development of emotions
- Emotions in sickness.
- Handling emotions in self and others.

8) ATTITUDES

- Meaning of attitudes.
- Role of attitude in health and sickness.

9) DEVELOPMENTAL PSYCHOLOGY

- Infancy, childhood, adolescence, adulthood and old age.
- Psychological needs of various age groups in health sickness.

B) PSYCHIATRY

Total - 45 hrs.
Theory - 30 hrs.
Clinical Training - 15 hrs.

COURSE DESCRIPTION:

The course provides a basic understanding of the normal and abnormal human behavior and the principles of psychiatry and also helps the student to manage patients with behavioral changes and psychiatric disease condition in the hospital and the community.

COURSE OBJECTIVES:

At the end of the course the student will be able;

- To know the historical development and trends of psychiatry.
- To understand the concepts of normal and abnormal human behavior.
- To understand the elementary theories and psychodynamics of abnormal behavior.
- To understand the course, sympatamatology, investigation, complications, management with various therapeutic modalities of common psychiatric conditions.
- To develop ability to render comprehensive care to patients with various psychiatric conditions and deviant behavior.

SYLLABUS

1) INTRODUCTION

- History and present trends of psychiatry.
- Scope and role of mental health care.
- Concepts and views on normal, abnormal human behavior.

2) PSYCHODYNAMICS OF ABNORMAL HUMAN BEHAVIOUR

- Orientation to 4 basic theories relevant to behavior formation (Sigmund Freud, Eric Erickson, Jean Piaget, Mcklein)
- Causes of abnormal behavior.
- Psychiatric disorders and their classification.

3) PSYCHIATRIC DISORDERS

a) Psycho-neurotic disorders

- Anxiety neurosis, phobic neurosis, hysterical neurosis, obsessive compulsive disorders, hyperchondriac neurosis, post traumatic disorder.

b) Psychotic disorders
   - Organic psychosis
   - Functional psychosis – Schizoprenia
   - Major affective disorders – depression, mania, maniac depressive psychosis.

c) Psycho physiological disorders
   - Concepts of psychosomatic conditions and anorexia nervosa, bulimia, obesity.

d) Personality disorders
   - Paranoid personality disorders
   - Antisocial personality disorders
   - Boderline personality disorders.

e) Substance abuse disorders
   - Alcoholic abuse, dependence
   - Drug abuse, dependence.

f) Psychiatric emergencies
   - Suicidal behavior
   - Aggressive behavior
   - Hallucinations, alcohol, withdrawal.

4) CHILD PSYCHOLOGY

- Habit disorders
- Childhood schizophrenia
- Autism
- Bedwetting, encopresis, hyperkinetic disorder.
- Stammering / Stuttering
- Juvenile delinquency.
- Psychiatric problems in mental retardation
- Child guidance clinic.

5) COMMUNITY MENTAL HEALTH

- Identification of psychological crisis situation and intervention
- Promotion of mental health.
- Prevention pf potential problems of mental health in community.
- Rehabilitation of mentally ill in the community.
- Approaches to community mental health in India.
- Psychological care of geriatric patients.

REFERENCES:

Text books:

1) Introduction to psychology by – Morgan and King.
2) General psychology by – S.K.Mangal
3) Mental health – psychiatric nursing – a holistic approach by Beck Cornelia, Rawlins Ruth and William Saphronia.

S.N.D.T. WOMEN'S UNIVERSITY, MUMBAI.

SCHEME OF EXAMINATION FOR THE SECOND YEAR BACHELOR OF PHYSIOTHERAPY

Sr	SUBJECTS	THEORY MARKS			PRACTICAL MARKS			Hours
		External	Internal	Total	External	Internal	Total	
1	Pathology	80	20	100				3 hrs.
2	Kinesiotherapeutics and Movement Therapy	80	20	100	60	40	100	3 hrs.
3	Electrotherapeutics and Actinotherapeutics	80	20	100	60	40	100	3 hrs.
4	Pharmacology*****	40	10	50				1.5 hrs
5	Microbiology*****	40	10	50				1.5 hrs
6	Psychology and Psychiatric*****							3 hrs.
	[A] Psychology*****	40	10	50				
	[B] Psychiatric*****	40	10	50				

*****College Level Examination

S.N.D.T. WOMEN'S UNIVERSITY, MUMBAI.

SYLLABUS

THIRD YEAR BACHELOR OF PHYSIOTHERAPY

[applicable from the year 2006-2007]

T.Y.B.P.T. TRANSCRIPT HOURS - 1370

Sr	SUBJECTS	THEORY	PRACTICAL	CLINICAL TRAINING	TOTAL
1	Surgery - I	50 hrs.	.	-	50 hrs.
2	Surgery - II	50 hrs.		70 hrs	120 hrs.
3	Medicine – I (Including Cardio Respiratory Condition)	50 hrs.	.	-	50 hrs.
4	Medicine- II (neurology)	40 hrs.	-	60 hrs	100 hrs.
5	Functional Diagnosis And Movement Therapy Skills	60 hrs.	100 hrs	140 hrs	300 hrs.
6	Gynecology and obstetrics and pediatrics*****	70 hrs.	-	10 hrs	80 hrs.
7	Community medicine*****	30 hrs.	-	15 hrs	45 hrs.
8	Principles of bio-engineering*****	30 hrs.	-	15 hrs	35 hrs.
	[Clinical Supervised practice – 265 Hrs. each in Surgery – II, Medicine – II and Physiotherapy – I.]			590 hrs.	590 hrs.
	Total Transcript Hours	**370 hrs.**	**100 hrs.**	**900 hrs.**	**1370 hrs.**

*****College Level Examination

SURGERY – I

Theory - 50 hrs.

COURSE DESCRIPTION:

This course follows basic courses on Anatomy, Physiology and Pathology. It covers relevant aspects of general surgery with diseases of various systems of the human body.

COURSE OBJECTIVES:

At the end of the course the student will be able:

- To gain knowledge regarding various surgeries; with emphasis on cardiothoracic surgeries, events accompanying surgeries, anesthesia, blood transfusion etc.
- To gain knowledge regarding the indication of various surgeries, their outcome, post operative complications and treatment.
- To gain knowledge regarding management of sequelae of various conditions like head injury and spinal cord injury; management of complication of following immobilization and be rest.

SYLLABUS

1. Descriptions of events frequently accompanying Surgery in general anesthesia. Blood transfusion and Physiological response of the body to Surgery.
2. Common pre and post-operative complications: clinical picture treatment and prevention.
3. Wounds, sinuses and Ulcers: Incisions healing and Principles of treatment.
4. Abdominal Surgery (major)
   a) Incisions in abdominal Surgery
   b) Operations on the Stomach
   c) Operations on the intestine.
   d) Appendectomy
   e) Operation on the abdominal wall
   f) Complications in abdominal Surgery and its management.
5. Thoracic Surgery

   Outline indications, contraindications, site of incision, pre and post operative management and complications of the following.

Lobectomy; pneumonectomy, segmenectomy, pleuro-pneumonectomy, Thoracoplasty, Decortication, Tracheotomy. Management of Endotracheal tubes, tracheal suction. Weaning the patient from ventilator. Extubation and post Extubation care.

6. Cardiac Surgery

   Outline indications, contraindications, site of incisions, pre and post operative management and complications of the following.

   a) Valvotomy and valve replacement
   b) Open Heart Surgery Cardiac by pass Surgery
   c) Surgery on pericardium
   d) Operation in congenital disorders
   e) Cardiac pacemaker
   f) Coronary Angioplasty

7. Brief about prostatectomy nephrectomy
8. Surgery of the breast
9. Neuro Surgery: Briefly outline the clinical features and management of the following.

   a) Congenital and childhood disorders (1) Hydrocephalus (2) Spina Bifida
   b) First aid and management of sequelae of head injury and spiral cord injury.
   c) Peripheral Nerve disorders- Peripheral Nerve injuries
   d) Intracranial tumours: Broad classification signs and symptoms.

10. a) Brief description of Deep Vein Thrombosis and pulmonary
    b) Vascular Disease Phlebitis etc.
11. Plastic Surgery: Principles of cineplasty tendon transplant Cosmetic Surgery, Types of Grafts, Surgery of hand with emphasis and management on traumatic leprosy & rheumatoid hand.
12. Burns- classification early and late complications management and reconstructive Surgery.
13. Ophthalmology: Errors of refraction, conjunctivitis, trachoma corneal ulcer, iritic, cataract, retinitis, detachment of retina; Glaucoma:
14. E.N.T. Sinusitis, Rhinitis, Otitismedia, Functional aphonia and deafness.

PRACTICALS

The students have to undergo outdoor and indoor clinical teaching in General Surgery and Orthopedic. They have to prepare a clinical record to be submitted at the University practical examination. The student should take minimum five case of General Surgery and five case of Orthopaedics and obtain a signature of a teacher time to time.

REFERENCES:

Text books:

1. Surgery for Nurses by Baily & Love C.H.K. Lewis & Co.
2. Short practice of surgery of Baily & Love

Reference books:

1. Surgery by Nan
2. Short practice of Surgery by Rain & Retelite
3. System of Orthopaedics by Adam Vd. I & II
4. Surgical Handicrati by Pyels
5. General Surgical Operations by R.M. Kirk and R. O.N. Williamson
6. Shaw's Text Book of Gynecology
7. Seffcoat's principle of Gynecology.

SURGERY - II

Total - 120 hrs.
Theory - 50 hrs.
Clinical Training - 70 hrs.

COURSE DESCRIPTION:

This course follows basic courses on Anatomy, Physiology and Pathology. It covers relevant aspects of surgery with emphasis on Orthopaedics and plastic surgery.

COURSE OBJECTIVES:

At the end of the course the student will be able:

- To gain knowledge regarding evaluation and assessment of various orthopaedic conditions and diagnostic procedures which emphasize on radiography and special test.
- To gain knowledge regarding etiology, pathology , clinical features and management of various orthopaedic conditions and their differential diagnosis and functional disabilities caused by them.
- To understand the goals of conservative and surgical treatment of various orthopaedic conditions which physiotherapy will be an important component of overall treatment.

SUBJECTS	THEORY	CLINICAL TRAINING	TOTAL
(a) Orthopaedics	**30 hrs**	**60 hrs**	**90 hrs**
(b) Plastic Surgery	**10 hrs**	**10 hrs**	**20 hrs**
(c) Clinical Radiology	**10 hrs**	**-**	**10 hrs**

SYLLABUS

1. Pathology clinical manifestations of trauma & diseases of the bones & soft tissues of the musculo skeletal tissue.
2. Fractures of the spine & extremities-classification / management & complications.
3. Metabolic & hormonal disorders of the bone tissue- Osteoporosis.
4. Peripheral nerve injuries-management / complications / V.I.C.
5. Deformities of the spine, extremities- congenital malformation-spina Bifida, meningocele/ meningomyocele.
6. re-constructive surgeries in Polio or cerebral palsy.
7. Inflammatory & infections of the bone & joints T.B./Osteomyelitis.
8. Tumors of the bone.
9. Degenerative / Rheumatoid arthritis

10. Soft tissue injury/ common soft tissue injuries encountered during sports / Over-use
11. Amputation-classification-prosthetic management.
12. Hand injury- management
13. Clinical Radiology in Orthopaedics
14. Plastic surgical procedures-nerves/ tendon repairs in hand & foot skin grafts/ flaps/ micro vascular surgery re-constructive surgeries in facial nerve paralysis & common cosmetic surgeries (in brief)- surgery for obesity.

REFERENCES:

Text books:

1. Essentials Of Orthopaedics by - Maheshwari
2. Orthopaedics – John Ebnezer
3. Orthopaedics in primary care – Andrew. J. Carr
4. Clinical orthopaedic diagnosis – Sureshwar Pandey
5. Essential orthopaedic and physiotherapy- Jayant Joshi.
6. Plastic surgery – Principles and techniques by – Pramod Kumar.

MEDICINE - I:

(INCLUDING CARDIO RESPIRATORY CONDITIONS)

Theory - 50 hrs.

COURSE DESCRIPTION:

This course follows basic courses on Anatomy, Physiology and Pathology. It covers relevant aspects of general medicine with diseases of various systems of the human body like cardio vascular systems respiratory system, endocrine system etc. and areas of pediatrics, geriatrics dermatology etc.

COURSE OBJECTIVES:

At the end of the course the student will be able:

- To gain knowledge regarding assessment of various general medical conditions, with emphasis on 'Cardiorespiratory' assessment & various diagnostic procedures used.
- To gain knowledge regarding etiology, pathology, clinical features & treatment of various diseases & their resultant functional disabilities.
- To understand the limitations imposed by the diseases on any therapy that may be prescribed.
- To understand about the goals of pharmacological & surgical therapy imparted in the diseases in which physical or occupational therapy will be important component of overall treatment.

MEDICINE INCLUDING CARDIO RESPIRATORY CONDITIONS

Duration 50 hours including clinical teaching

1. Disease of Cardio Vascular system

   Ischaemic Heart Disease. Hypertensive Heart Disease, Rheumatic heart disease. Congenital heart disease, thyrotoxic heart disease, syphilitic heart disease, vascular disease, thrombosis embolisms.

2. Disease of endocrine system

   Diabetes mellitus definition, diagnosis, classification and complication brief description of management of diabetes mellitus. Outline of hypothyroidism, goiter, Hyperthyroidism and Hypothyroidism.

3. Rheumatic Disease – Rheumatic fever, Rheumatoid arthritis disease, collagen disease. Idiopathogenesis, clinical features, complications, diagnosis and brief outline of the management.

4. Diseases of Respiratory system
    a) Disease of lungs; Bronchitis, Bronchial Asthma, Bronchiectasis, pulmonary Embolism, pulmonary Tuberculosis, lung Abscess, Emphysema, pneumonia. Bronchopneumonia, Flubbed lung. Resp. failure pneumothorax, RDS, hydro Pn.
    b) Diseases of pluera-pleurisy, Empyema
5. Deficiency Diseases : Rickets, Protein deficiency
6. Obesity-etiology and management
7. Common Geriatric Disorders and their management
8. AIDS &Leprosy

CLINICALS

Student has to undergo outdoor and indoor clinical teaching in General Surgery cases. They have to prepare a clinical record to be submitted at the time of University practical Examination. The student should take minimum five cases or General Surgery conditions and obtain a signature of a teacher time to time.

REFERENCES:

Text books:

1) Principles and practice of medicine by – Davidson.
2) Practical medicine by – P J Mehta.
3) Text book of general medicine and surgical conditions for physiotherapist by – Patricia A downie.

MEDICINE- II (Neurology)

Total - 100 hrs.
Theory - 40 hrs.
Clinical Training - 60 hrs.

COURSE DESCRIPTION:

This course follows basic courses on Anatomy, Physiology and Pathology. It covers relevant aspects of general medicine with diseases of Nervous system.

COURSE OBJECTIVES:

At the end of the course the student will be able;

- To gain knowledge regarding evaluation and assessment of various neurological conditions and diagnostic procedures like C.T. scan , MRI, Radiography etc.
- To gain knowledge regarding etiology, pathology, clinical features and management of various neurological conditions, their differential diagnosis and functional disabilities caused by them.
- To understand the goals of pharmacological and surgical interventions used in various neurological conditions in which physiotherapy will be an important component of overall treatment.

SYLLABUS

1. Circulation of the brain spinal cord- Cerebro-vascular- accidents.
2. Pyramidal & Extra Pyramidal lesions
3. Disorders of Nerve roots & Peripheral nerves
4. Disorders & Diseases of muscle
5. Disorders of the spinal cord & cauda equina
6. Demyelinating diseases
7. Infections of the nervous system
8. Epilepsy
9. Tetanus management
10. Disorders of higher cortical function
11. Hereditary & degenerative disorders
12. Disorders of cerebellar function.
13. Neurological effects of aging- Alziehmer's Disease
14. Space occupying lesions
15. Spinal surgeries

16. Traumatic brain injuries, sequelae of head injury and spinal cord injury.
17. Surgical management of brain diseases and cerebrovascular accidents.
18. Neurogenic bladder.

REFERENCES:

Text books:

1. Merritts neurology – Lewis. P.Roland
2. Brains disease of nervous system – John Walton
3. Clinical neurology – David Greenberg
   - Roger Simon

FUNCTIONAL DIAGNOSIS AND MOVEMENT THERAPY SKILLS

Total - 300 hrs.
Theory - 60 hrs.
Practical - 100 hrs.
Clinical Training - 140 hrs.

COURSE DESCRIPTION:

This subject is aimed at developing skills (learned earlier on models) on patients to identify movement dysfunction of the body as a whole and its affect on quality of life, with special emphasis to objective assessment and documentation to inculcate evidence based practice. This subject also aims at continuing skill development of basic movement sciences.

COURSE OBJECTIVES:

At the end of the course the student shall be able to

- Evaluate and objectively assess all the three components (as per ICF) of movement dysfunction and arrive at a functional diagnosis, with biomechanically and physiologically based reasoning.
- Describe the normal human development /maturity and aging process.
- Acquire following skills on models
  a) Manipulative skills on extremity joints
  b) P.N.F. Techniques
  c) Exercise Tolerance test.

SYLLABUS

1) Functional Diagnosis – ICIDH-II/ICF
   - Methods of history taking to identify impairment, activity limitations and participation restrictions.
   - Principles of objective documentation of various aspects of functional diagnosis – Qualitative/Quantitative assessment.
   - Assessment of Impairment
     a) Pain-VAS (at rest/during post activity)
     b) ROM / Limb length discrepancy / Muscle power / Joint reactivity / Extra-articular soft tissue tightness.
     c) Voluntary control (Stream format) Coordination.
     d) Cardio-pulmonary – Blood Pressure / Pulse rate / Respiratory rate / Auscultation-abnormal breath sounds / Chest expansion / Peak flowmetry.

- Assessment of Activity limitation

  Posture-static and dynamic

  Gait (abnormal) analysis

  Balance (Berg scale)

  ADL (Barthel Index)

  QOL Questionnaire (0-4 scale)

  Exercise tolerance assessment – 6 min. walk test.

- Methods of documentation of Functional Diagnosis

2) General principles of human development – maturation and aging process in general.
   - Sensory, motor, cognitive and emotional
   - Factors influencing human development and growth- Biological / Environmental / Inherited.
   - Principles of maturation – General – Cephalo caudal / Proximal – diatal / Centero – lateral / Mass to specific pattern / Gross to fine motor development.
   - Neuro physiological principles of P.N.F.
3) Electro diagnosis
   - Therapeutic current as a tool for electro diagnosis
   - Sensory and pain threshold
   - Motor studies using short-long pulse currents.
   - Principles of needle EMG – post insertional and spontaneous activity / minimal mass effort.
   - Principles of sensory / motor nerve conduction studies of peripheral nerves.
4) Principles of Manual Therapy
   - History of Manual therapy evolution.
   - Various schools of thought (emphasis to Kaltenborn, Maitland, Cyriax's principles of friction massage, Mulligan's concept of Movement with mobilization) Butler's method of neural tissue mobilization.

Clinical (on patients)

- Assessment of Impairment and activity limitations

Practical (on models)

- Mobilization skills of extremity joints (Kaltenborn / Maitland / Mulligan)
- 6 min walk test
- P.N.F. methods

REFERENCES:

Text books:

1) Physical rehabilitation (Assessment and Rehabilitation) by Susan B. O'Sullivan and Thomas J. Schmitz.
2) Clinical Orthopaedic examination by – Ronald Mc Rae.
3) Orthopaedic assessment by – David Magee.
4) Peripheral Manipulation by – G.D.Maitland.
5) Diagnosis and treatment in Cardiology by – Michael M. Crawford.
6) Clinical neurophysiology by – U.K.Mishra.

OBSTETRICS AND GYNECOLOGY AND PEDIATRICS

Total - 80 hrs.
Theory - 70 hrs.
Practical - 10 hrs.

COURSE DESCRIPTION:

This course follows the basic mechanics and physiological function due to pregnanacy and normal neuro development of child with specific reference to locomotion, and medical and surgical condition related to obstetrics, gynecological and pediatric.

COURSE OBJECTIVES:

At the end of the course the student will be able

- To describe altered mechanics and physiological function due to pregnanacy, labour and parity in female
- To acquire the knowledge of normal neuro development with specific reference to locomotion.
- To acquire knowledge about various gynaecological / obstetrical / pediatric conditions.

A. OBSTETRICS AND GYNECOLOGY

Total - 50 hrs.
Theory - 40 hrs.
Practical - 10 hrs.

1. Normal development & maturation.
2. Puberty & physiology of pregnancy.
3. Applied anatomy of pelvic floor, abdominal wall & pelvic organs.
4. Displacement of uterus including prolapse.
5. Pelvic inflammatory diseases.
6. Common gynecological & obstetric surgeries including post operative care.
7. Menopause & climacteric.
8. Physiology of menstruation, menstrual disorders & dysmenorrhoea .
9. Anti natal care, intra partum & post partum care.
10. Contraception.
11. Pelvic floor dysfunction.
12. Lactation.

B. PEDIATRICS:

Theory - 30 hrs.

1. Neuro development, integration of reflexes & milestones.
2. CNS involvement in children – tubercular meningitis & other infective conditions.
3. Birth trauma/ intrauterine & early infancy conditions Cerebral palsy – types, methods of evaluation – management.
4. Mental retardation – etiological factors; types, symptomatology & treatment.
5. Childhood obesity & its complications.
6. Hereditary neuromuscular disorders – DOWN'S SYNDROME .
7. Congenital neuromuscular disorders including spinal dysraphism.
8. Peripheral neuromuscular disorders including polio, spinal muscular atrophies, muscular dystrophies, myopathy.
9. Malnutrition & vitamin deficiency associated systemic conditions – rickets, skin conditions; deficiency neuromuscular conditions .
10. Respiratory conditions; asthama, TB, BRONCHIECTASIS, neuromuscular conditions.
11. Acute pediatric respiratory distress syndrome – intensive pediatric care.
12. Intensive neonatological & pediatric surgical care.
13. Congenital cardiovascular problems – management.
14. Cardio - respiratory rehabilitation in children.
15. Epileptic disorders.

REFERENCES:

Text books:

1. Obstetrics & gynecology by - Poldan
2. Shaw's textbook of gynecology
3. Seffcoat's principle of gynecology
4. Textbook of pediatrics – O.P. Ghai
5. A hand book of pediatrics. Complied by Avinash G. Desai.

COMMUNITY MEDICINE

Total - 45 hrs.
Theory - 30 hrs.
Clinical Training - 15 hrs.

COURSE DESCRIPTION:

This course follows the basic concept of health and diseases prevailing in the society and various medical professionals in the rehabilitation of patients in community.

COURSE OBJECTIVES:

At the end of the course the student will be able:

- To gain knowledge regarding concept of health and diseases prevailing in the society.
- To demonstrate an understanding of the influence of social and environmental factors on health of the individual and society.
- To understand the role of various medical professionals in the rehabilitation of patients in community.

SYLLABUS

1. General concepts of Health & Diseases / Epidemiology / Anthropology/ Habitat & nutrition.
2. Public Health administration
3. The nature of Urban & rural societies- The Family
4. Health problems of vulnerable groups- women, children & Aged
5. Occupational health hazards- accidents compensation acts
6. Family planning
7. Mental health emphasis on community aspects
8. Communicable disease-prevention/ control
9. Introduction to C.B.R.
10. Design 7 methodology of an experiment of survey.
11. Sampling & Interpretation of Data
12. Role of health organization
13. Demography & vital statistics.
14. Environmental Hygiene
15. Socio-economic behavior

16. Rehabilitation team approach-Role of Physio therapy/ Occupational therapy/ speech & hearing / P & O/ social worker / clinical psychologist/ vocational trainer.
17. Role of Multi- purpose Health worker.

REFERENCES:

Text books:

1. Park textbooks of preventive and social medicine – K.Park.
2. Textbook of preventive and social medicine - M.C.Gupta - B. K. Mahajan.

PRINCIPLES OF BIO-ENGINEERING

Total - 30 hrs.
Theory - 20 hrs.
Clinical Training - 15 hrs.

COURSE DESCRIPTION:

This course follows the basic principles of application and fabrication of variety of aids and appliances used for ambulation, protection and prevention.

COURSE OBJECTIVES:

At the end of the course the student will be able;

- To acquire knowledge about biomechanical principles of application of variety of aids and appliances used for ambulation, protection and prevention.
- To acquire in brief knowledge about various material used for splints / orthoses and prostheses.
- To acquire the skill of fabrication of simple splints made out of low cost material.

SYLLABUS

1. Classification of Aids & appliances
2. Biomechanical principles in designing of appliances & assessment Procedures for static & dynamic alignment of the following- Aids & appliances / Splints / Orthoses – for spine upper & lower limb / Prostheses – for Lower limbs and upper limb.

PRACTICAL:

1. Fabrication of simple temporary hand splints.
2. Fabrication of simple temporary lower limb splints.

REFERENCES:

Text books:

1) Atlas of Orthotics: Biomechanical principles of application by – St.Louis
2) Orthotics in rehabilitation by – Pat Mckee and leanne Morgan.
3) Amputations and prosthetics bt – Beela J. May.

S.N.D.T. WOMEN'S UNIVERSITY, MUMBAI.

SCHEME OF EXAMINATION FOR THE THIRD YEAR BACHELOR OF PHYSIOTHERAPY

Sr	SUBJECTS	THEORY MARKS			PRACTICAL MARKS			Hours
		External	Internal	Total	External	Internal	Total	
1	Surgery - I	40	10	50				1.5 hrs
2	Surgery - II	80	20	100				3 hrs.
3	Medicine – I (Including Cardio Respiratory Condition)	40	10	50				1.5 hrs
4	Medicine- II (neurology)	80	20	100				3 hrs.
6	Functional Diagnosis And Movement Therapy Skills	80	20	100	80	20	100	3 hrs.
5	Gynecology and obstetrics and pediatrics*****	80	20	100				3 hrs.
7	Community medicine*****	40	10	50				1.5 hrs
8	Principles of bio-engineering*****	40	10	50				1.5 hrs

*****College level Examinations.

S.N.D.T. WOMEN'S UNIVERSITY, MUMBAI.

SYLLABUS

FINAL YEAR BACHELOR OF PHYSIOTHERAPY

[Applicable from the year 2006-2007]

FINAL Y.B.P.T. TRANSCRIPT HOURS - 1377

Sr No	Subject	Transcript hours			
		Theory	Practical	Clinical training	Total Hrs.
1	Physiotherapy in Musculo skeletal condition	60 hrs.		80 hrs	140 hrs.
2	Physiotherapy in NeuroSciences	60 hrs.		80 hrs	140 hrs.
3	Physiotherapy in General Medicine, Surgery – including Cardio Respiratory conditions	60 hrs.		80 hrs	140 hrs.
4	Physiotherapy in Community Health	60 hrs.		80 hrs	140 hrs.
5	Physiotherapy in Mother and child care and General conditions	60 hrs.		80 hrs	140 hrs.
6	Ethics, Management and Introduction to research methodology and Biostatistics*			-	50 hrs.
	Ethics*	5 hrs			
	Management*	10 hrs			
	Introduction to research methodology and biostatistics*	35 hrs			
	[Clinical Supervised practice.]			627 hrs.	627 hrs.
FINAL YEAR TOTAL HOURS.		**350 hrs.**		**1027 hrs.**	**1377 hrs.**

*College Level Examination

PHYSIOTHERAPY IN MUSCULO – SKELETAL CONDITION

Total - 140 hrs.
Theory - 60 hrs.
Clinical Training - 80 hrs.

COURSE DESCRIPTION: (For all Physiotherapy subjects)

This final academic year exclusively focuses on developing ability of evidence based clinical practice by applying all the physiotherapeutic skills (learned on models so far) on patients for evaluation, assessment, arriving at functional diagnosis and correlate the same with clinical diagnosis as well as planning and executing preventive measures and also short term / long term treatment for restoration / rehabilitation of movement dysfunction affecting quality of life. In addition this academic year also includes basic skill development of conducting scientific projects based on research methodology and for community oriented practice

COURSE OBJECTIVES:

At the end of the course, the candidate will be able

- To identify, discuss and analyze the musculo-skeletal dysfunction in terms of biomechanical, kinesiological and biophysical bases and correlate the same with the provisional diagnosis, routine radiological and electrophysiological investigations and arrive at appropriate functional diagnosis with clinical reasoning.
- To plan and prescribe as well as acquire the skill of executing short and long term physiotherapy treatment by selecting appropriate modes of mobilization/ manipulations, electrotherapy, therapeutic exercises and appropriate ergonomic advise for the relief of pain, restoration, maintanence of function and or rehabilitation for maximum functional independence in ADL at home and work place.

SYLLABUS

Following topics are applicable to all the musculo-skeletal conditions included in the various clinical subjects of Medical sciences taught in 3rd year B.P.T. course.

1) Application of various Non-Thrust mobilization methods to the extremities of the patients having musculo-skeletal dysfunction; for the purpose of Evaluation, assessment, investigation, interpretation and functional diagnosis (in terms of impairment of local function, activity limitations and handicaps in environmental and socio-economical participation) with appropriate clinical reasoning.

2) Planning, prescription and implementation of short term and long term goals with clinical reasoning of the following conditions;
   a) Traumatic musculo-skeletal conditions: Fractures, dislocations and soft tissue lesion including sports injuries.
   b) Degenerative musculo-skeletal conditions.
   c) Rheumatological / Inflammatory / Autoimmune and Infective conditions
   d) Surgical conditions: Radical mastectomy, amputation and tendon transfer
3) Documentation and maintenance of records.
4) Application of appropriate electro-therapeutic modes for the relief of acute and chronic pain and swelling, tissue healing, electrical re-education etc. with clinical reasoning.
5) Application of simple therapeutic modes of mobility like massage, stretching, distraction, rhythmic mobilization (Non-thrust methods) friction massage, myofascial stretching, muscle energy methods, neural tissue mobilization etc.
6) Application of various taping modes for support and relief of pain.
7) Prescription of appropriate orthotic and prosthetic devises and fabrication of simple temporary splints during urgent requirement.
8) Application and advise (for home programme) of appropriate therapeutic exercise with the use therapeutic gymnastic tools or auto exercises for the relief of pain, structural stability, strength, endurance and functional restoration including gait training, maintenance of function and or for the preventive measure.
9) Ergonomic advice for preventive measures and functional efficiency at home and work place.

CLINICAL

Evaluation and treatment planning; its presentation and documentation of minimum two cases each in;

- # Upper limb (including hand injury)
- # Lower limb
- Soft tissue lesions
- # Spine with / without neurological conditions
- Degenerative arthritis of skeletal joints.
- Musculo-skeletal conditions of hand and foot.

REFERENCES:

Text books:

1) Cash's Text book of Orthopaedics and Rhematology for Physiotherapist – Jaypee Bros.
2) Manual mobilization of extremity joints by - Fredy Kaltenborn, Maitland.
3) Therapeutic exercise by - Kolby and Kisner
4) Therapeutic exercises by - O'Sullivan
5) Taping techniques by - Rose Mac Donald.

Reference books:

1) Orthopaedic Physical Therapy by – Donatelli
2) Manual Therapy by – Maitland.
3) Neural tissue Mobilisation by – Butler.

PHYSIOTHERAPY IN NEURO-SCIENCES (Adult / Psycho-Somatic and Psychiatric Conditions)

Total - 140 hrs.
Theory - 60 hrs.
Clinical Training - 80 hrs.

COURSE DESCRIPTION:

Same as previous subject.

COURSE OBJECTIVES:

At the end of the course the student will be able;

- To assess, identify and analyze neuro-motor and psycho-somatic dysfunctions in terms of alteration in muscle tone, power, co-ordination, involuntary movements, sensations, perception etc, correlate the findings with provisional diagnosis and investigations such as EMG/NCV studies and arrive at functional diagnosis with clinical reasoning.
- To acquire the skill of application of PNF techniques on patients.
- To plan, prescribe and execute short term and long term treatment with special reference to relief of neuropathic and psycho-somatic pain, mat exercise, functional re-education, gait training and functional training for ADL and ergonomic advice.
- To prescribe appropriate othoses, splints and will be able to fabricate temporary protective and functional splints.

SYLLABUS

1) Assessment of development, tone, co-ordination, psycho-somatic and locomotor function.
2) Functional diagnosis of neuromuscular dysfunction and assessment of neuropathic pain.
3) Understanding sensory system and organization of sensory strategies for efficient motor output.
4) Principles of sensory-motor learning, neuro-muscular skeletal training and balance training.
5) Planning short term and long term goals for all the topics given as follows;
   a) Cortico-spinal lesions – Hemiplegia.
   b) Cranial nerve lesions – emphasis on 7^{th} and 8^{th} nerves
   c) Hydrocephalus

d) Disorders of cerebral circulation and space occupying lesions such as cortical, thalamic and brainstem lesions.

e) Subdural haematoma and birth injuries (intra-cranial)

f) Diseases of meninges

g) Neuro-syphillis, Tabes dorsalis, HIV infection.

h) Viral infection of nervous system – Encehalitis, Herpes, Poliomyelitis, Viral meningitis.

i) Demywlinating disease of the nervous system – Multiple sclerosis.

j) Lesions of Extrapyramidal system and Basal Ganglia – Parkinsonism, spasmodic torticollis, athetosis, chorea, dystonia.

k) Tetanus and epilepsy.

l) Disorders of spinal cord – Paraplegia, Syringomyelia, Transversemyelitis, Spinal dysraphysm.

m) Deficiency disorders – sub-acute combined degeneration of spinal cord.

n) Disorders of peripheral nerves, tumours, traumatic, infective and metabolic lesions of nerves.

o) Disorders of voluntary muscles – Dystrophies and neuro-muscular junction disorders.

p) Disorders of Autonomic nervous system

q) Psycho-somatic pain and paralysis.

6) Application of appropriate electro therapeutic modes for relief of pain and functional re-education with clinical reasoning.

7) Application of skills as PNF, co-ordination and balance exercises by using techniques based on neuro-physiological principles and tools of therapeutic gymnasium such as vestibular ball, tilt board, bolsters, etc.

8) Application of transfer and functional re-education exercises – Postural exercises and gait training.

9) Functional training in bladder dysfunction.

10) Prescription of appropriate orthotic devises and fabrication of temporary splints during urgent requirement with clinical reasoning.

11) Ergonomic advice for prevention / rehabilitation and parent / care takers education about handling of paralytic patien.

CLINICAL

Evaluation and treatment planning; its presentation and documentation of minimum two cases each in

1) UMN Lesions
2) LMN Lesions

REFERENCES:

Text books:

1) Cash text book for Physio Therapist in Neurological disorders – Jaypee Bros.
2) Proprioceptive Neuromuscular Facilitation by – Herman Kabat.
3) Practical Physical Therapy by – Margaret Hollis.
4) Therapeutic exercises by – O'Sullivan.
5) Right in the middile by – Patricia Devis.
6) Stroke Rehabilitation by – Margaret Johnson.

Reference books:

1) Therapeutic exercise by – Basmajiian- 5th edition.
2) Physical Rehabilitation by – Krusen
3) Brains's disorders of nervous system.

PHYSIOTHERAPY IN CARDIO RESPIRATORY CONDITIONS

Total - 140 hrs.
Theory - 60 hrs.
Clinical Training - 80 hrs.

COURSE DESCRIPTION:

Same as previous subject.

COURSE OBJECTIVES:

At the end of the course, the student will be able;

- To identify, discuss and analyze cardio – pulmonary dysfunction, based on patho - physiological principles and arrive at the appropriate functional diagnosis.
- To acquire knowledge of rationale of basic investigative approaches in the medical system and surgical intervention regimes related to cardio – pulmonary impairment.
- To acquire the skill of evaluation and interpretation of functional capacity using simple exercise tolerance tests such as 6 min. walk test, symptom related test.
- To select strategies for cure, care and prevention, adopt restorative and rehabilitative measure for maximum possible functional independence of a patient at home, work place and in community.
- To execute the effective physio therapeutic measures (with appropriate clinical reasoning) with special emphasis to breathing retraining, nebulization, humidification, bronchial hygiene, general mobilization and exercise conditioning.
- To acquire knowledge of the overview of patients care at the intensive care area, artificial ventilation, suctioning, positioning for bronchial hygiene and continuous monitioring of the patient at the intensive care area.
- To acquire the skill of basic cardio – pulmonary and cerebral resuscitation.

SYLLABUS

The following topics are applicable to all the adult conditions related to cardio – pulmonary conditions included in the clinical subjects of 3rd year BPT programme.

1) Assessment of respiratory and haemodynamics by means of assessment of breath sounds, interpretation of dysfunction by spirometry / exercise tolerance test / assessment of thoracic mobility and breathing pattern.
2) Interpretation of radiological and biochemical investigation and correlate the same with clinical findings.

3) Functional diagnosis of cardio – respiratory dysfunction and related movement dysfunction.
4) Planning short / long term goals with clinical reasoning – documentation.
5) Application of appropriate skills for breathing re-training and bronchial hygiene as preventive (used specifically in pre-operative care) restorative and rehabilitative measures.
6) Prescription of appropriate therapeutic exercise programme for conditioning.
7) Prescription of home programme and ergonomic advice.

CLINICAL

1) Skill to palpate all pulses, rhythm, rate, volume and heart rate / pulse rate discrepancy.
2) Skill to assess Blood pressure at various sites and its physiological variation and to assess ankle – brachial index.
3) Skill of exercise testing
    a) 6 / 12 min. walk
    b) Symptom limited.
4) Interpretation of
    a) Treadmill and ergo cycle test findings.
    b) ECG, I.H.D and Blocks.
    c) Biochemical analyses – serum enzymes, C.P.K levels, L.D.H, S.G.O.T., S.G.P.T., tropomin T, lipid profile, electrolyte balance.
    d) Chest X ray
    e) P.F.T. – Obstructive / restrictive / reversibility.
    f) A.B.G.
    g) R.P.E – Borg's scale.
    h) Quality of life questionnaire.
5) Evaluation and treatment planning, presentation and documentation of two cases each in;
    a) Medical respiratory conditions
    b) Thoracic surgical conditions.
    c) Cardiological conditions.

REFERENCES:

Text books:

1) Cash's text book for Physio Therapists in Chest, Heart and Vacular diseases – Jaypee Bros.
2) Cash's text book in General medicine and Surgical conditions for Physio Therapists.
3) Chest Physical Therapy and Pulmonary rehabilitation by – Donna Frownfilter.
4) Bromptom's hospital guide.

Reference books:

1) Physio Therapy in Cardio – vascular rehabilitation – webber.
2) Exercise and the heart – Wenger.

PHYSIOTHERAPY IN COMMUNITY HEALTH

Total - 140 hrs.
Theory - 60 hrs.
Clinical Training - 80 hrs.

COURSE DESCRIPTION:

Same as previous subject.

COURSE OBJECTIVES:

At the end of the course the student will be able;

- To describe the strategy to assess – prevelance and incidence of various conditions theat increase the morbidity, role of physical therapy in improving morbidity, expected functional and clinical recovery; reasons for non-compliance in specific community environment – solution – strategies of CBR programme, concept of team work – role of PT / OT / Audiologist / P and O / Vocational guide in the CBR programme of the physically handicapped – role of multi purpose health worker.
- To describe the general concepts about health and disesse – general fitness.
- To describe various national and international health policies – role of IAP to promote physiotherapy as a health delivery system.
- To attain ability of conducting small survey and collection of anthropometric data collection for morbidity assessment in various conditions – planning and implementation of appropriate physio therapeutic modes and advise with clinical reasoning at the urban, rural and community level for
  a) Aging population
  b) General fitness
  c) Industrial set-up

SYLLABUS

1) Concepts of Community PT and CBR – difference between the two Concepts
   - National and international policies.
   - Principles of disaster management – short term / long term.
2) Industrial health, risk factors, factors affecting health – pollution – Psychosomatic aspects.
   - Assessment – job analysis, task analysis, ergonomic evaluation.
   - Safety and stress management – work hardening, work Simulation, energy conservation.
   - Legislation of disability and compensation.

3) Geriatrics
   - Physiology of Aging / degenerative changes- Musculoskeletal/
   - Neuromotor/ cardio- respiratory / Metabolic.
   - Role of Physio Therapy in a Home for the aged.
4) Fitness & Health promotion
   - Acute and Chronic physiological effects of aerobic exercises
   - Principles of Aerobic and Anaerobic training.
   - Principles for training strength, power and endurance.
   - Clinical reasoning for advocating aerobic exercises as preventive measure in Obesity & its related conditions / in cardio- respiratory conditioning / Aging / Deconditioning effect after prolonged bed rest/ Diabetes.

REFERENCES:

Text books:

1) Social and preventive medicine by – Park and Park.
2) Industrial Therapy by – Glenda Key.
3) Exercise Physiology by – Katch and Katch.
4) Orthopaedic assessment and treatment of geriatric patients by – Carolyn and Karen Knortz.
5) Therapeutic Exercises by – Kisner.

Reference books:

1) Text book of work physiology by – Astrand.
2) Ergonomics: Man in his working environment by – Mural K.F.

PHYSIOTHERAPY IN MOTHER AND CHILD CARE AND GENERAL CONDITIONS

Total - 140 hrs.
Theory - 60 hrs.
Clinical Training - 80 hrs.

COURSE DESCRIPTION:

Same as previous subject.

COURSE OBJECTIVES

At the end of the course the student will be able;

- To describe altered mechanics and physiological function due to pregnanacy, labour and parity in female.
- To plan and implement appropriate physio therapeutic modes and advise with clinical reasoning to various gynaecological / obstetrical conditions.
- To acquire the knowledge of normal neuro development with specific reference to locomotion.
- To plan and implement appropriate physio therapeutic modes and advise with clinical reasoning to various pediatrics.

1) Women's Health; (Theory – 25 hrs)

- Anatomy of Pelvic floor
- Clinical reasoning for Physical exercises during pregnancy
- Clinical reasoning for care to be taken during exercises during pregnancy.
- Prenatal/ antenatal programme- Clinical reasoning for specific breathing exs/ relaxation/ postural training/ Pelvic floor stretching & strengthening exs.
- Physio therapy during labour
- Post-natal exercise programme after normal labour/ labour with invasive procedures
- Uro-genital dysfunction- P.T. management
- Menopause – Deconditioning- P.T. management
- Common Gynaecological surgeries-role of P.T.
- Clinical reasoning for application of Electro-therapeutic measures in Obst/ Gynac

2) Paediatric Conditions: (Theory – 25 hrs)

- Musculo- skeletal – Fractures, congenital deformities, poliomyelitis, spinal dysraphism, arthrogryposis.
- Neurological – Normal neuro development, sensory, motor integration, cerebral palsy, myopathies, nutritional and metabolic disorders, infective conditions and sequalae.
- Cardio – pulmonary – Asthma, bronchitis, bronchiectasis, tuberculosis and congenital heart diseases.

3) General conditions (Theory – 10 hrs)

- Wounds, ulcers, peripheral vascular diseases, burns - skin grafts, flaps, scar management, skin conditions – vitiligo, vitamin D deficiency.

REFERENCES:

Text books:

1) Therapeutic Exercises by – Kisner
2) Cash's text book in General medicine and Surgical conditions for Physio Therapists
3) Cerebral palsy principles and management by – Sophia Lewitt.
4) Obstetrics & gynecology by - Poldan

ETHICS, MANAGEMENT AND INTRODUCTION TO RESEARCH METHODOLOGY & BIOSTATISTICS.

Total - 50 hrs.
Theory - 40 hrs.
Clinical Training - 10 hrs.

COURSE DESCRIPTION:

This courses aims to provide a basic understanding of ethics, management and research process in order to develop research attitude.

COURSE OBJECTIVES:

At the end of the course the student will be able;

- To acquire the knowledge of ethical code of professional practice as well as its moral and legal aspects and its role WHO and WCPT
- To acquire the knowledge of the basics in managerial and management skills and use of information technology in professional practice.
- To understand the meaning and scope of research.
- To understand and apply the basic concept of research methodology in daily personal & professional practice.
- To understand and apply basic statistics in research.
- To appreciate research findings and apply it in practice where feasible.

A. ETHICS

Theory - 5 hrs.

1. Ethics and constitution & physiotherapy by world confederation of Physical therapists(WCPT) and by Indian Association of Physiotherapists (IAP)
2. Concepts of morality, ethics and legality – rules of professional conduct and their medico – legal and moral implications.

B. MANAGEMENT

Theory - 15 hrs.

1. Basis of administration in institutional, private clinics and private practice in community.
2. Personal, intra and interdepartmental relationship.
3. Documentation.
4. Budget planning.
5. Performance analysis.

C. INTRODUCTION TO RESEARCH METHODOLOGY AND BIOSTATISTICS

Theory - 25 hrs.

Clinical Training - 10 hrs.

1) Meaning of Research
   - Basic concept of research
   - Its need and importance in daily personal and professional practice
   - Scope of research the practice of physiotherapy
   - Characteristics of research
   - Ethical consideration in research
   - Qualities of research
   - Classification of Research
   - Developing an enquiring mind.
2) Research problem/ Question.
   - Identification of problems, sources and selection of problems.
   - Statement of the problem and objectives
   - Library search
   - Meaning and understanding of terms
   - Variables
   - Assumptions
   - Hypothesis
   - Limitations
   - Delimitations
   - Populations
   - Sample

3) Sampling Technique
    - Random Technique
    - Non-Random Techniques
4) Method of date collection- Tools and Technique
    a) Technique- Questioning
        - Interview
        - Observation
    b) Tool – Interview Schedule
        - Questionnaire
        - Observation Checklist
        - Retiring scale
    c) Criteria good tool, reliability and validity
    d) Pilot study
    e) Classification and interpretation of findings.
5) Biostatistics
    - Use of statistics types.
    - Measures of central tendency – Mean, Median, Mode,
    - Measures of dispersion – Range, Variance, Standard deviation.
    - Use of descriptive statistics- Frequency, percentage
    - Use of tables and graphs- Histogram, Pie chart, Bar graph, Frequency graph
6) Writing a research report
    - References, documentations.

Note: **Student Activity** – Students under take a small project in their clinical area.

REFERENCES:

Text books:

1) Hospital management, accounting, planning and control by – Kulkarni G.K.
2) Methods in Bio-statistics by – B.K.Mahajan
3) Research for Physical Therapist by – Carolyn Hicks.
4) Medical ethics by – C.M.Travis.

S.N.D.T. WOMEN'S UNIVERSITY, MUMBAI.

SCHEME OF EXAMINATION FOR THE FINAL YEAR BACHELOR OF PHYSIOTHERAPY

Sr	SUBJECTS	THEORY MARKS			PRACTICAL MARKS			Hours
		External	Internal	Total	External	Internal	Total	
1	Physiotherapy in Musculo skeletal condition	80	20	100	80	20	100	3 hrs.
2	Physiotherapy in NeuroSciences	80	20	100	80	20	100	3 hrs.
3	Physiotherapy in General Medicine, Surgery – including Cardio Respiratory conditions	80	20	100	80	20	100	3 hrs.
4	Physiotherapy in Community Health	80	20	100				3 hrs.
5	Physiotherapy in Mother and child care and General conditions	80	20	100	80	20	100	3 hrs.
6	Ethics, Management and Introduction to research methodology and Biostatistics*****	40	10	50				1.5 hrs.

*****College level Examinations.

S.N.D.T. WOMEN'S UNIVERSITY, MUMBAI.

INTERNSHIP

Total - 1194 hrs.

[A] The Clinical Orientation workshop (3 days X 8 hrs.) - 24 hrs.

[B] Rotational basis clinical training - 1092 hrs.

[C] Physiotherapy practice & Scientific Project including administrative skills. (3 hrs. per week - not less than 78 hrs.) - 78 hrs.

Rules Governing Internship Training Programme for Final Year pass out B.P.T. Candidates under the Faculty of Medical Health Sciences.

1. This Direction shall be called "Rules Governing Internship Training Programme for Final Year pass out B.P.T. candidates.
2. This Direction shall come into force with effect from the date of its issuance.
3. For the Degree of Bachelor of Physiotherapy, the students after passing the professional examinations as per the syllabi prescribed by the S.N.D.T. Women's University, Mumbai, shall undergo Six months compulsory rotatory internship training programme to develop skill and acquire clinical knowledge with proficiency in managing patient independently.
4. These rules shall be implemented by all approved / recognized Physiotherapy colleges affiliated to the S.N.D.T. Women's University, Mumbai, meticulously from the first batch admitted in 2000-2001 to Physiotherapy course. The evaluation of the interns shall be done very carefully by the In-charge, Internship Training Programme and the Head of the concerned department on the basis of the skill, knowledge and ability to handle the cases independently. The Dean / Principal of the college shall have to monitor Internship Training Programme in collaboration with all Heads of the Departments. The In-charge, Internship Training Programme, Heads of the Departments and the Dean / Principal of the institution shall be responsible for the maintenance of standard and records of the interns. Any deviation/alteration in the training programme without the knowledge of the S.N.D.T. Women's University, Mumbai, shall not be permitted under any circumstances.
5. The programme of internship shall be as under.

GENERAL:

Internship is a phase of training where in a candidate is expected to conduct actual Physiotherapy practice, with fair independence in clinical decision making in low risk cases where as to work under supervision at high risk areas; so that at the end of Internship he/ she is capable to practice Physiotherapy independently.

Since Physiotherapy profession does not have a Council to regulate the education, till such Council is formed; the Rules & Regulations recommended by the Indian Association of Physiotherapists [I.A.P.], affiliated to the World Confederation for Physical Therapy, & accepted by the S.N.D.T. Women's University, Mumbai, shall be implemented.

The Internship programme shall mainly focus on acquisition of specific skills listed in the major areas of training by "hands on" experience & also on ability to conduct a scientific project.

1. The Chief of parent institute shall be responsible for implementation of Internship programme & also for the issue of Internship completion certificate.
2. Internship shall commence not later than One week from the day of declaration of results of IV B.P.T. examination.
3. It shall be binding on the candidate to follow strictly, the code of conduct prescribed by the I.A.P. & accepted by the S.N.D.T. Women's University, Mumbai. Any breach in the conduct / discipline shall disqualify the candidate from pursuing Internship for a period of One week to One month or more depending upon the gravity of breach of conduct.
4. No Stipend shall be paid.
5. Compulsory Internship shall include rotational clinical assignments, administrative skills & a Scientific project over a period of 26 weeks. Candidate is however encouraged to extend optional "Hands on" practice for six additional months in the desired areas at the hospitals, attached to a college affiliated to S.N.D.T. Women's University, Mumbai, conducting B.P.T. programme; as per the Rules & Regulations applicable to Internees regarding attendance, attitude, performance & evaluation. Such clinical experience on successful completion & on passing in evaluation, shall be documented in the transcript & shall be strongly recommended for additional credits for higher education or employment.
6. On successful completion of Internship, to the satisfaction of the Head of Physiotherapy Dept & the Chief of the parent institution, the Internship completion certificate shall be issued by the parent institution; and it will be forwarded to the S.N.D.T. Women's University, Mumbai, for the award of B.P.T. Degree.

OBJECTIVES:

At the end of Internship programme, the candidate shall be able to-

1. Detect & evaluate Anatomical, Patho-physiological & Psycho-somatic impairments resulting in Dysfunction of MOVEMENT of all the ages, & occupations; as well as epidemiological sectors in the population; & arrive at the appropriate Physical & Functional diagnosis.
2. Understand the rationale & basic investigative approach to the Medical system & Surgical intervention regimens & accordingly, Plan & implement specific Physio therapeutic measures effectively Or make a timely decision for referral to appropriate speciality
3. Select strategies for cure & care; adopt preventive, restorative & Rehabilitative measures for maximum possible independence of a client/ patient, at home, work place & in the community.
4. Help in all types of emergencies medical, surgical, neonatal, & paediatric by appropriate therapeutic procedures & shall be able to implement , as a first level care, the. Cardio Pulmonary resuscitation, providing support to the injured area, splinting etc, in the situation when medical aid is not available
5. Demonstrate skill to promote Health in general as well as competitive level, such as sports, work productivity, Geriatric &, Women's health etc, keeping in mind National Health policies;
6. Develop skill to function as an essential member in co-partnership of the health team organized to deliver the health & family welfare services in existing socio-economic, political & cultural environment
7. Develop communication skill for purpose of transfer of suitable techniques to be used creatively at various stages of treatment, compatible with the psychological status of the beneficiary & skill to motivate the client & his family to religiously carry out prescribed home exercise programme & compliance to follow ergonomic advice given as a preventive / adoptive measure.
8. Demonstrate skill of managing patients attending Physiotherapy services , by developing skills to use appropriate manipulative mobilization methods, Neuro-physiological maneuvers, techniques of Bronchial hygiene, Breathing retraining; application of Electro- therapeutic modalities & Therapeutic exercise; for the purpose of, evaluation, assessment, diagnostic procedures; & for the purpose of treatment as well, bearing in mind their indications & contraindications
9. Develop ability to prescribe, assess [fitting] & use of appropriate orthotic & prosthetic devices; in addition to an ability to fabricate simple splints for extremities, for the purpose of prevention, support & training for ambulation & activities of daily living.
10. Develop ability to do Functional Disability evaluation of Movement; & recommend for rest or alternative work substitution during the period of recovery or in case of permanent disability.

11. Practice professional autonomy & ethical principle with referral as well as first contact client in conformity with ethical code for Physiotherapists.

INTERNSHIP SCHEDULE:

Candidate shall be posted to four Rotational Clinical assignments of total 26 weeks, including administrative skills pertaining to Physiotherapy practice & a scientific project of 3 hours per week [total not less than 78 hours].

The schedule of Internship shall be as follows:

Assignment	Discipline	Duration
Musculo-skeletal Physiotherapy	OPD/Indoor Orthopaedics /Burns/ Surgical amputations	4 weeks
	Optional-Hand rehab. /Sports injury /wound & skin care	2 weeks
Neuro-physiotherapy	OPD/ Neurology/ Neurosurgery/	4 weeks
	Optional-Paediatrics /EMG	4 weeks
Cardio-pulmonary Physiotherapy	OPD /Medical/surgical	4 weeks
	Intensive care	4 weeks
Community Physiotherapy	* Womens health + Geriatric health at primary health centre or community	4 weeks
	TOTAL	26 weeks

* Clinical Posting in Community P.T can also be conducted at the Rural set up with prior permission from the HOD and the Dean/ Principal of the parent institution.

SCIENTIFIC PROJECT:

During the Internship, candidate shall undertake a scientific project of 3 hours per weeks [total duration not less than 78 hours] .Selection of topic & place for the conduct shall be in consultation & with consent of the H.O.D. P.T. dept & the ethical committee of parent institution .Scientific inquiry shall be based on Comparative diagnostic or clinical trials, having a sample size of not less than 20. The candidate shall submit the project not earlier than two weeks & not later than 4 weeks of the last day of internship & the HOD, P.T. dept of parent institution shall sign on the same if the project is up to her /his satisfaction.

Candidate shall then present the project in front of senior Faculty, & if found satisfactory, the evaluators shall offer an appropriate Grade in consultation with each other .Such grade shall appear on the transcript.

EVALUATION:

During the rotational posting, student shall treat not less than 10 patients per day & also undertake skills of maintaining administrative records & Maintenance of equipment. The candidate shall maintain a log book & record all the events of the respective posting She shall be closely monitored by the senior Physiotherapy staff in

charge through out the posting & the same shall also sign in the Log book on completion of the assignment

There shall be Formative & summative assessment at the end of each of the 4 postings given in the schedule & score will be given to each by the panel of minimum 3 teachers involved in supervision of the student during the respective assignment. Student shall repeat the respective assignment for a period of 25% of the period allotted to the respective posting, if she fails to score minimum 3 in the average of over all Formative + Summative score obtained during the respective posting.

During the Internship, student MUST CONDUCT following procedures

A. Electro-therapeutic Procedures:

1. Application of Low frequency currents [galvanic/faradic like, rectangular, triangular, surged ,interrupted etc] for- I]-Electro-diagnosis-a]-short-long pulse test, b]- motor points,c]-S.D. curves, d]- sensory threshold, e]-Pain threshold & tolerance, II]-Therapeutic purpose-Iontophoresis of various pharmaco-therapeutic drugs, Cathodal & anodal galvanism, Electrical re-education, TN.S, Interferential current therapy, Beat frequency, medium frequency currents, strong surged faradic stimulations, for pain relief & reduction of swelling etc.
2. Application of Superficial & Deep thermal agents- Cryotherapy, Hot packs, Paraffin wax bath, Infra red radiations, Short wave diathermy.
3. Calculation of appropriate dosage & application of a]-U.V.R[B /C] for wound care, & U.V.A .for skin conditions, b]-Continuous & pulsed Ultrasound of 1 & 3 MHz frequency for direct application, with coupling agents, water bags & phonophoresis .
4. Testing of all the electrical equipment

B. Therapeutic Gymnastic Procedures:

1. selection & application of appropriate gymnastic too for the management of dysfunction of mobility, strength, power, endurance, balance, coordination, cardio-pulmonary fitness; & for functional training such as transfers, mat activity, postural correction, gait training with or without aids, ambulation & A.D.L.
2. Group activity procedures-Select & implement group activity by effective & appropriate command & demonstration-such as Jacobson's Relaxation exercises, standard Yoga postures, Mat exercises, transfer exercises, shoulder/ Back class, General fitness/Aerobic exercises. Balancing exercises, Breathing exs

C. Manipulative Mobilisation Procedures:

a) massage maneuvers, for extremities, face, neck & back,

b) assessment of Physiological movements, & end-feel.; identification of target soft tissue to be mobilized, & application of NON-Thrust mobilization techniques of Kaltenborne ,Maitland, Mulligan ,Buttler, Cyriax, Mckenzie & muscle energy methods, passive sustained stretching on Spine & extremities, , manual traction for cervical & lumbar spine.

D. Therapeutic exercise [including auto stretching exercises.]:

For Home programme, for restoration & maintenance of function , prevention of Dysfunction

E. Neuromotor & Psychosomatic Procedures:

a) Manual muscle testing[group & individual] ,identification of trick movements, muscle imbalance,

b) assessment of posture[static & dynamic] & its deviations,

c) assessment of Gait & its deviation; selection of appropriate walking aids, & training, stair climbing;

d) Neuro- developmental & /neurophysiological methods of assessment & treatment [P.N.F, N.D.T., Brunstromme, Bobath, Butler, Patricia Devis] of voluntary control, spasticity, [Ashworth`s scale], coordination, balance, abnormal movements, functional re- education, standing, gait training, ADL training,

e) assessment of L.O.C, Tilt table standing for Ca++ balance, passive mobilization for maintenance of paralytic limbs,

f) Assessment of peripheral sensations, dermatomes, superficial & deep reflexes,

F. Cardio-Pulmonary Procedures:

a) assessment of B.P., R.R., Pulse, body temp. ,Abnormal breath sounds, breathing pattern, chest expansion, exercise tolerance[6 min. walk test] , P.E.F.R.,

b) selection & application of nebulisation, humidification, positioning for postural drainage, percussion manipulations for bronchial hygiene, coughing–huffing maneuvers, suctioning for tracheaostomized & non-tracheostomized patient, comatose patient, assist in bronchial hygiene in patients with Oxygen support or artificial ventilation;

c) selection & implementation of appropriate Breathing exercise,[inspiratory/ expiratory /modified inspiratory;]

d) Cardio-pulmonary resuscitation

G. Other Therapeutic Procedures:

a) Fabrication [with plaster of Paris bandages/ thermoplast/similar material-] splints- cock up, knuckle bender, outriggers, opponens splint, soft cervical collar ; posterior guards for gait training,

b) strapping & Taping of extremities for support, & pain relief

c) application of elastocrepe bandage for prevention of swelling, shaping of amputated stump,

d) wound care-application of U.V.R., TNS, etc, dressing ; UVR application for vitiligo, & psoriasis

H. Community Physiotherapy procedures:

a) Collect, analyse, interpret, & present , simple community & hospital based data,

b) participate as a member in co-partnership in the Rehabilitation work in the community

c) participate in the programmes in prevention & control of locally prevalent functional disorders,

d) be capable of conducting survey & employ its findings as a measures towards arriving at a community functional diagnosis

e) Provide health education to an individual / community on-

   i. General fitness, ergonomic alterations for better quality life at home & work place,

   ii. preventive tools to avoid accidents, in the industrial area

   iii. skin care in case of loss /impairment of sensations,

   iv. care of the back,

   v. antenatal/ post-natal exercises; management of pelvic dysfunction [urinary / anorectal incontinence; per vaginal prolapse

   vi. specific warming up activities & appropriate maintenance exercises to elderly patients

TO ASSIST IN PROCEDURES:

a) Fabrication of pylon

b) Electromyography,

c) Physiotherapy in Intensive care

d) Disaster management

EVALUATION SCHEME:

Skills during Formative Evaluation shall include following

1. Musculo-skeletal Physiotherapy-relevant Skills mentioned at - A ,B ,C ,D ,& G above
2. Neuro-Physiotherapy- Relevant Skills mentioned at A ,B ,D ,E ,& G above
3. Cardio-pulmonary Physiotherapy – Relevant skills mentioned at B, D, & F above
4. Community Physiotherapy- Relevant Skills mentioned at D,G & H above
5. Overall total marks per evaluation scheme is 10 marks.

LEAVE FOR INTERNS:

An internee shall be entitled for maximum 6 days leave during six months period of internship posting. An internee will not be permitted to avail more than 2 days leave in any department. Period of leave in excess of 2 days in a department will have to be

repeated in the same department. Under any circumstances this period will not be condoned by any authority.

Transfer of Internee to other Physiotherapy college:

The student desirous of transfer to another Physiotherapy college for doing internship training programme may apply to the University in the prescribed form along with the fee prescribed by the University from time to time.

A. Colleges affiliated to S.N.D.T. Women's University, Mumbai,:

1. Internee shall be permitted to complete all parts of internship at approved/ recognized Physiotherapy college.
2. The student will have to apply for No Objection Certificate to parent college and also where she wants to get internship transferred.
3. Maximum 5% of total intake capacity of that college (outgoing and incoming) will be entertained for transfer. Out of total transfer 4 % will be kept for regular and 1 % for repeater batch.
4. The parent college will forward the application with No Objection Certificate to S.N.D.T. Women's University, Mumbai and the University authority will finalize the cases strictly on the basis of the merit.
5. The college in which the internee is transferred will have to complete the programme as per the guidelines including skill test/ performance.
6. The parent institution will then receive the Internship Completion Certificate from that college and will forward the same to S.N.D.T. Women's University, Mumbai for the award of degree.

B. Colleges outside the jurisdiction of S.N.D.T. Women's University, Mumbai,:

1. No Objection Certificate from both relieving and receiving colleges shall be obtained by the candidate.
2. The application along with the No Objection Certificate's will be forwarded to S.N.D.T. Women's University, Mumbai for getting permission to allow the internship completion at colleges outside the jurisdiction of this University.
3. The concerned college will issue Internship Attendance Certificate mentioning the quantum of work done department-wise as per proforma of S.N.D.T. Women's University, Mumbai and it will be submitted by the internee to parent college.
4. The parent college will assess the skills by conducting skill performance tests as per the guidelines of internship.
5. After successful completion of skill tests, internship completion certificate will be issued by the parent college and it will be forwarded to S.N.D.T. Women's University, Mumbai for award of degree.

C. Merit to be considered:

The applications for transfer of internees shall be considered and decided strictly on the basis of merit as follows:

1. Aggregate marks obtained at Final B.P.T. Examination.
2. No. of attempts at Final B.P.T. Examination.
3. 1 % marks will be deducted per attempt from aggregate marks of final B.P.T.
4. In case of tie, combined marks of I, II, III & IV B.P.T. to be considered.
5. Age to be considered.

Issue of Internship completion certificate

Internee will be issued internship completion certificate by the Dean / Principal only after completion of internship training programme satisfactorily.

Start of Internship programme

The programme will commence within 10 days after the declaration of Final B.P.T. result by the University. Before commencement of the Internship Training Programme the Dean/ Principal shall conduct three days Orientation Workshop to orient the internees to get acquainted with the details of Internship Training Programme. The Orientation Workshop should cover orientation to internship programme, Disaster Management, CPR basics, Specific Emergency care of Patients, Hands- on, Medico-legal issues, Evidence based Practice (EBP), Clinical Reasoning, Linking Evidence and Practice (LEAP), Internal Evaluation Scheme, Mandatory Skills to be acquired, Social and ethical aspects, National Health Policy, Patient Management. It shall be mandatory for the internees to attend the Orientation Workshop. The period of three days shall be included in the period of six months Internship.

This direction shall remain in force until the University makes regulations in this behalf.

Place :

Sd/-

Date : __/___/20 The Registrar

FORMAT OF INTERNSHIP EVALUATION (For office use only)

Name:- _____ duration from _____ to_____
Assignment:-_____

SUMMATIVE EVALUATION		FORMATIVE EVALUATION	
MAXIMUM SCORE	5 each	MAXIMUM SCORE	5 each
Punctuality		Cognitive (Problem solving / clinical decision & reasoning / planning Treatment	
Attitude towards patients & colleagues/ Character		Physical Assessment Skills	
Urge for learning / Initiative		Skills of Treatment maneuvers	
Accountability / Responsibility		Skills of equipment handling	
Administrative ability (records / maintenance of equipment)		Participation in Academic activities	
Total		Total	

Head of the Dept./Dean/ Principal of the College
Internship in-charge

Minimum Grade required for passing – Average of Over all score obtained from the respective assignment is to be considered. Minimum score for passing shall be

A : Excellent

B : Good

C : Satisfactory

D : Below Satisfactory

(To be repeated)

S.N.D.T. WOMEN'S UNIVERSITY, MUMBAI.

SCHEME RELATED TO THE PROFESSIONAL DEGREE COURSE IN BACHELOR OF PHYSIOTHERAPY (B.P.T.) WITH EFFECT FROM ACADEMIC YEAR 2006 – 2007.

A. DURATION OF COURSE:

The total duration of Professional Degree Course in Bachelor of Physiotherapy (B.P.T.) approved by the University only for girl candidate is $4^1/_2$ (Four and half) year including six months' of internship so as to be at par with the recommendation of Indian Association of Physiotherapists (I.A.P.). The medium of instruction will be in English language.

B. ELIGIBILITY TO THE COURSE:

For admission to the Degree course in Bachelor of Physiotherapy (B.P.T.), a candidate shall have passed Higher Secondary Certificate Examination (Standard XII – 10 + 2 educational pattern) from (1) Maharashtra and Gujarat state Board of Secondary and Higher Secondary Education OR (2) Indian School Certificate Examination OR (3) Central Board of Secondary Education OR (4) equivalent in Science stream with Physics / Chemistry / Biology (including Theory and Practical examination) as mandatory subjects and minimum 50% marks. Over and above, English subject will be required as one of the subjects.

C. ARRANGEMENT OF TERMS:

For keeping terms the students shall have to put attendance 75% of the total lectures and practical taken togather of two terms.

On account of bonafide illness or any other valid reason deemed sufficient by the principal, the total attendance of a student falls short not more than 30 days of the minimum number of days required stated above, in such cases the principal shall be competent to permit a candidate to appear in examination as a very special case.

D. EXAMINATION:

The University level and college level examination shall be conducted as per Syllabi, twice in a year i.e. annual examination will be conducted in the month of May-June and supplementary examination will be conducted in the month of November-December (commencement from academic year 2006-2007) of every year on suitable such dates fixed by the Examination departments of the University and College level examination dates fixed by the principal of respective college.

Students who has satisfied all the requirements of course of studies in the affiliated college, including the necessary minimum attendance and is certified by the principal of the college will become eligible for admission to the respective examinations as a regular candidate / ex-student.

Subjects having weightage of 40 marks at final examination shall have one examiner.

E. STANDARD OF PASSING THE EXAMINATION:

All other provisions / Rules / Resolutions related to the examination of the University should be refered and will apply at the time of preparing the result of any class by the examination section.

Student must pass separately in theory, practical / clinical and internal assessment of each subject

- There will be combined passing in theory and practical / clinical in internal assessment of respective subjects.
- Students will have to acquire minimum 50% marks in each head of passing of respective subjects. Not withdrawing whatever is mentioned in examination scheme, the student will have to acquire minimum of 40% in the subject of English.
- The standard for declaring the class for every year and for each examination shall be as under:
  - Class will be declared only for such student who has passed the examination in each subject in the first attempt.
  - Marks obtained in any college level examination shall not be included while declaring class for respective year of examination
  - SECOND CLASS: will be declared to a candidate who obtains at least 50% marks and above but less than 60% marks in the aggregate of all examination
  - FIRST CLASS will be declared to a candidate who obtains at least 60% marks and above but less than 75% marks in the aggregate of all examination.
  - FIRST CLASS WITH DISTINCTION will be declared to candidate who obtains at least 75% marks or more in the aggregate of all examination.
  - Class will be declared for each year of examination.
  - Class for the degree certificate will be as per the aggregate marks obtained from all university examinations.
- A student will be allowed to keep terms in the next year (ATKT) if she fails in any one of the subjects listed below;

1st year – English and communication skills

Biochemistry

Sociology

2nd year – Pathology

Microbiology

Pharmacology

Clinical Psychology and Psychiatry

3rd year – Surgery I

Surgery II

Medicine I

Medicine II

Obstetrics and Gynaecology and Paediatrics

Community Medicine

Principles of Bio-engineering.

4th year – Ethics, Administration and Introduction to research methodology and biostatistics

- In case candidate fails in more than one subject she will not be granted ATKT and the candidate will have to clear the failed subjects before admission to the following year.
- Number of attempts allowed in an examination to the candidates granted maximum five in all (i.e. 1+ 4)
- Being absent in an examination with or without submitting the examination form will be considered as an attempt.
- Award of prizes scholarship etc. at the university level will be considered for student who are clearing the examination at first attempt.

F. AWARD OF A DEGREE OF BACHELOR OF PHYSIOTHERAPY (B.P.T.):

Every candidate who passes an examination for a degree of Bachelor of Physiotherapy (B.P.T.) and after completion of six months' internship as per syllabi shall become eligible for admission to the degree.

==========