AIMS AND OBJECTIVES OF THE COURSE
To educate and train the candidate to INDEPENDENTLY evaluate, assess, diagnose, prescribe, plan, and practice Physical Therapy at the end of the course.

B. Physio. 1. A candidate for the Degree of B.Physio for being eligible for admission to the College affiliated to this University must have:

(i) Passed the Higher Secondary Examination of XII Standard in Science Stream conducted by the Gujarat Secondary Education Board or its equivalent examination conducted by recognized Board with minimum 50% marks.

OR

As prescribed by the Govt. of Gujarat from time to time.

(ii) Completed the age of 17 Years at the time of admission or will complete 17 by 31st December of the year of his admission to the course.

B.Physio.2 The candidates for the degree of B.PHYSIO shall be required to undergo a period of certified study extending over four academic years. After a period of study extending over one academic year, a candidate on the production of necessary certificate would be entitled to appear for the First B.Physio, Examination. After passing the First B.Physio Examination a candidate can appear at the Second B.Physio Examination and so on. Only after completing the Course prescribed under relevant regulation and after completing one year. The Degree of B.Physio will not be confirmed upon a candidate unless he / she undergoes internship for a period of six months in the manner prescribed in relevant regulation, subsequent to his/ her passing the Final Examination.

B.Physio.3. Candidates desirous of appearing at any examination must forward their applications in the prescribed form to the Registrar through the Principal/ Dean of the Institution on or before the date prescribed for the purpose under the relevant ordinances.

B.Physio.4. No Candidates will be allowed to reappear at any examination in which he / she has already passed.

B.Physio.5. For the purpose of deciding Final University results at the First, Second, Third and Fourth B.Physio examination the ratio between internal and external assessment will be the same as indicated in the scheme of Examination.

B.Physo.6. RULES REGARDING INTERNAL EVALUATION FOR FIRST, SECOND , THIRD AND FOURTH B.PHYSIO EXAMINATION:
Theory: Two terminal examinations and one preliminary examination will be held for theory and practical for computing credit marks, the averaged marks of the two terminal examinations will be added to the marks of the preliminary examination.

Practical: Day-to-Day same as theory practical or viva voce marks will be used for computing credit marks.

1. (a) The result of each test shall be displayed on the Notice Board within one month after it is held.
   (b) The answer – scripts of the candidate in the various tests shall be duly examined and assessed by the Examiners concerned in the college and shall be marked in ink and no marking shall be erased or defaced and no correction of marking made without corresponding initialing by the examiners to whom the work is assigned, in support of the correction.

2. (a) The result of the internal evaluation shall be placed on the college Notice Board at least 15 days before the date on which University examination commences, and any candidate who has any doubt or dispute relating this should apply to the Principal / Dean of the college within two days of the declaration of the result for internal evaluation in the subject concerned. If a mistake is found, the Principal / Dean shall communicate the amended result within three days, no amendment shall be entertained by the university, if it is received after the University Examination commences.
   (b) The decision of the Principal / Dean in the internal evaluation in case of any doubt or dispute relating thereto shall, subject to the time-limit mentioned in {1} above, be final and no appeal shall be entertained thereon.

3. It shall be the duty of the college to communicate the result of internal evaluation of all the candidates whether fresh or repeaters by the prescribed date and in the prescribed manner to the University.

B.Physio 7 Standard of Passing

1. To pass the first, second, third and fourth B.Physio examination a student must obtain at least 50% marks in each of the subjects separately with a minimum of 50% theory and 50% in practical in medical and physiotherapy subjects while 36% marks in the subjects of humanity.

2. Those who have failed in THREE PAPER or less, will be allowed to take supplementary exam to be conducted 2 month after the declaration of result. Those who failed in more than THREE PAPERS are not eligible for supplementary exam and will have to take next regular exam. The student is eligible to take two regular and subsequent two supplementary exams only. There after he/she is not eligible to continue further.
3. ATKT AND SUPPLEMENTARY EXAMINATION

(A) Those who have failed in three or less than three papers will be allowed to take supplementary examination only in those paper(s) in which he/she has failed.

(B) Those candidates who have failed in more than three papers are allowed to take next annual examination along with subsequent batch of students only in failed papers and marks of passed papers will be retained as such.

(C) Those candidates who have kept the term but could not take annual examination due to ill health, accident or any other extreme reason can appear for supplementary examination along with ATKT examination provided that candidate has cleared in internal examination and has necessary 80% attendance.

4. DETERMINATION OF CLASS

(A) Those who secure less than 60% in aggregate, will be classified as Pass class.

(B) Those who secure 60% or more in aggregate and pass all the subjects in first attempt will be classified as First class.

(C) Those who secure 75% or more in aggregate and have passed all the subjects in first attempt will be classified as First class with Distinction.

(D) Getting 50% marks in internal examination is not mandatory to pass the examination. If the sum of marks in a paper in internal plus external marks secured is 50% or more, the candidate shall be declared passed in that paper, i.e. in medical and physiotherapy subjects.

Similarly, 36% aggregate is also sufficient to pass in humanity subjects i.e. Psychology, Sociology, English.

(E) Classification of pass class, first class and distinction class shall be done every year in annual regular examination.

(F) If a candidate takes more than one attempt to pass any of the papers of a particular academic year, he/she shall be classified only as Pass class.

(G) Psychology, Sociology and English are Humanity subjects in the first year, in which 36% marks are required to be declared passed and marks of these subjects will not be taken in to account to calculate the Percentage or class.

(H) The grace marks up to a maximum of five marks may be awarded by The University to a student, who has failed in a subject/subjects of a single paper (section I/II), five marks may be divided in two subjects either in theory or practical but has passed in all other papers.
B.PHYSIO.8. The paper(s) in which successful candidates may have got a distinction will be shown on the list. In order to obtain distinction in any year, the candidates should pass the examination at the first attempt in all the paper(s). Only those candidates who have passed the whole examination at the first attempt will be eligible for distinction or for any prize or scholarship to be awarded at the examination.

B.PHYSIO.9. Carry over system

1. A candidate can carry over maximum of three papers to next academic year.
2. If a candidate passes in one or two paper in supplementary examination of three failed papers of an academic year or fails in all three papers again, he/she can take up the failed paper(s) again along with next academic year examination; that means one can take –
   (a) Maximum three first year paper(s) along with second year annual examination.
   (b) Maximum three second year paper(s) along with third year annual examination.
   (c) Maximum three third year paper(s) along with fourth year annual examination.
3. A candidate can not carry over first year paper(s) to third year; and 2\textsuperscript{nd} year paper(s) to 4\textsuperscript{th} year.

B. PHYSIO .10. GUIDELINES FOR INTERNSHIP

After the successful completion of first year, second year, third year and final year the student has to undergo a compulsory rotating internship for a period of six months. The concerned college authority shall do the posting of successful candidates for internship within fifteen days of declaration of results of final year exams. During the internship period the student is entitled to six casual leaves.

If a student wants to do internship outside Surat in Gujarat; or in some other state in India; or abroad, he/she has to obtain an NO OBJECTION CERTIFICATE from the VNSG University, Surat after getting the recommendation from the PRINCIPAL and Dean (Medical) and NOC from that hospital where he/she wants to do the internship.

Hospital, where the candidate wants to do the internship must have at least 100 beds and it should be a multi-specialty hospital.

Note: This syllabus will be applicable from academic year 2005-2006.

This syllabus is not applicable for previous batches of B. Physio of this university.
VEER NARMAD SOUTH GUJARAT UNIVERSITY
BACHELOR OF PHYSIOTHERAPY ( B. Physio )

Subjects during the four-year study of B. Physiotherapy:

**First year:**
1. Human Anatomy
2. Human Physiology
3. Psychology & Sociology
4. Fundamentals of Bio- Medical physics
5. Exercise Therapy - I & Soft tissue manipulations
6. English

**Second year:**
1. Pathology & Microbiology
2. Pharmacology & Biochemistry
3. Exercise Therapy II & Exercise Physiology
4. Electro Therapy I
5. Electro Therapy II
6. BioMechanics & Kinesiology

**Third year:**
1. Medicine I (General Medicine, Pediatrics and Dermatology)
2. Medicine II (Neurology, Obstetrics and Gynecology)
3. Surgery I (General Surgery, Plastic Surgery and Cardio thoracic)
4. Surgery II (Orthopedics – Traumatology and Non Traumatology)
5. Biostatistics and Research methodology

**Fourth Year:**
1. Physiotherapy in Neuromuscular Conditions
2. Physiotherapy in Cardiopulmonary Conditions
3. Physiotherapy in General Medical & Surgical Conditions
4. Physiotherapy in Rehabilitation
5. Physiotherapy in Musculoskeletal conditions

Following subjects are not university exam going but must be included in the curriculum and taught:

1. Radiology & ENT (3rd year)
2. Ophthalmology and Psychiatry (3rd year)
3. Ethics, Administration and Management (4th year)
4. Computer science (internship)
Structure of Question paper for subject Human Physiology, Anatomy, Psychology (section 1) & Sociology (section 2), Bio Medical Physics, Exercise Therapy-I & STM.

Examination Weight age: 70 marks
Internal Assessment: 30 marks

TOTAL MARKS 70

SECTION – I

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SECTION – II

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TOTAL: 35

Structure of question paper for English
Examination Weight age: 35 marks
Internal Assessment: 15 marks
TOTAL MARKS 70

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TOTAL: 35
# VEER NARMAD SOUTH GUJARAT UNIVERSITY

## BACHELOR OF PHYSIOTHERAPY
(EFFECTIVE FROM ACADEMIC YEAR-2005-2006)

**F.Y.B.PHYSIO**

<table>
<thead>
<tr>
<th>Course</th>
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<th>Practical</th>
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<td><strong>2. Human Physiology</strong></td>
<td>70 (3hrs.)</td>
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<td><strong>3. Psychology &amp; Sociology</strong></td>
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<td>Sociology Theory</td>
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<tr>
<td>Internal Assessment</td>
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<tr>
<td>(Combined Psychology &amp; Sociology 70 marks, duration 3 hrs.)</td>
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<td><strong>4. Fundamentals of Bio-Medical Physics</strong></td>
<td>70 (3hrs.)</td>
<td>30</td>
<td>70</td>
<td>30</td>
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<tr>
<td><strong>5. Exercise Therapy-I &amp; Soft tissue Manipulations</strong></td>
<td>70 (3hrs.)</td>
<td>30</td>
<td>70</td>
<td>30</td>
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<td><strong>6. English</strong></td>
<td>35 (1&amp;1/2 hrs.)</td>
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RECOMMENDED LIST OF BOOKS FOR ALL FOUR YEAR OF B.PHYSIOTHERAPY

**SUBJECT: HUMAN ANATOMY**

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<td>Cunningham</td>
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<td>3.</td>
<td>Grays Anatomy</td>
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<tr>
<td>4.</td>
<td>ELBS atlas of human anatomy</td>
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**SUBJECT: HUMAN PHYSIOLOGY**

1. Concise Medical Physiology S.Chaudhary Text
2. Guyton’s Physiology Reference
3. Ganong’s Physiology Reference

**SUBJECT: PSYCHOLOGY & SOCIOLOGY**

1. Text book of Psychology Mann & Morgan Text
2. Psychology Atkinson
3. Psychology for physiotherapists Ramalingam A. T. & Bid D. N. Text
4. Text book of Sociology Vidhya Bhushan Text
5. Sociology For Physiotherapists Bid Dibyendunarayan Text

**SUBJECT: FUNDAMENTALS OF BIO MEDICAL PHYSICS**

1. College Physics (3rd edition) Sears Lewansky Text

**SUBJECT: EXERCISE THERAPY-I AND SOFT TISSUE MANIPULATION**

1. Exercise therapy Dena Gardiner Text
2. Practical Exercise therapy Margaret Hollis Text
3. Tidy’s Physiotherapy Porter Reference
4. Aids to Physiotherapy Lee Reference
5. Massage Manipulation Margaret Hollis Text
6. Bird’s Massage Refernce
7. Measurement to joint motion. Norkins & White Text
   Guide to Goniometry
<table>
<thead>
<tr>
<th>No.</th>
<th>Name of books</th>
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<tr>
<td>1.</td>
<td>Current Prose for better learning</td>
<td>Vimala Rama Rao</td>
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<td>2.</td>
<td>Living English Grammar And</td>
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<td>Composition</td>
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<td>P.R.Subramaniam</td>
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</table>
HUMAN ANATOMY

Note: Emphasis to be placed on topographical, Skeletal, Neuromuscular and functional aspects of anatomy, Students must take part in dissections to identify various structures.

General Introduction:

1. Definitions, terms and Subdivisions.
2. Plan of the human body.
4. The unit of structure and function – the cell.

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.

Arthology:

1. Classification of joints.
2. Construction of joints.
4. Articulation – Articular Surfaces, types of joints, motions of upper of and lower extremities, trunk & head.

Myology:

1. Types of muscle tissue.

Cardiovascular System:

2. The heart- main arteries, Veins, capillaries.
3. Lymph circulation.

Nervous System:

1. Division and function of the nervous system.
2. Nerve tissue – neuron, nerve fiber, synapse, end organs etc.
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. Cerebrospinal fluid.
6. Sensory end organs and sensation.
**Respiratory System:**

**Digestive System:**
1. Anatomy of digestive organs- esophagus, stomach, intestine, rectum etc.
2. The digestive glands.

**Urinary System:**

**Endocrine System:**

**Reproductive System:**
1. Outline of reproductive system-male and female reproductive organs.

**Special sensory organs and sensations:**
1. Emphasis on Skin, ear and eyes, less detail on smell and taste.

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

**General Embryology:**
1. Ovum, spermatozoa, fertilization, differentiation, development of musculoskeletal system, central nervous system.

**Practical Work:**

**Dissection:** Dissection of upper and lower extremities, back, anterolateral abdominal wall. Identification and description of all anatomical structures surface marking.
HUMAN PHYSIOLOGY

General Physiology:
2. General Principles of Biophysics.

Blood:
1. Composition of blood, plasma, protein formation and their function.
2. Structure formation and functions of R.B.C.
3. Structure formation and functions W. B. Cs. and platelets.
5. Blood groups and their significance Rh. Factor.
6. Reticulo endothelial system, Jaundice, Structure and functions of spleen.
7. Hemoglobin and E.S.R.

Cardiovascular System:
1. Structure, properties of Heart muscle and nerve supply of heart, structure and function of arteries, capillaries and veins.
2. Cardiac cycle and heart sounds.
3. Cardiac output measurement, factors affecting it.
5. Blood pressure its regulations and physiological variations.
6. Peripheral resistance, factors controlling, role in B.P.

Respiratory System:
1. Mechanism of respiration, Intra-pleural and intra pulmonary pressure.
2. Lung volumes and capacities.
3. 02 and CO2 carriage and their exchange in tissues and lungs.

Digestive System:
1. General outline and salivary digestion.
2. Gastric secretion and its mechanism of secretion and functions.
3. Mechanism of secretion of succus entericus and pancreatic juice and its functions.
4. Structure, Secretions and Functions of liver.

Nutrition:
1. Digestion, absorption and metabolism of carbohydrates.
2. Digestion, absorption and metabolism of fats.
3. Digestion, absorption and metabolism of proteins.
4. Vitamins, sources, functions and resources.
5. Balanced diet in different age group and occupation.
**Endocrine system:**
1. Anterior pituitary
2. Post Pituitary and parathyroid.
3. Thyroid.
4. Adrenal Cortex.
5. Adrenal Medulla, Thymus.
6. Pancreas and Blood sugar Regulation.

**Reproductive System:**
1. Sex determination and development, puberty.
3. Female sex hormones and functions, menstrual cycle, ovulation and contraceptives.
4. Pregnancy, functions of placenta and lactation.

**Excretory System:**
3. Renal function tests.
4. Physiology of micturition.

**Neuro Muscular Physiology:**

**Muscle and Nerve:**
1. Structure of neurons, membrane potential and generation of action potential.
3. Neuromuscular junction and drugs acting on it – Myasthenia gravis.
4. Degeneration and regeneration in peripheral nerves – Wallerian degeneration, electro tonus and flagers law.

**Muscle:**
1. Type of muscles and their gross structure, stimulus, Chronaxie, strength duration curve.
2. Structure of Sarcomere – basis of muscle contraction, Starlings law, changes during muscle contraction.
3. Electrical – Biphasic and monophasic action potentials.
4. Chemical, Thermal and physical changes isometric & isotonic contraction.
5. Motor units and its properties. Clonus, tetanus, all or none law, beneficial effect.

**Nervous System:**
1. Types and properties of receptors, types of sensations.
2. Structure of synapse, reflex arc and its properties, occlusion summation, sub minimal fringe etc.
3. Tracts of spinal cord.
4. Descending tracts, pyramidal and extra pyramidal tracts.
5. Hemi section and complete section of spinal cord. Upper and lower motor neuron paralysis.
6. Cerebral Cortex, areas and functions – E.E.G.
7. Structure, connections and functions of cerebellum.
8. Basal ganglia and thalamus, connections and functions.
9. Reticular formation, tone, posture and equilibrium.
10. Autonomic Nervous System.

Special Senses:
1. Broad features of eye, errors of refraction, lesions of visual pathways.
2. Speech and its disorders.
3. Ear and vestibular apparatus.

Practical & Demonstrations:
    2. Total W.B.C. Count.
    5. Erythrocyte Sedimentation rate.
B. 1. Artificial Respiration.
    2. Pulmonary function tests.
C. 1. Heart Sounds.
    3. Cardiac Efficiency tests.
    4. Recording and study of Electrocardiogram.
D. 1. Testing of peripheral sensations and cranial nerves.
    2. Superficial and deep reflexes.
    3. Tests of Cerebral and Cerebellar functions.
E. Varieties of stimuli, electrical apparatus for physiological experiment.

Frogs Nerve- muscle preparation and demonstration of the following experiments on it:
   Simple muscle twitch.
   Effect of load, temperature and fatigue on muscular contraction
   Frog’s normal cardiogram.
   Effect of following on normal cardiogram of Frog:
   1. Temperature.
   2. Extra systole.
   4. Radial pulse tracing.
   5. Basal metabolic rate.
   6. Work physiology.

PSYCHOLOGY
1. Introduction to psychology – definition application – schools of psychology – methods of psychology – scope of psychology
2. Heredity and environment – sex determination – twins- mechanism – influences on the individual
3. Developmental Psychology – Definition – stages of life span- behavioral changes during development
7. Thinking – Definition – types- steps in creative thinking – concept formation
8. Intelligence – Definition – theories of intelligence – intelligence tests
10.Learning – Definition – theories of learning methods of learning
12.Social psychology – Definition – nature and scope of social psychology – attitude and attitude change – leadership styles
13.Communication – types – effective ways of communication / teaching
SOCIOLOGY

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

Introduction:
1. Meaning - Definition and scope of sociology.
2. Its relation with anthropology, psychology,
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.

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

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

Family:
1. The family.
2. Meaning and Definition.
3. Functions.
4. Types
6. Influence of family on the individual’s health, family and nutrition, the effects of sickness on family and psychosomatic disease and their importance to physiotherapy.

Community:
1. Rural community - Meaning and features - Health hazards of ruralites.

Culture and Health:
1. Concept of culture.
2. Culture and behavior.
3. Culture 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.
5. Social change and deviance.
7. The role of social planning in the improvement of health and in rehabilitation.

Social Problems of Disabled:
Consequences of the following social problems in relation to sickness and disability, remedies to prevent these problems.
2. Poverty and unemployment.
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.
SECTION-I

1. Introduction to exercise therapy.
2. Physiological effects and uses of exercise.
3. Psychogenic aspects of exercises.
4. Pharmacological aspects of exercises.
5. Use of apparatus in exercise therapy.
6. Fundamental starting Positions derived position- effects and uses, pelvic tilt.
7. Muscle work for all positions.
8. Joint movement - terminology and range, axes and planes of movement, levers, measurement of joint movements, goniometry, types of goniometers- bubble and gravity goniometers.
10. Active movements- Definition, types, techniques, effects and uses.
11. Passive movement - Definition, types, techniques of relaxed passive movement and uses, comparison of both movements.
12. Causes of restriction of range of movement - Distinguish between skin, muscle, and capsular contractures.
13. Group work - Criteria of selection of patients, advantages and disadvantages of group class exercises.
15. Suspension therapy - definitions of suspension and point of suspension, type of suspension, pulleys and use of pulley in suspension therapy, application of suspension therapy either to increase the joint range or to increase muscle power.
16. Breathing - Mechanism of breathing (normal), muscles of respiration, changes in thoracic cage during process of respiration, types of breathing exercise, training programme- diaphragmatic and segmental breathing.
17. Pursed lip breathing - significance.
18. Crutch walking - Types of crutch walking, use of parallel bars in pre - crutch walking stage, balance exercises, phases of walking, gait training, group of muscles responsible during crutch walking.
19. Progression in crutch walking, measurement of crutches, other walking aids- canes, crutch-walking on even surface, slope, climbing up the stair-case.
SECTION-II

21. Application of resistance to develop endurance and power, progression of exercises, angle of pull, types of muscle work, exercises-free, resisted, assisted-use of gadget apparatus.
22. Resisted Exercises: Techniques and types of resistance, SET system (Heavy resisted exercises) Oxford Method, Delorme Method, McQueen’s Method).
23. Free Exercises - Classification, technique, and effects of free exercises-application for shoulder, neck, hip and knee joints, techniques of mobilization for stiff joints.
24. Mat exercises re-education of balance, strength, and endurance.
25. Posture - definition, types, factors influencing posture, postural training.

SOFT TISSUE MANIPULATION

27. Introduction- brief history, definition, classification. Physiological effects and therapeutic uses, contraindications.
28. Preparation of patient, basic points to be considered before and during massage procedure.
29. Technique, effects and uses of each manipulation.
30. Massage for arm, leg, neck, and upper back & face.
31. Massage for edema, scar, tendinitis, fibrosis (tight fascias)
32. Mobilization of soft tissues, joints and fluid collection.
English

(I) "Current Prose for Better Learning" : Edited by Vimala Rama Raw Macmillan India Limited (1982) All lessons (Except lesson No. 12) of above text should be exclusively taught as an intensive course during the first term.


Following parts of the above text should be taught in the second term:

Articles: (Ch-2) Primary Auxiliaries and Model Auxiliaries (Ch-6) The tenses form and use (Ch-10) Negative and interrogative Sentences (Ch-11), The passive Voice (Ch-12): Direct and indirect speech (Ch-14)

Composition: Letter Writing & Essay Writing.

Note: Distribution of marks for the University Examination will be as under:

1. Short Answer type Questions 6 Marks.
2. General Questions 7"
3. Short notes 5"
4. Comprehension & Précis 3"
5. Letter Writing: Formal Letter of request complaints, inquiries 5"
6. Essay 4"
7. Grammar 5"

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VEER NARMAD SOUTH GUJARAT UNIVERSITY

BACHELOR OF PHYSIOTHERAPY ( B. Physio )

Second Year

2005-2006

Structure of question paper for Electrotherapy I, Electro therapy II, Pharmacology (section 1) & Biochemistry (section 2), Pathology (section 1) & Microbiology (section 2), Biomechanics & Kinesiology, Exercise therapy -II & Exercise Physiology.

Examination Weight age: 70 marks
Internal Assessment: 30 marks
TOTAL MARKS 70

SECTION – I

QUESTION: 1: Full Question 8
OR
QUESTION: 1: Full Question

QUESTION: 2: Short Question (2 out of 3) 10
QUESTION: 3: Short Notes (2 out of 3) 8
QUESTION: 4: Very Short notes (3 out of 5) 9

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TOTAL: 35
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SECTION – II

QUESTION: 1: Full Question 8
OR
QUESTION: 1: Full Question

QUESTION: 2: Short Question (2 out of 3) 10
QUESTION: 3: Short Notes (2 out of 3) 8
QUESTION: 4: Very Short notes (3 out of 5) 9

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TOTAL: 35
1. **Pathology & Microbiology**
   - Pathology Theory 35
   - Internal Assessment 15
   - Microbiology Theory 35
   - Internal Assessment 15
   (Combined paper Pathology & Microbiology 70 marks, 3 hrs. duration)

2. **Pharmacology & Biochemistry**
   - Pharmacology Theory 35
   - Internal Assessment 15
   - Biochemistry Theory 35
   - Internal Assessment 15
   (Combined paper Pharmacology & Biochemistry 70 marks, 3 hrs. duration)

3. **Exercise-Therapy II & Exercise Physiology**
   - Theory 70 (3 hrs.)
   - Internal Assessment 30
   - Practical 70
   - Internal Assessment 30

4. **Electrotherapy-I**
   - Theory 70 (3 hrs.)
   - Internal Assessment 30
   - Practical 70
   - Internal Assessment 30

5. **Electrotherapy-II**
   - Theory 70 (3 hrs.)
   - Internal Assessment 30
   - Practical 70
   - Internal Assessment 30

6. **Biomechanics & Kinesiology**
   - Theory 70 (3 hrs.)
   - Internal Assessment 30
SUBJECT: PATHOLOGY & MICROBIOLOGY

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<thead>
<tr>
<th>No.</th>
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<th>Name of author</th>
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<tr>
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<td>Text book of Pathology</td>
<td>Harsh Mohan</td>
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<td>3</td>
<td>Basics of Pathology</td>
<td>Robbins and Kumar</td>
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<td>4</td>
<td>Clinical Pathology &amp; Clinical Bacteriology</td>
<td>K.N. Sachdev</td>
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<tr>
<td>5</td>
<td>Medical Parasitology</td>
<td>Rajesh Bhatia</td>
<td>Reference</td>
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<tr>
<td>6</td>
<td>Modern Immunology</td>
<td>A. Dasgupta</td>
<td>Reference</td>
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<td>1</td>
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<td>Cruik Shank</td>
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<td>Essentials of Microbiology</td>
<td>Jochu Panicker &amp; Rajesh Bhatia</td>
<td>Reference</td>
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</table>

SUBJECT: PHARMACOLOGY & BIO CHEMISTRY

1. Essential of Medical Pharmacology K.D. Tripathi Text
2. Text book of Medical Bio-Chemistry Chatterjee and Shinde Text

SUBJECT: EXERCISE THERAPY II AND EXERCISE PHYSIOLOGY

1. Therapeutic Exercise Kisner and Colby Text
2. Goniometry Practice Norkin and white Text
3. Manual of muscle testing Daniel Text
4. Manual of muscle testing Kendall Text
5. Exercise Physiology MacArdle Text

SUBJECT: BIOMECHANICS & KINESIOLOGY

1. Joint structure and function C. Norkin Text
2. Clinical Kinesiology Wells and Lutgens Text
3. Clinical Kinesiology Smith and Weiss Text
4. Brunnstrom's Clinical Kinesiology Smith and Weiss Text

SUBJECT: ELECTROTHERAPY I & II

1. Electrotherapy explained Low and Reed Text
2. Electrotherapy practice Joseph Khan Text
3. Claytons Electrotherapy Clayton Text
4. Treatment with interferential current Nikolova Reference
5. Practice of Laser therapy in PT Dexter Reference
6. Clinical Electro therapy Nelson Reference
BIO- MEDICAL PHYSICS

Physics and properties of Matter:

Heat:
Emissive and absorptive power-properties of thermal radiation, perfectly black body, kichoff's law, Newton's law of cooling and specific heat by cooling and specific heat by cooling, first law of thermodynamics and its application, second law of thermodynamics, Grothus law, joule's law of heat production.

Sound:
Newton's formula for velocity of sound, Medle's experiment, resonance and velocity of sound by resonance method, Ultrasonic- production and its application, recording and reproduction of sound.

Light:
Absorption and Emission spectra, classification of emission spectra sole spectrum and Fraunhoffer lines, infrared spectrum and ultra violet spectrum. Interference ,laser and its application.

Electricity:
Different types of capacitors, biological cell as capacitor, ohm's law, thermo electricity chemical effect of current and electromagnetic induction - faraday's law, Fleming right hand rule, self induction, mutual induction, induction coil, induced E.M.F. in the coil rotating in magnetic field, transformer long distance transmission, measurement of A.C./D.C., Modified current, milliammeter, voltmeter, Jack coil, variable rheostat.

Modern physics:
Structure of atom (Bohr model), infra red rays, ultra violet rays and lamp short wave diathermy, electric shock, radio active isotopes and medical applications of isotopes,

Electronics:
Semi conductor, diode as rectifier, amplifier, production of high frequency of current (micro-wave) by klystron magnetron. Amplifier C.R.O. triode as amplifier, triode as oscillator,
PATHOLOGY


3. Acute Inflammation: General morphology, phenomenon of acute inflammation.

4. Repair of wound, fractures, skin, nerves, and muscles.

5. Chronic inflammation: Osteomyelitis, tuberculosis (lung, bone), leprosy, and syphilis.


7. Neoplasia: General outline, classification, characteristics of benign and malignant tumors, and spread of tumors, systemic effects.


11. Respiratory disorders: Suppurative lung diseases, bronchial asthma, and emphysema.

12. Diseases of nervous system: Poliomyelitis, cerebrovascular accidents, and hydrocephalous

13. Diseases of muscles: Myasthenia gravis, myopathies, amyotonia congenita, the genetically determined neuromuscular diseases.

MICROBIOLOGY

General Bacteriology:
1. Introduction, historical Background, classification of micro-organisms.
4. Sterilization.
5. Culture media.

Systemic Bacteriology:
1. Gram positive cocci-strepto cocci, staphylococci.
2. Gram negative cocci – geno and meningococci.
3. Gram positive bacilli.
4. Gram negative bacilli- typhoid, cholera, dysentery.
5. Aerobic – diphtheria, tuberculosis, leprosy.

Immunology:
1. Immunity, antigens. antibodies
2. Antigen - antibody reactions.
3. Agglutination, precipitation.
4. Hypersensitivity reactions.

General virology:
1. Poliomyelitis
2. Rabies.
3. Demonstration of tests in:
   Diagnosis of AIDS.
   Diagnosis of hepatitis.
   Diagnosis of syphilis.

Parasitology:
1. Malaria.
2. Amoebiasis.
3. Round worm and Hookworm.

Mycology:
BIO-MECHANICS AND KINESIOLOGY

SECTION-A

Unit -I  Basic concept in Biomechanics
Unit -II- Joint structure & function
Unit -III- Muscle structure and function
Unit -IV- The vertebral column
Unit -V- The thorax and chest wall
Unit -VI- The temporo-mandibular joint
Unit -VII- The shoulder complex
Unit -VIII- The elbow complex
Unit -IX- The wrist and hand complex

SECTION- B

Unit-X- The hip complex
Unit -XI- The knee complex
Unit -XII- The ankle and foot complex
Unit -XIII- Posture
Unit- XIV- Gait
**ELECTRO THERAPY – I**

**Electromagnetic Waves:**
Electromagnetic spectrum, physical properties of electromagnetic radiations of reflection, refraction, absorption, penetration, grothus law, inverse square law and its practical application.

**Infra Red Rays:**
Production of infra red rays, luminous and non luminous generators, penetration, technique of application, physiological effects and therapeutic uses of infra red rays, duration and frequency of treatment, indications and contraindications, dangers and precautions.

**Ultra Violet Rays:**
Physiological effects of U.V.R. (Chemical reactions with skin).
Structure of skin, penetration and absorption of U.V.R. Erythema, different degrees of erythema, test dose, technique to find out the test dose and its importance.
Technique of application of U.V.R. in local and general irradiation, specific conditions like psoriasis, acne, alopecia, and indolent wounds.
Technique of applications using accessories.
Filters, sensitizers.
Dangers and contraindications.

**Cold Therapy:**
Physiological effects and therapeutic uses of ice therapy, techniques of application, contraindications to ice treatment.

**Hydrotherapy:**
Properties of Water. Buoyancy, effects of buoyancy on movement, Hubbard tank, contrast bath.

**Paraffin Wax Bath:** Structure of the bath, composition of wax and mineral oils, physiological effects and therapeutic uses of wax bath.

**Other Heating Modalities:** Heating pad, Moist Heat.

**High Frequency Current:**

- **Short wave Diathermy:** Introduction, Physiological effects and Therapeutic effects of SWD, Methods of application (capacitor field method and cable method etc.), Techniques of application, indications, contra-indications and dangers.

- **Pulsed SWD:** Definition, characteristics, mechanism of work, physiological effects & Therapeutic effects, Indications, Technique of application, principles of treatment and contraindications.

- **Microwave Diathermy:** Introduction and characteristics, physiological effects,
Therapeutic effects, Techniques of application and principles of treatment, Dangers & contraindications of microwave diathermy.

**LASERS:** Introduction and characteristics, effects on tissue, Therapeutic effects, principles of application, indications, contraindications and dangers.

**Ultrasonic Therapy:** Introduction and characteristics, U.S.therapy parameters, Coupling media, Therapeutic effects, Indications, contra-indications and dangers, Testing of apparatus, Techniques of application & dosage.

## ELECTRO THERAPY – II

**Low Frequency currents:**

**Nerve muscle physiology:** resting potential, action potential, motor unit, synapse and synaptic transmission of impulse. Effect of negative and positive electrodes on nerve & accommodation.

**Faradic Current:** Definition, characteristic and modified faradic current, sinusoidal current, Parameters of faradic stimulation, physiological and therapeutic effects of faradic-stimulation, Indications, contraindications and precautions, Techniques of stimulation, Group muscle stimulation, faradic foot bath, faradism under pressure and pelvic floor muscle re-education.

**Galvanic Current:** Introduction & Characteristics, Parameters of stimulation, Physiological and therapeutic effects of stimulation, Indications and Contraindications, Principles of treatment and techniques of stimulation, precautions.

**Iontophoresis:** Definition, principles of iontophoresis, physiological and therapeutic effects, indications, techniques of iontophoresis, principles of treatment, contra-indications and dangers.

**TENS:** Definition, pain gate theory, Theories of pain modulation, principle of TENS treatment, Techniques of treatment, indications and contraindications.

**Medium Frequency Current:**


**Bio-Feed Back:**

Advanced Electrotherapy:
Computerization in electrotherapy, programming of parameters of treatment appropriate selections of parameters and combination in therapy combined therapy – Principles, therapeutic uses and indications like, U.S. therapy with simulation or TENS etc.

EXERCISE THERAPY – II

SECTION-I

1. Passive Movements: Definition, types, technique, effects and uses, CPM unit, comparison of passive movements with active movements, practice of passive movements for all joints of extremities, neck and trunk.

   Stretching: Definitions related to stretching, types of contra cures and differentiation, properties of soft tissues affecting elongation, mechanical characteristics of non contractile soft tissues, stress-strain curve, therapeutic methods of stretching - manual and mechanical stretching, cyclic mechanical stretching, indication and aims of stretching, principles of stretching and contra-indications.

   Traction: Types, effects, principles of application for cervical and lumbar spine, traction to soft tissues of joints- gliding movements.

2. Mobilization: Causes of restriction of range of movements, prevention of restrictions, techniques of mobilization of various joints of limbs, assistance to mobilize joints. ROM through functional diagonal, patterns. Joint mobilization manipulations definition, types, joint shapes, types of motion arc stretching, glide stretching, compression, traction, indications, contra-indications and precautions, conditions for special precautions.

3. Manual muscle testing: Need of MMT, Fundamental principles, anatomical and physiological bases of muscle testing, oxford scale of muscle gradation, principles of isolation, substitution, stabilization, grading procedure for muscles of arm, leg, neck and truck.

4. Breathing exercise and Postural drainage: Breathing mechanisms and postural drainage, normal mechanism of respiratory diseases, control of breathing, pursed lip breathing, postural drainage assistive measures, techniques, indications, and contra-indications.


6. Strengthening of muscles: Principles involved to prevent muscle wasting, Rood’s techniques, initiating of muscle contraction, progressive strengthening of muscles, (Load assisted and load resisted exercise) use of equipments, re-education of muscles and restoration of limbs, neck, truck and face. Emphasis on hand and foot muscles, quadriceps, glutei, calf,
triceps, deltoid and face muscles. Use of manual and mechanical resistance, contra-indications to resisted exercises. Isometric- isokinetic regime.


8. **Hydrotherapy**: Physiological properties of water and hydrodynamics, physiological and therapeutic effects of exercises in warm water, progression of hydro-exercise, theory and application of Badragaz technique, Indications and contra-indications of hydrotherapy.

9. **Relaxation**: Muscle tone, postural tone, general and local relaxation, techniques of relaxation.


11. **Functional re-education**, mat activities for re-education of hemiplegics, paraplegics and cerebral palsy. Walking re-education in neurological conditions and in orthopedic cases.

12. **Aerobic exercises**: Physiological effects and therapeutic uses of aerobic exercises, fitness testing, stress testing for healthy and convalescent individuals.

13. **Exercise programme** to test-strength, flexibility, endurance, and skill.

**SECTION-II**

**EXERCISE PHYSIOLOGY**

1. Nutrition – Carbohydrates, proteins, fats, vitamins, minerals, water; Optimal nutrition for exercise.

2. Strength, power, endurance, speed, flexibility, agility, skill, aerobic and anaerobic activity.

3. Energy for physical activity, energy value of food, energy transfer in the body, energy release for food.

4. Energy transfer in exercise
   - Human energy expenditure during rest & physical activities (including walking, jogging, running, swimming)

5. Measurement of energy expenditure
   - Metabolic consideration – VO2, Lactate threshold, RQ, energy expenditure in terms of Calorimetry
6. Acute effects of exercise on – Cardiovascular, Respiratory, Metabolic (aerobic & anaerobic), Thermo-regulatory, Buffer (pH), Neuro-musculoskeletal, Endocrine, Immune systems.

7. Fatigue – causes and management;

8. Conditioning effects (adaptations) of exercise on – Cardiovascular, Respiratory, Metabolic (aerobic & anaerobic, Thermo-regulatory, Buffer (pH), Neuro-Musculo-skeletal (strength, power, endurance, speed, flexibility, agility, skill), Endocrine, Immune systems, Body composition

9. Measurement of aerobic & anaerobic power and other adaptations (Exercise tolerance test-types-walk test, step test, bicycle ergometry, treadmill test etc; basic parameters; pre-/post-/during-exercise studies)

10. Training – aerobic & anaerobic (strength, power, endurance, speed, flexibility, agility, skill)

11. Exercise at medium & high altitude; Sport diving; Space/micro gravity

12. Effects of prolonged Bed rest/Immobilization

13. Exercise prescription for special groups – children, adolescent, female, elderly

**BIOCHEMISTRY**

1. Biochemical characteristics of living matter.
2. Biochemistry morphology of cell.
4. Proteins.
5. The enzymes.
6. Metabolism.
12. Physical chemistry phenomenon.
13. Common procedures done in biochemistry.
PHARMACOLOGY

1. Chemical character and general action of drugs.
2. Methods of administration.
4. Drug toxicity including allergy and idiosyncrasy.
5. Drugs acting on C.N.S., anesthetics, antipyretics; hypnotics,
6. Drugs acting on peripheral nervous system, stimulating and / or inhibiting cholinergic and adrenergic activity.
7. Drugs acting on neuromuscular junction and muscle.
8. Drugs acting on the cardio-vascular system.
10. Drugs acting on the respiratory system.
11. Hormones and drugs affecting endocrine functions.
12. The Vitamins.
13. Immunological agents.
15. Diagnostics.
Structure of question paper for Medicine I (General Medicine + Pediatrics = 50 and Dermatology = 20)

Examination Weight age: 70 marks
Internal Assessment: 30 marks

TOTAL MARKS 70

SECTION – I

QUESTION: 1: Full Question 08
OR
QUESTION: 1: Full Question

QUESTION: 2: Full Question 08
OR
QUESTION: 2: Full Question

QUESTION: 3: Short Question (5 out of 6) 25
QUESTION: 4: Very Short Notes (3 out of 5) 09

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TOTAL: 50
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SECTION – II

QUESTION: 1: Full Question 08
OR
QUESTION: 1: Full Question

QUESTION: 2: Short Notes (4 out of 5) 12

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TOTAL: 20
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Structure of question paper for
Medicine II (Neurology=35, Obstetrics & Gynecology=35),
Surgery I (General Surgery + Plastic+Neuro Surgery=35, Cardio thoracic Surgery=35),
SurgeryII (Orthopedics- Traumatology and non traumatology=70).
(Biostatistics=35 and Research methodology=35)

Examination Weightage: 70 marks
Internal Assessment: 30 marks

TOTAL MARKS 70

SECTION – I

QUESTION: 1: Full Question 8
OR
QUESTION: 1: Full Question

QUESTION: 2: Short Question (2 out of 3) 10
QUESTION: 3: Short Notes (2 out of 3) 8
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TOTAL: 35
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SECTION – II

QUESTION: 1: Full Question 08
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QUESTION: 1: Full Question

QUESTION: 2: Short Question (2 out of 3) 10
QUESTION: 3: Short Notes (2 out of 3) 08
QUESTION:4: Very Short notes (3 out of 5) 09

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TOTAL: 35
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VEER NARMAD SOUTH GUJARAT UNIVERSITY

BACHELOR OF PHYSIOTHERAPY (B. Physio)

THIRD YEAR B. PHYSIO

1. **Medicine-I**
   General Medicine & Pediatrics
   - Theory: 50
   - Internal Assessment: 20

   Dermatology
   - Theory: 20
   - Internal Assessment: 10

   (Combined paper General medicine, Pediatrics and dermatology 70 marks, duration 3hrs.)

2. **Medicine-II**
   Neurology
   - Theory: 35
   - Internal Assessment: 15

   Obstetrics & Gynecology
   - Theory: 35
   - Internal Assessment: 15

   (Combined paper Neurology obstetrics and gynecology 70 marks, duration 3hrs.)

3. **Surgery-I**
   General Surgery, Plastic & Neuro Surgery
   - Theory: 35
   - Internal Assessment: 15

   Cardio thoracic Surgery
   - Theory: 35
   - Internal Assessment: 15

   (Combined paper General surgery, Plastic & Neuro surgery and Cardio thoracic surgery 70 marks, duration 3hrs.)

4. **Surgery-II**
   Orthopedics- traumatology
   - Theory: 35
   - Internal Assessment: 15

   Orthopedics- non-traumatology
   - Theory: 35
   - Internal Assessment: 15

5. **Bio-Statistics & Research Methodology**
   - Biostatistics: 35
   - Internal Assessment: 15
   - Research Methodology: 35
   - Internal Assessment: 15
SURGERY

Acute infections: Inflammatory fever- bacteriemia, septicemia, pyemia, toxemia.

Specific types: Cellulitis- sites, lymphadinitis, abscess with special reference to hand infection, carbuncle, Tetanus, gas gangrene, hospital infection, cross infection with modes of spread and prevention.

General survey of chronic inflammations: Syphilis (reference to other veneral diseases), Leprosy, actinomycosis.

Surgical tuberculosis.

General survey of trauma, pathology and clinical features of wound repair - primary, secondary and tertiary wound healing.


Post operative complications of abdominal surgery specifically chest, wound infection, edema.

Breast - Surgery.

Burns as a specific type of severe trauma, classification, early and late complications, management & reconstructive surgery - skin grafting as an example of plastic procedure.

Types of skin grafting - take of grafting - healing of grafting Postoperative care of plastic surgery with specific role of physiotherapy.

Outline of surgical disorders of brain & head injuries.

General survey of surgical disorders of spine and spinal and spinal cord problem of paraplegia.

Malignancy - Spread and its behavior.

Various abdominal incisions, abdominal drainage tubes, catheters and nasogastric tubes.

Ward demonstration for an hour a day for a period of one week.

Anesthesia & O.T. demonstrations.

Skin contractures and correction.

Problems of trauma to hand and their management.

Urinary Tract infection.

Plastic Surgery-Principles of cineplasty, tendon transplant, cosmetic surgery, types of grafts, surgery of hands with emphasis on management of leprosy hand.
**NEURO SURGERY**

**Neurophysiology:**
Neurophysiology basis of tone, disorders of tone and posture, bladder control, muscle contraction, movement and pain.

**Clinical Features and management of the following:**
Congenital and childhood disorders-hydrocephalus, spina bifida.

Trauma-Broad localization, first aid management & sequel of head injury and spinal cord injury.


**Peripheral nerve disorders** - Peripheral nerve injuries, localization & Management, Entrapment neuropathies.

**Intracranial tumors** - Broad classification, signs and symptoms.

**Miscellaneous:**
Pre-operative Assessment and indications and contraindications for neurosurgery. Management of Pain, electrical stimulation of brain and spinal cord.

**CARDIOTHORACIC SURGERY**

1. Basic anatomy of chest wall, trachea and bronchial tree, lungs and bronchopulmonary segments, pleura and mediastinum.
2. Physiology and mechanics of breathing and use of mechanical breathing ventilators (respirators).
3. Pulmonary function tests.
4. Investigation of lung diseases including endoscopies.
5. Bronchogenic carcinoma.
   - Thoracoplasty, Pulmonary dissections, Thoracotomy.
   - Pneumothorax, Hydropneumothorax, Empyema.
10. Surgery of portal hypertension.
12. Basic anatomy of heart, great vessels.
15. Cardiac arrest, its management.
16. Basic principles of open-heart surgery.
   Heart lung bypass (Extra portal circulation).
17. Common diseases of heart requiring surgery (both congenital and acquired)
   including open-heart surgery.
18. Common drugs used in cardiac surgery, its uses, and side effects.
   (Thrombosis, Embolism, atherosclerotic and occlusive vascular diseases) including
   coronary artery by pass:

Clinical:
1. Examination of patients as regards chest & heart diseases.
2. Demonstration – Acquaintenances with C.T. Surgery, Equipments, I.C.C.U.
   O.T.

Radiology:
X- ray studies – X-ray chest in various lung diseases.

ORTHOPAEDICS

Introduction to Orthopedic Surgery, definition and scope. Brief history.

Traumatic Disorders-

General principles and injuries of the upper limb:

Sprains and dislocation- causes, types, principles of treatment.

Fractures – types, displacement, general symptoms, healing, principles of treatment, union,
   delayed union, non–union, complications.

Injuries to the hand- types, principles of treatment, Injuries to the phalanges, sprains,
   dislocation of MP & IP joint, fractures of the phalanges, metacarpals, Bennett’s fracture, mallet
   finger, stenosis, tenosynovitis, trigger finger.

Wrist- dislocations, sprains, injuries to carpals, scaphoid, ganglion. Colle's fracture, displaced
   epiphysis.
Fractures of forearm bones - greenstick fracture. Infarction injury, adult forearm fractures, principles of treatment, Monteggia fracture dislocation.

Myositis ossificans. Tennis elbow, principles of treatment of elbow.

Fractures involving the elbow joint - Supracondylar fracture - displacement of lateral humeral epiphysis, medical epicondyle injuries, Y & T shaped fractures, volkmann's Ischemic Contracture. Fracture of the head of the radius, fracture of olecranon. Baby car fracture dislocation and reference to Volkman's contracture.

Fractures of the shaft of humerus, principles of treatment.
Injuries to main nerves - radial, ulnar and median.

Injuries to shoulder - fractures of the upper end of humerus, shoulder cuff lesions, dislocations, fracture dislocation, periarthritis, recurrent dislocation. Fractures of clavicle, acromioclavicular dislocations, fractures of the scapula.


Injuries of the lower limb:

Injuries to the knee joint, contusion, hemarthrosis, quadriceps mechanisms, ligamentous injuries, cartilage tear, fractures involving knee joint, dislocations. Epiphyseal injuries to the knee, fractures of upper and of tibia and fibula. Lateral popliteal nerve injuries.

Principles of treatment of fractures of tibia and fibula.

Injuries to the ankle - sprain, subluxation, dislocation, recurrent dislocations, dislocation of peroneal tendons. Pott’s fracture. Injuries to the talus, calcaneum and tarsal bones. Injuries to the foot.

Miscellaneous:
Amputations - types, sites, ideal stump, complications, general principles, upper extremity and lower extremity - prosthesis and prosthetic service. Nerve injuries, paraplegia, hemiplegia, quadriplegia, orthopaedic splint, orthopaedic appliances Injuries to muscles and tendons.

Non - Traumatic Disorders:

1. Congenital disorders:
Congenital deformities, congenital elevation of scapula, torticollis, caudodocranial dystosis

2. **Infections of bones, joints and arthritis:**
Infections of Bones- acute and chronic diseases of joints, Rheumatoid arthritis, Osteoarthritis, Skeletal tuberculosis, Principles of treatment, T.B. of shoulder, elbow and wrist, T.B. of hip, knee, ankle and foot.

3. **Neurological disorders:**
Poliomyelitis - recovering and late stages. Rehabilitation in recovery phase, charting, tendon lengthening, tenodesis, tendon transplants, stabilization problems, short limb and equalization.

4. **Miscellaneous:**
Backache, Disc- lesions, cervical spondylosis, metabolic diseases, rickets, osteomalacia, osteoporosis, parathyroid - osteodystrophy, scurvy etc.

**GENERAL MEDICINE**

1. **Respiratory Diseases:** Lung function tests, pneumonia, lung abscess, bronchiectasis, asthma, emphysema, Pleural effusion, pneumothorax, empyema, chronic bronchiectasis.

2. **Cardio Vascular diseases:** Rheumatic fever, valvular lesions, congestive cardiac failure, ischemic heart diseases (Angina pectoris and myocardial infarction) stress test, hypertension, peripheral vascular diseases (TAO, Raynauds disease).

3. **Endocrinal Disorders:** Diabetes mellitus, thyrotoxicosis, myxedema.

4. **Gastro - intestinal Disorders:** Peptic ulcer, pancreatitis, dysentery and diarrhea, inflammatory bowel diseases, jaundice, cirrhosis of liver.

5. **Infectious Disease:** Tuberculosis, malaria, typhoid, infective hepatitis, tetanus.

6. **Nutritional Disorders:** Vitamins and its deficiencies, disorders including rickets and osteomalacia, anemia.

7. **Urogenital System:** Structure and functions of kidneys including physiology of micturition, acute renal failure.

8. **Rheumatology:** Rheumatoid arthritis, ankylosing spondylitis, gout, osteoarthritis (Spondyloarthritis, systemic lupus erythematusus, polyarteritis nodusa, mixed connective
tissue disorders, sclerodermas.

PAEDIATRICS
1. **Growth and development** of a child from birth to 12 years, including physical, social, adaptive development.
2. **The maternal and neonatal factors** contributing to high risk pregnancy to the neonate, inherited diseases, maternal infections- viral and bacterial maternal diseases, pregnancy induced hypertension, chronic maternal diseases such as heart diseases, renal failure, tuberculosis, diabetes, epilepsy, bleeding in the mother at any trimester.
3. **Community Programmes:** International (WHO), national and local, for prevention of poliomyelitis, blindness, deafness, mental retardation and hypothyroidism, the immunization schedule for children.
4. **Cerebral Palsy:** Etiology- prenatal, perinatal and postnatal causes, pathogenesis, types of cerebral palsy (classification), findings on examination, general examination, examination of C.N.S. musculoskeletal system, respiratory system, GI tract and nutritional status.
5. **Associated defect:** Mental retardation, Microcephaly, blindness, hearing and speech impairment, squint and convulsions.
6. **Prevention:** Appropriate management of high-risk pregnancies, prevention of neonatal and postnatal infections metabolic problems.
7. **Muscular Dystrophy:** Various forms, modes of inheritance and clinical manifestation, physical findings in relation to disabilities, progression of various forms and prognosis, treatment goals in forms which are and are not fatal.
9. **Still's Disease:** Classification, Pathology in brief, physical findings, course and prognosis, treatment prevention and correction of deformity.
10. **Acute C.N.S. Infections:** Classification (Bacterial and Viral), the acute illness, C.N.S. sequel leading to mental retardation, blindness, deafness, speech defect, motor paralysis, bladder and bowel problems, seizure disorder and specific problems such as subdural effusion, hydrocephalus, pressure sores, feeding difficulties.
11. **Normal diet of newborn and child:** List dietary calories, carbohydrate fat, protein, mineral and vitamin requirement in a normal child and in a child with malnutrition, Etiology, findings and treatment of rickets. Vitamin D deficiency and resistant rickets.
12. **Lung infections:** Clinical findings, complications and medical treatment of
bronchiectasis, lung abscess and bronchial asthma.

**SKIN V.D. (DERMATOLOGY)**

1. Structure and functions of normal skin, primary and secondary skin lesions.
2. Scabies and pediculosis.
3. Fungal infections of skin:
   - Dermatophytosis.
   - Tinea versicolor.
   - Candidiasis.
4. Bacterial infections of skin- Impetigo / Boil.
5. Viral infections of skin- Herpes zoster.
7. Psoriasis / Acne / Alopecia / Vitiligo and Leucoderma.
8. Leprosy / Lepra-reaction / Physiotherapy in leprosy.
   - Syphilis - primary & secondary.
   - Gonorrhea. AIDS.

**NEUROLOGY**

1. **Anatomy, Physiology, Lesions and diseases of:** Pyramidal system, extra-Pyramidal system, cerebellar system, spinal cord, upper and lower motor neuron, cranial nerves, brachial plexus, lumbosacral plexus and peripheral nerves.
2. **Causes, Clinical features and management of:** Unconscious patient, hemiplegia, paraplegia, quadriplegia, cerebral diplegia, spastic child, foot drop and wrist drop.
3. **Disorders of cerebral circulation.**
4. **Infections:** Encephalitis, meningitis. Poliomyelitis, transverse myelitis, slow viral diseases.
5. **Diseases of Peripheral Nerves:** peripheral neuropathy.
6. **Muscle disorders:** Myositis, Polymyositis, and Muscular dystrophies.
7. **Degenerative diseases:** Parkinsonism, motor neuron diseases, spinocerebellar degenerations and diseases of anterior horn cell, dementia.
8. **Costoclavicular syndrome.**
9. **Demyelinating disorders** including multiple sclerosis.
10. **Basis concept of electro physiology and electromyography.**

**OBSTETRICS AND GYNAECOLOGY**

Anatomy and physiology of the female reproductive organs.

Puberty dynamics.

Physiology of menstrual Cycle- Ovulation cycle, Uterine cycle, duration, amount, Hormonal regulation of menstruation.

Diagnosis of pregnancy.

Abortion.

Physiological changes during pregnancy.

Antenatal care/ exercises.

High-risk pregnancy.

Normal labor.

Normal pueperium and postnatal exercises, family planning

Medical Termination of pregnancy (MTP)

Infections of female genital tract including sexually transmitted diseases.

Low backache.

Prolapse of uterus and vagina.

Principles of common gynecological operations -Hysterectomy

D & C / D & E - PAP smear.

**BIO- STATISTICS & RESEARCH METHODOLOGY**

**SECTION-I**
RESEARCH METHODOLOGY

1. Research and Physical Therapy
2. The Research Problem
3. Literature Review
4. The Proposal and Ethics
5. Quantification in Research
6. Non-experimental Research
7. Confidence in Research and Instruments
8. Experimental Research
9. Experimental Design
10. Parametric tests
11. Non-parametric Tests
12. Reporting Research

Ref: Elements of Research in Physical Therapy: Dean P Currier; Williams & Wilkins, 1990.

SECTION-II

BIO-STATISTICS

1. Definition and meaning of statistics.
3. Classification of data – Construction of frequency distribution table.
5. Presentation of data, diagrammatic and graphical presentation. One dimensional diagram, two dimensional diagram, three dimensional diagram, pie diagrams, histogram – frequency polygon, frequency curve-ogive.
7. Measure of dispersion – Meaning, requisites, various methods of dispersion – range, inter quartile range, quartile deviation, mean deviation, standard deviation, coefficient deviation.
8. Correlation – meaning, types of correlation, Scatter diagram, Karl Pearson’s coefficient of correlation (ungrouped data only), Spearman’s rank correlation, Coefficient (ungrouped data only).
10. Sampling technique – Random sampling – stratified sampling, systematic sampling, quota sampling, cluster sampling, laws of statistical regularity, inertia of large numbers, errors in sampling.
11. Probability – applied, conditional
Structure of question paper for Physiotherapy in neuromuscular conditions, Physiotherapy in Cardiopulmonary conditions, Physiotherapy in General Medical & Surgical conditions, Physiotherapy in Musculoskeletal conditions, Physiotherapy in Rehabilitation

Examination Weightage: 70 marks
Internal Assessment: 30 marks

TOTAL MARKS 70

SECTION – I

QUESTION: 1: Full Question 8

OR

QUESTION: 1: Full Question

QUESTION: 2: Short Question (2 out of 3) 10
QUESTION: 3: Short Notes (2 out of 3) 8
QUESTION: 4: Very Short notes (3 out of 5) 9

----------------------------
TOTAL: 35

SECTION – II

QUESTION: 1: Full Question 8

OR

QUESTION: 1: Full Question

QUESTION: 2: Short Question (2 out of 3) 10
QUESTION: 3: Short Notes (2 out of 3) 8
QUESTION: 4: Very Short notes (3 out of 5) 9

----------------------------
TOTAL: 35
1. Physiotherapy in Musculoskeletal Conditions
   Theory 70 (3 hrs.)
   Internal Assessment 30
   Practical 70
   Internal Assessment 30

2. Physiotherapy in Neuromuscular conditions
   Theory 70 (3 hrs.)
   Internal Assessment 30
   Practical 70
   Internal Assessment 30

3. Physiotherapy in Cardiopulmonary conditions
   Theory 70 (3 hrs.)
   Internal Assessment 30
   Practical 70
   Internal Assessment 30

4. Physiotherapy in General Medical & Surgical conditions
   Theory 70 (3 hrs.)
   Internal Assessment 30
   Practical 70
   Internal Assessment 30

5. Physiotherapy in Rehabilitation
   Theory 70 (3hrs.)
   Internal Assessment 30

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## VEER NARMAD SOUTH GUJARAT UNIVERSITY

### BACHELOR OF PHYSIOTHERAPY (B. Physio)

### FINAL YEAR

### SUBJECT: PHYSIOTHERAPY IN REHABILITATION

<table>
<thead>
<tr>
<th>No.</th>
<th>Name of books</th>
<th>Name of author</th>
<th>Type</th>
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<tbody>
<tr>
<td>1.</td>
<td>Rehabilitation surgery for deformities due to Poliomyelitis</td>
<td>KROL</td>
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<tr>
<td>2.</td>
<td>Lecture note on Rehabilitation</td>
<td>Saunders</td>
<td>Reference</td>
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<tr>
<td>3.</td>
<td>Disability management and physical Rehabilitation</td>
<td>Clifton</td>
<td>Reference</td>
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<td>4.</td>
<td>Neuro-Rehabilitation</td>
<td>S.D.Farber</td>
<td>Reference</td>
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</tbody>
</table>

### PHYSIOTHERAPY IN CARDIOPULMONARY CONDITIONS

1. Cardiopulmonary Physical Therapy                               Irwin & Tecklin
2. Essentials of Cardiopulmonary Physical Therapy                Hillegass
3. Cardiopulmonary Physical Therapy                              Frownfelter
4. Cardiopulmonary Physical Therapy                               Pryor and Prasad

### PHYSIOTHERAPY IN NEUROMUSCULAR CONDITIONS

1. Neurological Rehabilitation                                   Carr & Shepherd
2. Steps to Follow                                                 Sophie Davis
3. Right in the Middle                                             Sophie Davis
4. Cerebral Palsy                                                  Sophie Levitt
5. Neurological rehabilitation                                    Umphred

### PHYSIOTHERAPY IN MUSCULOSKELETAL CONDITIONS

1. Treatment and rehabilitation of fracture                       Hoppenfield    Reference
2. Orthopaedic Physical Therapy                                    Donatelli      Reference
3. Tidy’s Physiotherapy                                            Porter         Reference
4. Orthopedic Physical Diagnosis                                  S. Pandey      Reference
5. Orthopedic Physical assessment                                 Magee         Reference
6. Clinical Orthopedic Rehabilitation                            Brotzmann      Reference
7. Orthopedics For Physiotherapists                               Ebenezar       Reference

### PHYSIOTHERAPY IN GENERAL MEDICAL & SURGICAL CONDITIONS

1. Cash’s General Medical and Surgical conditions                Downie        Reference
2. Physical Medicine and Rehabilitation                          DeLisa        Reference
3. Women’s Health                                                 Sapsford       Reference
Books List

Reference Book

1. Neurological Rehabilitation Cart
2. Physiotherapy in pediatrics Shepherd
3. Amputations & Prosthetics: a Case study approach May
4. Hand secrets Jebson
5. Physical diagnostic secrets Mangione
6. Physiotherapy & Growing child Bums
7. Rehabilitation of movement Pitt-broke
8. Hand-splinting Wilton
9. Women-Health AT.B.for Physiotherapist Sapsford
10. Orthotics in Rehab. Splinting Hand & body McKee
11. Management in Rehab. A Case Study Schuch
12. Movement disorder Marsden
13. Hand-splinting Wilton
14. Cailliet Pain Series
   a) Knee Pain & disability Cailliet
   b) Low back pain “
   c) Shoulder pain “
   d) Hand pain & impairment “
   e) Neck pain & Arm pain “
   f) Foot & ankle pain “
   g) Head & face pain “
15. Orthopaedic Physical therapy Placzet
16. Human Movement Trew Everett
17. Rehabilitation of spine Liebensan
18. Dynamics of clinical Rehabilitation exercise Ordel & Expand
19. Rehab of early Rheumatoid Arthritis Leang & Logigean
20. Gait in Rehabilitation Samidt
21. Gait analysis Whittle
22. Physical agent in Rehab. Livingstone
23. Orthotics Redford & Trautman
24. Traction & Orthopaedic appuomeas
25. Orthopaedic Physical assement David j. Maggee
26. Physical therapy for shoulder Dona Tellei
27. Mannual therapy B. Mulligan
<table>
<thead>
<tr>
<th></th>
<th>Title</th>
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<tbody>
<tr>
<td>29.</td>
<td>Assessment through Touch &amp; Palpation skill</td>
<td>Leon Chaitow</td>
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<td>30.</td>
<td>Positional release technique</td>
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<td>31.</td>
<td>Pain – Diagnosis management</td>
<td>J. Mennel</td>
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<tr>
<td>32.</td>
<td>Mobilization of Nervous System</td>
<td>D. Butler</td>
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<tr>
<td>33.</td>
<td>Lifting, Moving and transferring Patient</td>
<td>Couhal</td>
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<td>34.</td>
<td>Therapy &amp; amputees</td>
<td>Barbara</td>
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<td>35.</td>
<td>Impairment rating &amp; disability</td>
<td>Handinelli/ Katz</td>
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<td>36.</td>
<td>Work related upper limb Disorders</td>
<td>Haston</td>
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<td>37.</td>
<td>Myofascial pain and Dysfunction (Vol 1, 2)</td>
<td>Barvara &amp; Travell Simons</td>
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<td>38.</td>
<td>Low back pain</td>
<td>Bernard</td>
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<tr>
<td>40.</td>
<td>Preventing Low back pain</td>
<td>Hooper</td>
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<td>41.</td>
<td>Hand book of Low back pain</td>
<td>Herrony</td>
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<td>42.</td>
<td>Rehabilitation (Physical) Management</td>
<td>Saunders</td>
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<tr>
<td>43.</td>
<td>Real concept in stroke</td>
<td>Bangal</td>
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<td>44.</td>
<td>Stroke patient: Cause, prevention &amp; Rehabilitation</td>
<td>A.L. Saha</td>
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<td>45.</td>
<td>Stroke Pain Principles &amp; Management Of Rehab</td>
<td>Johnstone</td>
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<tr>
<td>46.</td>
<td>Management of minor head injury</td>
<td>Jennet &amp; Yat’s</td>
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<tr>
<td>47.</td>
<td>The practical Management of head injury</td>
<td>Palter &amp; Briggs</td>
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<td>48.</td>
<td>Athletic injury</td>
<td>Arnhaim &amp; Freutie</td>
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<td>49.</td>
<td>Sports medicine secrets</td>
<td>Hauleyl &amp; Belfas</td>
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<td>50.</td>
<td>Sports injury</td>
<td>Hyoc Caenmu lave</td>
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<td>51.</td>
<td>Hand injury in athletics</td>
<td>Stnickland &amp; Retling</td>
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<td>53.</td>
<td>Human sexuality &amp; Rehabilitation</td>
<td>Ann Shaker</td>
</tr>
<tr>
<td>54.</td>
<td>Physically handicapped children</td>
<td>Black Magel</td>
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<tr>
<td>55.</td>
<td>The care of Geriatric population</td>
<td>Sherman</td>
</tr>
<tr>
<td>56.</td>
<td>Sports Physiotherapy approved Science &amp; practice</td>
<td>Zuluaga et al</td>
</tr>
<tr>
<td>57.</td>
<td>Limb amputation</td>
<td>Hanl cotton</td>
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<td>58.</td>
<td>Rehabilitation surgery for Deformities due to polio</td>
<td>Krol</td>
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<td>59.</td>
<td>Backache</td>
<td>Meallode/ Transfied</td>
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<td>60.</td>
<td>Revision: Total Hip replacement</td>
<td>Bons McCarthy</td>
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<td>61.</td>
<td>Relaxation technique</td>
<td>Payne</td>
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<td>62.</td>
<td>Pediatric Physical therapy</td>
<td>Teeklin</td>
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<tr>
<td>63.</td>
<td>Introduction of exercise science</td>
<td>Howarth</td>
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</table>
64. Exercise testing & exercise prescription  
65. Clinical Pediatric Physical Therapy  
66. Abnormal postural Activity  
67. Motor development in C.P.  
68. Physical therapy Management Of lower ext. Amputation  
69. Physical therapy for sports  
70. Physiotherapy in obstetrics & Gynecology  
71. Cash’s Textbook of chest, Heart & Vascular diseases  
72. Cash’s Text book of orthopedic & Rheumatology  
73. Neurology for Physiotherapy  
74. Cash’s Text book of medical & Surgical conditions  
75. Clinical Neurophysiology  
76. Clinical decision making In rehabilitation  

Skinner  
Ratliffe  
Berta Bobath  
Werner Kuprium  
Marget Polden  
Patricia A Orwine  
"  
"  
"  
U.K.Mishra/ J. Kalita  
Basmajian Banerjee
PHYSIOTHERAPY IN MUSCULO SKELETAL CONDITIONS

Assessment & treatment planning strategies. Documentation for orthopedic cases based on SOAP


2. Physiotherapy for Puttiplats operation.

3. Rehabilitation of patients- Arthroplasties- excision arthroplasty, total / partial hip and knee replacement, Mc Murray’s osteotomy, reconstructive surgery, mechanical changes-tendon transfer, peripheral nerve injuries.


5. Deformities: Mallet finger, trigger finger, deQuervain’s disease, metatarsalgia, hallux valgus, dupuytren’s contracture.

6. Pathological changes in inflammation, edema, pyogenic conditions, osteomyelitis.


10. Foot conditions: Valgus and Varus feet, Mortons’ neuroma, flat foot

11. Amputations of lower and upper extremity – physiotherapy management, Calipers, prosthesis and splints.

PHYSIOTHERAPY IN NEUROMUSCULAR CONDITIONS
SECTION-I

Physical therapy assessment, management strategies & documentation of the following conditions:

1. Neurological examination (Protocol):
   includes detailed evaluation of sensory, motor, perceptual and higher functions.
2. Paediatric Neurology:
   Cerebral palsy, Hydrocephalus and myelo-meningocele - Definition, classification, clinical features etc.
3. CNS infections (Bacterial & Viral):
   Meningitis and encephalitis, Myelitis (Transverse myelitis, Poliomyelitis & Post-polio Syndrome), Post Viral Syndromes (GBS)- Causes, Clinical features
4. Cerebellar disorders:
   Causes, Clinical features of cerebellar dysfunction
5. Extra pyramidal syndromes:
   Parkinson’s disease- Definition, aetiopathogenesis, Clinical features & Prognosis.
6. Demyelinating diseases of the nervous system:

SECTION-II

1. Vascular disorders of the brain:
   Definition, classification, clinical features of cerebrovascular stroke (CVS) & Transient Ischemic Attacks (TIA), Brainstem stroke- lateral medullary Syndrome, Medial medullary syndrome and Benedicts syndrome.
2. Traumatic brain injuries:
   Causes, types, complications & clinical features.
3. Motor system disorders:
   Motor neuron disease and spinal muscular atrophy - Types, aetiopathogenesis, Clinical features.
   Muscular dystrophy: DMD, Becker’s, Facio-scapulo-humeral muscular dystrophy & Peroneal muscular dystrophy - Types, aetiopathogenesis, Clinical features.
   Myopathies: Types, aetiopathogenesis, Clinical features.
   Myesthenia Gravis: definition, classification clinical features.
4. Multiple Sclerosis:
   Types, aetiopathogenesis, Clinical features.
5. Peripheral Neuropathies:
6. Basics of EMG & NCVs

PHYSIOTHERAPY IN CARDIO PULMONARY CONDITIONS
SECTION - I

1. Reviews of basic cardio respiratory anatomy and physiology
2. Cardiac and respiratory rehabilitation
   - definitions – assessment – aims and objectives- principles of rehabilitation
3. symptomatology of cardio respiratory disorders, investigations, diagnosis and differential diagnosis
4. Principles and techniques of physiotherapy in diseases of respiratory system : postural drainage, active cycle of breathing techniques, PEP mask, flutters and other chest clearance techniques, Breathing exercises and thoracic mobility exercises etc.
5. Physiotherapy assessment and treatment in cardio respiratory conditions – acute respiratory infections – pneumonia, lung abscess, pleurisy, emphysema, pulmonary tuberculosis
   - chronic respiratory conditions- chronic bronchitis, emphysema, bronchial asthma, Bronchiectasis, cystic fibrosis, Pneumothorax, hydro-pneumothorax, pyothorax , atelectasis.
   - Cardiac Conditions- congestive cardiac failure, myocardial infarction, Rheumatic heart disease.

SECTION – II

1. Pre and post operative evaluation and physiotherapy management of cardio thoracic surgical conditions & incisions
   a. Thoracoplasty, lobectomy, segmentectomy, pneumonectomy, tracheostomy, pleurodesis, valve replacement and valve repair surgeries CABG (coronary artery bypass grafting), heart transplant, peri-cardiotomy, septal defects, co-artertation of aorta, Fallot’s tetralogy,
2. Principles of chest physiotherapy in ICU & ICCU with effect of anesthesia on cardio respiratory system. Knowledge of equipments in ICU, ventilators, suction apparatus, nebulizer, humidifiers, O₂ therapy
3. Significance of following to physiotherapist – laboratory investigation, creatin phosphokinase level, SGOT, SGPT, Sputum culture, , blood test- chest X- rays- Arterial blood gas analysis-basics of ECG- lung function test- Cardiopulmonary stress test
4. Documentation and communication skills for physiotherapists – referral letters, daily records and discharge summary
5. Cardiopulmonary resuscitation - demonstration

PHYSIOTHERAPY IN GENERAL MEDICAL AND SURGICAL CONDITIONS
SECTION – I
1. Physiotherapy in mother and child care _ Antenatal and post natal management, early intervention and stimulation therapy in childcare (Movement Therapy)
2. Physical Fitness- Endurance, aerobic exercises
3. Skin conditions- Acne, Psoriasis, alopecia, Leucoderma
   Carbuncles and boils, STD – AIDS, syphilis, gonorrhea
4. Geriatrics – Handling of old patients and their problems
5. Psychiatry – Physiotherapy in psychiatric conditions
6. Wounds, local infections, ulcers, pressure sores, Inflammation & Edema - UVR and other electrotherapeutics for healing of wounds, prevention of hyper granulated scars relief of pain and mobilizations
7. Peripheral vascular diseases & amputation
8. Role of physiotherapy in diabetes mellitus hypertension, vertigo, leprosy, myofascial pain, acute and chronic pain syndromes, obesity, hemophilia.

SECTION II

1. Complications – common to all operations
2. Physiotherapy during pre operative and post operative stages
3. Abdominal incisions
4. Operations on upper gastrointestinal tract oesophagus, stomach, duodenum
5. Operation on large and small intestine - appendicectomy, cholecystectomy, partial colectomy, olistectomy, hernias, herniotomy, herniorraphy
6. Hysterectomy, prostatectomy, nephrectomy, pelvis repair, caesarian
7. other gynecological operations
8. Mastectomy – simple, radical
9. Burns and its treatment – Physiotherapy in burns, skin grafts and reconstructive surgeries and rehabilitation
10. ENT : physiotherapy in facial palsy, sinusitis, laryngectomy, pharyngo – laryngectomy
PHYSIOTHERAPY IN REHABILITATION

Section - I
1. *Introduction to rehabilitation* – Basic principles – administration and prescription writing – Rehabilitation team.
3. Reservation and legislation for rehabilitation services for the disabled.
4. Contribution of social worker in Rehabilitation.
6. *Principles of Rehabilitation*
   (a) Communication Problems-evaluation and treatment
   (b) Social Problems-social needs-Rehabilitation Environment-Community Resources
   (c) Vocational Problems-evaluation –rehabilitation
7. *Community Based Rehabilitation*—Introduction-aspects of CBR-Role Of Physiotherapy
8. *Occupational Health*–Definition-scope—Occupational Diseases and Hazards

Section - II
1. *Geriatric Problems*
   a. Physiology of Aging process/degenerative changes-Musculoskeletal-cardiorespiratory-metabolic
   b. Role of Physiotherapy in graceful aging-evaluation and management.
2. *Prosthesis and Orthosis*
   i. **Prosthesis**
      -Purpose of prosthetics, Types
      -Upper Limb Prosthesis components-terminal devices-hooks-wrist units-forearm, shoulder harenness-suspension control system(In Brief)
   ii. **Orthosis**
      -Purpose of orthosis,types
      -Lower limb orthosis-AFO,KAFO,HKAFO –components-check out procedure and training with orthosis
      -Upper limb orthosis-principles of wrist,finger,thumb orthosis,opponuns splint
      -Introductory demonstration of methods of construction of temporary    orthosis for Hand and fingers.
3. *Ergonomics*
   Definitions-principles-evaluation and application
4. Environmental assessment of modifications
5. Functional assessment
6. *Rehabilitation of Pain Syndromes*
   Definitions-acute and chronic pain syndromes
7. Wheelchair Management.
PSYCHIATRY

Mental Health:
Normal Mental Health
Criteria of normality or natural personality.
Factors contributing to normal mental health.
Self-actualizing individual.

Study of Abnormal Personality:
Neurotic.
Hysterical.
Psychotic.
Paranoid.
Schizoid.
Psychopathic etc.

General Etiological Factors:
Hereditary.
Genetically Constitutional.
Acquired.
Traumatic.
Infective.
Toxic.
Degenerative.
Social and Environmental including pathogenic family patterns.
Precipitating causes.
Frustration and conflicts.

Symptomatology and Treatment of:

Psychoses: (I) Functional - Functional Schizophrenic, reaction group, simple, paranoid, catatonic, hebephrenic paranoid state, paranoid state, paranoia, juvenile, schizophrenia autistic thinking, dementia.

(II) Organic - Toxic confused states, senile psychoses, arteriosclerosis, degenerative, G.P.I.

Affective Disorders: Dynamics of Mania, hypomanias, chronic mania, M.P.D., involutional depression, senile depression, postpartum depressive reactions, reactive and neurotic depression, endogenous depression, suicide (Egoistic, Altruistic, Anomic).

Epileptic Disorders: Epileptic Psychoses.
Neurosis:
Sympatomatology, diagnosis and treatment and psycho- dynamics of anxiety state, hysteria, conversion reaction, dissociative reaction, dual personality obsessional neurosis, phobias, hypochondriasis, neurasthenia and mental fatigue.

Mental retardation- Definition, Etiological factors, Prenatal, postnatal, infective hormonal congenital, type of mental retardation clinical types- microcephaly, hydrocephalus, Mongol, family idiocy, phenylketonuria etc.

Symptomatology of various grades of retardation, differential diagnosis and treatment.

Child Psychology:

Introduction to dynamics of Psychophysical disorders:
Asthma, skin rashes, hypertension, bowel disorders Introduction to treatment in psychiatry - E.C.T., Insulin, Coma therapy
Drug therapy - Tranquilizer, Mood elevators, hypnotics and sedatives.
Psychotherapy - Deep and superficial, individual and group, expressive suppressive, environmental manipulation, re-educative.
Psychodrama.
Psychoanalysis.
Play Therapy.
Physiotherapy.
Occupational Therapy.
**OPTHMALOGY**

1. Common eye diseases including Refractory errors, Conjunctivitis and trachoma.

2. Cataract and glaucoma


4. Eye lesions in leprosy, including cases, treatment and complications of lagophthalmos.

5. Causes, clinical features and treatment of disorders of ocular movement occurring in diseases such as myasthenia gravis, progressive supranuclear palsy and lower motor neuron diseases.

6. Causes, clinical features treatment and prognosis in inflammatory disorders, vitamin A deficiency emphasis on preventable causes and prophylactic measures.

7. Definition of blindness, and visual disability evaluation, investigative procedures used for testing visual failures.

**E.N.T.**

1. Anatomy and physiology of hearing and the use of audiometer in assessment of hearing - outline only.

2. General introduction to diseases of E.N.T., emphasis on otitis media, bell's palsy, sinusitis, rhinitis.


5. Causes of hearing loss, Conservative and surgery intervention including types and availability of hearing aids.
COMPUTER APPLICATIONS

1. ROLE OF COMPUTER IN PHYSIOTHERAPY
2. MS OFFICE
3. MS EXCEL
4. MS WORD
5. MS POWER POINT
6. INTERNET APPLICATION
7. LITERATURE SEARCH ON THE INTERNET
BPT-IV
MANAGEMENT

Course Objectives:
The course is designed to provide basic management knowledge and skills essential for effective functioning; and to be conversant with planning, organization, work scheduling, cost, control of quality in relation to Physiotherapy Care and Service.

Course Contents:
1. Introduction, Branches of Management, Nature and Scope of management process.
2. General Principles of Management – Theories of management; Principles of Health Sector Management; its application to Physiotherapy.
5. Financial issues including budget and income generation.
6. Hospital Management: Hospital Organization, Staffing, information, Communication and co-ordination with other services of hospital, Cost of services, Monitoring and evaluation.
7. Self Management
   - Preparing for first job
   - Time Management
   - Career development
8. National Health Policy and health care system in India
9. Organization of Physiotherapy department: Planning, Space, Manpower and other basic resources.
BPT-IV
ETHICS

1. History of Physiotherapy
2. Ethical Principles in Health Care
3. Ethical Principles Related to Physiotherapy
4. Scope of Practice
5. Rules of Professional Conduct
   (a) Physiotherapy as profession
   (b) Relationship with patients
   (c) Relationship at Health care institution i.e. Hospitals, Clinics etc.
   (d) Relationship with Colleagues and Peers
   (e) Relationship with Medical and other Professionals.
6. Confidentiality and Responsibility
7. Malpractice and Negligence.
8. Provision of Services and Advertising
10. Legal Aspects
    (a) Legal responsibility of Physiotherapists for their action in the professional context
        and understanding liability and obligations in case of medico legal action.
    (b) Consumer protection act.
VEER NARMAD SOUTH GUJARAT UNIVERSITY
BACHELOR OF PHYSIOTHERAPY ( B. Physio )

2005-2006

Practical Marks Distribution: This is the general guideline for marks distribution and examination pattern for FY, SY, TY and Fourth Year B. Physio.

Total: 70 Marks

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<th>Practical (50 marks)</th>
<th>Viva-voce (20 marks)</th>
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<tr>
<td>Long case (30 marks)</td>
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<tr>
<td>Short case (10 marks)</td>
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<td>Short case (10 marks)</td>
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</table>

General Instruction for University Practical Examination:

1) Practical Examination should be taken & marks should be given by pair of Examiners only & not by single examiner.

2) Marks should be put directly to the mark sheet. No rough mark sheet should be used.

3) Sealed Original and Duplicate mark sheets should be submitted at the end of each session to the special Supervisor or coordinator of examination.

4) Examiner shall not keep any kind of rough or fair copy of any mark sheet with him/her.
<table>
<thead>
<tr>
<th>SR.NO</th>
<th>SUBJECT</th>
<th>TOTAL HOURS OF TEACHING</th>
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<tbody>
<tr>
<td>1.</td>
<td>Human Anatomy</td>
<td>250</td>
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<tr>
<td>2.</td>
<td>HUMAN PHYSIOLOGY (Inclusive of electro-physiology)</td>
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<tr>
<td>3.</td>
<td>Psychology &amp; Sociology</td>
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<tr>
<td>4.</td>
<td>Bio-medical physics</td>
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<tr>
<td>5.</td>
<td>Exercise – therapy I&amp;II &amp; soft tissue Manipulations</td>
<td>300</td>
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<td>6.</td>
<td>Electro therapy -I&amp;II</td>
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<tr>
<td>7.</td>
<td>Pathology</td>
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<tr>
<td>8.</td>
<td>Microbiology</td>
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<tr>
<td>9.</td>
<td>Biochemistry</td>
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<tr>
<td>10.</td>
<td>Pharmacology</td>
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<tr>
<td>11.</td>
<td>Bio-Mechanics &amp; Kinesiology</td>
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<tr>
<td>12.</td>
<td>Psychiatry</td>
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<td>13.</td>
<td>Neurology</td>
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<td>14.</td>
<td>General Medicine</td>
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<td>15.</td>
<td>Pediatrics</td>
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<td>16.</td>
<td>Skin &amp; V.D</td>
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<td>17.</td>
<td>Cardio-Pulmonary Surgery</td>
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<td>18.</td>
<td>Obstetrics &amp; Gynecology</td>
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<td>19.</td>
<td>Orthopedics</td>
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<td>General Surgery+ Plastic Surgery</td>
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<td>Radiology</td>
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<td>24.</td>
<td>Physiotherapy in conditions</td>
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<td>25.</td>
<td>Bio-Statistic &amp; Research Methodology</td>
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<td>26.</td>
<td>Rehabilitation Therapy (P&amp;O splinting)</td>
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<td>27.</td>
<td>Ethics, Administration &amp; Management</td>
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<td>28.</td>
<td>Institutional Visits, Conferences, Educational Tours &amp; others</td>
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<tr>
<td>29.</td>
<td>Clinical hours during S.Y., T.Y., &amp; final year</td>
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<td>30.</td>
<td>Clinical hours during Internship</td>
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