

# BPT COURSE OUTCOMES

## I B.P.Th.

### SYLLABUS

Transcript Hrs-1400

Sr. No.	Subjects	Didactic Hours	Practical/Demonstration / Clinical Hours	Total Hours
	<b>PROFESSIONAL PRACTICE</b>			
1	Professional practice & Ethics <i>(College Examination in final year)</i>	015	-	015
	<b>BASIC MEDICAL SCIENCES</b>			
3	Human Anatomy	150	60	210
4	Human Physiology	150	50	200
5	Biochemistry	046	004	050
	<b>PHYSIOTHERAPY</b>			
6	Fundamentals of Kinesiology & Kinesiotherapy	100	150	250
7	Fundamentals of Electrotherapy	095	105	200
8	Seminar (including introduction to <b>terms</b> of I.C.F. definition of Structural and Functional impairments as applied to Anatomical structures and Physiological	-	60	060

	functions) ( <i>not for examination</i> )			
9	<b>Observational Clinical Practice</b> ➤ He /She shall observe and note technical aspects of fixation of electrotherapeutic modalities, basic movements and starting positions used, learn bedside manners and communication skills with the seniors, peers and patients	-	415	415

## **PROFESSIONAL PRACTICE AND ETHICS**

### **COLLEGE EXAMINATION IN FINAL YEAR)**

**TOTAL -15 HRS**

### **COURSE DESCRIPTION:**

This subject will be taught in continuum from first year to final year. An exam will be conducted only in final year. Professional and ethical practice curriculum content addresses the Knowledge, Skills and Behaviors required of the physiotherapist in a range of practice relationships and roles. The course will discuss the role, responsibility, ethics administration issues and accountability of the physical therapists. The course will also cover the history and change in the profession, responsibilities of the professional to the profession, the public and to the health care team. This includes the application of professional and ethical reasoning decision-making strategies and professional communication.

### **OBJECTIVES:**

**At the end of the course, the student will be compliant in following domains:**

**Cognitive:** The student will

- a) Be able to understand the moral values and meaning of ethics.
- b) Acquire bedside manners and communication skills in relation with patients, peers, seniors and other professionals.

**Psychomotor:** The student will be able to:

Develop psychomotor skills for physiotherapist-patient relationship.

## **HUMAN ANATOMY**

(Didactic –150hrs + Practical / Laboratory –60hrs) **TOTAL -210 HRS**

**COURSE DESCRIPTION:** The focus of this course is an in-depth study and analysis of the regional and systemic organization of the body. Emphasis is placed upon structure and function of human movement. A comprehensive study of human anatomy with emphasis on the nervous, musculoskeletal and circulatory systems is incorporated. Introduction to general anatomy lays the foundation of the course. Dissection and identification of structures in the cadaver supplemented with the study of charts, models, prosected material and radiographs are utilized to identify anatomical landmarks and configurations of the:

- Upper limb and thoracic region
- Lower limb, abdomen and pelvis
  
- Head and Neck
  
- Nervous system

### **OBJECTIVES:**

#### **1] MUSCULOSKELETAL ANATOMY**

- i. The student should be able to identify & describe Anatomical aspects of muscles, bones, joints, their attachments & to understand and analyze movements.
- ii. Application of knowledge of anatomy on the living (living anatomy).
- iii. To understand the Anatomical basis of various clinical conditions.

#### **2] NEURO ANATOMY**

- i. To identify & describe various parts of nervous system.
- ii. To describe blood circulation of C.N.S. & spinal cord.
- iii. Be able to identify the Structures of various C.N.S Trans-sections.
- iv. To identify and describe the course of peripheral nerves.
- v. To understand anatomical basis of clinical conditions of nervous system

### **3] CARDIOVASCULAR & RESPIRATORY ANATOMY**

- i. To identify & describe various structures of the Cardio Vascular &Respiratory system and the course of blood vessels
- ii. Identify and describe various structures of Thoracic cage and mechanisms of Respiration
- iii. Be able to apply knowledge of Living anatomy with respect to Cardio Vascular &Respiratory system.
- iv. To understand anatomical basis of clinical conditions of cardiovascular &Respiratory system

## **HUMAN PHYSIOLOGY**

(Theory -150 hrs, Practical / Laboratory -50 hrs) **TOTAL 200 hrs**

### **COURSE DESCRIPTION:**

The course is designed to study the function of the human body at the molecular, cellular, tissue and systems levels. The major underlying themes are; the mechanisms for promoting homeostasis, cellular processes of the metabolism, membrane function and cellular signaling; the mechanisms that match supply of nutrients to tissue demands at different activity levels; the mechanisms that match the rate of excretion of waste products to their rate of production; the mechanisms that defend the body against injury and promote healing.

These topics address the consideration of nervous and endocrine regulation of the cardiovascular, hematopoietic, pulmonary, renal, gastro-intestinal and musculoskeletal systems including the control of cellular metabolism. The course stresses on the integrative nature of physiological responses in normal function and disease.

This course will serve as a pre-requisite/foundation for the further courses i.e. Exercise physiology or Pathology

### **OBJECTIVES:**

At the end of the course, the candidate will:

1. Acquire the knowledge of the relative contribution of each organ system in maintenance of the Milieu Interior (Homeostasis)
2. Be able to describe physiological functions of various systems, with special reference to Musculo-skeletal, Neuro-motor, Cardio-respiratory, Endocrine, Uro-genital function, & alterations in function with aging
3. Analyze physiological response & adaptation to environmental stresses-with special emphasis on physical activity, altitude, temperature

Acquire the skill of basic clinical examination, with special emphasis to Peripheral & Central Nervous system, Cardiovascular & Respiratory system, & Exercise

## **BIOCHEMISTRY**

(Didactic 46hrs+Demonstrations 4hrs) **TOTAL 50 HRS**

## **COURSE DESCRIPTION:**

This course provides the knowledge and skills in fundamental organic chemistry and introductory biochemistry that are essential for further studies. It covers basic biochemical, cellular, biological and microbiological processes, basic chemical reactions in the prokaryotic and eukaryotic cells, the structure of biological molecules, introduction to the nutrients i.e. carbohydrates, fats, enzymes, nucleic acids and amino acids.

## **OBJECTIVES:**

The student would know:

1. Various biomolecules which are present in the body and functions
2. The formation and fate of these biomolecules
3. Their normal levels in body fluids required for functioning and their abnormal levels to understand the disease process.

# **FUNDAMENTALS OF KINESIOLOGY & KINESIOTHERAPY**

(Didactic – 100 Hrs & Practical / Laboratory – 150 Hrs) **TOTAL 250 HRS**

## **COURSE DESCRIPTION:**

This course covers the definition of various terms used in mechanics, biomechanics kinesiology as well as its importance in physical therapy. It applies the mechanical principles to simple equipments of therapeutic gymnasium and familiarizes the candidate to its use. It covers the types of human motions as well as planes and relative axes of motion. It also explains the inter-relationship among kinematic variables and utilizes this knowledge to describe and analyze motion. It covers the classification of the joints and muscles along their distinguishing characteristics and skill of measurement of its ranges in various planes and axes. This course additionally covers therapeutic principles and skills of application of massage, yoga, aerobic exercise and use of suspension therapy. It also enhances the skill of evaluation of vital parameters & sensory system.

## **OBJECTIVE:**

### **Cognitive:**

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

- a) Define the various terms used in relation to Mechanics, Biomechanics & Kinesiology
- b) Recall the basic principles of Biophysics related to mechanics of movement / motion & understand the application of these principles to the simple equipment designs along with their efficacy in Therapeutic Gymnasium & various starting positions used in therapeutics.

### **Psychomotor:**

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

- a) Describe & also acquire the skills of use of various tools of the Therapeutic Gymnasium
- b) Demonstrate the movements in terms of various anatomical planes and axes.
- c) Demonstrate various starting & derived positions used in therapeutics.
- d) Describe physiological principles & acquire the skills of application of therapeutic massage
- e) Acquire the skills of assessment of basic evaluation like sensations, reflexes & vital parameters
- f) Acquire the skill of objective assessment of Range of Motion of the joints by Goniometry
- g) Describe physiological basis and principle of relaxation and acquire the skills of relaxation methods
- h) Describe physiological responses and principles of aerobic exercises for general fitness & demonstrate fitness skills on self & group.
- i) Describe physiological principles and acquire the skill of performing Pranayama & Yogasanas

# **FUNDAMENTALS OF ELECTROTHERAPY**

Didactic 95 hrs+ Practical 105hrs [**TOTAL-200HRS**]

## **COURSE DESCRIPTION:**

This course will cover the basic principles of Physics that are applicable in medical equipments used in Physiotherapy. It will also help to understand the fundamentals of currents, sound waves, Heat & its effects, electromedical radiations and their effects as well as their application in physical therapy. It covers the skill of application of superficial thermal agents and Cryotherapy.

## **OBJECTIVES:**

### **Cognitive:**

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

- a) Recall the physics principles & Laws of Electricity, Electro magnetic spectrum, & ultra sound
- b) Describe effects of environmental & man made electromagnetic field at the cellular level & risk factors on prolonged exposure.
- c) Describe the Main electrical supply, Electric shock, precautions
- d) Enumerate Types & Production of various Therapeutic electrical currents & describe the panel diagrams of the machines

### **Psychomotor:**

At the end of the course the candidate will be able to –

- a) Test the working of the various electrotherapeutic equipments
- b) Describe in brief, certain common electrical components such as transistors, valves, capacitors, transformers etc & the simple instruments used to test / calibrate these components [ such as potentiometer, oscilloscope , multimeter ] of the circuit ; & will be able to identify such components.
- c) Describe & identify various types of electrodes used in therapeutics, describe electrical skin resistance & significance of various media used to reduce skin resistance.



- d) Acquire knowledge of various superficial thermal agents such as Paraffin wax bath, Cryotherapy, Hydrocollator packs, Home remedies, their physiological & therapeutic effects, Merits / demerits & acquire the skill of application.

## II B.P.Th.

### SYLLABUS

**Transcript Hours- 1400**

Sr. No.	Subject	Theory Hours	Practical / Clinical Hours	Total Hours
	<b>PROFESSIONAL PRACTICE</b>			
1	Professional practice & Ethics <i>(College Examination in final year )</i>	005	010	015
	<b>MEDICAL SCIENCES</b>			
1	Pathology	050	-	050
2	Microbiology	031	004	035
3	Pharmacology	050	-	050
4	Psychiatry (Including Psychology)	030	020	050
	<b>PHYSIOTHERAPY</b>			
1	Kinesiology	080	-	080
2	Kinesiotherapy	080	160	240
3	Electrotherapy	100	200	300

4	Seminar (including introduction to <b>terms</b> of I.C.F. definition of terms Activity Limitation and Participation Restriction) ( <i>not for examination</i> )		090	090
5	<p>Supervised clinical practice ( To practice clinical skills under the supervision, at the O.P.D./ I.P.D. set up)</p> <ul style="list-style-type: none"> <li>➤ Clinical assignments should include Observation, Clinical History taking &amp; technical assistance to the clinicians</li> <li>Therapeutic Gymnasium</li> <li>Fundamentals of Exercise therapy &amp; Electro Therapy</li> </ul> <p>To maintain a Register / Log book-in which the prescribed Case Histories &amp; written assignments are documented &amp; to obtain the signature from the respective section In-charge at the end of the assignment.</p>		490	490

## **PROFESSIONAL PRACTICE AND ETHICS**

**(COLLEGE EXAMINATION IN FINAL YEAR)**

**Total -15 HRS**

### **COURSE DESCRIPTION:**

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application of professional and ethical reasoning and decision-making strategies, professional communication.

## **OBJECTIVES:**

**At the end of the course the candidate will be compliant in following domains:**

### **Cognitive:**

- a) Be able to understand the moral values and meaning of ethics
- b) Will acquire bedside manners and communication skills in relation with patients, peers, seniors and other professionals.

### **Psychomotor:**

- a) Be able to develop psychomotor skills for physiotherapist-patient relationship.
- b) Skill to evaluate and make decision for plan of management based on sociocultural values and referral practice.

### **Affective:**

- a) Be able to develop behavioral skills and humanitarian approach while communicating with patients, relatives, society at large and co-professionals.
- b) Be able to develop bed side behavior, respect & maintain patients' confidentiality.

## **PATHOLOGY**

**[DIDACTIC –50 HRS]**

### **COURSE DESCRIPTION:**

Students will develop an understanding of pathology underlying clinical disease states involving the major organ systems and epidemiological issues. Students will learn to recognize pathology signs and symptoms considered red flags for serious disease. Students will use problem-solving skills and information about pathology to decide when referrals to another health care provider or alternative interventions are indicated. Students will develop the ability to disseminate pertinent information and findings, and ascertain the appropriate steps to follow. The course more deals with structural impairments as an important part in ICF Classification.

## **OBJECTIVES:**

At the end of the course, the candidate:

### **Cognitive:**

- a) Will have sound knowledge of concepts of cell injury & changes produced by different tissues, organs and capacity of the body in healing process.
- b) Acquire the knowledge of general concepts of neoplasia with reference to the Etiology, gross & microscopic features, & diagnosis, in different tissues, & organs of the body.
- c) Acquire knowledge of common immunological disorders & their resultant effects on the human body.

### **Psychomotor:**

- a) Recall the Etiology–pathogenesis, the pathological effects & the clinico–pathological correlation of common infections & non-infectious diseases.
- b) Understand in brief, about the common Haematological disorders & investigations necessary to diagnose them.
- c) Correlate normal & altered morphology of different organ systems in different diseases needed for understanding disease process & their clinical significance

# **MICROBIOLOGY**

(Didactic-31hrs + Demonstration -4hrs) **TOTAL 35 HRS**

## **COURSE DESCRIPTION:**

Students will develop an understanding of pathology underlying clinical disease states and involving the major organ systems and epidemiological issues. Epidemiological issues will be presented and discussed. Students will learn to recognize pathology signs and symptoms considered red flags for serious disease. Students will use problem-solving skills and information about pathology to decide when referral to another health care provider or alternative intervention is indicated. Students will develop the ability to disseminate pertinent information and findings, and ascertain the appropriate steps to follow.

## **OBJECTIVES:**

At the end of the course, the candidate will

1. Have sound knowledge of prevalent communicable diseases and the agents responsible for causing clinical infections, pertaining to C.N.S, C.V.S, Musculoskeletal system, Respiratory system, Genitourinary system, wound infections and of newer emerging pathogens
2. Know the importance and practices of best methods to prevent the development of infections in self and patients (universal safety precautions)

# **PHARMACOLOGY**

**[DIDACTIC – 50 hrs]**

## **COURSE DESCRIPTION:**

This course covers the basic knowledge of Pharmacology including administration, physiologic response and adverse effects of drugs under normal and pathologic conditions. Topics focus on the influence of drugs in rehabilitation patient/client management. Drugs used in iontophoresis and phonophoresis will be discussed in detail.

## **OBJECTIVES:**

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

**Cognitive:**

- a. Describe Pharmacological effects of commonly used drugs by patients referred for Physiotherapy; list their adverse reactions, precautions, contraindications, formulation & route of administration.
- b. Identify whether the pharmacological effect of the drug interferes with the Therapeutic response of Physiotherapy & vice versa
- c. Indicate the use of analgesics & anti-inflammatory agents with movement disorders with consideration of cost, efficiency, & safety for individual needs.

**Psychomotor:**

Get the awareness of other essential & commonly used drugs by patients- The bases for their use & common as well as serious adverse reactions.

## **PSYCHIATRY (INCLUDING PSYCHOLOGY)**

[Didactic 30hrs + Clinical 20hrs]- **TOTAL  
50HRS**

**COURSE DESCRIPTION:**

The course design increases awareness of psychosocial issues faced by individuals. Their significance at various points on the continuum of health and disability should be emphasised. The course discusses personal and professional attitudes and values as they relate to developing therapeutic relationships. It emphasizes on communication skills for effective interaction with patients, health-care professionals and others. It expects students to identify common psychiatric conditions.

**OBJECTIVES:**

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

**Cognitive:**

- a. Define the term Psychology & its importance in the Health delivery system, & will gain knowledge of Psychological maturation during human development & growth & alterations during aging process.

b. Understand the importance of psychological status of the person in health & disease; environmental & emotional influence on the mind & personality.

c. Have the knowledge and skills required for good interpersonal communication.

**Psychomotor:**

a. Enumerate various Psychiatric disorders with special emphasis to movement / Pain & ADLs

b. Acquire the knowledge in brief, about the pathological & etiological factors, signs / symptoms & management of various Psychiatric conditions. c. Understand the patient more empathetically.

## **KINESIOLOGY**

**DIDACTIC- 80 HRS**

**COURSE DESCRIPTION:**

This course is based on anatomical, physiological & related kinesiological principles for normal human movement. Students have the opportunity to develop and acquire understanding of kinesiological responses for the efficacy in various kinesiotherapeutic applications.

**Objective** – At the end of the course, the candidate will be able to –

1. Understand the principles of Biomechanics.
2. Acquire the knowledge of kinetics and kinematics of Spine, Extremities, Temporo-Mandibular joint, Thoracic cage
3. Acquire the knowledge of Musculo skeletal movements during normal Gait and Activities of Daily Living

## **KINESIOTHERAPY**

Didactic-80 Hrs + Practical/ Laboratory-160 HRS [**TOTAL - 240 HRS**]

4.  
**COURSE DESCRIPTION:**

5.  
This course is based on anatomical and physiological & related kinesiological principles for normal human movement and for the efficacy in the assessment methods for mobility, muscle strength. Students have the opportunity to develop and acquire understanding of physiological responses to various types of training and develop skills of exercise

programs (on models). Exercise components of muscle strength, flexibility, balance, breathing and gait are examined. Evidence of appropriate, safe and effective exercise design and proper exercise biomechanics and prescription parameters are addressed with all interventions.

### **OBJECTIVES:**

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

#### **Cognitive:**

Describe the Biophysical properties of connective tissue, & effect of mechanical loading, & factors which influence the muscle strength, & mobility of articular & periarticular soft tissues.

#### **Psychomotor:**

1. Apply the biomechanical principles for the efficacy in the assessment methods for mobility, muscle strength
2. Acquire the skill of subjective and objective assessment of individual & group muscle strength
3. Acquire the skills of subjective and objective methods of muscle strengthening
4. Describe the physiological effects, therapeutic uses, merits / demerits of various exercise modes including Hydrotherapy
5. Demonstrate various therapeutic exercises on self; & acquire the skill of application on models with Home Programs
6. Analyze normal Human Posture [static & dynamic].
7. Acquire the skill of functional re-education techniques on models
8. Acquire the skill of Balance and Coordination Exercises
9. Acquire the skill of using various walking aids for Gait Training
10. Acquire the skill of demonstrating breathing exercises and retraining on self and others
11. Acquire the skill of demonstrating Postural Drainage on models

## **ELECTROTHERAPY**

Didactic –100 hrs+ Practical / Laboratory –200 hrs [**TOTAL - 300 HRS**]

### **COURSE DESCRIPTION:**

This course tends to explore fundamental skills in application of electrotherapeutic modalities and knowledge of indications, contraindications and physiological principles needed for appropriate patient care. It includes topics such as Electrical stimulation, T.E.N.S., Iontophoresis, Ultrasound / Phonophoresis, Diathermy and Electro diagnostic testing etc.



## OBJECTIVES:

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

### Cognitive:

1. Acquire the knowledge about the physiology of pain, Pain pathways & Methods of pain modulation, selection of appropriate modality for Pain modulations.
2. Describe the Physiological effects, Therapeutic uses, indication & contraindications of various Low/ Medium & High Frequency modes / Actinotherapy
3. Describe the Physiological Effects & therapeutic uses of various therapeutic ions & topical pharmaco -therapeutic agents to be used for the application of iontophoresis & sono/ phonophoresis

### Psychomotor:

1. Acquire the skills of application of the Electro therapy modes on models, for the purpose of Assessment & Treatment.
2. Acquire an ability to select the appropriate mode as per the tissue specific & area specific application.

## III B. P.Th.

## SYLLABUS

Transcript Hours- 1400

Sr. No.	SUBJECTS	Theory Hours	Laboratory / Clinical Hours	Total Hours
	<b>PROFESSIONAL PRACTICE</b>			
1	Professional Practice & Ethics <i>(College Examination in final year)</i>	10	005	015

<b>MEDICAL SCIENCES</b>				
2	Surgery-I (Cardiovascular & Thoracic Surgery, General Surgery & Plastic/Reconstructive Surgery)	030	025	055
3	Surgery-II (Orthopaedics)	040	020	060
4	Medicine-I (Cardiovascular Respiratory Medicine, General Medicine, Rheumatology & Gerontology)	045	010	055
5	Medicine-II (Neurology & Paediatrics)	045	020	065
6	Community Medicine & Sociology	050	010	060
7	Obstetrics & Gynaecology ( <i>College Examination</i> )	020	010	030
8	Dermatology ( <i>College Examination</i> )	010	-	010
<b>PHYSIOTHERAPY</b>				
9	Functional Diagnosis & Physiotherapeutic Skills	135	325	460
10	Seminar (including ICF)	-	090	090
11	Supervised clinical practice	-	500	500
<b>TOTAL</b>		<b>385</b>	<b>1015</b>	<b>1400</b>

## **PROFESSIONAL PRACTICE AND ETHICS**

**(COLLEGE EXAMINATION IN FINAL YEAR)**

**TOTAL -15 HRS**

## **COURSE DESCRIPTION:**

This subject would be taught in continuum from first year to final year. An exam in theory would be conducted only in final year. Professional and ethical practice curriculum content addresses the Knowledge, Skills and Behaviors required of the physiotherapist in a range of practice relationships and roles. The course will discuss the role, responsibility, ethics administration issues and accountability of the physical therapists. The course will also cover the history and change in the profession, responsibilities of the professional to the profession, the public and to the health care team. This includes the application of professional and ethical reasoning and decision-making strategies, professional communication.

## **OBJECTIVES:**

**At the end of the course the student will be compliant in following domains:**

### **Cognitive:**

- a) Be able to understand the moral values and meaning of ethics.
- b) Will acquire bedside manners and communication skills in relation with patients, peers, seniors and other professionals.

### **Psychomotor:**

- a) Be able to develop psychomotor skills for physiotherapist-patient relationship.
- b) Skill to evaluate and make decision for plan of management based on sociocultural values and referral practice.

### **Affective:**

- a) Be able to develop behavioral skills and humanitarian approach while communicating with patients, relatives, society at large and co-professionals
- b) Be able to develop bed side behavior, respect & maintain patients' confidentiality

## **SURGERY-I**

**(General Surgery, Cardiovascular & Thoracic Surgery & Plastic/ Reconstructive Surgery)**

(Didactic-35hrs + Clinical -20 hrs) TOTAL =55HRS

**COURSE DESCRIPTION:**

This course intends to familiarize students with principles of General surgery including various specialties like cardiovascular, thoracic, neurology and plastic surgery. It also familiarizes the students with terminology and abbreviations for efficient and effective chart reviewing and documentation. It explores various conditions needing attention, focusing on epidemiology, pathology, as well as primary and secondary clinical characteristics and their surgical and medical management. The purpose of this course is to make physiotherapy students aware of various surgical conditions general surgery and specialty surgeries so these can be physically managed effectively both pre as well as postoperatively.

## **OBJECTIVES:**

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

1. Describe the effects of surgical trauma & Anaesthesia in general
2. Clinically evaluate & describe the surgical management in brief of
  - a) General Surgery
  - b) Neuro Surgery
  - c) Cardiovascular and Thoracic Surgery
  - d) ENT & Ophthalmic Surgery
  - e) Plastic & Reconstructive Surgery
3. Describe pre-operative evaluation, surgical indications in various surgical approaches, management and post operative care in above mentioned areas with possible complications.
4. Be able to read & interpret findings of the relevant investigations

## **SURGERY-II**

### **(ORTHOPAEDICS)**

(Didactic-40hrs + Clinical -20hrs) **TOTAL =60 HRS**

## **COURSE DESCRIPTION:**

This course intends to familiarize students with principles of orthopaedic surgery along with familiarization with terminology and abbreviations for efficient and effective chart reviewing and documentation. It also explores various orthopaedic conditions needing attention, focusing on epidemiology, pathology, as well as primary and secondary clinical characteristics and their surgical and medical management. The purpose of this course is to make physiotherapy students aware of various orthopaedic surgical conditions so these can be physically managed effectively both pre as well as postoperatively.

## **OBJECTIVES:**

At the end of the course, the candidate will –

- a) Be able to discuss the, aetiology, Pathophysiology, clinical manifestations & conservative / surgical management of various traumatic & cold cases of the Musculoskeletal Conditions.
- b) Gain the skill of clinical examination; apply special tests & interpretation of the preoperative old cases & all the post-operative cases.
- c) Be able to read & interpret salient features of the X-ray of the Spine & Extremities and correlate the radiological findings with the clinical findings.
- d) Be able to interpret Pathological / Biochemical studies pertaining to Orthopaedic conditions.

## **MEDICINE-I**

**(Cardiovascular Respiratory Medicine, General Medicine & Gerontology)**

(Didactic-45 hrs + Clinical-10 hrs) **TOTAL-55 HRS**

### **COURSE DESCRIPTION:**

This course intends to familiarize students with medical terminology & abbreviations for efficient & effective chart reviewing & documentation. It also explores selected systemic diseases, focusing on epidemiology, pathology, histology, etiology as well as primary & secondary clinical characteristics & their management. Discusses & integrates subsequent medical management of General, Rheumatology, Gerontology, Cardio-vascular & Respiratory systems, to formulate appropriate intervention, indications, precautions & contraindications.

### **OBJECTIVES:**

At the end of the course, the candidate will:

1. Be able to describe Etiology, Pathophysiology, Signs & Symptoms & Management of the various Endocrinal, Metabolic, Geriatric & Nutrition Deficiency conditions.
2. Be able to describe Etiology, Pathophysiology, Signs & Symptoms, Clinical Evaluation & Management of the various Rheumatologic Cardiovascular & Respiratory Conditions.
3. Acquire skill of history taking and clinical examination of Musculoskeletal, Respiratory, Cardio-vascular & Neurological System as a part of clinical teaching.
4. Be able to interpret auscultation findings with special emphasis to pulmonary system.

5. Study Chest X-ray, Blood gas analysis, P.F.T. findings & Haematological studies, for Cardiovascular, Respiratory, Neurological & Rheumatological conditions.
6. Be able to describe the principles of Management at the Intensive Care Unit.
7. Be able to acquire the skills of Basic Life Support.
8. Acquire knowledge of various drugs used for each medical condition to understand its effects and its use during therapy.

## **MEDICINE-II**

### **(Neurology & Paediatrics)**

(Didactic – 45 hrs + Clinical – 20 hrs) **TOTAL – 65 HRS**

#### **COURSE DESCRIPTION:**

This course intends to familiarize students with medical terminology & abbreviations for efficient & effective chart reviewing & documentation, It also explores select systemic diseases, focusing on epidemiology, etiology, pathology, histology as well as primary & secondary clinical characteristics & their management. It discusses & integrates subsequent medical management of Neurological & Paediatric conditions to formulate appropriate intervention, indications, precautions & contraindications.

#### **OBJECTIVES:**

At the end of the course, the candidate will:

1. Be able to describe Aetiology, Pathophysiology, signs & Symptoms & Management of the various Neurological & Paediatric conditions.
2. Acquire skill of history taking and clinical examination of Neurological & Paediatric conditions as a part of clinical teaching.
3. Acquire knowledge of various drugs used for each medical condition to understand its effects and its use during therapy.
4. Acquire knowledge in brief about intra-uterine development of the foetus.
5. Be able to describe normal development & growth of a child, importance of Immunization, breast-feeding & psychological aspect of development.

6. Be able to describe neuromuscular, musculoskeletal, cardio-vascular & respiratory conditions related to immunological conditions, nutritional deficiencies, infectious diseases, & genetically transmitted conditions.
7. Acquire skill of clinical examination of a neonate / child with respect to neurological, musculoskeletal & respiratory function.

## **COMMUNITY HEALTH & SOCIOLOGY**

**TOTAL 60 HRS**

### **A- COMMUNITY HEALTH**

(Didactic- 30 Hours + Visits -10 Hours) **Total 40hrs**

#### **COURSE DESCRIPTION:**

The course is organized to introduce the concept of health care and management issues in Health Services. It will help them in assuming a leadership role in their profession and assume the responsibility of guidance. It will help them assume wider responsibilities at all levels of health services. It will help them in improving their performance through better understanding of the health services at all the levels of community.

#### **OBJECTIVES:**

At the end of the course, the candidate shall be able to understand the contents given in the syllabus.

### **B- SOCIOLOGY**

**Total 20 hrs**

#### **COURSE DESCRIPTION:**

This course covers the basic knowledge and concepts of sociology to with the aim to help them understand the impact of group, culture and environment on the behavior and health of the patients. Make them realize the importance of the relationship of the physical therapist and the patient and the environment around them.

#### **OBJECTIVES:**

At the end of the course, the candidate shall be able to understand the contents given in the syllabus.

# **GYNAECOLOGY & OBSTETRICS**

**(COLLEGE EXAMINATION)**

(Didactic - 20 hrs + Clinical – 10 hrs) **TOTAL 30 HRS**

## **COURSE DESCRIPTION:**

This course intends to provide introduction to women`s health which includes problems related to pregnancy, osteoporosis, and other disorders specific to women. Topics will focus on medical terminology, clinical examination, evaluation, comparing contemporary, traditional interventions and the impact of evolving technology in this area. It also emphasises on evaluation & medical treatment of pelvic floor dysfunctions.

## **OBJECTIVES:**

At the end of the course, student will be able to describe:

- a) Normal & abnormal physiological events, complications and management during Puberty.
- b) Normal and abnormal physiological events, complications and management of pregnancy (Pregnancy, Labour, Puerperium)
- c) Normal and abnormal physiological events, complications and management of menopause.
- d) Normal and abnormal physiological events, complications and management of urogenital dysfunction.(Antenatal, Postnatal, during menopause)
- e) The student will be able to acquire the cognitive skill of clinical examination of the pelvic floor.



# **DERMATOLOGY**

**(COLLEGE EXAMINATION)**

**TOTAL - 10 HRS**

## **OBJECTIVES:**

At the end of the course, the student will be able to describe the Pathophysiology, Signs & Symptoms, Clinical Features, Examination & Management of Common Skin Conditions like Leprosy, Psoriasis, Bacterial & Fungal Infections of the skin, connective tissue disorder, hand eczema, drug reaction, cutaneous manifestation of HIV, & Sexually Transmitted Diseases

## **FUNCTIONAL DIAGNOSIS & PHYSIOTHERAPEUTIC SKILLS**

(Didactic - 135 hrs + Clinical – 325 hrs) **TOTAL 460 HRS**

## **COURSE DESCRIPTION:**

1. Functional Diagnosis & Physiotherapeutic Skills is a stepping stone to introduce students to actual concepts of PT assessment and later to the treatment concepts
2. Functional Diagnosis focuses on the assessment of all the body systems i.e. Musculoskeletal, Neurological and Cardiovascular-Respiratory in order to study the various impairments and their impact on activity and participation of the individual taking into consideration the contextual factors as well. It also emphasizes on the clinical reasoning of the underlying components of a universal evaluation tool (ICF) for a better understanding of the patient in a holistic manner. The student is also subjected to learn basics of manipulative, cardiovascular-respiratory and neuro-therapeutic skills on models so that he/she will be able to apply these principles eventually on patients.
3. The student will also gain a sound knowledge of electro-diagnosis, which is an integral part of Functional Diagnosis.

## **OBJECTIVES:**

### **Cognitive:**

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

1. Understand the use of ICF.
2. Acquire the knowledge of human growth and development from new life to birth and adulthood
3. Understand structure and function of nerve and muscle as a base for understanding the electro-diagnostic assessment.
4. Understand the use of appropriate tools or instruments of assessment in Musculoskeletal, Neurological and Cardio-vascular conditions.
5. Understand the theoretical basis and principles of manipulative skills, neurotherapeutic skills and skills of cardiopulmonary care and resuscitation
6. Document results of assessment to evaluate the patient from time to time.

### **Psychomotor:**

Student will be able to:

1. Perform assessment of measures of body structures and functions related to tissue mechanics.
2. Perform assessment of measures of body structures and functions related to motor control affecting activity and participation, quality of life and independence.
3. Perform the skill of electro-diagnosis (SD Curve) and observe skills of EMG and NCV studies, to understand the documentation of finding of these studies.
4. Interpretation and analysis of assessment and findings.
5. Demonstrate skills of manual therapy musculoskeletal, neurotherapeutics and cardiovascular and respiratory skills on models (Laboratory work).

### **Affective:**

Student will be able to:

1. Select appropriate assessment techniques to facilitate safety, sensitive practices in patient comfort and effectiveness.
2. Select appropriate assessment techniques to facilitate safety, sensitive practices in patient comfort and effectiveness.

3. Demonstrate safe, respectful and effective performance of physical therapy handling techniques taking into account patient's clinical condition, need for privacy, resources available and the environment.
4. Follow the principles of appropriate handling technique that is draping, hand placement, body part positioning, manual techniques, lifting and transfer techniques.
5. Communicate with patients and their families/caregivers regarding the need and uses of various assessment techniques.
6. Select appropriate assessment techniques to facilitate safety, sensitive practices in patient comfort and effectiveness.
7. Demonstrate safe, respectful and effective performance of physical therapy handling techniques taking into account patient's clinical condition, need for privacy, resources available and the environment.
8. Follow the principles of appropriate handling technique that is draping, hand placement, body part positioning, manual techniques, lifting and transfer techniques.
9. Communicate with patients and their families/caregivers regarding the need and uses of various assessment techniques

## IV B.P.Th.

### SYLLABUS

Transcript Hrs-1465

Sr. No.	Subjects	Theory Hours	Practical / Clinical Hours	Total Hours
	<b>PROFESSIONAL PRACTICE</b>			
1	Professional Practice & Ethics <i>(College Examination)</i>	015	--	015
2	Administration, Management & Marketing <i>(College Examination)</i>	020	--	020
	<b>PHYSIOTHERAPY</b>			
3	Musculoskeletal Physiotherapy	060	140	200
4	Neuro Physiotherapy	065	135	200
5	Cardiovascular-Respiratory Physiotherapy (Including Critical Care)	060	140	200
6	Community Physiotherapy	085	115	200
7	Principles of Bio-engineering <i>(College Examination)</i>	030	-	030
8	Research Methodology & Biostatistics	040	-	040

<i>(College Examination)</i>				
9	Seminar (including I.C.F.)	-	060	060
10	Supervised clinical practice -During each clinical assignment, the student shall evaluate, functionally diagnose, plan & practice clinical skills on patients in consultation with the qualified physiotherapist staff	-	500	500
<b>TOTAL</b>		<b>375</b>	<b>1090</b>	<b>1465</b>

## **PROFESSIONAL PRACTICE AND ETHICS**

**(COLLEGE EXAMINATION)**

**Total -60Hrs (I to IV year)**

### **COURSE DESCRIPTION:**

This subject will be taught in continuum from first year to final year. An examination will be conducted only in final year. Professional and ethical practice curriculum content addresses the Knowledge, Skills and Behaviors required by the physiotherapist in a range of practice relationships and roles. The course will discuss the role, responsibility, ethics administration issues and accountability of the physical therapists. The course will also cover the history and change in the profession, responsibilities of the professional to the profession, the public and to the health care team. This includes the application of professional and ethical reasoning and decision-making strategies and professional communication.

### **OBJECTIVES:**

At the end of the course, the student will be compliant in following domains:

**Cognitive:** The student will

1. Be able to understand the moral values and meaning of ethics

2. Be able to learn and apply ethical code of conduct in fields of clinical practice, learning, teaching, research and physiotherapist-patient relationship
  3. Acquire bedside manners and communication skills in relation with patients, peers, seniors and other professionals
  4. Will acquire the knowledge of the basics in Managerial & Management skills, & use of information technology in professional Practice
1. Develop psychomotor skills for physiotherapist-patient relationship
  2. Develop the skill to evaluate and make decisions for plan of management based on sociocultural values and referral practice
1. Develop behavioral skills and humanitarian approach while communicating with patients, relatives, society and co-professionals
  2. Develop bedside behavior, respect & maintain patients' confidentiality

## **ADMINISTRATION, MANAGEMENT & MARKETING (COLLEGE EXAMINATION)**

**Total – 20 HRS**

### **COURSE DESCRIPTION:**

This curriculum content addresses the Knowledge, Skills and Behaviors required of the physiotherapist in a range of practice relationships and roles. The course will discuss the role, responsibility, administration issues of the physiotherapists. The course will also cover responsibilities of the professional to the profession, the public and to the health care team. This includes the application of professional and ethical reasoning and decision-making strategies, professional communication, reflective practice strategies and personal management issues (stress, work-life balance). Factors that influence individual practice are addressed, including the availability and accessibility of local health care resources as well as the ethical, legal and regulatory requirements of practicing the physiotherapy profession in a given jurisdiction.

## **OBJECTIVES:**

At the end of the course the student will be compliant in following domains:

### **Cognitive:**

The student will:

- a. Learn the management basics in fields of clinical practice, teaching, research and physiotherapy practice in the community.
  
- b. Acquire communication skills in relation with patients, peers, seniors and other professionals & the community.
  
- c. Acquire the knowledge of the basics in Managerial & Management skills, & use of Information technology in professional Practice

### **Psychomotor:**

The student will be able to:

- a. Develop psychomotor skills for physiotherapy practice.
  
- b. Develop skill to evaluate and make decision for plan of management based on sociocultural values and referral practice.

### **Affective:**

The student will be able to:

Develop behavioral skills and humanitarian approach while communicating with patients, relatives, society at large and co-professionals.

## **MUSCULOSKELETAL PHYSIOTHERAPY**

(Didactic - 60 hours + Practical-140 hours)**TOTAL: 200 HOURS**

### **COURSE DESCRIPTION:**

This course includes a study of applied anatomy and physiology of the musculo-skeletal system along with pathological changes and patho-mechanics of the system. It discusses relevant tests and measures for determining impairment and differentiating the diagnosis based on the specificity and sensitivity of the assessment instruments as related to patients with disorders of the musculo-skeletal system.

Musculo-skeletal Physiotherapy focuses on maximizing functional independence and well-being. The course uses a patient-centered model of care with multi-system assessment, evidence based interventions and a significant patient education component to promote a healthy, active lifestyle and community-based living.

The candidate will have a sound understanding of theory, scientific evidence and best practices in the areas of the Musculo-skeletal System including Movement Sciences, Psychosocial Sciences and Physiotherapy.

## **OBJECTIVES:**

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

### **Cognitive:**

- a) Identify, evaluate, analyze & discuss primary and secondary musculo-skeletal dysfunction, based on biomechanical, kinesiological & patho-physiological principles.
- b) Correlate the same with radiological, electrophysiological, biochemical/haematological investigations as applicable & arrive at the appropriate Physiotherapy diagnosis with skillful evaluation of structure and function with clinical reasoning.
- c) Understand the pharmaco-therapeutics, its interaction with physiotherapeutic measures and modify physiotherapeutic intervention appropriately.
- d) Apply knowledge of psychosocial factors (personal and environmental factors in the context of disability associated with the musculo-skeletal system or multiple body systems) for behavioral and lifestyle modification and use appropriate training and coping strategies.

### **Psychomotor:**

- a) Apply theoretical basis of physiological effects, indications, contraindications; and best available evidence on the effectiveness, efficacy and safe application guidelines for a full range of physiotherapeutic strategies and interventions, including appropriate modes of soft tissue & joint mobilization, electrotherapy, therapeutic exercise, and appropriate ergonomic advice that can be employed to manage problems of the individual's structures, functions, activities and participation, capacity and performance levels



associated with the musculo-skeletal system, for relief of pain & prevention, restoration and rehabilitation measures for maximum possible functional independence at home, workplace and in community.

- b) Prescribe and train for appropriate orthoses, prostheses and walking aids based on musculoskeletal dysfunction.

**Affective:**

Acquire ethical skills by demonstrating safe, respectful and effective performance of physical handling techniques taking into account the patient's clinical condition, the need for privacy, the physiotherapist, the resources available and the environment.

## **NEUROPHYSIOTHERAPY**

(Didactic 60 hrs + Clinical 140 hrs) **TOTAL 200 HRS**

**COURSE DESCRIPTION:**

This course includes a study of applied anatomy and physiology of the neuromuscular system along with the pathological changes and patho-mechanics of the system. It discusses relevant tests and measures for determining impairment and differentiating the diagnosis based on the specificity and sensitivity of the assessment instruments as related to patients with disorders of the neuromuscular system.

Neurophysiotherapy curriculum emphasizes the selection and use of measurement tools and management techniques based on the best available evidence. Physiotherapy strategies for assessment and treatment address structural & functional impairments and activity limitations of individuals and population (both adults & paediatric) in the context of their personal needs/goals including participation restrictions and the environment they live in. The permanence of many neurological impairments mandates that, where possible, emphasis is placed on prognosis and criterion – referenced outcomes to establish realistic goals.

The therapeutic approach is patient and family focused with a biopsychosocial emphasis that embraces inter professional collaboration and requires ongoing communication, education and negotiation with the client, family, care giver and healthcare team

**OBJECTIVES:**

At the end of the course, student will

**Cognitive:**

- a) Be able to identify and analyze movement dysfunction due to neuromuscular skeletal disorders in terms of biomechanical and biophysical basis, correlate the same with the health condition, routine electrophysiological, radiological and

biochemical investigations, and arrive at appropriate physical therapy diagnosis using WHO-ICF with clinical reasoning.

- b) Be able to plan realistic goals based on the knowledge of prognosis of the disease of the nervous system and prescribe appropriate, safe evidence based physiotherapy interventions with clinical reasoning.
- c) Understand infection control principles, best practices and techniques applicable to a range of setting where clients with neurological conditions would receive physiotherapy services.
- d) Know determinacy of health (environmental, nutritional, self-management/ behavioral factors) and chronic disease management principles related to neurological health.

**Psychomotor:**

- a) Be able to develop psychomotor skills to implement timely and appropriate physiotherapy assessment tools/techniques to ensure a holistic approach to patient evaluation in order to prioritize patient's problems.
- b) Be able to select timely physiotherapeutic interventions to reduce morbidity and physiotherapy management strategies, suitable for the patients' problems and indicator conditions based on the best available evidence.
- c) Implement appropriate neuro-physiotherapeutic approaches, electrotherapeutic modalities, joint and soft tissue mobilizations and ergonomic advice for neuromuscular skeletal systems, contextual factors to enhance performance of activities and participation in society.

**Affective:**

- a) Be able to develop behavioral skills and humanitarian approach while communicating with patients, relatives, society and co-professionals, to promote individual and community health.

# **CARDIO-VASCULAR & RESPIRATORY**

## **PHYSIOTHERAPY**

**(INCLUDING CRITICAL CARE)**

**(Didactic–60HRS + Clinical 140HRS) TOTAL 200 HRS**

### **COURSE DESCRIPTION:**

This course includes a study of applied anatomy and physiology of the Cardiovascular and Respiratory system along with pathological changes and patho-mechanics of the system. It discusses relevant tests and measures for determining impairment and differentiating the diagnosis based on the specificity and sensitivity of the assessment instruments as related to patients with disorders of the Cardiovascular and Respiratory system.

Cardiovascular and Respiratory Physiotherapy focuses on maximizing functional independence and well-being. This course uses a patient-centered model of care with multi-system assessment, evidence based interventions and a significant patient education component to promote healthy active lifestyle and community-based living. The candidate will have a sound understanding of theory, scientific evidence and best practices in the areas of the Cardiovascular and Respiratory System including critical care, Psychosocial Sciences, Movement Sciences and Physiotherapy.

### **OBJECTIVES:**

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

#### **Cognitive:**

a. Identify and analyze cardio-vascular & pulmonary dysfunction in terms of bio-mechanical, and Bio-physical basis and correlate the same with the Health condition, routine electrophysiological, radiological, and biochemical investigations and arrive at appropriate Physical therapy diagnosis using WHO-ICF tool (Disability, Functioning and contextual factors) with clinical reasoning.

b. Plan, prescribe appropriate, safe physiotherapy interventions with clinical reasoning for and prevention of impairments, activity limitations, participation restrictions and

environmental barriers related to cardio-vascular & pulmonary dysfunction in acute care settings, at home , work place, in society & in leisure activities.

**Psychomotor:**

- a. Utilise skills such as executing exercise tests, PFT, Ankle brachial index, arterial & venous insufficiency tests
- b. Utilise psychomotor skills to implement appropriate bronchial hygiene therapy, therapeutic exercise, electrotherapeutic modalities, CPR, Intensive (critical) care, joint and soft tissue mobilisations, offering ergonomic & energy conservation advice for patients with cardio-vascular & pulmonary dysfunction.
- c. Utilise the knowledge about contextual factors to enhance capacity and performance of activities and participation in society
- d. Utilise the skill to deliver cardiac, pulmonary & vascular rehabilitation

**Affective:**

- a. Develop behavioral skills and humanitarian approach while communicating with patients, relatives, society at large and co-professionals
- b. Develop bed side behavior, respect & maintain patients' confidentiality

## **COMMUNITY PHYSIOTHERAPY**

(Didactic 85 hrs + Clinical 115 hrs) **TOTAL 200 HRS**

**COURSE DESCRIPTION:**

Community Physiotherapy describes the roles & responsibilities of the Physiotherapist as an efficient member of the society. This component introduces the Physiotherapist to a proactive preventive oriented philosophy for optimization & betterment of health.

Community Physiotherapy is not apart from the other sections of Physiotherapy described in this syllabus. In fact, it is the in-depth application of these same aspects viz. Musculoskeletal, Neurological & Cardio Vascular & Respiratory to the entire

society. This is done by understanding the sections & sub sections of the societies, the national & international health policies, role of Government & Non Government Organizations.

The applications of Community Physiotherapy are not limited to conditions & dysfunctions but as attributed to promotion of Health & rehabilitation in Communities like Elderly, Women, and Occupational Health etc.

### **OBJECTIVES:**

At the end of the course the student shall:

#### **Cognitive:**

Be able to describe:

- a) The general concepts about health, disease and physical fitness.
- b) Physiology of aging process and its influence on physical fitness.
- c) National policies for the rehabilitation of disabled – role of PT.
- d) The strategies to access prevalence and incidence of various conditions responsible for increasing morbidity in the specific community – role of PT in reducing morbidity, expected clinical and functional recovery, reasons for non-compliance in specific community environment & solution for the same.
- e) The evaluation of disability and planning for prevention and rehabilitation.
- f) Rehabilitation in urban and rural set up.
- g) Able to be a part of decision making team regarding the policies for the welfare of special communities & on issues of disability

#### **Psychomotor:**

- a) Be able to identify with clinical reasoning the prevailing contextual {e.g. environmental and psycho-social cultural} factors, causing high risk responsible for various dysfunctions and morbidity related to sedentary life style and specific community like women, children, aged as well as industrial workers and describe planning strategies of interventional policies to combat such problems at community level.
- b) Be able to gain the ability to collaborate with other health professionals for effective service delivery & community satisfaction
- c) Utilize the research methodology knowledge for formulation of a research question (synopsis)

#### **Affective:**

Be an empathetic health professional, especially for those in the community, who is away from the health institutions and having difficulty in healthcare access

# **PRINCIPLES OF BIOENGINEERING**

**(COLLEGE EXAMINATION)**

(Didactic 27 hrs + Practical /Laboratory-03 hrs) **TOTAL 30 HRS**

## **COURSE DESCRIPTION:**

The course is designed to give knowledge & application of biomechanical principles related to Orthotics & Prosthetics. Students will also learn the principles of the prescription & the checkout procedures of aids & appliances as per the physical dysfunction of the person. They will learn to fabricate simple splints.

## **OBJECTIVES:**

At the end of the course, the candidate shall

### **Cognitive:**

- a) Acquire knowledge about biomechanical principles of application of variety of aids & appliances used for ambulation, protection & prevention.
- b) Acquire in brief knowledge about various material used for splints/ Orthoses & prostheses and their selection criteria

### **Psychomotor:**

Acquire the skill of fabrication of simple splints made out of Low cost material

# **RESEARCH METHODOLOGY AND BIostatISTICS**

**(COLLEGE EXAMINATION)**

**[DIDACTIC: 30 HRS]**

## **COURSE DESCRIPTION:**

To provide the students with the necessary concepts of statistics to enable them to realize a research project in the field of Physiotherapy. It involves selection of appropriate statistical techniques to address questions of medical and physiotherapeutic

relevance; selects and applies appropriate statistical techniques for managing common types of medical / physiotherapeutic data. It uses various software packages for statistical analysis and data management. It interprets the results of statistical analyses and critically evaluates the use of statistics in the medical literature. It communicates effectively with statisticians and the wider medical community, in writing and orally through presentation of results of statistical analyses. It explores current and anticipated developments in medical statistics as applied to physiotherapists. It is designed to teach entry-level physical therapy students the fundamentals of reading and understanding research methods, design, and statistics.

## **OBJECTIVES:**

At the end of the study of this subject the student should be able to:

1. Enumerate the steps in Physiotherapy research process.
2. Describe the importance & use of biostatistics for research work.
3. Acquire skills of reviewing literature, formulating a hypothesis, collecting data, writing research proposal etc.