BACHELOR OF PHYSIOTHERAPY
PAPER CODE – 03060701
PHYSIOTHERAPY IN CARDIORESPIRATORY CONDITIONS- (THEORY)

Periods/Week Credits

TEACHING HOURS: 64

T: 4 4

MAX. MARKS: 100
INTERNAL: 40
EXTERNAL: 60
TIME: 3 Hrs

BACHELOR OF PHYSIOTHERAPY
PAPER CODE – 03060701
PHYSIOTHERAPY IN CARDIORESPIRATORY CONDITIONS- (PRACTICAL)

Periods/Week Credits

TEACHING HOURS: 64

P: 4 2

MAX. MARKS: 50
INTERNAL: 20
EXTERNAL: 30

Course Description:

This course serves to integrate the knowledge gained by the students in Clinical Cardio respiratory conditions with the skills gained in exercise therapy, electrotherapy and massage, thus enabling them to apply these in clinical situations of dysfunction due to cardio respiratory pathology

Course Objectives:

The objective of this course is that after 128 hours of lectures, demonstrations, practical and clinics the student will be able to identify cardio respiratory dysfunction, set treatment goals and apply their skills in exercise therapy, electrotherapy and massage in clinical situation to restore cardio respiratory function.

Course Outcomes:

1. Interpretation of different invasive and non invasive diagnostic investigation to make proper assessment in various respiratory and cardiovascular dysfunction
2. Develops the skills to execute different Physiotherapy techniques used in treatment of Cardio-respiratory dysfunctions.
3. To select strategies for cure, care & prevention; adopt restorative & rehabilitative measures for maximum possible functional independence of a patient at home, work place & in community
4. Be able to execute the effective Physiotherapeutic measures with appropriate clinical reasoning to improve pulmonary function.
5. To design & execute effective tailored cardiopulmonary rehabilitation programme.
6. To learn and execute the principle of care of patients at the Intensive care area.

Date	Theme/ Topic	Duration (Hrs)	Learning Experiences & Learning Resources	Learning Objectives
	Review of Anatomy and Physiology of Respiratory system	8 Hrs.	Student Interactive Session Explanation using Charts and Models Student Seminar Poster presentation Cardiopulmonary Physical Therapy- Donna Frown Feltter	Describe the Physiology and Anatomy of Respiratory System Discuss the mechanism of respiration Identify abnormalities in rate, rhythm and in exchange of gases
	Assessment of Respiratory system	12 Hrs.	Student Interactive Session Practical Session Case Discussion Cardiopulmonary Physical Therapy- Donna Frown Feltter	Describe the Assessment of Respiratory System Evaluate the patient condition Interpret the different test used in respiratory assessment Perform the techniques of Palpation, Percussion, Auscultation & Measurement of chest expansion
	Physiotherapy techniques for the management of Cardio respiratory problems	12 Hrs.	Student Interactive Session Practical Session Case Discussion Cardiopulmonary Physical Therapy- Donna Frown Feltter Physiotherapy in respiratory Care- Hough Respiratory Physiotherapy- Harden	Describe the various Physiotherapy Techniques used in treatment of Respiratory Conditions Demonstrate the Breathing Exercises, Controlled Breathing Training, Chest Mobilization Exercise, Huffing & Coughing, Postural Drainage, Chest percussion, vibration & shaking, Manual Hyperinflation and Suctioning Understand the techniques of Humidification, Aerosol Therapy, PEP, Flutter and Inspiratory Muscle training
	Obstructive Pulmonary Disorders	10 Hrs.	Student Interactive Session Case Discussion Cardiopulmonary Physical Therapy- Donna Frown Feltter	Describe the various Obstructive lung conditions Explain the different techniques used in assessment and treatment of Obstructive lung conditions Discuss the Patho physiology ,

			Physiotherapy in respiratory Care- Hough Respiratory Physiotherapy- Harden	Risk Factors, Clinical Presentation, Physiotherapy Assessment and Physiotherapy Management in COPD, Asthma, Cystic Fibrosis & Bronchiectasis
	Pleural Diseases	4 Hrs.	Student Interactive Session Case Discussion Cardiopulmonary Physical Therapy- Donna Frown Feltter Physiotherapy in respiratory Care- Hough Respiratory Physiotherapy- Harden	Describe the various Pleural diseases Discuss Patho physiology , Risk Factors, Clinical Presentation, Physiotherapy Assessment and Physiotherapy Management in Pleurisy, Pleural Effusion, Empyema & Pneumothorax
	Infectious Lung conditions	8 Hrs.	Student Interactive Session Case Discussion Vertical Integerated teaching Cardiopulmonary Physical Therapy- Donna Frown Feltter	Describe the Patho physiology, Risk Factors, Clinical Presentation, Physiotherapy Assessment and Physiotherapy Management in Lung Abscess, Pneumonia, Pulmonary tuberculosis & Rheumatic Fever
	Lung Carcinoma	4 Hrs.	Student Interactive Session Cardiopulmonary Physical Therapy- Donna Frown Feltter	Describe the Carcinoma of Respiratory Tract Explain Types, Classification, Physiotherapy assessment and Physiotherapy Management in Lung Carcinoma
	Paralytic conditions	4 Hrs.	Student Interactive Session Cardiopulmonary Physical Therapy- Donna Frown Feltter	Describe the Patho-physiology , Clinical Presentation, Physiotherapy Assessment and Physiotherapy Management in Diaphragm Paralysis, Vocal Cord Paralysis
	Chest Deformities	2 Hr.	Student Interactive Session Model Presentation Student Seminar Cardiopulmonary Physical Therapy- Donna Frown Feltter	Describe the various Chest Wall Deformities and their consequences on respiratory functions Explain Clinical Presentation, Physiotherapy Assessment and Physiotherapy Management in

				Barrel Chest, Pigeon Chest, Funnel Chest
	ICU Management	6 Hrs.	Student Interactive Session Practical Session Training in ICU Chest physiotherapy in intensive care unit- Mackenzie et al - Williams and Wilkins. Cardiopulmonary Physical Therapy- Donna Frown Feltter	Describe the Principle of Intensive Care Physiotherapy Incorporate different Physiotherapy Approach to a patient admitted in ICU Explain the Positioning of patient, Hemodynamic monitoring, Demonstrate the techniques of Removal of secretion Explain Oxygen Therapy Perform the early ambulation Explain the prevention of complications
	Mechanical Ventilators	6 Hrs.	Student Interactive Session Practical Session Training in ICU Understanding Mechanical Ventilation- Hasan	Describe the Ventilators Differentiate between invasive non invasive ventilators Explain the Purpose of Ventilator Discuss Types, Classification and Different Modes of Ventilators
	Review of Anatomy and Physiology of Cardiovascular system	4 Hrs.	Student Interactive Session Explanation using Charts and Models Cardiopulmonary Physical Therapy- Donna Frown Feltter	Describe the Physiology and Anatomy of Cardiovascular System Explain Regulation of Heart Rate Describe Regulation of Blood flow
	Assessment of Cardiovascular system	4 Hrs.	Student Interactive Session Practical Session Case Discussion Cardiopulmonary Physical Therapy- Donna Frown Feltter	Describe the Assessment of Cardiovascular System Interpret the different tests used in Cardiovascular assessment
	Ischemic heart diseases	8 Hrs.	Student Interactive Session Explanation using Charts and Models Case Discussion Cardiopulmonary Physical Therapy- Donna Frown Feltter	Describe the Ischemic Heart Disease Assess, plan and execute a rehabilitation programme for a patient with ischemic heart disease Differentiate between Stable

			ACSM Guidelines for exercise testing and prescription- ACSM- Williams and Wilkins	angina, Unstable Angina & Myocardial Infarction
	Congestive heart failure	4 Hrs.	Student Interactive Session Explaination using Charts and Models Case Discussion Cardiopulmonary Physical Therapy- Donna Frown Feltter ACSM Guidelines for exercise testing and prescription- ACSM- Williams and Wilkins	Describe the types of congestive Heart Failure Explain Patho-physiology, Risk Factors, clinical Presentation, Physiotherapy Assessment and Physiotherapy Management in CHF
	Blood Pressure abnormalities	4 Hrs.	Student Interactive Session Case Discussion Vertical integerated teaching Cardiopulmonary Physical Therapy- Donna Frown Feltter ACSM Guidelines for exercise testing and prescription- ACSM- Williams and Wilkins	Describe the Abnormalities of Blood Pressure Explain Pathogenesis, Patho physiology, Risk Factors, Clinical Presentation, Physiotherapy Assessment and Physiotherapy Management in Hypertension & Hypotension
	Peripheral Vascular Diseases	12 Hrs.	Student Interactive Session Practical Session Case Discussion Cardiovascular/Respiratory physiotherapy- Smith & Ball- Mosby Cash textbook of Chest, Heart and Vascular Disorders for Physiotherapists- Downie- J.P.	Describe the Pathogenesis, Patho physiology, Risk Factors, Clinical Presentation of Peripheral Vascular Disease- Atherosclerosis, Arteriosclerosis, Burger's Disease, Reynaud's Disease, Thrombosis & Embolism, Phlebitis & Thrombo phlebitis, Varicose Vein, Lymphedema & Gangrene Assess, plan and execute a rehabilitation programme for a patient with peripheral vascular disease
	Lung Surgeries	8 Hrs.	Student Interactive Session Case Discussion Cardiopulmonary Physical Therapy- Donna Frown Feltter	Identify different incision Describe indication, pathological changes of Lobectomy, Pneumonectomy, Thoracotomy, Thoracoplasty, Endoscopy & Eye Hole surgeries

			ACSM Guidelines for exercise testing and prescription- ACSM- Williams and Wilkins	Assess, plan and execute a rehabilitation programme for a patient with lung surgery
	Cardiac Surgeries	8 Hrs	Student Interactive Session Case Discussion Cardiopulmonary Physical Therapy- Donna Frown Feltter ACSM Guidelines for exercise testing and prescription- ACSM- Williams and Wilkins	Describe the various Heart Surgeries, indications, Pathological changes Assess, plan and execute a rehabilitation programme for a patient with heart surgery- Corrective Surgeries of congenital heart defects, Angioplasties, Blood vessel grafting, Open heart surgery Heart Transplantation

BACHELOR OF PHYSIOTHERAPY

Paper Code- 03060702

Physiotherapy in Orthopedic Conditions-1

(THEORY)

Periods/Week	Credits
T: 4	4

TEACHING HOURS: 64

MAX. MARKS: 100

INTERNAL: 40

EXTERNAL: 60

TIME: 3 Hrs

BACHELOR OF PHYSIOTHERAPY - IVYEAR

Paper Code- 03060702

Physiotherapy in Orthopedic Conditions-1

(PRACTICAL)

Periods/Week	Credits
P: 4	2

TEACHING HOURS: 64

MAX. MARKS: 50

INTERNAL: 20

EXTERNAL: 30

Course Description:

This course serves to integrate the knowledge gained by the students in Clinical Orthopaedics, with the skills gained in exercise therapy, electrotherapy and massage, thus enabling them to apply these in clinical situations of dysfunction due to musculoskeletal pathology.

Course Objectives:

The objective of this course is that after 128 hours of lectures, demonstration, practical and clinics the student will be able to identify disability due to musculo seketal dysfunction, set treatment goals and apply their skills gained in exercise therapy, electrotherapy and massage in clinical situations to restore musculoskeletal function.

Course Outcomes:

1. Assessment of patients sustaining orthopaedic injuries.
2. Development of injury prevention program for the society.
3. Understanding and development of nutrition program for the prevention of disorders related to nutrition deficiency.
4. Student will be able to work out proper therapeutic techniques for the efficient management of the populations.

Date	Theme/ Topic	Duration (Hrs)	Learning Experiences & Learning Resources	Learning Objectives
	Traumatology 1. Specific fractures and their physiotherapeutic management. 2. Soft tissue injuries	88	Student Interactive Session Case presentation Teachers seminar Problem based learning Orthopedics physiotherapy- Donatelli&VVooden- WB. Saunders. Essentials of orthopedics and applied physiotherapy - Joshi and kotwal- B.L. Churchill Livingstone.	Describe the traumatology bony tissues, specific fracture and soft tissue injuries Describe the physiotherapeutic intervention and technique of physiotherapy in Fracture and dislocations Discuss Classification and type of displacement, method of immobilization, healing of fractures and factors affecting union, non union, delayed Union etc., common sites of fractures and their general physiotherapeutic management. Explain the Physiotherapy management of Synovitis and Capsulitis. Describe the Physiotherapy management of Tendonitis and other tendon injuries around wrist, elbow, knee, shoulder, ankle. Discuss the PT management of Bursitis, volkman's ischemic contracture Explain rehabilitation of Tear of semilunar cartilage, menisectomy Discuss the PT management of Injury to cruciate ligaments of knee.Internal derangement of knee. And other overuses injuries important for a Physiotherapist.
	Deformities	40	Student Interactive Session Case presentation	Describe Etiology, pathology, clinical presentation, diagnostic criterion general, orthotic and Physiotherapy Management of

			Students seminar Poster presentation Orthopedics physiotherapy- Donatelli&VVooden- WB. Saunders. Essentials of orthopedics and applied physiotherapy - Joshi and kotwal- B.L. Churchill Livingstone.	the following: Congenital torticollis, Cervical rib, CTEV, Pescavus, Pesplanus and other common congenital deformities, Scoliosis, Increased and decreased Kyphosis, increased & decreased Lordosis, Coxavara, Genu valgum, Genu varum and recurvatum.

BACHELOR OF PHYSIOTHERAPY -IVYEAR

Paper Code- 03060703

PHYSIOTHERAPY IN NEUROLOGY-1

(THEORY)

Periods/Week Credits

TEACHING HOURS: 64

T: 4 4

MAX. MARKS: 100

INTERNAL: 40

EXTERNAL: 60

TIME: 3 Hrs

BACHELOR OF PHYSIOTHERAPY -IVYEAR

Paper Code- 03060703

NEUROLOGY-1 (PRACTICAL)

Periods/Week Credits

TEACHING HOURS: 64

P: 4 2

MAX. MARKS: 50

INTERNAL: 20

EXTERNAL: 30

Course Description:

The course is designed to develop the basic knowledge about the Anatomy and Physiology of Central as well as Peripheral Nervous System and its relation towards the diseases and Physiotherapy Management.

Course Objective:

The objective of this course in that after 64 hours of lecture, the student will be able to identify disability due to neurological dysfunction, set treatment goals and apply their skill. Students will understand the role exercise therapy, electrotherapy and recent therapeutic advancement in clinical situation to restore neurological function .In addition, the student will be able to fulfill with 75% accuracy to diagnose the condition.

Course Outcomes:

1. Knowledge about the development of the brain .
2. Understand the anatomy and physiology of central and peripheral nervous system
3. Identify the disability due to neurological dysfunction .
4. Learn the physical assessment in Neurologoical conditions
5. Understand the various Physiotherapy techniques used in management of Neurologoical condition.

Date	Theme/ Topic	Duration (Hrs)	Learning Experiences & Learning Resources	Learning Objectives
	Basics of nervous system	24 hrs	Student Interactive Session Students seminar Neurological Rehabilitation - Urmpherd – Mosby Neurological physiotherapy - A, Problem solving approach – Susan Edwards- Churchill Linvigstone.	Describe the Basic Anatomy & Physiology of brain & spinal cord Explain the organization and function of cerebral hemispheres, cerebellum, spinal cord, peripheral nerves, pyramidal system, extra pyramidal system Describe the factors influencing alpha motor neuron activity Explain the neurological basis of muscle tone and movement Demonstrate the hypertonia, spasticity rigidity, ataxia, athetosis, chorea
	Principle of Assessment of nervous system	24 hrs	Student Interactive Session Practical demonstration Group discussion Neurological Rehabilitation – Carr & Shepherd – ButterworthHeinrnan Motor assessment of Developing Infant - Piper &Darrah - W B. Saunders	Develop the skill in history taking Explain assessment of higher functions, cortical sensations, cranial nerves, dorsal column sensation and pain & temperature sensations Describe the assessment of motor function: grading of muscle power, assessment of range of movement, balance and coordination Assess superficial and deep reflexes Explain assessment of reflex maturation in terms of stimulus, position negative/positive reaction and their

				significance Assess gait both normal and abnormal (spastic, ataxic and paralytic patterns)
	Principles of Treatment	40 hrs	Student Interactive Session Practical demonstration Group discussion Demonstration on patient Neurological Rehabilitation - Urmpherd – Mosby Neurological physiotherapy - A, Problem solving approach – Susan Edwards- Churchill Linvigstone.	Describe the basic techniques, modalities & splints used for rehabilitation Demonstrate Sensory re –education, Bobath's / neuro developmental therapy, Motor re-education, Strengthening exercise, coordination exercise, joint mobilization, PNF, Vojta techniques, biofeedback, Brunnstorm therapy, MRP, & Sensory integeration therapy Discuss the Treatment to improve function Free exercise, gait training with and without aids, activities of daily living, mat exercise Explain the use of splints and braces in spastic upper motor neuron and in flaccid lower motor neuron lesions, in both upper and lower limbs Explain the management of chronic pain in neurological conditions with respect to the type of pain treatment modalities available, selection criteria for each modality and possible complications
	Peripheral Nerve Lesions	20 hrs	Student Interactive Session Practical demonstration Group discussion Patient assessment Horizontal Integerated teaching Neurological Rehabilitation - Urmpherd – Mosby Neurological physiotherapy - A, Problem solving approach – Susan Edwards- Churchill Linvigstone.	Identify type of peripheral nerve lesions Assess the motor 'system: Specific muscles. Range of motion, active and passive ranges, muscle girth. Assess sensory system: touch, pain, temperature, par aesthesia, nerve reverberation Assess autonomic function: sweating, skin condition, soft tissue atrophy Describe muscle reeducation techniques: electrical stimulation (selection of current): active, assisted, resisted movements: Passive and self assistive stretching and massage. Describe sensory reeducation and pain

				relief by various modalities describe the common splints used peripheral nerve lesions Explain Static, dynamic and functional Isolating muscle contraction, specific muscle strengthening. Explain Post- Operative management: Pressure bandaging reeducation after transfer. Describe a home program.
	Neuro Muscular Diseases & its physiotherapy management	20 hrs	Student Interactive Session Role model Practical demonstration Group discussion Patient assessment Neurological Rehabilitation - Urmpherd – Mosby Neurological physiotherapy - A, Problem solving approach – Susan Edwards- Churchill Linvigstone. Geriatric physical therapy- Gucciona- Mosby Physiotherapy in Pediatrics - Shepherd - Butterworth Heinrnan	Describe the etio pathology, clinical sign & symptoms, impairments, disabilities evaluation Procedure, physiotherapy management of Amyotrophic Lateral sclerosis Define Demyelinating inflammatory poly radiculoneuropathies Explain its etio pathology, clinical sign & symptoms, impairments, disabilities. evaluation procedure & physiotherapy management Define Muscular Dystrophy Describe stages of the disease ambulatory .wheelchair and bed stages Describe significance of exercise resisted, active and free. Identify and assess common contractures and deformities. Assess range of motion and muscle power. Assess functional ability. Demonstrate treatment program for strengthening weak muscles: Active movements and hydrotherapy Increase range of motion by suspension therapy, powder board, passive stretching positioning etc. Demonstrate gait training with appropriate orthosis, Describe management of chest complication: breathing exercises chest percussion, drainage of secretions and

				assisted coughing.

BACHELOR OF PHYSIOTHERAPY
Paper Code-03060704
PHYSIOTHERAPY IN SPORTS INJURIES- THEORY

Periods/Week **Credits** **TEACHING HOURS: 64**
T: 4 **4**

MAX.

MARKS: 100

INTERNAL: 40
EXTERNAL: 60
TIME: 3 Hrs

BACHELOR OF PHYSIOTHERAPY

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Paper Code- 03060704

PHYSIOTHERAPY IN SPORTS INJURIES- PRACTICAL

Periods/Week Credits

TEACHING HOURS: 64

P: 4 2

MAX. MARKS: 50
INTERNAL: 20
EXTERNAL: 30

Course Description:

This course is to design and develop basic knowledge of sports related injuries with respect to different sports and different game situations, hence to understand importance of injury prevention and specific physiotherapy management

Course Objectives:

The objective of the course is that after 64 hours of teaching, the student will be able to understand

1. Importance and methods of physiotherapy in managing sports injuries.
2. Importance and methods of prevention of injuries in various sports.
3. The role of physiotherapy in the prevention of sports injuries.
4. Various game situations and the potential risk factors associated to those games.
5. The component and importance of fitness in relation to health of the society.
6. The requirement of special care for the specially abled athletes, adolescent and female athletes.

Course Outcomes:

1. Assessment of players sustaining sports related injuries.
2. On field evaluation and basic knowledge of first aid which are the cornerstones of management of any sports injury.
3. Development of injury prevention program for the sports playing population.
4. Understanding and development of individual diet and nutrition program for the sports population.
5. Prevention and minimizing various risk factors of sports injuries.
6. Student will be able to work out proper fitness regimen and rehabilitation protocol for various sports injuries.

Date	Theme/ Topic	Duration (Hrs)	Learning Experiences & Learning Resources	Learning Objectives
	Pre-exercise evaluation. Diet and nutrition measurement of fitness components and sports skills.	20	Student Interactive Session Teachers seminar Sports Physiotherapy: Applied Science and Practice, María Zuluaga	Describe the pre exercise evaluation and diet, nutrition measurement of fitness components & Sports skills Measure the muscular endurance, Measure the flexibility,

	Physiological effects of exercise on body system-	16	Student Interactive Session Students seminar Sports Physiotherapy: Applied Science and Practice, María Zuluaga	Describe the physiological effects of exercise on body system- Muscular system, Endocrine system, Cardio-respiratory system, Nervous system
	Sports injuries:	40	Student Interactive Session Students seminar Poster presentation Sports Physiotherapy: Applied Science and Practice, María Zuluaga	Describe the various sports injuries such as PIVD, cervical whiplash injuries, facet joint syndrome, SI joint dysfunction. Hip-muscle strain, piriformis syndrome, ITB syndrome, osteitis pubis, hamstring tendenopathy, Knee- menisci, cruciate, collateral, osteochondritis, chondromalacia patella, biceps femoris tendinitis, swimmer's knee, patellofemoral pain syndrome. Leg & ankle- shin splint, achillis tendinitis, & rupture, TA bursitis, ankle sprain, plantar fasciitis, tuff toe syndrome, Head & Face:- maxillofascial injuries, helmet compression syndrome.
	Sports injuries Shoulder-	20	Student Interactive Session Students seminar Group discussions Sports Physiotherapy: Applied Science and Practice, María Zuluaga	Describe the various sports injuriessuch as instability, rotator cuff injury, bicep tendinitis and rupture, pectoralis major rupture, swimmers shoulder, scapular dyskinesia, and acromio-clavicular joint injuries. Elbow: tennis elbow, golfer's elbow. Wrist and Hand: carpal tunnel syndrome, game keeper's thumb
	Principle of injury prevention.	16	Student Interactive Session Poster presentation Sports Physiotherapy: Applied Science and Practice, María Zuluaga	Describe the principle of injury prevention and training, rehabilitation in sports
	Sports in Special age groups:	16	Student Interactive Session Teachers seminar Sports Physiotherapy: Applied Science and Practice, María Zuluaga	Describe the various sports specifics condition such as Female athletic triad, Younger athlete Discuss the Management of children with chronic illness and

				nutrition. Discuss older athlete Explain Physiological changes with aging Describe the benefits, risks of exercise in elderly, Explain Exercise prescription guidelines for elderly.

BACHELOR OF PHYSIOTHERAPY

IVYEAR

Paper Code- 03060705

RESEARCH METHODOLOGY

Periods/Week Credits

TEACHING HOURS: 32

T: 2 2

MAX. MARKS: 50

INTERNAL: 20
EXTERNAL: 30
TIME: 3 Hrs

Course Description:

This course is designed to develop the basic knowledge of research and to understand its special needs in relation to interventions in physiotherapy which will help them to provide and find out the best treatment and new treatment for their patients

Course Objectives:

The objective of this course is that, it will provide a comprehensive introduction to research proposal writing, research methodologies, and foundational research theories and protocols. Students in the course learn about the cyclical nature of applied research and the iterative process of research writing. The course teaches students how to write a proposal, engage in independent studies, and work collaboratively and in Biostatistics the student will be introduced to the basic principles and methods of biostatistics, providing a sound methodological foundation for health outcomes research. The purpose of the course is to teach fundamental concepts and techniques of descriptive and inferential statistics with applications in health care research. Basic statistics, including probability, descriptive statistics and inferential statics for means and proportions, and regression methods are presented

Course Outcomes:

1. Understand the importance of research in the relative field.
2. Understand the basic concepts and methods of research.

Date	Theme/ Topic	Duration (Hrs)	Learning Experiences & Learning Resources	Learning Objectives
	Introduction to Research	2 Hrs.	Student Interactive session Research in Physical Therapy- Christopher E. Bork Research Methodology- CR Kothari	Know about basics of research. Identify the importance of Research in clinical practice Discuss the scientific approach, Characteristics, purpose and limitations of research
	Techniques of descriptive research	3 Hrs.	Student Interactive session Group Discussion Research in Physical Therapy- Christopher E. Bork Research Methodology- CR	Describe the different techniques of descriptive research Explain Central tendency, measures of dispersion, tables graphs, normal distributions

			Kothari Statistics in Medicine-Colton-Little Brown. Boston	
	Ethical Issues in Research	3 Hrs	Student Interactive session Research Methods for Clinical Therapist- Carolyn M Hicks Research in Physical Therapy-Christopher E. Bork	Identify various ethical issues involved in research Explain elements of informed consent
	Research Question	2 Hrs.	Student Interactive session Research in Physical Therapy-Christopher E. Bork Research Methodology- CR Kothari	Identify various steps involved in formulating a Research Question. Describe literature review
	Research design	3 Hrs.	Student Interactive session Research in Physical Therapy-Christopher E. Bork Research Methodology- CR Kothari	Define Research Design, Describe various research design
	Research proposal	3 Hrs.	Student Interactive session With examples of journals shown in class. Research in Physical Therapy-Christopher E. Bork	Identify the contents of a research proposal
	Techniques of data collection	3 Hrs.	Student Interactive session Group Discussion Research Methods for Clinical Therapist- Carolyn M Hicks Research Methodology- CR Kothari	Identify the methods of collection of data Explain Questioners, surveys and sampling. Discuss the Principal of Measurement
	Reliability & Validity	3 Hrs.	Student Interactive session Group Discussion Research in Physical Therapy-Christopher E. Bork Research Methodology- CR Kothari	Know about reliability & validity & their types Explain the and need of reliability in research Explain the need of validity in research

	Critical Analysis of Research	3 Hrs.	Student Interactive session Criticizing a published research in class Research Methods for Clinical Therapist- Carolyn M Hicks Research in Physical Therapy- Christopher E. Bork	Identify the various steps involved in critical analysis of research
	Research writing for publication	4 Hrs.	Student Interactive session With examples of journals shown in class. Research Methodology- CR Kothari	Describe the various steps involved in research report writing and Explain different types of report writing Identify precautions for writing research reports
	Stage presentation of research	3 Hrs.	Student Interactive session Seminar presentation Research Methodology- CR Kothari	Identify the techniques used in stage presentation of research