

VELS



INSTITUTE OF SCIENCE, TECHNOLOGY & ADVANCED STUDIES (VISTAS)
(Deemed to be University Estd. u/s 3 of the UGC Act, 1956)
PALLAVARAM - CHENNAI
ACCREDITED BY NAAC WITH 'A' GRADE
INSTITUTION WITH UGC 12B STATUS
Marching Beyond 30 Years Successfully

M.P.T
Master of Physiotherapy

Curriculum and Syllabus
(Based on Choice Based Credit System)
Effective from the Academic year
2023-2024

School of Physiotherapy

M.P.T – Master of Physiotherapy

CURRICULUM Total No. of Credits: 100

2023-24 Regulation

I Semester

S.No.	Category	Code	Course	Hours/Week			Cr.'s	CA	SEE	Total
				L	T	P				
1	Core	23CMPT001T	Basic Sciences – Theory	5	0	0	5	40	60	100
		23CMPT001P	Basic Sciences – Viva	0	0	2	1	40	60	100
2	Core	23CMPT002T	Exercise Physiology & Movement Mechanics – Theory	5	0	0	5	40	60	100
		23CMPT002P	Exercise Physiology & Movement Mechanics –Viva	0	0	2	1	40	60	100
3	Core	23CMPT003T	Research Methodology& Biostatistics - Theory	4	0	0	4	40	60	100
4	Core	23CMPT004T	PT Ethics & Entrepreneurship - Theory	4	0	0	4	40	60	100
5	Practical	23PMPT001	Physical Diagnosis & Management - Practical	0	0	6	3	40	60	100
	Total			**18**	**0**	**10**	**23**			

II Semester

S.No.	Category	Code	Course	Hours/Week			Cr.'s	CA	SEE	Total
				L	T	P				
1	Core	23CMPT005T	Advanced Therapeutic Interventions – Theory	5	0	0	5	40	60	100
		23CMPT005P	Advanced Therapeutic Interventions – Practical	0	0	4	2	40	60	100
2	Core	23CMPT006T	Electro Diagnosis & Electrotherapeutics – Theory	5	0	0	5	40	60	100
		23CMPT006P	Electro Diagnosis & Electrotherapeutics – Practical	0	0	4	2	40	60	100
3.	Elective	23DMPT101	DSE I - Theory	3	0	0	3	40	60	100
5	Elective	23GMPT151	GE I - Theory	3	0	0	3	40	60	100
	Total			**16**	**0**	**8**	**20**			

III Semester

S.No.	Category	Code	Course	Hours/Week			Cr.'s	CA	SEE	Total
				L	T	P				
1	Specialty Core	23CMPT___	Basic Fundamentals in Elective Subjects – Theory	5	0	0	5	40	60	100
		23CMPT___	Basic Fundamentals in Elective Subjects – Practical	0	0	4	2	40	60	100
2	Specialty Core	23CMPT___	PT Evaluation/ Documentation & Evidence Based Practice in Elective Subjects- Theory	5	0	0	5	40	60	100
		23CMPT___	PT Evaluation/ Documentation & Evidence Based Practice in Elective Subjects- Practical	0	0	4	2	40	60	100
3	Elective	23DMPT102	DSE II - Theory	3	0	0	3	40	60	100
4	Elective	23GMPT152	GE II - Theory	3	0	0	3	40	60	100
	Total			**16**	**0**	**8**	**20**			

IV Semester

S. No.	Category	Code	Course	Hours/Week			Cr.'s	CA	SEE	Total
				L	T	P				
1	Specialty Core	23CMPT___	Advance PT Intervention in Elective Subjects – Theory	5	0	0	5	40	60	100
			Advance PT Intervention in Elective Subjects - Practical	0	0	4	2	40	60	100
2	Project	23RMPT___	Dissertation	0	0	12	6	40	60	100
3	Elective	23DMPT103	DSE III - Theory	3	0	0	3	40	60	100
4	Elective	23GMPT153	GE III - Theory	3	0	0	3	40	60	100
	Total			**11**	**0**	**16**	**19**			

L – Lectures, T-Tutorial, P – Practical, Cr.'s – Credits, CA – Continuous Assessment Test , SEE- Semester End Examination

Credits by L.T.P. 82

Soft Skill/ Clinicals 18

Total Credits 100

List of specialty Electives – for III Semester

23CMPTA001T	Basic fundamentals in Orthopedics - Theory
23CMPTA001P	Basic fundamentals in Orthopedics-Practical
23CMPTB001T	Basic fundamentals in Neurology- Theory
23CMPTB001P	Basic fundamentals in Neurology Practical
23CMPTC001T	Basic fundamentals in Cardiopulmonary diseases- Theory
23CMPTC001P	Basic fundamentals in Cardiopulmonary diseases Practical
23CMPTD001T	Basic fundamentals in Sports- Theory
23CMPTD001P	Basic fundamentals in Sports-Practical
23CMPTE001T	Basic fundamentals in Hand Conditions- Theory
23CMPTE001P	Basic fundamentals in Hand Conditions- Practical
23CMPTF001T	Basic fundamentals in Obstetrics &Gynaecology- Theory
23CMPTF001P	Basic fundamentals in Obstetrics &Gynaecology-Practical
23CMPTG001T	Basic fundamentals in Pediatrics - Theory
23CMPTG001PP	Basic fundamentals in Pediatrics - Practical

List of specialty Electives – for III Semester

23CMPTH001T	PT Evaluation/ Documentation/EBP in Orthopedics - Theory
23CMPTH001P	PT Evaluation/ Documentation/EBP in Orthopedics- Practical
23CMPTI001T	PT Evaluation/ Documentation/EBP in Neurology - Theory
23CMPTI001P	PT Evaluation/ Documentation/EBP in Neurology -Practical
23CMPTJ001T	PT Evaluation/ Documentation/EBP in Cardiopulmonary diseases-- Theory
23CMPTJ001P	PT Evaluation/ Documentation/EBP in Cardiopulmonary diseases- Practical
23CMPTK001T	PT Evaluation/ Documentation/EBP in Sports- Theory
23CMPTK001P	PT Evaluation/ Documentation/EBP in Sports -Practical
23CMPTL001T	PT Evaluation/ Documentation/EBP in Hand Conditions- Theory
23CMPTL001P	PT Evaluation/ Documentation/EBP in Hand Conditions- Practical
23CMPTM001T	PT Evaluation/ Documentation/EBP in Obstetrics & Gynaecology- Theory
23CMPTM001P	PT Evaluation/ Documentation/EBP in Obstetrics &Gynaecology -Practical
23CMPTN001T	PT Evaluation/ Documentation/EBP in Pediatrics- Theory
23CMPTN001P	PT Evaluation/ Documentation/EBP in Pediatrics - Practical

List of specialty Electives – for IV Semester

23CMPTA002T	Advance PT Intervention in Orthopedics - Theory
23CMPTA002P	Advance PT Intervention in Orthopedics-Practical
23CMPTB002T	Advance PT Intervention in Neurology - Theory
23CMPTB002P	Advance PT Intervention in Neurology- Practical
23CMPTC002T	Advance PT Intervention in Cardiopulmonary diseases- Theory
23CMPTC002P	Advance PT Intervention in Cardiopulmonary diseases -Practical
23CMPTD002T	Advance PT Intervention in Sports- Theory
23CMPTD002P	Advance PT Intervention in Sports -Practical
23CMPTE002T	Advance PT Intervention in Hand Conditions- Theory
23CMPTE002P	Advance PT Intervention in Hand Conditions -Practical
23CMPTF002T	Advance PT Intervention in Obstetrics &Gynaecology- Theory
23CMPTF002P	Advance PT Intervention in Obstetrics &Gynaecology- Practical
23CMPTG002T	Advance PT Intervention in Pediatrics- Theory
23CMPTG002T	Advance PT Intervention in Pediatrics - Practical

Dissertation – for IV Semester

23RAMPT001	Elective Orthopedics
23RBMPT001	Elective Neurology
23RCMPT001	Elective Cardiopulmonary diseases
23RDMPT001	Elective Sports
23REMPT001	Elective Hand Conditions
23RFMPT001	Elective Obstetrics &Gynaecology
23RGMPT001	Elective Pediatrics

List of Discipline Specific Elective Courses

23DMPT101	Ergonomics
23DMPT102	Basics of Medical Imaging & Bio Instumentation
23DMPT103	Food and Nutrition
23DMPT104	English for communication
23DMPT105	Computer & its application in PT
23DMPT106	Applied Physics

Generic Elective Courses

23GMPT151	Women's Health & Child Care
23GMPT152	Community Based Physiotherapy
23GMPT153	Clinical Diagnosis
23GMPT154	Applied Chemistry
23GMPT155	Hospital Management

23CMPT001T BASIC SCIENCES 5005

Course Objective:

The objectives of this course is that after 100 hours of lectures & demonstrations, in addition to clinics, the student will be able to understand the basic knowledge about the applied anatomy and applied physiology of various systems of the body, Psychosocial sciences and Pharmacology

This paper consist of the following 5 modules

1. Applied Anatomy
2. Applied Physiology I
3. Applied Physiology II
4. Psychosocial sciences
5. Pharmacology

Course outcomes

1. This provides a detailed introduction on applied anatomy and applied physiology of different systems of the body
2. This gives better understanding of physiological mechanisms and organ systems that allow humans to engage in physical activity
3. This course provides information on changes taking place on systems by chronic activity and disuse
4. This course provides knowledge on psychology including cognitive, learning memory and behavioural sciences
5. Extensive details regarding the basic pharmacology of various common medication used and its effect on patient and during physiotherapy.

UNIT I APPLIED ANATOMY 20

1. Topographic anatomy concerning the neck, arm, leg and back with a focus on vessels, nerves and muscles/fascia and joints.
2. Topographic anatomy concerning thorax, abdomen and the pelvic region with a focus on the abdominal wall, viscera, vessels and nerves.
3. Surface anatomy and palpations concerning extremities, thorax, abdomen and the pelvicregion Patho anatomy of peripheral nerve injuries, various bone pathologies

UNIT II APPLIED PHYSIOLOGY I 20

I) THE HEART AND CIRCULATION

a. Structure and properties of heart muscles
b. The action of the heart
c. Determinants of cardiac performance
d. Normal E.C.G
e. Maintenance of blood pressure
f. Cardiac arrest and heart failure
g. Outline of lymphatic circulation and pulmonary circulation Cardiovascular compensation for postural and gravitational changes
h. Hypertension
i. Edema
j. Central and peripheral venous pressure

II) NERVOUS SYSTEM

a. Outline the structure and function of the central nervous system
b. Outline the autonomic nervous system
c. Types of nerve cells, electrical phenomena in nerve cells
d. Properties of mixed nerves
e. Reflex action, reciprocal innervations
f. Degeneration and regeneration of nerves

UNIT III APPLIED PHYSIOLOGY II 20

I) RESPIRATION

a. Mechanics of respiration
b. Breath sounds
c. Properties of gases
d. Exchange of gases
e. Gas tension in air at sea level, tracheal air, cellular air, mixed air, plasma, arterial blood and mixed venous blood
f. Lung volume
g. Magnitude of dead space
h. Control of bronchial smooth muscle
i. Lung compliance
j. Nervous control of respiration
k. Chemical control of respiration
l. Voluntary control of respiration
m. Oxygen and CO 2 transport
n. Acid - base reactions in blood

o. Effects of exercise on respiration
p. Artificial respiration

II) MUSCULAR SYSTEM

a. Control of posture
b. Outline of voluntary movement
c. Cutaneous, deep and superficial sensations
d. Synaptic transmission
e. Neuromuscular transmission
f. Properties of muscles, contractile responses, types of contraction, electrical phenomena and tonic reflexes

UNIT IV PSYCOSOCIAL SCIENCES 20

1. Psychology –cognitive science including learning memory, perception, self efficacy,
2. attention and motivation
3. Social science- quality of life, social determinants of health, support system, social
4. policy , disability and function, community participation
5. Psychosocial theories of lifespan development
    a. Theories of psychological development and aging
    b. Relationship with health, injury disease and disablement across life span
6. Learning and education- education principles related to the role of PT as Educator of
7. Clients/patients, families, other professionals and students.

UNIT V PHARMACOLOGY 20

Introduce the students to basic pharmacology of various common medication used and its effects on patients and during physiotherapy.

A. Terminology
B. Classification of drugs
C. Factors influencing the dosage of drugs and its actions.
D. Drug Allergy
E. Principles of drug administration and routes.
F. Definition, action, indications, contra - indications, adverse reactions of the following:
    a) Anti-inflammatory
    b) Anti-epileptic
    c) Sedatives, Hypnotics, Tranquilizers
    d) Muscle relaxants
    e) Alcohol
    f) Pulmonary effects of general an aesthetic agents

g) Mucolytic agents
h) Local an aesthetic agents
i) Narcotic Steroids
j) Vasodilators
k) Insulin and oral hypoglycemic agents
l) Antibiotics – Bactericidal, Bacteriostatic
m) Chemotherapeutic drugs in leprosy and tuberculosis.

Evaluation **Total Hours: 100**

Textbooks:

1. Guyton, Text book of Physiology Elsevier, 4 Ed, 2000
2. ToraTora , Textbook of Anatomy & Physiology, Churchill Livingston, 3 Ed, 2004
3. Chatterjee, Text Book of Physiology. JP, 2 Ed, 2001
4. Handbook of educational technology-Ellington henry, Kogan page
5. Essentials of medical pharmacology KD Tripathi 8 th ed.

References:

1. Grays Anatomy, mosby, 2Ed, 1994
2. Derek, Anatomy, Palpation and surface Marking, Elsevier, 4Ed, 1997
3. Sieg, Illustrated essentials of musculoskeletal anatomy, CBS, 2Ed, 1995
4. Nigel, Anatomy and human movement , MCGH, 4 Ed, 2000
5. T.S. Ranganathan , Textbook of anatomy, JP, 3 Ed, 1999
6. Palastanga , Anatomy and human Movement JAYPEE, 2 Ed, 2003
7. Cynthia. C.Norkin, Pamela , K.Levengle Joint structure & function, ELBS, 4 Ed, 2004

23CMPT002T EXERCISE PHYSIOLOGY AND MOVEMENT SCIENCE 5005

Course Objective:

The objectives of this course is that after 100 hours of lectures and demonstrations, in addition to clinics, the student will be able to understand the basic knowledge about the applied anatomy and applied physiology of various systems of the body, biomechanics and pathomechanics, nutrition, fitness and PT ethics.

This paper consists of 2 modules

1. Exercise physiology
2. Movement science

Course outcomes

1. This provides detailed information about the exercises and physiological changes in the different systems
2. This explains about the diet recommendation for the sportsmen before exercise and also during training.
3. The lectures provides the basic training methods and also the system adaptations on training methods
4. This subject explains the pathomechanics aspect of upper limb, lower limb and spinal structures
5. This lectures provides detailed explanation of the effects of altered forces on the joints of the body and its mal-alignment

UNIT I **20**

Fundamentals of exercise physiology and system changes

- Micronutrients and macronutrients
- Pre competition meal
- Energy transfer during exercise
- Maximum oxygen uptake – oxygen deficit
- Respiratory, cardiovascular and neuromuscular system changes

UNIT II **20**

Exercise training and adaptations

- General training principles
- Adaptations to exercise training

- Factors affecting the aerobic training response
- Methods of training
- Measurements of muscle strength
- plyometric training
- DOMS
- Acclimatization

UNIT III **20**

Skeletal and Muscular consideration of movement

- Pathomechanics of bone, cartilage, tendon and ligament
- Muscle fibre types
- Length – tension relationship and force velocity relationship
- Active and passive insufficiency
- Motor units

UNIT IV **20**

Functional anatomy and related pathomechanics

- Impingement of shoulder and its altered mechanics
- Scapulohumeral rhythm and frozen shoulder
- Scapula dyskinesis
- Rotator cuff muscle weakness
- Pitcher's elbow
- Pulled elbow injuries
- Tennis elbow and golfer's elbow
- Ulnar variance
- Functional position of wrist
- Hand functions
- Trigger finger
- Dequervain's tenosynovitis
- Intrinsic minus and plus position
- Unilateral and bilateral stance with cane use
- Pelvic tilting and muscle weakness
- Extension lag and flexion contractures
- Tibiofemoral and Patellofemoral joint injury
- Coxavalga and coxavara
- Altered mechanics following patellectomy and meniscectomy
- cruciate ligaments
- Angular positioning of the patella

- Genu valgum and genu varum
- Hamstring strengthening and prevention of back injuries
- Functional implications of flexion contractures of the knee
- Pes anserinus
- Patellofemoral joint forces in three different exercises
- Metatarsal length
- Tarsal coalition
- Foot deviations
- Plantar fasciitis
- Tennis leg

UNIT V **20**

Altered mechanics in Spine, Posture and Gait

- Forward head posture
- Craniovertebral angle
- Upper and lower cross syndrome
- Deviations of posture in sagittal and frontal plane
- Kyphosis, scoliosis and lordosis
- Hemi vertebra
- Spondylolisthesis
- Lumbar pelvic rhythm
- Lumbosacral angle
- Squat lift versus stoop lift
- Gait parameters and its abnormalities in various conditions
- Pathological Gait

Evaluation **Total Hours: 100**

Textbooks:

1. Katch, Exercise physiology energy nutrition and human performance ELSEVIER, 4Ed, 2006

REFERENCE

1. Kinesiology, the mechanics and pathomechanics of human movement – Carol Oatis 2 ndedition.

23CMPT003T RESEARCH METHODOLOGY & BIO STATISTICS 4004

Course Objective

The objective of this course is after 100 hours of lectures the student should be able to have basic knowledge on Research Methodology and Bio Statistics.

Course Outcome:

1. The student will be able to implement hypothesis testing
2. Important concepts relating to research design and measurements and scaling techniques.
3. To analyze experimental and observational study
4. Knowledge of Processing and analyzing data can be gained
5. To implement and calculate frequency distribution.

Unit I **20**

Research Methodology - I

- Introduction
- Importance of research in physiotherapy.
- Ethics in physiotherapy research.
- Introduction to the conceptual, empirical, interpretative, quantitative and qualitative research.
- Conceptual Phase
- Formulation of the problem.
- Concepts and variables.
- Literature review.
- Hypothesis.

Unit II

Research Methodology – II **20**

- Empirical/Conducting Phase
- Research design.
- Brief overview of qualitative and quantitative approaches.
- Population and samples
- Collection of data.
- Research data and analysis.
- Interpretative Phase
- Discussion and conclusions.
- Interpreting qualitative results.

Unit III **20**

Research Methodology - III

- Criticizing published results
- Need for criticizing results.
- Guidelines for criticizing results.
- Writing research for publication
- Guidelines for writing results.
- Recent trend in research

Unit IV **20**

Biostatistics – I

Uses of statistical methods in Physiotherapy

1. Measurement, measurement scales, variables & their measurements.
2. Symbolizing data & operations.

Statistical Tools

1. Statistical data
2. Tabulation
3. Calculation of central tendency & dispersion
4. Linear regression & correlation
5. Presentation of data in diagrammatic & graphic form.

Unit V **20**

Biostatistics – II

Probability & sampling

1. Probability as a mathematical system
2. Population & samples
3. Sampling distribution
4. Sampling methods
5. Surveys in research

Vital & Health statistics

1. Uses of vital & health statistics in practice of PT
2. Sources & methods of collection & recording
3. Interpretation of commonly used vital & health statistics & estimate population using arithmetic progression method

Evaluation **Total Hours: 100**

Textbooks:

1. B.L Agarwal, Basic statistics, New Age International Publication.2012.

Reference:

1. P.S.S. Sundar rao, Introduction to biostatistics and Research Methodology, CBS, 1Ed, 2002.
2. C.R Kothari, Research methodology, New Age international publication, 3Ed, 2014.

23CMPT004T PT ETHICS &ENTREPRENEURSHIP 4004

Course Objective

- After 100 hours of lecture, students should be able to understand principles of management in personal management, principles of physiotherapy profession, times management and administration including budgeting.

Course Outcomes:

1. This course provides basic knowledge on professional ethics and legal issues.
2. This course explains the role of professional bodies.
3. This provides information on management for physiotherapy
4. This gives knowledge on job recruitment, organization, and time management.
5. Rules and Regulations of governing bodies of Physiotherapy in resource and quality management.

UNIT I: LEGAL AND ETHICAL ASPECTS IN PHYSIOTHERAPY PRACTICE 20

1. Ethical Aspects:

   a) Ethical principles for physiotherapy practice,
   b) Quality care and Evidence based practice,
   c) Informed consent.
   d) Patient's/ client's rights.

2. WCPT policy& (ii). World Medical Association Declaration,

3. Relationship with the patient/ client,

4. Relationship with medical practitioner and other health care professionals,

5. Professionalism in physiotherapy and standard physical therapy practice,

6. Ethics in health research

Need for ethical guidelines.

UNIT II LAWS RELATED TO PHYSIOTHERAPY PRACTICE &PROFESSIONALNEGLIGENCE 20

1. Laws Related to Physiotherapy practice.
2. Scope of following law in physiotherapy practice.
   a) Consumer Protection Act 1986 (CPA)
   b) Person with Disability Act
   c) Right to information act

d) Workman‟s Compensation Act 1923.

3. Professional negligence:
    a) Civil Negligence.
    b) Criminal Negligence.
    c) Contributory Negligence.
    d) Vicarious Liability.
    e) Medical Negligence in India and CPA 1986.
    f) Medical Negligence and criminal Law
    g) Prevention of Medical Negligence.
    h) Defenses against Medical Negligence.

UNIT III APPLIED ETHICS & PROFESSIONAL ORGANISATIONS 20

1. Applied Ethics: Steps of application in ethical principles in clinical situations, Medical indication, patient preference, quality of life and contextual features.
2. Professional Organizations: Role of following professional organizations in scope of physiotherapy practice and physiotherapy education in India.
    a. World Confederation of Physiotherapy
    b. Indian Association of Physiotherapy.

UNIT IV PRINCIPLES OF MANAGEMENT 20

1. Definition & Branches of Management
2. Principles of health sector Management, General Principles of Management:
3. Theories of Management ,Planning ,Decision making
4. Principles of an Organizational chart, Organization of a department: Planning, space, materials and basic requirements.
5. Personnel Management and Financial Management Functions of Personnel Manager.
6. Job Analysis Job Description, Job Specification, Recruitment, Selection, Placement, Induction or Orientation, Training & Development, Performance Appraisal, Promotion, Job Evaluation.
7. Scope of Finance function, Executive functions and Incidental functions,
8. Financial decisions, Financial issues including budget and income generation.

UNIT V QUALITY MANAGEMENT 20

1. Concepts and dimensions of quality, vision, mission and policy statements, customer focus, customer perception of quality, translating needs into requirements, customer retention, Dimension of product and service quality.
2. Leadership, Motivation and Change Management and Self-Management, Leadership, Qualities, Leadership styles, Motivation, Importance, Theories of Motivation, Maslow’s Theory of need hierarchy, Herzber’s theory. Concept of change, change as a natural process, importance & causes of change, Resistance to changes.
3. Self-Management: Preparing for 1ST job, time Management, career development.

Evaluation **Total Hours: 100**

Text books:

1. Larry J Nosse, Management Principles for Physical therapist, Lippincott Williams, 2nd 2005

2. Chris croft, Time Management, International Thomson Business press, 1996.

References:

1. Physical Therapy Ethics 2nd Edition by Donald L. Gabard PT PhD, Mike W. Martin PhD
2. Textbook of Medical Ethics by Loewy, Erich H.

23PMPT001 PHYSICAL DIAGNOSIS & MANAGEMENT 0 0 6 3

Course Objective:

After 200 hours of clinical practice, students should be able to

i) Explain the concepts and principles of various Rehabilitation approaches.
ii) Demonstrate assessment of patients using various Principles.
iii) Analyze the patient's problems and come to a clinical diagnosis.

Course outcomes: (Skill Development)

1. One can understand about the significance & importance of history taking.

2. The clear understanding of orthopaedic diagnosis and rehabilitation can be attained

3. The clear understanding of cardiac diagnosis and rehabilitation can be attained

4. The clear understanding of pulmonary diagnosis and rehabilitation can be attained

5. The clear understanding of neurological diagnosis and rehabilitation can be attained

6. The clear understanding of geriatrics syndrome diagnosis and rehabilitation can be attained

7. The clear understanding of OBG disease diagnosis and rehabilitation can be attained

UNIT I INTRODUCTION 20

1. Assessment and treatment planning
2. Value of patient care
3. Significance of history taking
4. Importance of physical diagnosis

UNIT II ORTHOPAEDIC DIAGNOSIS & REHABILITATION 20

1. Musculoskeletal assessment
2. Gait analysis & postural assessment
3. Perambulation and gait training
4. Physical diagnosis and rehabilitation in arthritis & regional conditions
5. Amputation management & rehabilitation

UNIT III CARDIO AND PULMONARY DIAGNOSIS & REHABILITATION 20

1. Cardio & respiratory assessment
2. Exercise prescription
3. Pulmonary rehabilitation
4. Cardiac rehabilitation
5. Community based rehabilitation for pulmonary diseases

UNIT IV NEUROLOGICALDIAGNOSIS&REHABILITATION 20

1. Neuro assessment
2. Assessment and intervention strategies for cognition and perceptual dysfunction for neuro conditions
3. Assessment &rehabilitation for Stroke
4. Assessment & rehabilitation for Spinal cord injury
5. Assessment & rehabilitation for Muscle disease

UNIT V GERIATRICS AND OBG DIAGNOSIS & REHABILITATION 20

1. Assessment & rehabilitation in Geriatric syndromes
2. Exercise prescription for geriatrics
3. Assessment & rehabilitation in Gynacological conditions
4. Significance of exercise antenatal and postnatal stages
5. Exercise prescription in OBG surgeries

Evaluation **Total Hours: 100**

Text books:

1. Janet H carr, a motor re leaning programme for stroke, aspen publishers, 2nd, 1987

2. Berta bobath, adult hemiplegia, butterworth Heinemann, 3rd ed, 1990.

Reference:

1. David J. magee, orthopeadic physical assessment, saunders , 5th ed, 2008.

23CMPT005T ADVANCED THERAPEUTIC INTERVENTION 5005

Course Objectives:

The objectives of this course is after 200 hours of lectures & demonstrations, in addition to clinics, the student will be able to understand about manual techniques, neurological system, sports, cardio respiratory system, Pilates

Advanced therapeutic Intervention

This paper consists of 5 Modules

1. Manual techniques
2. Neurological system
3. Sports
4. Cardio respiratory system
5. Pilates

Course outcomes:

1. Knowledge about peripheral and vertebral techniques
2. Knowledge about neuro rehabilitation techniques
3. Knowledge about sports rehabilitation techniques
4. Knowledge about cardiac rehabilitation techniques
5. Knowledge about Pilates training

UNIT I MANUAL TECHNIQUES: 20

1. Peripheral Joint Mobilization
2. Basic concept of joint motion – Arthrokinematics
3. Indication for joint mobilization
4. Limitation of joint mobilization
5. Contraindication and precaution
6. Procedures for applying passive joint mobilization
7. Mobilization with movement, principles and practice
8. Peripheral Joint mobilization technique.
9. Vertebral joint mobilization
10. Intervertebral mobility testing
11. Spinal manual techniques

UNIT II **20**

NEURO MUSCULAR SYSTEM:

1. Bobath's approach (Normal movement concept)
2. Motor Relearning process (MRP)
3. Sensory re -education
4. Hand rehabilitation

UNIT III **20**

SPORTS:

1. Isokinetic testing
2. Strength training
3. Gait evaluation (force plates, gait parameters, analysis of jumping and running mechanics)
4. ACSM guidelines for sports
5. Plyometrics
6. Agility training for sports players following lower extremity injury

UNIT IV **20**

CARDIO RESPIRATORY SYSTEM:

1. Proprioceptive neuro muscular facilitation
2. Exercises for PVD
3. Tracheal stimulation
4. Cardiac stress testing
5. ABG
6. Suctioning
7. Patient examination & care in ICU

UNIT V PILATES **20**

1. History
2. Anatomy
3. core stabilization
4. concepts
5. principles
6. mat workouts
7. machine workouts
8. demonstration

Evaluation **Total Hours: 100**

Textbooks:

1. Robin mckenzie textbook of mechanical diagnosis and therapy for cervical, thoracic and lumbar spine volume 1
2. Janet H carr, motor re leaning programme for stroke, aspen publishers, 2 nd, 1987
3. Berta bobath, adult hemiplegia, butterworth Heinemann, 3 rded, 1990.
4. Cardiorespiratory physiotherapy 5 th edition adults and pediatrics – Eleanor main, lindadenehy
5. Sports medicine and rehabilitation– 2 nd edition - Buschbacher R

References:

1. Rudolph Kessler., Management of common musculoskeletal problem, Mosby, 3 rdEd, 2002
2. Maitland textbook of peripheral and vertebral manipulation 4 th edition.
3. Freddy. M. kalternborn textbook of manual mobilization volume 1
4. Clinical sports medicine – 3 rd edition -peter brukner and karim khan
5. Web based search

23CMPT006T ELECTRO DIAGNOSIS & ELECTROTHERAPEUTICS 5005

Course Objectives:

The objective of this course is that after 200 hours of lectures & demonstration in addition to clinics the student will be able to understand the basic knowledge about the indications and contra – indications, demonstrate the different techniques and the effects of various types of Electrotherapy modalities, Electrophysiology & Electro diagnosis.

Course Outcomes: (Employability)

1. Knowledge about various types of therapeutic currents and its physiological, therapeutic effects gained.
2. Knowledge about pain and pain modulation mechanism gained.
3. Knowledge about different types of low and medium frequency currents. Its indication, contraindication, method of application gained.
4. Knowledge about Traction external compression, its indication, contraindication, method of application gained.
5. Knowledge about the electrical properties of nerve & muscle gained & Diagnosis of neuromuscular dysfunction by electro-diagnostic test is known.

UNIT I **20**

1. FARADIC STIMULATION

a. Faradic type currents.
b. Physiological effects, indications, contraindications.
c. Faradic stimulation in weak pelvic floor muscles, Bell's palsy, reduction of limb oedema, disuse atrophy and reduction of arches of foot.

2. DIDYNAMIC CURRENTS:

a. Physiological effects, indications, contraindications, methods of application, dosage.

3. HVPGS

4. IONTOPHORESIS

a. Direct currents.
b. Strength of the solution, common drugs in usage today, apparatus used.
c. Indications, contraindications.
d. Dosage methods: in contact, sub aquatic, iontophoresis technique – treatment of hyperhydrosis, calcific tendonitis, allergic vasomotor rhinitis.
e. Side effects, contraindications, techniques**.**

5. TENS:

a. Principles of TENS.
b. Physiology and modulation of pain
c. Physiological effects, therapeutic effects of TENS.
d. Obstetrical TENS, cancer pain & TENS, TENS for non-healing fractures.

6. INTERFERENTIAL THERAPY:

a. Interferential currents, Rebox, Russian Currents
b. Physics of IFT.
c. Physiological effects and uses of IFT.

UNIT II **20**

1. ULTRASONIC THERAPY:

a. Medical frequencies of ultrasound, production of ultrasound, physical phenomenon of ultrasound.
b. Pulsed ultrasound.
c. Physiological effects of ultrasonic energy.
d. Indications, contraindications, dangers, coupling media, dosage, methods of application, techniques of application**.** Techniques of application in contact method, sub aquatic method users.

2. LASER THERAPY:

a. Cold LASER production, physical characteristics, physiological effects, dosage, pain control.
b. Indications, contraindications.
c. Trigger points.

3. a. SHORTWAVE DIATHERMY:

1. Physics, biophysical and biomechanical effects of SWD, therapeutic effects of SWD, indications, dangers, precautions, application of inductothermy.
2. Pulsed SWD: Biological effects, indications, contraindications and techniques of application, advantages and disadvantages.

b. LONG WAVE DIATHERMY

4. MICROWAVE DIATHERMY:

a. Physics of MWD.
b. Biophysical, biomechanical, therapeutic effects of MWD.
c. Dosage, indications and contraindications.
d. Techniques of MWD.

e. Dangers, precautions, methods of application, advantages and disadvantages.
f. Pulsed MWD.

5. SHOCK WAVE DIATHERMY

a. Principles and uses
b. Physiological & Therapeutic effects

6. INFRA RED RADIATIONS:

a. Physical apparatus for infra-red heating, physiological effects, indications, contraindications.
b. Techniques of application.
c. Advantages & disadvantages.

UNIT III **20**

1. PARAFFIN WAX:

a. Method of application – immersion, brushing, equipments requires.
b. Physiological effects, therapeutic uses, benefits of the therapy.

2. HOT PACKS:

a. Hydro collator packs, temperature maintenance, physiological effects, methods of application, uses, advantages and disadvantages.

3. CONTRAST BATH:

a. Equipment used method of application, indications, contraindications, physiological effects and therapeutic uses.

4. CRYOTHERAPY:

a. Cold packs, ice bags, ice massage, ice towels, compressive cryotherapy, vapocoolant sprays.
b. Therapeutic effects of cryotherapy, uses in sports medicine, spasticity.

5. TRACTION:

a. Types of spinal traction – continuous, intermittent, manual, auto traction, gravity lumbar traction.
b. Indications for spinal traction.
c. Contraindications, effects of traction, mechanical lumbar traction technique, cervical traction technique.

6. MECHANICAL EXTERNAL COMPRESSION:

a. Causes of edema, pathophysiology of edema, types of edema.

b. Methods of external compression – taping, intermittent compression, elastic support bandaging, gradient support, massage, exercise.
c. Physiological effects, therapeutic uses.
d. Patient education.

UNIT IV ELECTRO PHYSIOLOGY **20**

1. Excitable Tissues – Nerve:

a. Excitation and conduction.
b. Measurement of electrical events.
c. Ionic basis of excitation and conduction
d. Physiologic basis of nerve conduction tests – their reliability and access.

2. Excitable Tissues – Muscle:

a. Electrical phenomena & ionic fluxes.
b. Contractile responses.

3. Clinical Neurophysiology:

a. History of Clinical Neurophysiology: Introduction to electro diagnostic signals and their measurements.

UNIT V ELECTRO DIAGNOSIS **20**

1. Nerve Conduction Study:

a. Principles of nerve conduction study.
b. Clinical application of NCV
    - Median nerve.
    - Ulnar nerve.
    - Radial nerve.
    - Brachial plexus.
    - Cervical radiculopathy.
    - Lumbar plexus.
    - Lumbo sacral radiculopathy.
    - Anomalous innervations of the extremities.
    - Nerve conduction of non-limb nerves.
    - Late responses.
    - Autonomic nervous system testing.

2. EMG:

a. Introduction to EMG.
b. Technique of EMG.
c. Clinical Application of EMG:
    - EMG findings in neurological disorders.

- EMG studies in polyneuropathy.
- Repetitive Nerve Stimulation.
- Single fiber and macro EMG.
- Visual evoked potential.
- Brainstem auditory evoked potential.
- Somatosensory evoked potential.
- Motor evoked potential.

Evaluation **TOTAL HOURS: 100**

Text Books:

1. Clayton's Electrotherapy – Therapy and practice – Angela Forster, All India Traveler Bookseller.9th Ed, 2012.
2. John Low and AnnReed ,Electrotherapy Explained –, Butterworth Heinmann Pub. 4th Ed,2003
3. Edward BellisClayton , Nigel Palastanga, Claytons Electrotherapy:Theory and practice, 9thEd, 1985
4. Valma, J.Robertson, Electrotherapy explained, Butterworth ,Heinmann, Elsevier, 4 th Ed,2014.

References:

1. Michelle Cameron , Physical agents in rehabilitation CBS, 2 Ed, 2001
2. G.David Baxter, Laser (therapeutic) theory & Practice, CBS, 2 Ed, 2008.
3. Josheph Arodgold M.D., Electro diagnosis of Neuro muscular disease, Mosby, 2 nd Ed,2007.
4. Basanta Kumar Nanda, Electrotherapy explained, Jaypee Brothers, 1 st Ed, 2006.
5. Tim Watson Electrotheray evidence based practice, Churchill Livingston, 12 th Ed, 2008.

23CMPTA001T BASIC FUNDAMENTALS IN ORTHOPAEDICS 5005

Course Objectives

The objectives of this course is that after 200 hours of lectures & demonstrations, in addition to clinics, the student will be able to understand about bio mechanics of human joint, clinical orthopaedics conditions and pharmacology in orthopaedic conditions.

Course Outcomes: (Employability)

1.One can able to understand about the concept of Muscle and joint Biomechanics, Pain and its transmission can be well understood.
2.Students can able to understand about the concept of Pathology involved in fracture & soft tissue injuries.
3.Pathology related to rheumatology conditions can be understood well.
4.Theories behind geriatric rehabilitation and age related changes in geriatrics can be well understood.
5.One can know about the pharmacology with respect to orthopaedic conditions.

UNIT I Anatomy / Biomechanics 20

1.Classification, structure and function of joints of appendicular and axial skeleton.
2.Classification, structure and function of the skeletal muscular system.

UNIT II Physiology 20

1. Pain: manifestation, transmission and modulation.

2. Histology:

- Inflammation and healing of soft and bony tissue.
- Repair and regeneration of tissue.
- Circulation and Oedema.

UNIT III Pathology 20

1. Fractures: Classification, injury mechanisms, healing and pathology behind fractures and dislocations.

2. Soft tissue: injuries/ disorders of the upper and lower limbs. Classification, injury mechanisms, healing, patho-physiology of muscle strain, ligament sprain, meniscal damage, tendonitis.
3. Degenerative diseases
4. Congenital diseases
5. Amputation

UNIT IV Geriatrics **20**

- Theories of geriatric rehabilitation.
- Principles of geriatric rehabilitation
- Physiological changes in different systems during aging process.
- Osteoporosis, Osteopenia, Paget's disease

UNIT V Pharmacology in Orthopedic Conditions **20**

- Analgesics
- NSAID
- Corticosteroids
- Immunosuppressive drugs
- Anti-Rheumatic drugs
- Chemotherapeutic drugs

Evaluation **Total Hours: 100**

Text Book

1. Mayilvahanan Natrajan, Text book of orthopaedics and traumatology, Lippincott, 7th Ed, 2011
2. Jayant Joshi, Essentials of Orthopaedics and applied physiotherapy, Elsevier, 2 nded,2011.
3. Susan 0 sullivan, physical rehabilitation,

References

1. John Crawford Adams, Outline of Orthopaedics –, ELBS/Churchill Livingstone.2007
2. Turek's orthopaedics, Mosby, 4Ed, 2004
3. John Crawford Adams, Outline of orthopaedics, Churchill Livingston, 13 th Edition,2001.
4. William A Mc Ardle, Exercise physiology, Lippincott, 7 thed, 2010.

23CMPTB001T BASIC FUNDAMENTALS IN NEUROLOGY 5005

Course Objectives:

The objectives of this course is that after 200 hours of lectures & demonstrations, in addition to clinics, the student will be able to understand about clinical neurological conditions and pharmacology in neurological conditions.

Course outcomes: (Employability)

1. Knowledge of various approaches like Bobath, Brunstrom, PNF, Vojta, Roods
2. Knowledge of motor control and learning
3. Knowledge of physiotherapy management in perceptual and sensory dysfunction
4. Knowledge about adaptive equipments.
5. Knowledge of physiotherapy management in neurological conditions

UNIT I 20

Medical conditions

- Anatomy and physiology of nervous system
- Symptomatology and pathophysiology of neurological conditions like Central nervous system disease, Polio, Gullianbarre syndrome, cerebrovascular accident, dementia drome, diseases like meningitis, encephalitis, coordination and balance diseases, neurodegenerative disease

UNIT II 20

Surgical conditions

- Space occupying lesions of brain and spinal cordCNS tumors, beningn & malignant, Spinal injuries**.**

UNIT III

Neurodiagnosis and Investigations 20

- Principles of clinical neuro diagnosis and investigations, CT scan, MRI,
- Electro diagnosis, Nerve conduction studies, EMG
- Electrical study of reflexes(H reflex, axon reflex, F response, blink reflex, jaw jerk, tonicvibration reflex)
- Evoked potential SSEP, MEP,
- Interpretation of neuro-physiological response

UNIT IV **20**

Special tests

- Special tests
- S-D curve
- Test for balance & co-ordination
- Pinch test
- Strength test
- Dexterity test
- Aphasia test
- Memory test
- Test for higher functions

UNIT V

Aids and appliances **20**

- Aids, appliances and support systems
- Use of orthotics and appliances in neurological condition
- Advanced intervention in neurological rehabilitation.

Evaluation **Total Hours: 100**

Textbooks:

1. Carpenter, Mental Health & Learning disability — EURETT. 2 Ed, 1998
2. Ropper, Principles of Neurology, JP, 10 Ed, 2014

References:

1. Catherine A Trombly. Occupational Therapy for physical dysfunction, Williams &Wilkins.4Ed, 1998
2. Brain and Bannister's Clinical Neurology, Sir Ruger Bannister, Oxford.7Ed, 1992
3. Introduction to nervous System – Hokmes Bullock, WH Freeman and company.

23CMPTC001T BASIC FUNDAMENTALS IN CARDIOPULMONARY DISEASES 5005

Course objectives:

The objectives of this course is that after 200 hours of lectures & demonstrations, in addition to clinics, the student will be able to understand about clinical cardiorespiratory conditions and pharmacology in cardio respiratory conditions.

Course Outcomes: (Employability)

1. To know the abnormalities of heart and lungs
2. To understand the pulmonary and cardiovascular Physiology at various stress levels
3. To study the clinical aspects of cardio pulmonary diseases
4. To know the drug actions and its composition
5. To understand the drugs used in cardio vascular diseases and pulmonary diseases.

UNIT I **20**

ANATOMY AND PHYSIOLOGY OF CARDIO – PULMONARY SYSTEMS:

1. The structure and function of cardiovascular and respiratory systems - Mechanics of breathing – work of breathing, airway resistance, lung compliance, Respiratory muscles. Normal and abnormal patterns of breathing, Cough reflex, Regulation of blood pressure, Autonomic nervous system on cardio pulmonary system, Vital signs, cardiovascular system – Heart, Blood vessels and systemic circulation, coronary circulation, conduction system.

UNIT II **20**

RESPIRATORY PHYSIOLOGY AND APPLIED ASPECTS:

1. Respiratory physiology - The gas transport system, Dead space, surface tension - Resistance to gas flow, Cardiac output and pulmonary vascular resistance – Ventilation– Perfusion interactions and shunts - Respiration, control of breathing - Acid – Basebalance – Respiratory regulation.
2. Applied respiratory physiology - Hypoxia - Respiratory failure - O2 therapy -Dyspnea - Cyanosis - Periodic breathing - Voluntary hyperventilation - Breath holding- Hyperbaric breathing - Hypercapnia - Hypocapnia - Lung defense mechanism – RDSin neonates - Respiration in hold - Air pollution, occupational exposure,environmental pollutants carrying lung cancer, cigarette smoking - Chest walldeformities.

UNIT III **20**

CARDIAC PHYSIOLOGY AND APPLIED ASPECTS:

1. Cardiovascular physiology - Properties of cardiac muscle, Cardiac cycle, Cardiac output, Heart rate, Cardiovascular reflex and other control mechanisms, Systemic arterial blood pressure, Regional circulation.
2. Applied cardiovascular physiology – Ischaemic heart disease, cardiomyopathy, cardiac arrhythmia, Hypertension**.**

UNIT IV **20**

Definitions, causes, patho-physiology, clinical features, investigations of the following condition

1. COPD
2. Restrictive lung disease
3. Chest wall deformities
4. Chest wall injuries
5. Congenital heart diseases (CHD)
6. Ischemic heart diseases
7. Peripheral vascular diseases
8. Cardiac and pulmonary surgical conditions

UNIT V **20**

CARDIOVASCULAR AND RESPIRATORY PHARMACOLOGY:

1. Introduction to pharmacology a) Pharmokinetics b) Pharmacodynamics
2. Cardiac Drugs
    a. Anti – ischemic drugs
    b. Anti – arrhythmic drugs
    c. Anti – hypertensive therapy
    d. Pharmacologic management of lipid disorders
    e. Cardiac drugs used in critical care
    f. Diabetes.
3. Pulmonary Drugs
    a. Broncho – dilator therapy
    b. Ancillary pulmonary medications

Evaluation: **Total Hours: 100**

Textbooks:

1. Frances J.Brannon, Cardio pulmonary rehabilitation, Basic theory & application – mosby, 4 thed, 2001
2. Joanne watching, Cardio pulmonary physical therapy, a clinical manual – CBCS, 3 ED, 2003
3. Ellen Hillegassstevensadowsky., Essentials of cardio pulmonary physical therapy, ELSEVIER, 2 ED, 1994

References:

1. Crofton & doogles Respiratory Diseases Vol – I & II, SEATON.1 Ed, 2003
2. Downie, Cash text book of chest, Heart & Vascular disorders, ELBS, 1 Ed, 2005
3. Berne, Cardio – Vascular Physiology, Mosby, 4Ed, 2012

23CMPTD001T BASIC FUNDAMENTALS IN SPORTS 5005

Course Objectives

The objectives of this course is that after 200 hours of lectures & demonstrations, in addition to clinics, the student will be able to understand about patho mechanics of human joint, clinical sports conditions and pharmacology in sports conditions.

Course outcomes:

1. Students will be able to identify the types, levels of sports injuries and their acute phase of management like immobilization.
2. Students will have a wide knowledge about Pathomechanics of sports injuries and flexibility exercises.
3. Students will know about Bio mechanics of various sports and their relationship to joint injuries
4. Students will be able to insist about different types of sports injuries in upper limb, lower limb &postural syndrome
5. To evaluate the various running and swimming injuries

UNIT I **20**

ANATOMY, PSYCHOLOGY AND PHYSIOLOGY

a. Osteology, Myology, Arthrology and Neurology of Skull, Upper Extremity, Lower Extremity and Vertebral column .
b. Psychological factors of sports injuries ·
c. Physiological factors of sports injuries – Type of injuries, Reaction to injury, Response of joint structures to injury, Effects of immobilization, Effects of remobilization, Inflammatory and healing process, micro trauma, stress reactions·
d. sport specific injuries

UNIT II **20**

BIOMECHANICS & PATHOMECHANICS

a. Biomechanics of sports and its relationship to muscle, bone and joint injuries
b. Pathomechanics of sport injuries in different sports
c. Physical demand in different sports
d. Physiological effects of stretching & mobilizations prior to the participation in sports
e. Types of exercises and their physiological effects related to sports

UNIT III **20**

CLINICAL CONDITIONS

Student is expected to learn common causes, mechanism, pathophysiology, signs, symptoms, medical and surgical treatments of following sports related injuries and also should know the recent advances in the surgical, medical management of sport related injuries.

1) Epiphyseal injuries:

a. Classification, complications and prognosis of epiphyseal injuries,
b. Osgood Schlatter's disease and traction epiphysitis
c. tendinitis at the insertion of patellar tendon
d. complete avulsion of the epiphysis of the tibial tubercle and shoulder
e. Contributing risk factors – intrinsic factors, and extrinsic factors.

2) Shoulder Girdle injuries:

a. Injuries to the sternoclavicular joint – sprains and dislocations
b. Scapulothoracic joint and acromoclavicular joint sprains
c. Shoulder dislocation, Painful Arc syndrome, rotator cuff injuries, impingementsyndromes and Glenoid labrum lesions.
d. thoracic outlet syndrome.

3) Elbow Joint injuries:

a. Olecranon bursitis, Valgus, extension overload in elbow and Ulnar nerve lesions
b. Ulnar and Radial collateral ligament sprains, Contusions and strains
c. Dislocations, Osteochondritisdissecans and Little Leagues elbowproblems resulting from throwing, medial lesions, lateral lesions, posterior lesions.
d. Elbow injuries from Tennis: Epicondylitis – Incidence, pathology and mechanism of injury.
e. Wrist and Hand Injuries : Colle's fracture, Scaphoid fracture, Gamekeeper's Thumb, DIP joint fracture and dislocation
f. Jersey finger, Boutonniere deformity, Pseudo boutonniere deformity, fractures of the metacarpals, Bennett's fracture, mallet finger
g. Dequervain's tenosynovitis of the thumb, Bowler's thumb, handler palsy, Hamate fracture, Ganglion cysts, Trigger finger and Carpal tunnel syndrome.

UNIT IV **20**

Thigh Injuries: Contusions and strain of the quadriceps musculature, acute strain of the hamstring group, complete rupture of the patellar tendon.

1) Knee Injuries:

a. Knee ligament injuries - first-degree, second-degree and third-degree sprain
b. Anterior and posterior cruciate tears, anteriolateral instability meniscal-lesion,

Articular cartilage lesions and Patello femoral dysfunction.

2) Injuries of the Patella:

a. Patella fracture, acute & recurrent dislocation, subluxation and spontaneous reduction of a dislocated patella
b. Osteochondritis Dissecans, Jumper's knee.

3) Injuries to lower leg, ankle and foot:

a. Tibiofibularsynostosis, rupture of the gastrocnemius & Tennis leg
b. Total & partial rupture of Achilles tendon
c. Tendinopathies – Achilles tendinitis, anterior tibialis tendonitis, Peronealtendonitis. Posterior tibialis tendonitis, Flexor hallucislongus tendinitis, Flexordigitorumlongus tendonitis.
d. Compartmental compression syndromes, Heel bruise, Ostrigonum injury,
e. Calcaneal apophysitis, Tarsometatarsal injuries.
f. Tarsal tunnel syndrome, cuboids syndrome, metatarsal stress fracture, Inter-digitalneuroma (Morton's neuroma), Stair Climbers transient paraesthesia, Turf toe, sesamoitidis.

4) Injuries to the Ankle:

a. Syndesmotic ankle sprain, Inversion sprains, eversion sprains, dorsiflexion sprains
b. tarsal tunnel syndrome, stress fracture of the metatarsal, corns and calluses, blisters, ingrown toenails, peroneal tendonsubluxation.

5) Injuries to the low back: Postural syndrome, Dysfunction syndrome, Derangementsyndrome, Spondylolisthesis.

UNIT V **20**

1) Injuries to the Running Athlete:
   a. Causes of over use injuries – Common running induced injuries to the lower back, hip, Iliotibial tract pain
   b. Trochanteric Bursitis, stress fracture of femoral neck, Slipped capital femoral Epiphysis & vague hip pain.
   c. Common running related injuries to the knee: Medial Patellar pains, Pes anserine bursitis, patellar tendonitis, retro patellar pain, lateral patellar pain, lateral knee pain, biceps femoral tendinitis.

d. Common running related injuries to the lower leg:

- Tibial stress relation, stress fracture, medial tibial stress syndrome, compartment syndrome – Anterior, posterior lateral, fibular tress reaction and stress fracture, retro calcaneal bursitis, medial arch pain, plantar fascitis

2) Swimming Injuries – 'Swimmer's Shoulder, anterior subluxation of the Glenohumeral Joint, Breast stroker's injury.
3) Role of drugs in physiotherapy
4) Doping / Pro acting

Evaluation **Total Hours: 100**

Textbooks:

1. James a Gould, orthopaedics and sports physical therapy, jp, 3ED, 1997

2. Das, a text book of sports medicine, JP, 1 ED, 2006

3. Karim Khan, Clinical Sports Medicine,3ED,2008.

References:

1. Mcardal, Exercise Physiology , ELBS, 5Ed, 2011

2. Steven roy, Sports medicine, mosby, 4 ed, 1988

23CMPTE001T BASIC FUNDAMENTALS IN HAND CONDITIONS 5 0 0 5

Course Objectives

The objectives of this course is that after 200 hours of lectures & demonstrations, in addition to clinics, the student will be able to understand about clinical hand conditions.

Course outcomes:

1. One can able to Appreciate the basic anatomy of upper guardant & Identify the Cutaneous covering and connective tissue of the hand
2. One can able to Identify and appreciate the kinetics and kinematics of upper guardant & Understand pathomechanics of upper guardant
3. Student will be able to Appreciate the process of healing in skin, tendon and soft tissue & Understand the role of hand therapist in wound healing
4. Student will be able to Understand the role of pharmacological agents & Utilize the appropriate investigative procedures fer diagnosis
5. Student will be able to Define ergonomics
6. Student will be able to Appreciate the principles

UNIT I **20**

ANATOMY OF UPPER QUADRANT

1. Skeletal system
2. Joints
3. Musculature
4. Nerve supply
5. Vascular system
6. Cutaneous covering & connective tissue of the hand

UNIT II **20**

BIO MECHANICS OF UPPER QUADRANT:

1. Shoulder girdle
2. Elbow joint
3. Wrist and hand

PATHO MECHANICS OF UPPER GUADRANT:

1. Shoulder pathomechanics
2. Elbow & forearm pathomechanics
3. Wrist and hand pathomechanics

UNIT III **20**

WOUND HEALING

1. Historical perspective
2. The biological process of wound healing
3. Skin wound healing
4. Tendon healing
5. The therapist and wound healing

UNIT IV **20**

PHARMACOLOGY IN HAND CONDITIONS

- Analgesics
- NSAIDS
- Corticosteroids
- Immune suppressive drugs
- Anti – Rheumatic drugs
- Chemotherapeutic drugs
- Sympatholytic drugs in reflex sympathetic dystrophy

INVESTIGATIVE PRACEDURES

- Clinical laboratory tests
- Interpretation of x-ray, CT and MRI
- Arthroscopy
- PET / SPECT Imaging

UNIT V **20**

Principles of ergonomics

Define Ergonomics

Principles of Ergonomics

Evaluation **Total Hours: 100**

Textbook:

1. Judith Boschienen , The Hand, CBCS, 2nd ed, 1999.

References:

1. Barbara, Concepts in Hand Rehabilitation- mosby, 4th ed, 1997.

2. Tubiana , Hand Atlas – JP, 1st ED, 2011.

23CMPTF001 BASIC FUNDAMENTALS IN OBSTETRICS & GYNAECOLOGY 5005

Course Objectives:

The objectives of this course is that after 200 hours of lectures & demonstrations, in addition to clinics, the student will be able to understand about clinical gynaecological and obstetric conditions

Course outcomes: (Employability)

Knowledge about general principles of treatment and physiotherapy management for various gynecological conditions

1. Knowledge about growth and development of the fetus and female reproductive system
2. Knowledge of various obstetric conditions ,breastfeeding and lactation issues
3. Knowledge of antenatal and postnatal physiotherapy interventions
4. Knowledge of physiotherapy management in postsurgical gynecological conditions
5. Knowledge of physiotherapy management in postsurgical obstetric conditions

UNIT I **20**

Anatomy and Physiology of Female Reproductive System

1. Review Of anatomy of the female reproductive system.
2. Types of pelvis, neuroanatomy and neurophysiology of pelvic floor.
3. Muscles of the pelvis and pelvic floor/diaphragm.
4. The perineum and external genitalia.
5. Physiology of ovulation and menstruation.
6. Puberty and menarche.

UNIT II **20**

Pregnancy and Antenatal Period

1. Pregnancy and fetal development
2. Physical and physiological changes during pregnancy
   - Endocrine system
   - Reproductive system
   - Cardiovascular system
   - Respiratory system
   - Gastrointestinal system
   - Nervous system
   - Urinary system
   - Musculoskeletal system
3. Antenatal care and education

4. Diet and weight gain.

5. Discomforts and complications in antenatal period.

6. High risk pregnancy and Urinary dysfunction during pregnancy.

7. Gestational diabetes mellitus.

UNIT III **20**

Labour and Lactation

1. Stages and mechanism of labour.
2. Types of assisted deliveries.
3. Cesarean section.
4. PIH and eclampsia.
5. Complications in labour.
6. Psychological and emotional changes in the postpartum period and coping with the demands of the newborn.
7. Breast milk, its advantages.
8. Common problem in Breast feeding.
9. Types of nipples and its problems.

UNIT IV **20**

Urogynecology and Women's Health

1. Urogynaecology – Urinary dysfunction.
2. Bowel and anorectal dysfunction.
3. Uterine prolapse and its types.
4. Menopause and osteoporosis.
5. Gynecological problems in adolescence.

UNIT V **20**

Family Planning and Sterility

1. Pelvic inflammatory disease.
2. Endometriosis.
3. Polycystic ovarian syndrome (PCOS)
4. Contraception and family planning.
5. Infertility.
6. Premature ovarian failure/Premature menopause.

Evaluation **Total Hours: 100**

Textbooks:

1. Margaret Polden, Jill Mantle, Physiotherpy in Obstetrics and Gynecology – Jaypee Brothers 1st Edition, 2007
2. Carolyn Kisner, Therapeutic Exercise – Foundation & Techniques, Jaypee 6th Edition – 2012.

References:

1. D.C. Dutta textbook of Obstetics, Central – 2004.
2. G.B. textbook of Physiotherapy for OBG, Japypee 1st edition-2007.
3. Cesarean section- Therapeutic exercise, Carolyn Kisner, Lynn Allen Colby.
4. Jean M. Irion, Glenn L. Irion, Women's Health In Physical Therapy, Lippincott Williams & Wilkins, 2010.

23CMPTG001 BASIC FUNDAMENTALS IN PAEDIATRICS 5005

Course Objectives:

The objectives of this course is that after 200 hours of lectures & demonstrations, in addition to clinics, the student will be able to understand about clinical paediatric neurological conditions

Course outcomes:

1. Knowledge about growth and development of the child, general principles of treatment for paediatric conditions
2. To Know about the of various paediatric orthopedic conditions
3. Students should know about the various paediatric cardiopulmonary condition
4. Students should enhance the knowledge on various paediatric neurological conditions
5. Students should enrich the Knowledge on facilities available for children with special needs

UNIT I Growth and Development of the child 20

Embryology, Neonatal physiology, Neonatal care, high risk babies, Paediatric care and nutrition, Genetic basis of paediatric disorders and Genetic counseling, immunization schedule, milestones development, Normal motor development, Reflex maturation, Role of physiotherapy in typically developing children.

UNIT II Paediatricmusculoskeletal conditions 20

Congenital and acquired orthopaedic problems in children - its medical, surgical and physiotherapy management.

Juvenile rheumatoid arthritis, Congenital dislocation of hip, CTEV, Scoliosis, Kyphosis, Perthes disease, Rickets, Torticollis, Osteogenesisimperfecta, Arthrogryphosis multiplex, Fractures in childhood, Pyogenic arthritis, Amputation, Paediatric burns unit, Paediatric oncology

UNIT III Paediatric cardio-pulmonary conditions 20

Congenital and acquired cardio pulmonary problems in children - its medical, surgical and physiotherapy management.

Respiratory problems in low birth weight, Cystic fibrosis, Asphxia, Primary complex, Asthma, Pneumonia, Bronchiectasis, RDS, Deformities of chest wall, Tetralogy of fallot, ASD, VSD, PDA, Coarctation of aorta, Pulmonary and aortic stenosis, Transposition of great arteries, Thoracic surgeries

UNIT IV Paediatric neurological conditions 20

Congenital and acquired neurological problems in children and its medical, surgical and PT management.

Cerebral palsy, Spina bifida, Muscular dystrophy, Head injury, Brachial plexus injury, Developmental disorders, Peripheral nerve injury, Mental Retardation, Poliomyelitis, Brain tumors, Spinal cord injury, Hydrocephalus, Neuromuscular disorders, Encephalitis, Meningitis

UNIT V Children with special needs 20

Analysis of fitness and exercise prescription for special paediatric populations-cerebral palsy, down syndrome, poliomyelitis, muscular dystrophy, juveline diabetes and obesity, Adaptive equipments for paediatric conditions, Physical therapy in public school, Special schooling for child with special needs.

EVALUATION Total Hours: 100

Text books:

1. Cash textbook of Neurology for physiotherapist, PatricaDownie, 4th edition, 1992
2. Textbook of rehabilitation, Sunder
3. Brain and Bannister's Clinical Neurology, Sir Ruger Bannister. Oxford. 7th Edition, 1992
4. Early Diagnosis and therapy in Cerebral Palsy: Scherzer, Alfred L.

References:

1. Neurological rehabilitation, Darcy A. Umphred, 5th Edition, 2007
2. Physical Management in neurological rehabilitation, Maria Stokes
3. Physiotherapy in neuro conditions, GladySamual Raj, 2006
4. Physiotherapy in disorders of brain, Janet H. Carr, Roberta B. Shepherd
5. Motor Control: Translating research into clinical practice, Anne Shumway Cook, Marjorie Woolacott, 3rd edition
6. Neurological rehabilitation, optimizing motor performance, Janet Carr, R. Shepherd
7. Textbook of cerebral palsy and motor delay, Sophia Levitt
8. Physiotherapy for children, Campbell, Maggie

23CMPTH001T PT EVALUATION, DOCUMENTATION & EVIDENCE BASED PRACTICE IN ORTHOPEDICS 5005

Course Objectives:

The objectives of this course is that after 240 hours of lectures & demonstrations, in addition to clinics, the student will be able to understand about PT assessment, diagnosis and evidence based practice related to various orthopaedic conditions.

Course Outcomes: (Employability)

1. Proper assessment and documentation of Orthopedic conditions can be well known to the students.
2. Observation and Palpation related to Orthopedic problems can be understandable for the students.
3. Students can be well versed with the clinical examination about musculoskeletal problems.
4. Functional and disability scales are knowledgeable to the students
5. Student can well understand about the importance of special test and Investigations in orthopaedics.

UNIT I PT evaluation and Documentation 20

1. Overview of process: SOAP, severity, irritability and nature, generation of clinical impressions/ hypothesis, problem lists, goal setting, prognosis, treatment options, treatment selection.
2. Professional Issues: Communication skills, explanation, informed consent, professionalism in handling, Patient centric approach.
3. Subjective Assessment: Sources of information (patient, referrals, medical notes) gathering subjective data, closed and open questioning, data required, relevance of data assessment, interpretation of data. 'Special Questions" – Red and Yellow Flags and relevance to assessment.
4. Using Subjective Data: to direct objective assessment via selection of appropriate tests
5. Objective Assessment: Gathering objective data, alternate means of collecting data, optimizing starting positions, validity of data, interpretation of data to exclude or suggest involvement of structures.

6. Documentation and Recording: use of abbreviations, medico-legal implications, appropriate data.

UNIT II SUBJECTIVE ASSESSMENT 20

1. Observation: Posture, Bony and soft tissue symmetry and other findings, Gait
2. Palpation of joints and soft tissue.
3. Pain assessment and scales for evaluation in acute and chronic pain

UNIT III OBJECTIVE ASSESSMENT 20

1. Assessment of AROM / PROM: Quality and Quantity using goniometry, use of overpressure.
2. Muscle strength testing: static and through range muscle tests using MRC scale.
3. Muscle flexibility testing.
4. Assessment of Tone, tightness of musculoskeletal tissues
5. Accessory and Physiological Movements
6. Limb length measurement

UNIT IV GAIT AND POSTURE ANALYSIS 20

1. Neurological Assessment

-Myotomes, Dermatomes and Reflexes.

- Base neural provocation tests.

2.. Assessment of

- Posture
- Gait
- Balance

UNIT V SPECIAL TESTS AND INVESTIGATIONS 20

1. Functional and Environmental assessment

2. Physical Disability evaluation

3. Special tests

4. Investigation:

X-Ray, MRI, CT Scan report reading and analysis

Interpretation from other investigative tools used such as lab test, bone scan, bone biopsy

Total Hours: 100

Text book

1. David J Magee, Orthopaedic Physical assessment, Saundres, 5 thed, 2008
2. Nicola J Petty, Neuromusculoskeletal Examinations and assessment, 4thed 2011
3. Shirley A.Sahramann, diagnosis and treatment of movement syndromes, 2013

References

1. John Crawford Adams , Outline of Orthopaedics –, ELBS/Churchill Livingstone.2007
2. Turek's orthopaedics , Mosby, 4Ed, 2004
3. John Crawford Adams, Outline of orthopaedics, Churchill Livingston, 13th Edition, 2001.
4. William A Mc Ardle, Exercise physiology, Lippincott, 7thed, 2010

23CMPTI001 PT EVALUATION / DOCUMENTATION/EVIDENCE BASED PRACTICE IN NEUROLOGY 5005

Course Objectives:

The objectives of this course is that after 200 hours of lectures & demonstrations, in addition to clinics, the student will be able to understand about PT assessment, Diagnosis and evidence based practice related to various neurological conditions.

Course outcomes: (Employability)

1. Detailed knowledge of assessment of neurological conditions
2. knowledge of motor and sensory assessment of neurological conditions
3. Should have knowledge of various scales of neurological conditions
4. Should have knowledge of various measuring techniques of neurological conditions
5. Should have detailed knowledge of various scales and measuring techniques of paediatric conditions

UNIT I Assessment Evaluation & Investigations 20

1. Assessment of motor, sensory, perception, posture, balance, co-ordination, higher centres
2. Assessment of Gait and locomotion
3. SOAP notes
4. Functional mobility & Impairment.
5. Clinical neurodiagnosis and investigation

UNIT II Scales & Measurement of Neurological Conditions 20

Measurement of cognitive & impairment, disability evaluation, motor impairment, river mead, motor index, trunk control, motor assessment scale, Ashworth scale, isometric muscle strength, dynamometer, balance and co-ordination scales, measurement of ADL, Pulses profile, environmental assessment, multiple sclerosis assessment, Spinal cord injury assessment, MND assessment scale, Parkinson's assessment scale.

UNIT III ASSESSMENT 20

1. Berg balance test
2. Functional independence measure (FIM)
3. Functional reach test (FRT)
4. Gross motor function measure (GMFM)
5. Leg length discrepancy tape measure

6. Glascow coma scale
7. Voluntary control grading
8. MMSE

UNIT IV SPECIAL TESTS 20

1. Manual muscle test (MMT)
2. Nine minute walk test (screening tool)
3. Dynamic and static balance tests.
4. Quality of well-being scale (QWB)
5. Timed up and go (TUG)
6. Visual analog scale
7. Vulpe assessment battery-revised (VAB-R)
8. Youth quality of life instrument-research version (YQOL-R)

ELECTRODIAGNOSIS

1. Neurophysiology of nerve conduction studies and electromyography
2. Electrical study of reflexes(H reflex, axon reflex, f response, blink reflex)
3. Evoked potential(SSEP, MEP, BAERA and VER)

UNIT V EVIDENCED BASED PRACTICE 20

1. Evidenced based practice of various neurological conditions
2. Patient centric approaches
3. Inclusive Therapy
4. Barriers and Facilities in evidenced based practice approaches

Total Hours: 100

Textbook:

1. Physical rehabilitation laboratory manual - susan b o Sullivan and Thomas J Schmitz
2. Hand book of neurological rating scale - Robert M Herndon,
3. Neuro rehabilitation - Faber, W.B saunder
4. Motor relearning programme–Carr
5. Adult hemiplegia evaluation and treatment – Bobath B, Heinman

References

1. John Crawford Adams , Outline of Orthopaedics –, ELBS/Churchill Livingstone.2007
2. Turek'sorthopaedics , Mosby, 4Ed, 2004
3. John Crawford Adams, Outline of orthopaedics, Churchill Livingston, 13th Edition, 2001.
4. William A Mc Ardle, Exercise physiology, Lippincott, 7thed, 2010

23CMPTJ001T PT EVALUATION / DOCUMENTATION/EVIDENCE BASED PRACTICE IN CARDIOPULMONARY DISEASES 5005

Course Objectives:

The objectives of this course is that after -------- hours of lectures & demonstrations, in addition to clinical postings, the student will be able to understand about PT assessment, diagnosis, documentation and evidence based practice related to various cardio respiratory ailments.

Course Outcomes: (Employability)

a. To understand the evidence based assessment of cardio vascular & pulmonary systems
b. To know the evaluation of specific conditions of heart and lungs
c. To learn the principles and purpose of laboratory evaluation & to gain knowledge about their interpretations.
d. To learn the cardio pulmonary evaluation & documentation in ICU.
e. To learn the assessment of cardio pulmonary Fitness.
f. To understand the diagnosis and differential diagnosis.
g. To know the measurement and documentation methods.

UNIT – I 20

MEASUREMENTS & DOCUMENTATION

a. Measurements - Types of measurements, selecting measurements, performing measurements, Interpreting measurements.
b. Documentation - Purpose of documentation, Documentation in ICU, Types of documentation, General guidelines for content and organization: i) Subjective information, ii) Objective information, iii) Assessment, iv) Plan, v) Summary & follow-up.

UNIT – II 20

CARDIO-RESPIRATORY EVALUATION

1) History - History of present illness, past medical history including surgical history. Present medical status, occupational history, Social history, Family history, History of ICU admission previously.

2) General Respiratory Evaluation - Chest examination & airway assessment.

3) Components of Chest Examination:

a. Inspection - a. Evaluation of general appearance, Surface anatomy of ribs & trachea, b. Specific evaluation of head and neck, c. Chest wall configuration, Chest wall deformities, thoracic spine evaluation, d. Evaluation of cough, and sputum, Anemia, Cyanosis, Clubbing & Respiratory Pattern.
b. Auscultation - a. breath and heart sounds, c. technique of auscultation, d. Interpretation.
c. Palpation - a. Evaluation of mediastinum and tracheal deviation, b. Evaluation of chest wall expansion & symmetry, c. Evaluation of fremitus, d. Evaluation of accessory respiratory muscles, e. Evaluation of diaphragmatic movement, g. Evaluation of edema·

4) Laboratory Evaluation:

- Principles, analysis and Guidelines for interpretation of ABG, PFT, treadmill test, exercise tolerance test, ECG, ECHO, angiography, Doppler study chest radiography, bacteriological- and cytological tests, MUGA test.
- Evaluation of a Patient with Coronary Artery Disease:
  1. Review of medical records and extraction of pertinent data, 2. Interview and examination of patient, 3. Preliminary assessment of clinical status, 4. Determination of candidacy for further evaluation, 5. Evaluation of functional activities, 6. Evaluation of activities of daily living, 7. Monitored ambulation, 8. Low level exercise test, 9. Definitive assessment regarding candidacy for exercise therapy, 10. Individually monitored aerobic exercise and strengthening program, 11. Maximal exercise test, 12. Additional invasive and non-invasive testing, 13. Serum lipid profile, 14. Evaluation of monitored job simulation, 15. Cardiac enzymes.
  2. Low Level Exercise Testing - · Purpose, Contra - indications, Termination points.
  3. Maximal Exercise Testing - · Purpose, Guidelines, Exercise test protocols, Contraindications and Precautions, Criteria for termination of test, Prognostic implications from exercise testing, Exercise prescription and activity recommendation based on maximal exercise test results, interpretation of maximal exercise test results. Exercise tolerance test or stress test METS and their use' in evaluation

UNIT – III **20**

CARDIOPULMONARY EVALUATION IN INTENSIVE CARE

1) Evaluation of Ventilatory Dependent Patient - Assessment of ventilators, vital monitoring. Fluid and electrolyte balance, fluid chart assessment, Assessment of ICD patients, Arterial blood gas analysis. ECG monitoring, Intra-arterial lines &Intravenous lines, Central venous pressure, Intra cranial pressure, assessment of tracheostomy patients.

UNIT – IV **20**

1) Physiotherapy Evaluation of Respiratory conditions, Pre-operative & post-operative evaluation of Pulmonary surgical conditions.
2) Physiotherapy Evaluation of Cardiac conditions, Pre-operative & post-operative evaluation of cardiac surgical conditions.

UNIT – V **20**

1. Recent developments & trends in physiotherapy evaluation of cardio respiratory conditions.
2. Clinical reasoning with evidence-based evaluation.

Total Hours: 100

23CMPTK001T PT EVALUATION / DOCUMENTATION /EVIDENCE BASED

PRACTICE IN SPORTS MEDICINE 5005

Course Objectives:

The objectives of this course is that after 240 hours of lectures; demonstrations, in addition to clinics, the student will be able to understand about PT assessment, Diagnosis and evidence based practice related to various sports conditions.

Course Outcomes:

1. The students will have a good idea about emergency sports assessment
2. They will a be familiar in pre – participation evaluation
3. Students will be able to known concept of calesthenic exercises, circuit training and Isokinetics
4. Students will know about the throwing mechanism and related injuries
5. Students will be having a sound knowledge about well balanced diet and pre – event nutrition

UNIT I 20

Emergency Sports Assessment

Pre-event Preparation.

Primary Assessment – Level of Consciousness, Establishing the airway, Assessment for Bleeding, Fluid loss and Shock, Pupil Check, Assessment for spinal cord injury, Assessment for Head Injury, Assessment for Movement, Positioning the patient, Injury severity.

UNIT II 20

Secondary Assessment

Pre-participation Evaluation, Objectives of the Evaluation, Setting of the Examination.

UNIT III 20

Pre-participation History

Examination– a. Eye Examination, Musculoskeletal Examination and Convulsive

Disorders, Pulmonary Examination, Urogenital Examination, Gatrointestinal examination, Dermatological Examination, Examination for Heat Disorders. General Medical Problems Dental Examination, Neurological Examination, Cardiovascular Examination,

b. Application of isokinetics in testing.

UNIT IV **20**

Plyometrics & mobilization

a. Calesthenic exercise

b. circuit training

c. Joint mobilization &manipulation

d. Soft tissue therapy

UNIT V **20**

Nutrition & Athlete

Well balanced diet, Pre-event nutrition, Carbohydrate loading diet, increase & decrease weight

Evaluation **Total Hours: 100**

Textbooks:

1. Das, a text book of sports medicine, JP, 1 ED, 2006.
2. Dey, a text book of sports and exercise physiology JP, 1 ED, 2012.
3. Karim Khan, Clinical Sports Medicine,3ED,2008.

References:

1. James a Gold, orthoppaedics and sports physical therapy, JP, 3ED, 1997.
2. Christopher Norris, sports injuries and management, mc graw hill, 3 ed, 1999.

23CMPTL001T PT EVALUATION, DOCOMENTATION & EVIDENCE BASED PRACTICE IN HAND CONDITIONS 5005

Course Objectives:

The objectives of this course is that after 240 hours of lectures & demonstrations, in addition to clinics, the student will be able to understand about PT assessment, Diagnosis and evidence based practice related to various hand conditions.

Course outcomes:

1. Student will be able to Evaluate and appreciate component in hand evaluation & Enumerate the implication of treatment
2. Student will be able to Appreciate the concept of sensory physiology & Write a summary on sensory testing
3. One can able to Reason the functional evaluation process of hand & Appreciate functional evaluation methods employed in hand
4. One can able to Define and demonstrate RULA
5. Student will be able to Understand the ctinical concenpts in wound and edema assessment & Define disability indere, ADL scales and make disability evaluation
6. Student will be able to Document and record the clinical proceedings & Reason the strategies for selecting a management approach and factors influencing decision

UNIT I **20**

EVALUATION OF THE HAND

a. General considerations
b. Components of hand evaluation
c. Specific components of hand evaluation
d. Differential diagnosis
e. Selective tissue tension testing
f. Strength
g. Circulation
h. Nerve compression
i. Assessment of clinical findings
j. Implications of treatment

UNIT II 20

SENSIBILITY TESTING

a. Concepts of sensory physiology
b. Classification of sensory tests
c. Selecting appropriate sensory tests
d. Performing specific sensory tests
e. Correlating sensibility with hand functions
f. Writing a sensibility testing summary

UNIT III **20**

a. History of functional testing
b. Clinical reasoning and the functional evaluation processes
c. Terminology associated with functional patterns of movement
d. Methods of functional evaluation.
e. RULA

UNIT IV **20**

CONCEPTS IN CLINIC AL ASSESSMENT AND DISABILITY EVALUATION

a. Wound assessment
b. Edema assessment
c. Disability evaluation: Disability index, ADL and instrumental ADL scales and upper extremity functional evaluation scales

UNIT V **20**

DOCUMENTATION AND RECORDING

a. Documentation and recording: use of abbreviations, medico legal implications
b. Clinical reasoning – the development of muscle – skeletal dysfunction, refinement – of data collection and analysis, strategies for selecting a management approach and factors influencing decision

Total Hours: 100

Textbook:

1. Judith Boschienen , The Hand, CBCS, 2nd ed, 1999.

References:

1. Barbara, Concepts in Hand Rehabilitation- mosby , 4th ed, 1997.

2. Tubiana , Hand Atlas – JP, 1st ED, 2011.

23CMPTM001T PT EVALUATION/ DOCUMENTATION/ EBP IN OBSTETRICS & GYNAECOLOGY 5005

Course Objectives:

The objectives of this course is that after 240 hours of lectures & demonstrations, in addition to clinics, the student will be able to understand about PT assessment, diagnosis and evidence based practice related to various gynaecological conditions.

Course Outcomes: (Employability)

1. Proper assessment and documentation of gynecological can be well known to the students.
2. Observation and Palpation related to gynecological problems can be understandable for the students.
3. Students can be well versed with the clinical examination about gynecological and obstetric problems.
4. Related musculoskeletal assessment can be well known to the students.
5. Student can well understand about the importance of physiotherapy interventions and investigations in gynecological and obstetric conditions.

UNIT I 20

PT Evaluation and Documentation

1. Overview of process: SOAP, severity, irritability and nature, generation of clinical impressions/ hypothesis, problem lists, goal setting, prognosis, treatment options, treatment selection.
2. Professional Issues: Communication skills, explanation, informed consent, professionalism in handling, etc.
3. Subjective Assessment: Sources of information (patient, referrals, medical notes) gathering subjective data, closed and open questioning, data required, relevance of data assessment, interpretation of data.
4. Objective Assessment: Gathering objective data, alternate means of collecting data, optimizing starting positions, validity of data, interpretation of data to exclude or suggest involvement of structures.
5. Documentation and Recording: use of abbreviations, medico-legal implications, appropriate data.

UNIT II **20**

Objective Examination

1. Antenatal period

Routine assessment

Evaluation of maternal musculoskeletal disorders and musculoskeletal changes during pregnancy

2. Assessment during labor

3. Postnatal period

- Routine Assessment
- Evaluation of postnatal problems

5. Assessment of posture, gait and balance in pregnancy.

UNIT III **20**

Urogenital Examination

1. Assessment of urinary and bladder incontinence.

2. Pelvic floor assessment, PFM grading, indication and contraindication.

3. Impairment of PFM and its PT management.

4. Assessment of genitourinary dysfunction and diastatis recti.

UNIT IV: **20**

Special Tests and Investigation:

1. Functional and Environmental assessment
2. Nutrition &Pregnancy: Well balanced diet, Pregnancy nutrition, Carbohydrate in diet.
3. Special tests in OBG
4. Investigations in OBG

UNIT V: **20**

Gynecological scales and questionnaires

1. Quality of life

2. Scales used during antenatal period
3. Scales used during labor
4. Scales and questionnaires used during postnatal period
5. Self efficacy scales
6. Scales for emotional wellbeing

Evaluation **Total Hours: 100**

Textbooks:

1. Margaret Polden, Jill Mantle, Physiotherpy in Obstetrics and Gynecology – Jaypee Brothers 1st Edition, 2007
2. Carolyn Kisner, Therapeutic Exercise – Foundation & Techniques, Jaypee 6th Edition – 2012.

References:

1. D.C. Dutta textbook of Obstetics, Central – 2004.
2. G.B. textbook of Physiotherapy for OBG, Japypee 1st edition-2007.
3. Cesarean section- Therapeutic exercise, Carolyn Kisner, Lynn Allen Colby.
4. Jean M. Irion, Glenn L. Irion, Women's Health in Physical Therapy, Lippincott Williams & Wilkins, 2010.
5. Obstetrics & Gynecologic Physical Therapy Wilder Elnine, Churchill, Livingstone, New York 1994.
6. Women's Health Sapsford Publisher Lippincott.

23CMPTN001T PT EVALUATION, DOCUMENTATION & EVIDENCE BASED PRACTICE IN PEDIATRICS 5005

Course Objectives

The objectives of this course is that after 200 hours of lectures & demonstrations, in addition to clinics, the student will be able to understand about Physiotherapy assessment, Diagnosis and evidence based practice related to various paediatric conditions.

Course outcomes

1. Detailed knowledge of paediatric assessment, investigations, preoperative and post operative assessment
2. Knowledge of motor and sensory assessment
3. Should have knowledge of various scales, measuring techniques for paediatric population
4. Knowledge about physical disability evaluation for children
5. Knowledge about the children with special needs

UNIT I General assessment 20

Review of general assessment – locomotor disorders, pre and post-operative paediatric surgical conditions, Assessment of Reflex maturation, assessment of premature infants and full term infants including developmental screening, electro diagnosis – electromyography, nerve conduction study, evoked potentials, muscle biopsy - report reading and analysis.

UNIT II Specific Assessments 20

Congenital and acquired cardio pulmonary problems in children and its medical, surgical and PT management, Assessment of higher mental functions, Neurodevelopmental assessment, Pain assessment, Sensory assessment, Motor control assessment, Muscle length testing, Postural assessment, Limb length measurement, Range of motion, Balance assessment, Coordination assessment, Cranial nerve testing, Nerve tension testing, Clinical gait assessment

UNIT III Scales and measurements of paediatric conditions 20

APGAR score, FLACC scale, Alberta infant motor scale, Bayley scales of infant development, Denver development screening test, functional reach test, Gross motor function measure, Infant developmental screening scale, Infant motor screen, leg length discrepancy tape measure, neonatal oral motor assessment scale, six minutes walk test, oral motor feeding rating scale, timed up and go, visual analog scale and Psychometric analysis.

UNIT IV Physical disability evaluation 20

Paediatric Balance Scale, Functional independent measure for children, peabody developmental motor scales, quality of well-being scale, vulpe assessment battery, youth quality of life instrument – research version, Glascow outcome measure, padiatric evaluation of disability inventory, neonatal behavioural assessment scale, Bruninks-Oseretsky test of motor proficiency, functional status score, pediatric cardiac quality of the life inventory, assessment for assistive aids prescription, Northstar Ambulatory assessment

UNIT V Special needs 20

Analysis of fitness for special paediatric conditions, Evidence based practice in paediatric physiotherapy – importance, implementation, facilities and barriers in practice, clinical decision making in paediatric physiotherapy, SOAP notes, legal aspects, effectiveness and implications in paediatric physiotherapy, family and patient centric care, Inclusive therapy.

EVALUATION Total Hours: 100

Text books

1. Motor Control: Translating research into clinical practice, Anne Shumway Cook, Marjorie Woolacott, 3rd edition
2. Neurological rehabilitation, optimizing motor performance, Janet Carr, R. Shepherd
3. Textbook of cerebral palsy and motor delay, Sophia Levitt
4. Physiotherapy for children, Campbell, Maggie
5. Neurological rehabilitation, Darcy A. Umphred, 5th Edition, 2007

References:

1. Cash textbook of Neurology for physiotherapist, PatricaDownie, 4th edition, 1992
2. Textbook of rehabilitation, Sunder
3. Brain and Bannister's Clinical Neurology, Sir Ruger Bannister. Oxford. 7th Edition, 1992
4. Early Diagnosis and therapy in Cerebral Palsy: Scherzer, Alfred L

23CMPTA002T ADVANCE PT INTERVENTION IN ORTHOPEDICS 5 0 0 5

Course Objectives:

The objectives of this course is that after 200 hours of lectures & demonstrations, in addition to clinics, the student will be able to understand about current and latest intervention used for various orthopaedic conditions.

Course Outcomes:(Employability)

1. One can able to understand about the various concept of Physiotherapy interventions in fracture, Deformities and other acute traumas.
2. Students can able to understand about the concept of Geriatric rehabilitation.
3. Latest Physiotherapy interventions related to orthopedic conditions can be understood well.
4. Theories behind ergonomic principles of back care can be well understood.
5. One can know about the splints used for orthopedic deformities.

UNIT I Traumatology 20

A. Fractures:

Principles of fracture management.

Principles of Physiotherapy management in treating fracture cases.

Physiotherapy management of complications of fracture.

Regional fractures (involving upper limb, lower limb, spine) and their complete physiotherapy management.

B. Dislocation:

Principles of physiotherapy Management in dislocation and recurrent dislocations.

C. Soft Tissue injuries:

Principles of physiotherapy Management in soft tissue injuries.

D. Amputations:

Pre-operative, post-operative, prosthetic Management in amputations.

Prevention and Treatment of complications of Amputation

UNIT II Orthopaedics **20**

A. Arthritis:

Principles of physiotherapy Management in Arthritis.

B. Deformities:

Principles of physiotherapy Management in treating following deformities:

- Congenital deformities
- Acquired deformities
- Spinal deformities

UNIT III Geriatrics **20**

- Rehabilitation following Arthritis in the elderly patients
- Rehabilitation following Fracture in elderly patients
- Rehabilitation following Geriatric amputation

External aids:

Splints, orthotics and prosthetics

UNIT IV Recent Techniques **20**

Physical, physiological and physiotherapeutic principles, Indications and contraindications, application techniques and dangers of following treatment techniques

- Balanced ligamentous tension (BLT)
- High Velocity Low Amplitude Thrust (HVLAT)
- Joint mobilization
- Manipulation Techniques
- Muscle Energy Technique (MET)
- Myofascial Release
- Neuromuscular therapy (trigger point therapy)
- Positional release therapy

UNIT V Replacement and reconstructive surgeries 36

Post operative management of the following surgeries

1. Total knee replacement
2. Total hip replacement
3. ACL & PCL reconstructive surgery
4. Burns
5. Arthroscopy
6. Laminectomy and discectomy
7. Lumbar fusion and decompression

Evaluation **Total Hours: 180**

Text book

1. David J Magee, Orthopaedic Physical assessment, Saundres, 5 thed, 2008
2. S. Brent Brotzman, MD, Robert C. Manske, PT, Clinical Orthoedic rehabilitation, elsvier, 3rded, 2011
3. Mark Jones, Darren Rivett, Clinical reasoning for Manual therapists, Elsevier, 2007

References

1. John Crawford Adams , Outline of Orthopaedics –, ELBS/Churchill Livingstone.2007
2. Turek's orthopaedics , Mosby, 4Ed, 2004
3. John Crawford Adams, Outline of orthopaedics, Churchill Livingston, 13th Edition, 2001.
4. William A Mc Ardle, Exercise physiology, Lippincott, 7thed, 2010

23CMPTB002T ADVANCED PHYSIOTHERAPEUTIC INTERVENTION IN NEUROLOGY 5005

Course Objectives

The objectives of this course is that after 200 hours of lectures & demonstrations, in addition to clinics, the student will be able to understand about current and latest intervention used for various neuro conditions.

Course outcomes: (Employability)

1. Knowledge about general principles of treatment
2. Knowledge of neural tissue mobilization
3. Knowledge of various approaches like Bobath, Brunstromn, PNF ,Vojta, Roods
4. Knowledge of motor control and learning
5. Knowledge of physiotherapy management in perceptual and sensory dysfunction

UNIT I Clinical Conditions 20

1. Principles of Management for Neurological Conditions
2. Traumatic brain and spinal cord injuries, cerebrovascular accidents
3. Demyelinating inflammatory infectious degenerative and metabolic diseases of the nervous system
4. Brain tumor, motor neuron disease, neuromuscular junction disorders
5. disorders and its rehabilitation

UNIT II Treatment Approaches 20

Theoretical basis of Treatment and concepts:

Bobath (NDT)

John stone,

PNF

Brunstromm,

Rood

Gordon,

Vojta technique

UNIT III Motor control theories **20**

Horak theories

Motor control and Re- learning Programs

Common facilitatory and inhibitory techiniques

UNIT IV Neurological rehabilitation **20**

Integrated treatment

Management in sensory &perceptual dysfunction

Management of co-ordination problems

Management of balance dysfunctions

Management of movement dysfunction

UNIT V Recent Advances in Neurological rehabilitation **20**

Physiotherapy in neurological conditions

Implication of feedback mechanism in PT management

Adaptive equipment for physically challenged type, equipment roles selection etc.

Recent advances in neurological rehabilitation

Total Hours: 180

Textbooks:

1. Carpenter, Mental Health & Learning disability — EURETT. 2 Ed, 1998

2. Ropper, principles of Neurology, JP, 10 Ed, 2014

References:

1. Catherine A Trombly. Occupational Therapy for physical dysfunction –, Williams & Wilkins.4Ed, 1998

2. Brain and Bannister's Clinical Neurology, Sir Ruger Bannister, Oxford.7Ed, 1992

3. Introduction to nervous System – Hokmes Bullock, WH Freeman and company,1st Ed,2000

23CMPTC002T ADVANCED PHYSIOTHERAPEUTIC INTERVENTIONS IN CARDIO-PULMONARY DISEASES 5005

Course Objective:

The objectives of this course is that after 200 hours of lectures & demonstrations, in addition to clinics, the student will be able to understand about current and latest intervention used for various cardio respiratory conditions.

Course Outcomes: (Employability)

1. Student should be able to plan appropriate treatment regime based on the knowledge of various subjects learned during this semester for the below mentioned condition.
2. Additionally emphasis should be on special techniques. · Artificial respiration. · Exercise planning and prescription. . · Cardio pulmonary resuscitation, procedures and techniques.
3. Effects of aerobic, anaerobic exercises on cardiac functions. · Adjuncts to chest physiotherapy
4. Physiotherapy techniques in relation with chest physiotherapy. · Pediatric cardiopulmonary physiotherapy
5. Postoperative management of CABG and other cardiac surgeries. · Risk factors in cardio pulmonary bypass

Student should learn the physiotherapy interventions and recent advances in the physiotherapy management of following conditions.

Course Content

UNIT – I 20

CPR

1) CPR – Indications, Technique for Adults and Pediatrics.
2) Defibrillators.
3) Advanced life support.

UNIT – II 20

Rehabilitation

1) Pulmonary Rehabilitation.

2) Cardiac Rehabilitation.

3) Peripheral vascular diseases& their management.

4) Physiotherapy in ICU.

UNIT – III **20**

Physiotherapy Intervention following-

1) Pulmonary surgeries.

2) Cardiac Surgeries.

3) General surgeries

UNIT – IV **20**

Exercise Prescription

1) Exercise testing, planning and prescription: aerobic and anaerobic exercise training.
2) Exercise Prescription for health promotion and fitness for special populations- DM, Obesity, IHD, COPD, HTN.

UNIT – V **20**

Evidence Based Intervention & Case Discussion

1) Recent advances in Cardio respiratory physiotherapy including palliative care in cardiorespiratory conditions.
2) Critical appraisal and Evidence based intervention in Cardiorespiratory Physiotherapy intervention.

Total Hours: 180

Textbooks:

1. Frances J. Brannon, Cardio pulmonary rehabilitation, Basic theory & application – mosby, 4 ed, 2001
2. Joanne watching, Cardio pulmonary physical therapy, a clinical manual – CBCS, 3 ED, 2003

3. Ellen Hillegass steven sadowsky, Essentials of cardio pulmonary physical therapy, Elsevier, 2 ED, 1994

References:

1. Crofton & doogles Respiratory Diseases Vol – I & II, Seaton.1 Ed, 2003
2. Downie, Cash text book of chest, Heart & Vascular disorders ,ELBS, 1 Ed, 2005
3. Berne, Cardio – Vascular Physiology ,Mosby, 4Ed, 2012

23CMPTD002T ADVANCE PT INTERVENTION IN SPORTS 5005

Course Objectives:

The objectives of this course is that after 200 hours of lectures & demonstrations, in addition to clinics, the student will be able to understand about current and latest intervention used for various sports conditions.

Course outcomes:

1. Students will know about how to prevent athletic injuries& emergency sports management
2. Students will be able to identify the general conditioning principles warm – up schedule
3. Students will be able to know about the proper protective & supportive Devices & taping wrapping techniques
4. Students will be able to apply various electrotherapy modalities in sports injuries
5. Students will be able to treat all kind of sports injuries that can occur in upper & lower limbs, running & swimming injuries

UNIT I **20**

Prevention of Athletic Injuries and Treatment of Athletic injuries.

a. General conditioning principle – strength, power, muscular endurance, flexibility, anaerobic metabolism.
b. Warm-up period and Cool down, schedule Protective and supportive equipment – protective equipment: Supportive devices, motion limiting devices.
c. Taping and wrapping techniques.
d. Emergency care and Athletic first-aid – cardiopulmonary emergencies, ABC of resuscitation, Heimlick maneuver Shock Injuries: - Internal injuries, Head and neck injuries, fractures, dislocations.
e. Injury first-aid – ICE or Cold application, compression, elevation, gait instruction, stretcher and wheel chair uses.

UNIT II **20**

a. Physiotherapeutic interventions for relief of pain – Therapeutic modalities and nprocedures – General principles of therapeutic modalities Hydrotherapy, Microwave diathermy, Ultrasound and Laser. Iontophoresis, Phonophoresis, TENS, Cryotherapy, Cold Spray, Contrast Bath, Massage and soft tissue mobilization treatment techniques.

b. Fitness training related to specific sports – Manipulative Therapy, Principles, Concept, Indications and Contraindications, Applications.
c. Injuries Rehabilitation – Goals of rehabilitation, types of exercises – isometric exercise, isotonic exercise, special forms of exercise, manual resistance. Proprioceptive Neuromuscular facilitation, surgical tubing, circuit training, sport-specific skills.
d. Application of isokinetics in Athletic Rehabilitation.

UNIT III **20**

a. Epiphyseal Injuries, Osgood Schlatter's disease, traction, epiphysitis, tendinitis at the inertion of patellar tendon, complete avulsion of the epiphysis of the tibialtubercle shoulder and its Sports Rehabilitation.
b. Shoulder Girdle Injuries: Injuries to the sternoclavicular joint – sprains, dislocations, Scapulothoricic joint lesion, acromioclavicluar joint sprains, dislocation of the shoulder and thoracic outlet symdrome. Painful arc syntrome, rotator cuff injuries, Impingement syndromes,Glenoid Labrum lesions and its sports rehabilitation.
c. Elbow joint Injuries: Olecranon bursitis, Valgus, extension overload in elbow, Ulnar nerve lesions, Ulnar and Radial collateral ligament sprains, Contusions and strains, Dislocations, Osterochondritisdissicans, Little Leaguers elbow and its sports rehabilitation.
d. Wrist and Hand Injuries – Colle's fracture, Scaphoid fracture, Gamekeeper's Thumb, DIP joint fracture and dislocation, Jersey finger, Boutonniere deformity, Pseudo boutonniere deformity, fractures of the metacarpals, Bennett's fracture, mallet finger, Dequervain's tenosynovitis of the thumb, Bowler's thumb, Handler palsy, Hamate fracture, Ganglion cysts, Trigger finger, Carpal tunnel syndrome and its rehabilitation.

UNIT IV **20**

a. Thigh Injuries – Contusions to the quadriceps, strain of the quadriceps musculature, acute strain of the hamstring group, complete rupture of the patellar tendon and its rehabilitation.
b. Knee Injuries – Knee ligament injuries first-degree sprain, second-degree sprain, third-degree sprain, anterior and posterior cruciate tears, anteriolateral instability meniscal-lesion, Articular cartilage lesions, Patello femoral dysfunction and its rehabilitation.
c. Injuries of the Patella – Patella fracture, acute-dislocation, recurrent dislocation, subluxation and spontaneous reduction of a dislocated patella, OsteochondritisDissicans, Jumper's knee and its rehabilitation.
d. Injuries to lower leg, ankle and foot – Tibiofibularsynostosis, rupture of the gastrocnemius, Tennis leg, rupture of the Achilles tendon, tendinopathies – Achilles tendonitis, anterior and postriortibialis tendonitis, Peroneal tendonitis., Flexor

hallucislongus tendinitis, flexor digitorumlongustendonitis.Compartmental compression syndromes, Heel bruise, Ostrigonum injury,Calcaneal apophysitis, Tarsometatarsal injuries. Tarsal tunnel syndrome, cuboidssyndrome, metatarsal stress fracture, inter-digital neuroma(Morton's neuromas), Stair Climbers transient parasthesia, Turf toe, sesmoitidis and its rehabilitation.

e. Injuries to the Ankle – Syndesmotic ankle sprain, Inversion ,eversion and dorsiflexion sprains, tarsal tunnel syndrome, stress fracture of the metatarsal, corns and calluses, blisters, ingrown toenails, peroneal tendon subluxation and its rehabilitation.
f. Injuries to the low back – Postural syndrome, Dysfunction syndrome, Derangement syndrome, Spondylolisthesis and its rehabilitation
g. Injuries to the Running Athlete – Common running induced injuries to the lower back, hip Iliotibial tract pain, Trochanteric Bursitis, stress fracture of femoral neck and Slipped capital femoral epiphysis.

UNIT V **20**

a. Common running related injuries to the knee - Medial Patellar pains, Pes anserine bursitis, patellar tendinitis, retro patellar pain, lateral patellar pain, lateral knee pain, biceps femoral tendonitis.
b. Common running related injuries to the lower leg –Tibial stress relation, stress fracture, medial tibial stress syndrome, compartment syndrome – Anterior, posterior, lateral, fibular stress reaction and stress fracture, retro calcaneal bursitis medial arch pain, plantar fascitis.
c. Swimming Injuries – 'Swimmer's Shoulder' anterior subluxation of the Glenohumeral Joint, Breast stroker's injury.
d. Thermal injuries – heat injuries & prevention, healing syndrome, heat cramps, heat fatigue and heat stroke
e. Old injuries - students should know the pre and post operative rehabilitation used in sports physiotherapy.
f. Female and Old Atheletes**.**

Evaluation **Total Hours: 100**

Textbooks:

1. James a Gould, orthoppaedics and sports physical therapy, jp, 3ED, 1997
2. Das, a text book of sports medicine, JP, 1 ED, 2006
3. Karim Khan, Clinical Sports Medicine,3ED,2008.

References:

1. Mcardal, Exercise Physiology , ELBS, 5Ed, 2011.
2. Steven roy, Sports medicine, mosby, 4 ed, 1988

23CMPTE002T ADVANCE PT INTERVENTION IN HAND CONDITIONS 5005

Course Objectives:

The objectives of this course is that after 200 hours of lectures & demonstrations, in addition to clinics, the student will be able to understand about current and latest intervention used for various hand conditions.

Course Outcomes

1. Student will be able to apply the techniques and manage wound edema and scar conditions & gain knowledge and master the application of desensitization and sensory re-education protocols
2. One can able to provide hand care
3. Student will be able to apply the physical agents and electrotherapy techniques in hand rehabilitation
4. Student will be able to Understand the importance and application splinting technique & Appreciate the concepts in phases of splinting
5. Student will be able to Apply hand therapy in various conditions involving shoulder, elbow, wrist and hand & Perform pre and post operative hand therapy following surgical procedures of upper quadrant
6. Student will be able to Appreciate occupational hand disorders and apply hand therapy techniques including cybax and other work simulators

UNIT I **20**

- Concepts in clinical treatment
- Wound management
- Edema management
- Scar management
- Desensitization protocols
- Sensory re – education protocols
- Motor reeducation
- Restoration of ROM – muscle strength and endurance therapeutic exercise: maintaining and restoring mobility in the hand
- Hand protection & hand core.

UNIT II **20**

Physical agents and electrotherapy techniques in hand rehabilitation

- Cryotherapy
- Superficial heating agents
- Ultrasound
- Electrical stimulation

UNIT – III **20**

Splinting

- Data – Gathering phase
- Design - fabrication phase

UNIT IV **20**

Hand dysfunction & hand therapy in:

Arthritis – degenerative, rheumatoid & post traumatic poliomyelitis, brachial plexus injuries. Peripheral nerve injuries entrapment neuropathy, hansen's disease, diabetes, spinal cord injuries, stroke, parkinson's, injections of the hand, burns, dupuytrens, callosities, reflex sympathetiv disorder, cumulative trauma disorder, hypersensitivity. Crush injuries, zones of hand injuries, ligamenbous injuries, volar plate injuries, tendon injuries, fracture & dislocations, amputation, volkman's ischaemic contracture.

Surgical procedures: pre & post operative hand therapy: Tenton repair, tendon transfers, tenolysis, soft tissue repair/release, Various grafting procedures, amputations, replantation and arthroplasty.

UNIT V **20**

Occupational hand disorders

- Applied ergonomics of hand
- Cumulative trauma disorders
- Nature & prevalence of injury
- Specific solution, preventive measures & hand therapy techniques including cybex and other work simulators

Total Hours: 250

Textbook:

1. Judith Boschienen , The Hand, CBCS, 2nd ed, 1999

References:

1. Barbara, Concepts in Hand Rehabilitation- mosby , 4 ed, 1997

2. Tubiana , Hand Atlas – JP, 1 ED, 2011

23CMPTF002T ADVANCED PHYSIOTHERAPEUTIC INTERVENTIONS IN OBSTETRICS & GYNAECOLOGY 5005

Course Objectives:

The objectives of this course is that after 200 hours of lectures & demonstrations, in addition to clinics, the student will be able to understand about current and latest intervention used for various gynaecological conditions.

Course Outcomes: (Employability)

1. One can able to understand about the various concept of Physiotherapy interventions and current physiotherapy intervention in gynecological conditions.
2. Gynecological Physiotherapy management can be well understood.
3. Students can able to understand about the concept of Obstetric rehabilitation.
4. Theories behind ergonomic principles of back care in pregnancy and postnatal period can be well understood.
5. One can know about the lactation and issues related with lactation.

UNIT I 20

Antenatal period

1. PT management in Antenatal period
2. PT management during labor.
3. PT management in postnatal period.
4. PT management in bladder and bowel incontinence and bladder training.

UNIT II 20

Lactation and it's importance

1. Importance of breast feeding

2.breast conditions during lactation

3. Breast feeding positions and techniques

4. Various approaches for breast engorgement

UNIT III **20**

Physiotherapy in Gynecology

1. Physiotherapy management in gynecological surgeries.
2. Electrotherapeutic modalities in gynecological conditions.
3. Electrotherapeutic modalities in labour.
4. Assessment and management of lymphedema and osteoporosis.
5. Levatorani syndrome, coccydynia, vulvodynia, vaginismus, dyspareunia and its PT management.

UNIT IV **20**

Physiotherapy and fitness in Postnatal Period

1. Perineal massage.
2. Breast engorgement and its PT management.
3. Aerobic exercises in pregnancy.
4. Relaxation techniques in labour.
5. Biofeedback,
6. Vaginal cones.
7. Perineometer.

UNIT V: **20**

Latest PT Interventions in OBG

1. Diastasis recti and its PT management.
2. Physiotherapy management of oedema in pregnancy.
3. Physiotherapy management in high risk pregnancy.
4. Use of hydrotherapy for labour and water birth.

Evaluation **Total Hours: 180**

Textbooks:

1. Margaret Polden, Jill Mantle, Physiotherpy in Obstetrics and Gynecology – Jaypee Brothers 1st Edition, 2007
2. Carolyn Kisner, Therapeutic Exercise – Foundation & Techniques, Jaypee 6th Edition – 2012.

References:

1. D.C. Dutta textbook of Obstetics, Central – 2004.
2. G.B. textbook of Physiotherapy for OBG, Japypee 1st edition-2007.
3. Cesarean section- Therapeutic exercise, Carolyn Kisner, Lynn Allen Colby.
4. Jean M. Irion, Glenn L. Irion, Women's Health in Physical Therapy, Lippincott Williams & Wilkins, 2010.
5. Obstetrics & Gynecologic Physical Therapy Wilder Elnine, Churchill, Livingstone, New York 1994.
6. Women's Health Sapsford Publisher Lippincott.

23CMPTG002T ADVANCED PT INTERVENTION IN PEDIATRICS 5005

Course Objectives:

The objectives of this course is that after 200 hours of lectures & demonstrations, in addition to clinics, the student will be able to understand about current and latest intervention used for various Paediatric conditions.

Course outcomes:

1. Knowledge about theories of motor learning and control, assessment and management.
2. Knowledge about the advanced techniques and therapeutic approach for neurological conditions
3. Knowledge of recent trends and physiotherapy management of orthopedic conditions
4. Knowledge about the emerging trends in the management of cardiorespiratory conditions
5. Knowledge about the of assistive devices and special needs

UNIT I Introduction 20

Theories of motor control, Theories of motor learning, common assessment procedure, planning for progress, rationale of plan for treatment, roles and responsibilities of paediatric physiotherapist, Stretching, Strengthening, Passive movements, Active exercise training, Resisted exercise training, Postural re-education, Electrotherapy modalities, Gait training, wheel chair prescription

UNIT II Physiotherapy Management for paediatric neurological conditions 20

Principles and concepts of various techniques like NDT, Vojta,, Rood's Approach, motor relearning program, conductive education, constraint induced movement therapy, temple fay, doman-delacato, task oriented approach.

UNIT: III Physiotherapy Management for paediatric Orthopedic conditions 20

Phelps Approach, vibration therapy, Balance training, co-ordination management, Pain management, relaxation technique, Biofeed back, play therapy, group therapy, aquatic

therapy, hippotherapy, community rehabilitation in paediatrics, physiotherapy management in sensory and perceptual dysfunction, peadiatric manual therapy.

UNIT: IV Physiotherapy Management for paediatric cardiopulmonary conditions 20

Positioning, Oxygen therapy, assisted ventilation, complications of assisted ventilation, Humidification, Nebulization, procedure for chest physiotherapy, postural drainage, manual techniques like percussion, shaking, vibrations; manual hyperinflation, mobilization, breathing exercises, suctioning, inspiratory and expiratory games, general exercises, Role of Physiotherapy in NICU.

UNIT: V Assistive Technology and special needs 20

Aims of exercise and activity, games and sports, physical education, outdoor activities, Assistive technology: use of robotics on paediatric physiotherapy, splints, serial splinting, orthotics and prosthetics for paediatric conditions, electronic aids in daily living, training of care givers for children with disabilities,

EVALUATION Total Hours: 100

Text books:

1. Brain and Bannister's Clinical Neurology, Sir Ruger Bannister. Oxford. 7th Edition, 1992
2. Physiotherapy in disorders of brain, Janet H. Carr, Roberta B. Shepherd
3. Textbook of cerebral palsy and motor delay, Sophia Levitt
4. Motor Control: Translating research into clinical practice, Anne Shumway Cook, Marjorie Woolacott, 3rd edition
5. Neurological rehabilitation, optimizing motor performance, Janet Carr, R. Shepherd

References:

1. Physical Management in neurological rehabilitation, Maria Stokes
2. Physiotherapy in neuro conditions, GladySamual Raj, 2006
3. Physiotherapy for children, Campbell, Maggie
4. Early Diagnosis and therapy in Cerebral Palsy: Scherzer, Alfred L.
5. Neurological rehabilitation, Darcy A. Umphred, 5th Edition, 2007

DISSERTATION **0 0 15 15**

Course Objectives

This dissertation of clinical study / review of literature is designed to develop the aptitude among students towards further reading and selecting references and present a written dissertation, or conduct a comparative study of the value / efficacy of a physiotherapy procedure in selective group of patients and normal subjects or justify the chosen procedure.

Every candidate shall submit to the Registrar of the university in the prescribed proforma, a synopsis containing particulars of proposed dissertation work within 4 months from the date of commencement of the course on or before the dates notified by the university. The synopsis shall be sent through the proper channel (Duly approved by the guide, HOD, Principal and Ethical committee) such synopsis will be reviewed and the university will register the dissertation topic. The dissertation is aimed to train a postgraduate student in research methods and techniques. It includes identification of a problem, formulation of a hypothesis, search and review of literature getting acquainted with recent advances, designing of a research study, collection of data, critical analysis, and comparison of results and drawing conclusions. Every candidate pursuing MPT degree course is required to carry out work on a selected research project under the guidance of a recognized postgraduate teacher. The result of such a work shall be submitted in the form of dissertation. Any change in the dissertation topic or guide shall be informed to the authorities of this university for its approval. No change in the dissertation topic or guide shall be made within nine months for commencement of university examination.

The printed text of dissertation should not be less than 50 pages/2500 words and shall not exceed 75 pages excluding references, tables, questionnaires and other annexure. It should be neatly typed in double line spacing (Font 12, times New Roman) on one side of paper (A4 size, 8.27” X 11.69”) and hard bound properly (No spiral binding). Four copies of dissertation thus prepared shall be submitted to the Controller of the Examination, three

months before final examination on or before the dates notified by the university duly certified by the guide, head of the department and head of the institution.

A candidate who has submitted his/her dissertation once is not required to submit a fresh dissertation if he/she reappears for the examination in the same branch on the subsequent occasion, provided the dissertation has been accepted by the examiners

Total Hours: 250

Elective Courses

Discipline Specific Elective

Discipline Specific Elective -I

23DMPT101 ERGONOMICS 3003

Course objective:

The objective of this course is that after 80 hours of lectures & demonstrations, the student will be able to understand the knowledge about ergonomics issues, evaluation and safe practice standards.

Course outcome: (Employability)

1. Student should have understood the different types of work nature and its impact towards the human body.
2. Student should have understood how to perform the ergonomic evaluation &should also be aware of mandatory questions which needed to be asked related to the profession.
3. Student should be aware to perform a workplace assessment for all the profession &should have understood about all nature of work how it affects the normal system, body mechanics, and psychological level of the person.
4. Student should be able to differentiate the work nature of software and hardware professionals.
5. Students should have understood what are the legal bodiesexsiting in constructing the work place.

UNIT I **20**

Introduction & Bioengineering

1. History of ergonomics
2. Need of ergonomics
3. Domains in ergonomics
4. Equipment design – workstation, tools, workbenches, computers

UNIT II **20**

Ergonomic Assessment

1. Ergonomic cycle
2. Evaluation of ergonomic issues
3. Assessment tools

4. Exit assessment
5. Fatigue assessment
6. Measuring human capacities and limitation

UNIT III **20**

Job analysis

1. Requirement of job
2. Profile and candidate selection
3. Pre employment screening
4. Job site analysis
5. Job task analysis

UNIT IV **20**

LEVEL OF INTERVENTION

1. Deconditioning
2. Return to work rehab process
3. Avenues and benefits of ergonomics
4. Work conditioning
5. Work hardening

UNIT V

Current Trends in Ergonomics

1. Software in ergonomics
2. Regulatory bodies
3. Professionals in ergonomics
4. Legal issues and insurance policies
5. Industrial therapy – team concept, rehab discipline and purpose.

Evaluation **Total Hours: 120**

Textbook:

1. Salvendry**,** Handbook of Human Factors and Ergonomics, Mosby, 1Ed, 2012

Reference:

1. Valevie, J Berg rice ergonomics in health care & rehabilitation, butter worth, 1998.

Discipline Specific Elective -II

23DMPT102 BASICS OF MEDICAL IMAGING & BIO INSTUMENTATION 3003

Course Objectives:

The objectives of this course is that after 90 hours of lectures & demonstrations, in addition to clinics, the student will be able to understand about medical imaging and bio instrumentation

Course outcomes: (Employability)

1. Knowledge about different views and assessing of X-ray gained.
2. Knowledge about various radiological imaging studies gained
3. Knowledge about various Magnetic Resonance Imaging gained
4. Knowledge about computed tomography studies gained.
5. Knowledge about ultrasonogram

UNIT I **20**

RADIOLOGY, RADIO DIAGNOSTICS & SONOGRAPHY

Introduction to Radiography: Radio Imaging and Radio Diagnostic:

- Dimension in radiography.
- Radio density.
- A roentgen.
- Analysis of image.
- Positioning, viewing of radiograph, film markers.
- Image quality factors: radiographic density, contrast, distortion, recorded results.

UNIT II **20**

- Common Imaging Studies:
- X Ray – spinal, skull, peripheral.
- Conventional topography.
- Computed tomography (CT).

UNIT III **20**

- Contrast enhanced radiography.
- Radio nucleide scan.
- Magnetic resonance Imaging with Spectroscopy.
- PET.
- Myelography.

UNIT IV **20**

- Nuclear Imaging.
- Pneumo encephalogram.
- EEG.

UNIT V **20**

- Ultrasonogram.
- ECG & Doppler studies.
- MUGA – Nuclear Test.

Evaluation **Total Hours: 100**

TEXT BOOKS:

A text book of MRI basic principle and applications – 5th edition – Brian M Dale

Discipline Specific Elective -III

23DMPT103 FOOD AND NUTRITION 3 0 0 3

Course objective:

The objective of this course is that after 100 hours of L,D,P the student shall be able to understand the basic knowledge about Diet, balanced diet, metabolism, malnutrition, under-nutrition, overnutrition, deficiency disease.

Course outcomes: (Employability)

1. Become familiar about the nutritive values of food.
2. Explain about the food sources from which we obtain vitamins.
3. Become familiar with various compositions of food.
4. Well versed with digestion at each stages of digestive system.
5. Become familiar with different cooking methodologies.
6. Know and explain about food preparations by food manufacturer.
7. Explain thoroughly about the advantages and disadvantages of various convenience foods.

UNIT I SOURCES OF FOOD 20

1) Nutritive value of foods,
2) Food Sources from which Key vitamins are derived

UNIT II DIGESTIVE SYSTEM 20

1. Digestion and absorption –Digestion at each stage of the digestive system
2. Dietary guidelines- Factors affecting food requirements. Meals for all ages and occupations. Meal plan for women's health.

UNIT III COMPOSITION OF FOOD 20

Composition and value of the main foods in the diet -

Milk, meat, fish, cheese, eggs, margarine and butter

cereals (wheat, rice, maize, millets, oats)

fruits and vegetables

UNIT IV PROCESSING OF FOOD 20

1. Cooking of food -Transfer of heat by conduction, convection and radiation, changes in food processing,
2. Role of processed food in space.
3. Life style management – Obesity, underweight and benefits of rotein food in lifestyle management

UNIT V FOOD PREPARATION 20

4. Convenience foods- Foods partly or totally prepared by a food manufacturer – dehydrated, tinned, frozen, ready to eat. Intelligent use of these foods.
5. Advantages and disadvantages.

Evaluation **Total Hours: 100**

Text Book:

1. Agarwal, Textbook of human nutrition, JP, 1 Ed, 2014
2. Food science, B Srilakshmi, 3 Ed

Reference:

1. Kenneth F. Kiple, KriemhildConeè Ornelas,The Cambridge world history of food,Cambridge University Press, Ist ed,2000

Discipline Specific Elective -IV

23DMPT104 ENGLISH FOR COMMUNICATION 3003

Course Objective:

At the end of 100 hours of lectures the student will be able to:

1. Speak fluently, intelligibly and appropriately to teachers, Colleagues, Doctors, Patients and friends at the college, Hospital and hostel etc. about academic or (occupational) areas of interest.
2. Develop flexibility in reading; improve speed and rate of comprehension while tackling textbooks or reference material.
3. Write official letters to the warden, principal and other officials in the bank, post office etc.
4. Write reports about patients care.
5. Overcome the common errors in pronunciation and grammatical and idiomatic usage.

Course outcomes:

1. Become fluent in speaking and enhance the ability to communicate effectively with colleagues, doctors, patients etc.
2. Well versed with comprehension skills and vocabulary enhancement.
3. Become familiar with writing various official letters, writing patients reports and summarise scientific sessions.
4. Understand about the grammatical and idiomatic usages.
5. Well versed with various methods of teaching by involving in group activities, role plays etc.
6. Gain knowledge about various methods of evaluation.

UNIT I SPOKEN COMMUNICATION 20

1. Learning to read the phonetic symbols
    1. Stress
    2. Intonation
    3. Rhythm
    4. Commonly mispronounced words
    5. Correct pronunciation of important commonly used words in clinical practice
    6. Note taking in lecture classes

UNIT II VOCABULARY AND READING 20

1. Special features of English vocabulary
    1. Common errors in choice of word
    2. Semi technical vocabulary
    3. Collecting material from library on scientific topics
    4. Comprehensive exercises

UNIT III WRITING 20

1. Writing letters regarding permission, Leave, opening bank account etc.
2. Note making from lecture / reading material
3. Writing reports on patient care
4. Summarizing scientific passages

UNIT IV GRAMMATICAL AND IDIOMATIC USAGE 20

1. Correction of errors
2. Types of interrogative sentences
3. Active – Passive voice
4. Tense
5. Principles of precision, Clarity and specificity

UNIT V 20

1. METHODS OF TEACHING

Lecture, pair work, group activities, role plays, simulations, debates, quiz, exercises and essay writing.

2. METHODS OF EVALUATION

Oral presentations
Panel Discussions
Summary/Essay writing
Comprehension exercises

Evaluation **Total Hours: 100**

Text books:

1. Bhaskar, W.W.S. and Prabhu, N.S, English through reading, Macmillan & Co of India Ltd, 4 Ed, 1993
2. Gimson A.E., An introduction to the pronunciation of English, Wing King Tong Co Ltd.5 Ed,1995
3. Randolph and Green Baum, A University Grammar of English ,Quick,Group (FE) Ltd.3Ed,1997
4. Thomson, A.J., And Martinel A.V.V - Practical English Grammar –.,Oxford University press, Delhi,2003

References:

1. Water F.V.A , Proficiency Course in English,Hodder and Stronghton Pub., London,1994
2. Tone Daniel, I.M. , English Pronouncing Dictionary,Dent and sons Ltd. London.2004
3. O’ Connor, I.D., Better English Pronunciation , Cambridge University.2009

Discipline Specific Elective -V

23DMPT105 COMPUTER & ITS APPLICATION IN PHYSIOTHERAPY 3003

Course objective:

The objective of this course is that after 100 hours of L,D,P the student shall be able to understand the basic knowledge about computer & its language, components, functions and networks

Course outcomes:

1. Able to explain various types of computers.
2. Become familiar with various aspects of computer.
3. Become familiar with various operating systems.
4. Know and explain about various aspects of looping.
5. Able to handle various computer applications.
6. Able to use effectively computer graphics and other computer applications for better understanding in the field of physiotherapy and clinical studies.

UNIT I INTRODUCTION TO COMPUTERS 20

Introduction to computers
Types of computers
Characteristics and Hardware aspects of computer.

UNIT II OPERATING SYSTEMS 20

Operating systems
Definition &Types of operating systems
MS DOS
UNIX
LINUX
Memories, RAM, ROM, Secondary Memory.

UNIT III LOOPING 20

Decision making and Looping
Which statement
Do statement
FOR statement Arrays
String handling functions
User defined functions.

UNIT IV COMPUTER PACKAGES 20

Computer packages
MS Office
MS word
MS Excel
MS PowerPoint
Advantages and uses.

UNIT VCOMPUTER NETWORKS & GRAPHICS 20

Introduction to computer networks – Definition LAN, WAN advantage of Internet – worldwide web.

Computer Graphics: Definition – display devices – graphical input and output devices – multimedia – definition and application – computer applications in physiotherapy and clinical studies.

PRACTICALS

Exercises based on the following are to be dealt:

1. Computer operating systems like UNIX, MS-DOS etc.
2. Simple program In C.
3. MS-Office (MS-Word, MS-Excel, MS-Access, MS-PowerPoint)

Evaluation

Total Hours: 100

Text Books:

1. C.NellaiKarunan, MS Office, CBS,4th Ed, 2006

2. Hunt N and Shelly J., Computers and commonsense, Prentice - hall of India New Delhi,2011

References:

1. E.Balaguruswamy – Programming in ANSI –C Tata Mc.Graw Hill-1997

2. Byron Gottfield – Programming with C, Prentice - hall of India,2nd Ed, 2000

3. Popst and Perrum, computer aided drug design, Academic press New york.1999

4. Writh, systematic programming- an introduction, Prentice Pub,3rd Ed,2005

5. Tanen Baum, Computer networks,2 Ed, 2012

6. Rajaraman,Computer Graphics, McGraw Hill, 6 Ed, 2009

Discipline Specific Elective -VI

23DMPT106 APPLIED PHYSICS 3003

Course objective:

The objective of this course is that after 100 hours of L,D,P the student shall be able to understand the basic knowledge about the forces acting in human body, gravity, electricity and magnetism.

Course outcomes:

1. Students will know about the human body functions applied by the force gravity
2. Recognize how observation, experiment & theory work together to continue to expand the frontiers of knowledge of the physical universe
3. Analyze interpret and evaluate scientific hypotheses and theories , laws using rigorous methods
4. Students can understand the basic scientific principles, theories & laws as was as an awareness of the changing nature of science
5. Students aid gain knowledge about the current elasticity to differentiate the mode of transmission

UNIT – I INTRODUCTION 20

1. Forces in human body
2. Gravity, LOG, COG
3. Levers of the body
4. Anatomical pulleys
5. Body torque
6. Types of motion, Planes of motion, Axis, Direction and quality of motion

UNIT – II MUSCLES 20

1. Elasticity- Hook's law.
2. Stress / strain curve
3. Angle of pull & the mechanical efficiency of muscle
4. Types of muscle work

UNIT – III HYDROTHERAPY AND HEAT 20

1.Laws of hydrotherapy & its application
2.Heat & its application

UNIT – IV **ELECTRICITY** **20**

1.Static electricity
2.Current electricity
3.Working & importance of current in clinical practice
4.Electro Magnetic spectrum

UNIT – V **MAGNETISM** **20**

1.Definition
2.Properties of magnets
3. Electromagnetic induction
4.Magnetic forces and field

Text Books:

1. Claytons , Electrotherapy Explained – CBS, 9 Ed, 2013
2. John Low and Anee Reed , Electrotherapy Explained –, Butterworth Heinmann pub, 1Ed, 2000

Reference:

1. Dena Gardiner, Principles of Exercise therapy, Bell and Hymes, 4th Ed, 1981.

Generic Elective Courses

Generic Elective Courses I

23GMPT151 WOMEN'S HEALTH AND CHILD CARE 3003

The objectives of this course is that after 200 hours of lectures & demonstrations, in addition to clinics, the student will be able to understand about clinical gynaecological and obstetric conditions.

Course outcomes:

1. Knowledge about growth and development of the fetus and female reproductive system.
2. Knowledge of breastfeeding and lactation issues.
3. Knowledge of antenatal and postnatal physiotherapy interventions.
4. Knowledge of physiotherapy management in gynecological conditions.
5. Knowledge of physiotherapy management in postsurgical gynecological and obstetric conditions.

UNIT I **20**

1. Anatomy & Physiology of female reproductive organs
2. Puberty & Menarche.
3. Physical and physiological changes during pregnancy.

UNIT II **20**

1. Antenatal education.
2. Antenatal discomforts and its management.
3. Exercise in pregnancy.
4. Mechanism of Labour& its complication
5. Types of delivery, its complications and its management.

UNIT III **20**

1. Postnatal exercise.
2. Postnatal complications and its management including management of scars.
3. Episiotomy and its wound care.
4. Post operative care in gynecological surgery.
5. Breast engorgement.

UNIT IV **20**

1. Gynaecological disorder & its PT Management
   a) Infective conditions
   b) Back ache & abdominal pain
   c) displacement & Genital prolapse

2. Post menopause problem & its Management.
3. Urinary dysfunction – Physiotherapy management.
4. Lymph oedema& Role of Physiotherapy.

UNIT V **20**

1. Baby massage and stretches.
2. Nutrition for toddler.
3. Breast feeding positions.
4. Complimentary diet for infant.

Evaluation **Total Hours: 100**

Text books:

1. Margaret polden, Jill Mantle, Physiotherapy in Obstetrics and Gynecology –Jaypee Brothers, 1st Edition – 2007.
2. Carolyn kisner, therapeutic exercise – foundation & techniques, Jaypee, 6th edition-2012.

References:

1. D.C. Dutta, textbook of obstetrics, central – 2004.
2. G.B. Madhuri, textbook of physiotherapy for OBG, Jaypee 1st edition – 2007.
3. Patricia Downie, Cash's Text Book of General Medical and Surgical Conditions for physiotherapists, Editor Jaypee Brothers, 2nd Edition,1994
4. Cesarean Section – Therapeutic Exercise – Carolyn Kisner, Lynn Allen Colby.
5. Jean M. Irion, Glenn L. Irion, Wom

Generic Elective Courses II

23GMPT152 COMMUNITY BASED PHYSIOTHERAPY 3003

Course Objective:

The objective of the course is that after 90 hours of lectures, demonstrations, practical and clinics, the student will be able to demonstrate and understanding of the influence of social and environmental factors of individual and society.

Course Outcome:

1. Epidemiological implications of impairment and handicap and disability, health statistics
2. National health schemes and its benefits.
3. Immunization programmes – malnutrition and early detection of disabling conditions and Intervention.
4. Categorizes various rehabilitations and describes its advantages and disadvantages.
5. Explains about communicable and non communicable diseases and its implications.
6. Influence of nutritional factors on disability.

UNIT I **20**

1. Outline the Concept of Disease, Concept of Causation and Natural history of diseases.
2. Spectrum of Disease – Iceberg of Disease
3. Prevention methods for Disease with disability
4. Population studies and epidemiological implications of Impairment and Handicap.

UNIT II **20**

1. Disability, health statistics.
2. Health administration - management concept as applied to physiotherapy.
3. Health and fitness, Environmental health physiotherapy as a drugless system. Public
4. Health education methods of Communications.

UNIT III **20**

1. Child-care – prevention and social medicine.
2. National health programmes and Immunization programmes
3. Maternal care Antenatal and Postnatal physiotherapy
4. Educated children, postnatal complications and prevention of postural defects, fitness Programme.

UNIT IV **20**

1. Industrial physiotherapy – prevention of Repetitive strain injuries, physiological restoration, rehabilitation
   in industrial injuries.
2. Psychosomatic approaches in management of stress disorders.

3. Changes in life style to reduce risk factors for disability, Drug dependence and iatrogenic
disorders.

UNIT V **20**

1. Community based Rehabilitation.
2. Nutrition and diet.
3. Care of the aged, geriatric physiotherapy, life span yoga.

Evaluation Total Hours: 120

Text Books:

1. Park's Text Book of preventive and Social Medicine – K Park, 24TH ED, BDB Publishers,2017.

Generic Elective Courses III

23GMPT153 CLINICAL DIAGNOSIS 3 0 0 3

Course objective: (Employability)

The objective of this course is that after 100 hours of the student shall be able to understand the basic knowledge about Clinical diagnosing Orthopaedic,Neurologicaland Cardio-respiratory Conditions.

Course Outcomes:

1. To be well versed in diagnostic procedure of fracture, dislocation, injuries, and deformities
2. To Clearly understand the diagnosis of stroke, myopathies, Parkinson's, and demyelinating disorders
3. To be well versed in diagnosis of congenital heart disease, arrythmias, and cardiomyopathies
4. To understand the diagnosis of pulmonary conditions
5. To understand the clinical diagnosis of urinary incontinence, ante natal and post-natal complication.

UNIT I CLINICAL DIAGNOSIS OF ORTHOPAEDIC CONDITIONS 20

1. Fracture
2. Dislocation
3. Congenital disorders
4. Deformities
5. Trauma & injury
6. Orthopedic disabilities arising due to neurological conditions

UNIT II CLINICAL DIAGNOSIS OF NEUROLOGICAL CONDITIONS 20

1. Stroke
2. Brain tumors
3. Myopathies
4. Parkinson
5. Cerebellar dysfunction
6. Epilepsy
7. Demyelinating disorders

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UNIT III CLINICAL DIAGNOSIS OF CARDIAC CONDITIONS 20

1. Congenital heart diseases
2. Circulatory disorders
3. Arrhythmias
4. Cardiomyopathies
5. Myocardial infraction

UNIT IV CLINICAL DIAGNOSIS OF RESPIRATORY CONDITIONS 20

1. Abnormal breathing patterns
2. Chronic Obstructive Pulmonary Disease
3. Occupational lung diseases
4. Restrictive Lung diseases
5. Tuberculosis& Tumors

UNIT V CLINICAL DIAGNOSIS OF OBG CONDITIONS 20

1. Prolapse of uterus
2. Hernia
3. Mastectomy
4. Antenatal and Post- natal complications
5. Diastasis recti
6. Urinary incontinence

Total Hours:100

Text Book:

1. Davidson,A Text Book of Medicine, Churchill Livingston, 21 st Ed, 2010.
2. Susan B'O' Sullivan, Physical rehabilitation, Jaypee, 6th ed. – 2014
3. Madhuri , Text book of physiotherapy for cardiothoracic surgery condition ,CBS, 1sted, 2008.
4. Margaret polden, Jill Mantle, Physiotherapy in Obstetrics and Gynecology –Jaypee Brothers, 1st Edition – 2007.

Reference:

1. Magee, Texbook of orthopaedics, ELBS, 7Ed, 2002

Generic Elective Courses IV

23GMPT154 APPLIED CHEMISTRY 3 0 0 3

Course objective:

The objective of this course is that after 100 hours of L,D,P the student shall be able to understand the basic knowledge about the ATP production, energy source & body and other biochemical activity / changes that occur in our body.

Course outcomes:

1. Student will know about the energy source that invalid in human body
5. Student will know about the acidic reaction & mechanism
6. They will know about the metabolism of the body and how the process occur
7. Student will know about the nutrition and the deficiency
8. Student will know about the clinical tester to identify the internal function of the organs
9. Student will know how the chemical reaction occur in our human body

UNIT – I INTRODUCTION 20

1. Energy source of body
2. Carbohydrates
3. Protein
4. Fat

UNIT – II ENERGY SYSTEMS 20

1. ATP Production
2. Aerobic & Anaerobic Metabolism
3. .Lactic acid production
4. Lactic acid clearance mechanism

UNIT – III METABOLISM 20

1. Protein metabolism – Digestion, absorption, Urea cycle
2. Carbohydrate metabolism
3. Fat metabolism

UNIT – IV **NUTRITION** **20**

1. Composition of food
2. Balanced diet
3. Nutritional deficiency disorders
4. Major dietary constituent & their importance

UNIT – V **CLINICAL BIOCHEMISTRY** **20**

1. Metabolic equivalence
2. Types of energy expenditure
3. Liver function test
4. Renal function test
5. Lipid profile in serum

Total Hours:100

Text Book:

1. B.E. Deb, Basics in Bio chemistry – JP, 2Ed, 1997

Reference:

2. Chatterjee, Text book of medical biochemistry, JP, 8 Ed, 2012

Generic Elective Courses V

23GMPT155 HOSPITAL MANAGEMENT 3 0 0 3

Course objective:

Students can explore public policy, community relations, human resource management, hospital finance, fundraising, physician relations and collective bargaining after completing 100 hrs of lecture.

Course Outcomes:

1. To understand the concept of principles of management
2. To be wellversed in the types of management
3. To clearly explain the research methods for management
4. To be wellversed in Hospital Architecture, planning and Design
5. To understand the concept of materials management
6. To be wellversed in Ethics and laws in Hospital management

UNIT I PRINCIPLES OF MANAGEMENT 20

1. Principles of Management
2. Organizational Behaviour

UNIT II TYPES OF MANAGEMENT 20

1. Accounting and Finance for Managers
2. Marketing Management
3. Human Resource Management
4. Quantitative Techniques for Management

UNIT III IMPORTANCE OF MANAGEMENT 20

1. Research Methods for Management
2. Corporate Communication
3. Operations Management

UNIT IV HOSPITAL MANAGEMENT 20

1. Hospital Architecture, Planning And Design
2. Materials Management
3. Hospital Operation – I (Patient Care)
4. Hospital Operation – II (Supportive Services)

UNIT V ETHICS & LAWS IN HOSPITAL MANAGEMENT 20

1. Bio-Sciences & Epidemiology
2. Hospital Information System
3. Health Laws & Policies
4. Hospital Environment and Ethics

Total Hours:100

Textbook:

1. Wallace J. Hopp , Hospital Operations: Principles of High Efficiency Health Care, Pearson higher education Publication, 2nd Ed,2012

Reference:

1. Goyal&Sharma,Hospital Administration and Human Resource Management,PHI Publisher,2013