

**KERALA UNIVERSITY OF HEALTH SCIENCES**

**M.P.T SYLLABUS**

**CURRICULUM OF MASTER OF PHYSIOTHERAPY COURSE  
(2 YEARS)**

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## ***1. SHORT TITLE AND COMMENCEMENT***

These regulations shall be called “**THE REGULATIONS FOR THE MPT POST GRADUATE PHYSIOTHERAPY SPECIALITY DEGREE COURSE OF KERALA UNIVERSITY OF HEALTH SCIENCES**”.

These regulations shall come into force from the academic year 2010-2011. The Regulations and the Syllabi are as prescribed under these regulations and are subject to modification by the Standing Academic Board from time to time.

## ***2. AIM AND OBJECTIVES***

### **Aim:**

The Master of Physiotherapy Program is directed towards rendering training in the respective Physiotherapy Speciality so as to enhance individual competence in order to fulfill requirement and to meet the global standards of Physiotherapy education and practice.

### **Objectives:**

- 1.** To gain in knowledge of the human body related Basic Medical and Physiotherapeutic sciences relevant to the concerned specialties.
- 2.** To gain in knowledge of movement dysfunction of human body and evidence based Physiotherapeutic management for movement dysfunction.
- 3.** To develop skills in Physiotherapy assessment pertaining to their speciality by relevant current physiotherapeutic concepts.
- 4.** To plan and implement appropriate Physiotherapeutic intervention for all clinical conditions related to respective speciality in acute and chronic phases, critical care, indoor and outdoor institutional care and independent practice.
- 5.** To develop skills as a self-directed learner, recognize continuous education needs, select and use appropriate learning resources.
- 6.** To develop ability to teach post graduate and undergraduate Physiotherapy students.

7. To demonstrate managerial, administrative skills and legislation applicable to compensation for functional disability and appropriate certification.
8. Acquainting a student with concept of quality of care at the institutional as well as the community levels.

### ***3. SPECIALITIES OFFERED:***

Candidates shall be examined in one of the following Specialty branches.

#### **M.P.T**

Branch I Physiotherapy in Musculo-skeletal and Sports

Branch II Physiotherapy in Neurology

Branch III Physiotherapy in Cardio - Respiratory

Branch IV Physiotherapy in Pediatrics

### ***4. COURSE OUTLINE***

The Masters Degree in Physiotherapy is a two year program consisting of classroom teaching, self academic activities and clinical postings. In the first year theoretical basis of fundamental Physiotherapy subjects are refreshed. In the second year, the students learn on the clinical conditions, physiotherapy assessment and advanced techniques in their specialty. During these two years, the students will be posted in their area of specialty. The learning program includes seminars, journal reviews, case presentations, case discussions and classroom teaching. Some of the clinical postings are provided at other reputed centers in the country in order to offer a wider spectrum of experience. The students are encouraged to attend conference and workshop to enhance their knowledge during their entire course of the study. University examinations are held at the end of first and second year. To fulfill their course completion, the students are required to complete and submit their dissertation.

## ***5. ELIGIBILITY***

Candidates admitted into the Master in Physiotherapy course should have passed the BPT degree examination of this university or an examination of any other university accepted by the authority of this university as equivalent thereto.

## ***6. UPPER AGE LIMIT:***

There is no upper age limit.

## ***7. FITNESS CERTIFICATE***

Every candidate before admission to the course shall submit to the principal of the institution a certificate of medical fitness from an authorized medical officer that the candidate is physically fit to undergo the M.P.T course and does not suffer from any contagious disease. Student with disability should produce the disability certificate issued by the duly constituted district medical board.

## ***8. INTAKE OF STUDENTS***

The intake of students to the course shall be in accordance with the ordinance in this behalf. The guide student ratio should be 1:2

## ***9. REGISTRATION***

A candidate admitted to the course in any of the affiliated institutions of **KERALA UNIVERSITY OF HEALTH SCIENCES** shall register with the university by remitting the prescribed fees along with the application form for registration duly filled in and forwarded to the controller of examination of this university through the head of the affiliated institutions within the stipulated date.

## ***10. DURATION OF THE COURSE***

The period of certified study for Master in Physiotherapy shall be a full time course and its duration shall extend over a period of two academic years for the award of the degree.

### ***11. MEDIUM OF INSTRUCTION***

English will be the medium of instruction for the subjects of study and for the examination of the MPT course.

### ***12. COMMENCEMENT OF THE COURSE***

The course will commence from September 1<sup>st</sup> of every year.

### ***13. CUT OFF DATE FOR ADMISSION***

Last date of Admission to Master in Physiotherapy is \*\*\*\*\* of each year

### ***14. WORKING DAYS IN AN ACADEMIC YEAR***

Each academic year shall consist if not less than 250 working days.

### ***15. METHODS OF TRAINING***

Post graduate students shall be trained to acquire responsibilities in the management of patients with ethical standards of practice. They will be made to actively involve themselves in seminars, case presentations, journal review meetings and clinical discussions with reflective practice. Every candidate will be given training in teaching of under graduate students. They are specially trained to perform research activities in their speciality.

### ***16. MONITORING THE PROGRESS OF STUDIES***

#### **a) Maintenance of Log Book**

Every post graduate shall maintain a record of skills (Log book) he/she has acquired during the two years training period certified by the various heads of the department where he/she has undergone training. The candidate is also required to

participate in the teaching and training program for the Undergraduate students. In addition the Head of the department shall involve the post graduate students in seminars and journal, group discussions and participation in conferences. The Head of the department shall scrutinize the log book once in every three months. At the end of the course, the candidate should summarize the contents and get the log book certified by the Head of the department.

**b) Model checklist are given in the appendix 1 to 7 at the end of the syllabus for reference.**

**c) INTERNAL ASSESSMENT EXAMINATION:**

The continuing internal assessment examinations in theory and practical/clinical may be held at least twice in a particular year followed by a model examination in the pattern of university examination to be held at the end of the year of study. Internal assessment marks for a candidate in a subject will be calculated as the average of, the marks obtained in the model examination and the highest among all other internal examinations, in the subject. This average mark will be reported to the University. The Heads of the Department and College Principal should ensure that the class average of internal assessment marks reported to the University in each subject/paper is not more than 75% in both theory and practical/clinical separately. For a student to be eligible to appear for the University examination he/she should have secured at least 40% of the maximum marks in internal assessment for both theory and practical/clinical in all subjects/papers, separately (i.e. minimum 10/25 in theory and 8/20 in practical/clinical) .

**17. ATTENDANCE REQUIREMENTS FOR ADMISSION TO EXAMINATION**

No candidate shall be permitted to appear for the examination unless he/she puts in 80% attendance during his/her period of study and training in the affiliated institutions recognized by this university and produces the necessary certificates of

study attendance and progress from head of institution. If the candidate do not acquire the required attendance, he should repeat the course with prior permission of university within a period of 3 years.

## 18. CONDONATION OF ATTENDANCE

There shall be no Condonation of attendance in post graduate courses.

## 19. SCHEME OF EXAMINATIONS

The scheme of examination for m.p.t. Course shall be divided into 1st m.p.t. examination at the end of the first, 2nd m.p.t. examination at the end of second year. The examination shall be open to a candidate who satisfies the requirements of attendance, progress and other rules governing the institution/University. Attendance and application form for examination of only eligible students should be sent to University from the college. The University examination for a subject shall be conducted twice in a year at an interval of not less than four to six months as notified by the university from time to time.

YE AR	SUBJECT	THEORY		THEORY INTERNAL		PRACTICAL		VIVA		PRACTICAL INTERNAL		TOTAL	
		Max Mar ks	Passi ng Mark s	Ma x. Ma rks	Passin g Marks	Max Mar ks	Passin g Marks	Max. Mar ks	Passi ng Mar ks	Max. Mark s	Passi ng Mark s	Max. Mar ks	Passi ng Mar ks
I	<b>Paper I</b> Basic Sciences	100	50	20	8	***	***	***	***	***	***	120	60
	<b>Paper II</b> Research Methodolog y and Biostatistics	100	50	20	8	***	***	***	***	***	***	120	60
	<b>Paper III</b> Physical Rehabilitation	100	50	25	***	100	50	50	***	25	**	300	150
	<b>INTERNAL PAPER MANAGEM ENT, EDUCATIO N AND ETHICS</b>	100	50	***	***	***	***	***	***	***	***	100	50

<b>II</b>	<b>Paper V</b> Advance physiothera py & Evidence- Based Practice	100	50	20	8	***	***	***	***	***	***	300	150
	<b>Paper VI</b> Specialty Paper	100	50	25		100	50	50	***	25		300	150
	<b>Paper VII</b> Dissertation	APPROVED / NOT APPROVED				***		100	50	***		100	50

### **A. Scheme of theory examination**

**Maximum marks: 100 (No choice)**

Duration: 3 Hours

1. Five essay question with 20 mark each (no choice) 5x20= 100

### **B. Scheme of practical examinations**

#### **I YEAR (General)**

#### **PRACTICAL AND VIVA – Physical Rehabilitation**

- One long case - 100 marks
- One short case - 40 marks
- Viva - 50 marks

#### **II YEAR (Speciality)**

#### **a) PRACTICAL AND VIVA – ADVANCED PHYSIOTHERAPY MANAGEMENT, MANUAL THERAPY AND EVIDENCE-BASED PRACTICE**

(Practical exam is emphasized only on Physiotherapy Assessment  
Physiotherapy Interventions)

- One long case - 60 marks
- One short case - 40 marks
- Viva - 50 marks

**b) PRACTICAL AND VIVA – SPECIALITY PAPER**

(Practical exam is emphasized only on Physiotherapy Assessment  
Physiotherapy Interventions)

- One long case - 60 marks
- One short case - 40 marks
- Viva - 50 marks

**C. Dissertation**

- Approved or Not Approved
- Viva – 100 Marks

**21. CRITERIA FOR QUESTION PAPER SETTING/ ANSWER SHEET EVALUATION**

**a) CRITERIA FOR QUESTION PAPER SETTER/ ANSWER SHEET EVALUATOR**

**I YEAR (General)**

For all theory subjects, the question paper setter/ answer sheet evaluator must have a minimum of 5 years of post graduate teaching experience after completion of Master of Physiotherapy or Master in Concerned Specialty.

**b) DISTRIBUTION OF THEORY MARKS FOR EACH SUBJECT**

YEAR	PAPER	SUBJECTS		DISTRIBUTION OF MARKS	TOTAL MARKS
<b>I</b>	<b>Paper I</b> Basic Sciences	1	Biomechanics, Kinesiology and Pathomechanics	40	100
		2	Ergonomics	20	
		3	Nutrition, Exercise Physiology and Work Physiology. Electro physiology	40	
	<b>Paper II</b> Research Methodology and Biostatistics	1	Research Methodology	50	100
		2	Biostatistics	50	
	<b>Paper III</b> Physical rehabilitation			40	100
				30	
				30	
<b>II</b>	<b>Paper I V</b> Advanced Physiotherapy Management, Manual Therapy and Evidence-Based Practice	1	Advanced Physiotherapy Management	35	100
		2	Manual Therapy	35	
		3	Evidence-Based Practice	30	
	<b>Paper V</b> Specialty Paper	1	Clinical condition	25	100
		2	Physiotherapy assessment	25	
		3	Foundational concepts and condition, management	25	
		4	Special techniques	25	

### **c) PREPARATION OF ANSWER KEY**

For each question, the question paper setter must prepare the relevant answer key with the main content of the answer and the split up of marks for each and every contents of the answer with the appropriate references.

## **22. CRITERIA FOR EXAMINERS**

### **I YEAR (General)**

For the practical subject in the first year, there shall be 2 examiners. External examiner with minimum of 5 years of post graduate teaching experience after completion of Master of Physiotherapy. Internal examiner from the same college with post graduate degree.

### **II YEAR (Specialty)**

For all practical subjects in the second year, there shall be 2 examiners. One internal examiner will be, preferably from the same college or as decided by the university with master of physiotherapy with concerned specialty . The other external examiner shall be from concerned specialty with 5 years post graduate teaching experience.

## **24. DISSERTATION**

Every candidate presenting himself for the examination for the first time shall submit four copies of a dissertation not exceeding 2500 words consisting if the result of his own study of important investigation carried out by him under the guidance of a recognized faculty together with a review of recent advances pertinent to that theme.

The topic of the dissertation should be submitted at end of the first month of second year. The candidate should also inform the name of the guide for the dissertation to the University while submitting the dissertation topic.

If any changes in the dissertation topic, the same has to be informed before at the end of the third month of second year.

The dissertation should be submitted six months in advance duly signed by the professor of that branch and the same has to be forwarded to the controller of examination through the dean or principal of the college six months prior to the Examination without which he or she shall not be permitted to appear for the second year examination .The subject of study should be related to the area of specialization and decided in consultation with the guide.

A maximum marks of 100 will be awarded for dissertation. The thesis has to be accepted by the appointed examiners as partial fulfillment for award of the MPT degree. The board of examiner should mark the dissertation either approved or not approved.

If the dissertation is not approved or rejected by the majority of the examiners, the result shall be withheld till the resubmitted dissertation is approved. If the candidates fail in the written/practical examination, but his/her dissertations approved, the approval of the dissertation shall be carried over to the subsequent Examinations.

**Criteria for recognition of MPT teacher/ guide** - MPT with three years of post graduate teaching experience working on a full time position at a recognized institution. The age of guide / teacher shall not exceed 62 years. The guide student ratio should be 1:2.

**Change of Guide** - In the event of registered guide leaving the college for any reason or in the event of death of guide, guide may be changed with prior permission from the University.

The dissertation should be written under the following headings

1. Introduction
2. Aims or objectives of Study
3. Review of Literature
4. Methodology
5. Data Analysis
6. Results
7. Discussion
8. Conclusion
9. References
10. Appendices

## **25. CLASSIFICATION OF SUCCESSFUL CANDIDATES**

Candidates who secure not less than 75% in aggregate in any subject gets distinction in that particular subject provided he/ she passes the whole examination in the first attempt.

Candidates who pass the examination at the first appearance obtaining not less than 60% but below 75% of the aggregate marks shall be declared to have passed the examination in the first class.

Candidates who pass the examination at the first appearance obtaining not less than 50% but below 60% of aggregate marks shall be declared to have passed the examination in the second class.

## **26. REVALUATION OF ANSWER PAPERS**

There shall be no revaluation of answer papers of failed candidates in the Postgraduate examination.

## **27. NUMBER OF APPEARANCES**

A candidate registered for 2 years post graduate degree course should qualify in the examination within four years of date of admission.

## **28. MIGRATION / TRANSFER OF CANDIDATE**

Request for transfer during the course of study will not be entertained under any Circumstances

## **29. RE- ADMISSION AFTER BREAK OF STUDY**

- a) Candidates having a break of study of 5 years and above from the date of admission and more than 2 spells of admission of break will not be considered for re admission.
- b) The five year period of break of study shall be calculated from the date of admission to the first discontinuation of the course by candidate.

A candidate having a break of study shall be readmitted after satisfactory fulfillment of regulation of the university at the commencement of an academic year only and shall undergo the full duration of the course with no exemption in period of study and will be permitted to appear for the examinations as prescribed in regulations

# COURSE CURRICULUM, CREDIT HOURS AND DURATION

## I YEAR

SI	Subject	Hours		Total
		Theory	Practical	
I	Basic Sciences	280	-	280
II	Research Methodology, Biostatistics	100	-	100
III	Physical Rehabilitation Non-university paper Management, Education and Ethics	120  100	200  -	320  100
	Seminar, Journals clubs, Case Presentations, Teaching skills, field works etc...		200	200
	Clinical postings	-	600	600

## II YEAR

SI	Subject	Hours		Total
		Theory	Practical	
V	Advanced Physiotherapy Management, & Evidence-Based Practice	150	250	400
VI	Speciality Paper	200	200	400
	Clinical Postings and dissertations		- 800	800

## **30. COURSE CONTENT AND STRUCTURE**

### **PAPER I**

#### **BASIC SCIENCES**

This paper consists of 3 Modules:

- I. Biomechanics and Pathomechanics
- II. Ergonomics
- III. Nutrition and Exercise Physiology
- IV Electro physiology

#### **Module I Biomechanics and Pathomechanics**

##### **Part I Foundational concepts in Bio and Pathomechanics**

###### **Unit:**

1. Basic concepts in biomechanics
2. Biomechanics of tissues and structures of the musculoskeletal system
  - Bone
  - Articular cartilage
  - Tendons and ligaments
  - Peripheral nerves
  - Skeletal muscle
3. Functional adaptation of bone under pathological conditions
4. Mechanics of joint and muscle action
5. Body balance and equilibrium

##### **Part II Biomechanics and Pathomechanics of joints**

**Unit:**

1. Upper extremity
2. Lower extremity
3. Vertebral column
4. Thorax and chest wall
5. Temporal mandible joint

**Part III Biomechanics of integrated function****Unit:**

1. Gait
2. Posture
3. Arm as a whole

**Recommended books:**

1. Basic biomechanics of the musculoskeletal system by Margareta Nordin and Victor H. Frankle, 2nd edition ( Lea and Febiger)
2. Kinesiology of the Human Body: Under Normal and pathological condition by Arthur Steindler, 5th edition (Charles C Thomas, 1977)
3. Joint Structure & Function :A comprehensive analysis by Cynthia C Norkin, Pamela K Levangie (Jaypee Brothers, 2006)
4. Brunnstrom's Clinical Kinesiology by Laura K. Smith & Don Lehmkuh, 5th edition (F A Davis, 1996)
5. The Physiology of the Joints by Kapandji & Matthew J Kendel (Churchill Livingstone, 2008)
6. Clinical Biomechanics of the Spine by Augustus A White & Manohar M Panjabi, 2<sup>nd</sup> Edition (Lippincott Williams & Wilkins; 1990)
7. Kinesiology :The mechanics and Pathomechanics of Human Movement by Carol Oatis (Lippincott Williams & Wilkins; 2008)
8. Kinesiology: Application to pathological motion by Soderberg, 2nd Edition (Wiliams & Wilkins, 1997)

## **Module II Ergonomics**

### **Unit**

1. History of ergonomics
2. Worker care spectrum
3. Functional assessment
4. Weighted capabilities
5. Participation level
6. Postural examination
7. Job analysis
8. Work hardening programme
9. Exit assessment
10. Pre-employment screening
  - Job analysis
  - Job task analysis
  - Job site analysis
11. Work capacity analysis
12. Role of Physiotherapy in industrial set up
13. Workers functional capacity assessment
14. Industrial therapy
15. Educational programme for prevention of injury
16. Adult education
17. Injury prevention and ergonomics

### **Recommended books**

1. **Industrial Therapy** by Glenda L. Key, 1st Edition (Mosby)

## **Module III Nutrition and Exercise physiology**

## **Part I Basic Exercise Physiology**

### **Unit**

1. Introduction to exercise physiology
2. Nutrition and Performance
3. Energy transfer
4. Measurement of human energy expenditure
5. Systems of energy delivery and utilization
  - Pulmonary system
  - Cardiovascular system
  - Musculoskeletal
  - Nervous System
  - Endocrine system

## **Part II Applied Exercise Physiology**

### **Unit**

1. Aerobic power training
2. Anaerobic power training
3. Special aids in performance and conditioning
4. Exercise at different altitudes
5. Exercise at various climatic conditions
6. Sport diving
7. Obesity and weight control
8. Exercise and aging
9. Clinical exercise physiology

## **Recommended Books**

1. **Exercise Physiology** by Mc Ardle, Katch & Katch (Lippincott Williams and Wilkins, 2000)
2. **Exercise Physiology: Exercise, Performance, and Clinical Applications** by Robert A. Roberts and Scott O Roberts William C Brown, 1997)
3. **Clinical Exercise Testing and Prescription Theory and Applications** by Scott O. Roberts, Peter Hanson (C RC Press, 1997)

## **ELECTROPHYSIOLOGY**

1. Characteristics and components of Electro therapeutic stimulation systems and Electro physiological assessment devices.
2. Instrumentation for neuromuscular electrical stimulation.
3. Anatomy and physiology of peripheral nerve, muscle and neuromuscular junction.
4. Electrical properties of muscle and nerve.
5. Muscles plasticity in response to electrical stimulation.
6. Electrical stimulation and its effects on various systems.
7. Clinical Electro physiological testing.

## **Recommended Books**

Manual of nerve condition velocity techniques – De Lisa, Raven press, New York, 1982  
Electrodiagnosis in diseases of nerve and muscle – Kimura J, F.A Davis, Philadelphia

## **PAPER II**

### **RESEARCH METHODOLOGY AND BIOSTATISTICS**

#### **Module I Research Methodology**

##### **Part I Research Process and Methods**

**Unit:**

1. Overview services and scientific methods.
2. Steps on the research process.
3. Selection and statement of problem.
4. Formulation of hypothesis.
5. Basic principles and methods of research designs.
6. Data collection methods, scales and techniques of psychological measures.
7. Reliability, validity and criteria for assessing and measuring the tools.
8. Analysis and interpretation of research data.
9. Role of computers.
10. Pilot study.
11. Critique of PT students.
12. Historical.
13. Instruments and tools.
14. PT education.
15. Administration.
16. PT practice.

**Part II Practical Application in Research Process****Unit:**

1. Selection and statement of problem and hypothesis.
2. Review of literature.
3. Selection of research approach.
4. Selection of data gathering and developing the data gathering instruments.
5. Developing the data analysis plan.
6. Selection of sample.
7. Identifying the assumption and limitations of the study.
8. Designing the data-gathering plan.
9. Pilot study.
10. Conducting the study .
11. Implementing the data-gathering plan.
12. Implementing the analysis plan.

13. Preparing the research report.
14. Mechanics/writing the report.
15. Documentation.
16. The details of the study.
17. Arrangement of report.

## **Module II Biostatistics**

### **Part I Introduction**

#### **Unit:**

1. Uses of statistics data.
2. Measurement, Measurement scales, variable and their measurement.
3. Symbolizing data and operations.
4. Statistical data.
5. Tabulation.
6. Calculation of central tendency and dispersion.
7. Linear regression and correlation.
8. Presentation of data in diagrammatic and graphical form.

### **Part II Probability and Sampling**

#### **Unit:**

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

### **Part III Vital and Health Statistics**

#### **Unit:**

1. Point and interval estimation for proportion mean.
2. Hypothesis testing, simple test of significance.
3. Inferential technique: normal

## **VITAL AND HEALTH STATISTICS – USE OF VITAL STATISTICS IN THE PRACTICE OF PT**

1. Sources and methods of collection and recording
2. Interpretation of commonly used vital and health statistics and estimate population using Arithmetic progression method.

### **PAPER III**

#### **Physical rehabilitation**

##### **Course objective**

1. Make clinical decision and plan for effective treatment.
2. Evaluate and analyse the physiological aspects of physical rehabilitation.
3. Identify and recognize the importance of monitoring vital signs .
4. plan strategies for management of various musculoskeletal neurological ,cardio pulmonary problem and in various medical surgical conditions.

##### **Course content**

1. Clinical decision making-planning effective treatment
  - a. Collection and documentation of data
  - b. Analysis of data and identifying the problems
  - c. Setting of goals
  - d. formulation and implementation of treatment plan including evaluation of treatment outcome
  - e. Clinical decision making models
  - f. Foundation for clinical decision making
2. Overview of psychological aspects of physical rehabilitation

- a. Disability adjustment, Reaction to injury ,subjectivity of disability and adjustment, stress in disease.
- b. role theory ,stages of adjustment ,emotional complications and emotional functioning
- c. overview of psychological and social adjustment to illness

### 3. Vital signs

- Identification of reasons for monitoring vital signs;
- importance of monitoring vital signs;
- common techniques of monitoring vital signs;
- identification and analysis of normal values with that of abnormal values.

### 4. Evaluation assessment and treatment planning strategies for musculoskeletal problems:

Principles of evaluation , clinical manifestations, general and specific musculoskeletal clinical examination .

### 5. Treatment goals and strategies

#### 6. (a) Gait Analysis

Overview of normal gait analysis :kinetic and kinematic analysis; the reliability and validity of gait analysis; Description of some of the most commonly used types of observational gait analysis; Advantages and disadvantages of kinematic qualitative and kinematic quantitative gait analysis.

#### (b) Gait training;

Pre ambulation programme;assistive devices and gait patterns.

7. Evaluation and management of amputee; overview of amputation surgery which includes concepts pre operative , post operative,pre fitting ,post fitting physiotherapy.

Prosthetic assessment and management , components of below knee, above knee prostheses, advantages and disadvantages of alternative component and materials , features of partial foot,symes,knee and hip disarticulation prostheses; principles and features of prosthetic assessment including dynamic and static check out of prostheses.

8 (a) Overview of epidemiology, pathology, pathogenesis,disease course and common clinical manifestations of degenerative,infective,inflammatory and non specific arthritis of all joints.

(b) Investigative procedures commonly used in the evaluation of all kinds of arthritis of all kinds of arthritis including laboratory tests.

c) Medical management of the individual with different types of arthritis and emphasizing the effects of drugs and invasive procedures on the musculoskeletal system ,the implications of them in various physiotherapy modalities.

d) physiotherapy management of all above conditions.

9. orthotic evaluation and management

Types of orthosis; footwear modification , lower limb orthoses, components, check out. Spinal orthosis; types and components, Physiotherapy management including orthotic gait analysis and gait training. Wheel chair ; components of wheel chair measurement for wheel chair ,features of sports wheel chair.

10. Bio-feed back ; principles of bio-feed back in physiotherapy.

Electromyographic feed back for motor relearning.

Equipment and technical specifications

Kinematic feed back ; standing feed back ; kinetic feed back ; new concepts of bio- feed back.

11. overview of advances in surgical procedures.

Evaluation assessment and treatment planning strategies for traumatic and surgical problems.

12. Sensory evaluation and assessment ; purpose of sensory evaluation and assessment ,classification and function of receptor mechanism, involving the perception of sensation ,identification of spinal pathways that mediate sensation ,guidelines for completing sensory evaluation, description for testing protocol for assessment of each sensory modality.

13. Coordination evaluation and assessment;

Purpose; common coordination deficits associated with lesions of cerebellum, basal ganglia and dorsal columns. Testing procedure; non –equilibrium coordination test; equilibrium coordination tests.

14. Motor control assessment; purposes and components, identification and description of CNS controls mechanism associated with motor control mechanism ,description of Common motor control defects with specific procedures and tests used to assess motor Control defects , the factors which influence the result of motor control assessment.

15. Electro diagnosis ; EMG studies and nerve conduction velocity test; instrument, methodology for performing EMG and NCV examination ; The characteristics of normal muscle potential ; the typical EMG and NCV finding seen neuro muscular disorders , their treatment strategies in physiotherapy based on clinical EMG finding ; the relation between EMG and force with different types of contraction .

Interpretations of EMG correlating the procedural, technical and physiological considerations; the uses of kinesiological EMG for clinical evaluation and treatment of patients with neuro muscular or musculoskeletal dysfunction.

16. Functional evaluation ; The concept of health status impairment; functional limitation; disability and handicap; definition of functional activity and the purposes and components of the functional assessment ; selection of activity and roles for an individual based on his or her capabilities and functional limitation, various forms of functional tests; physical function test and multi dimensional functional assessment instrument , identification of instrument for testing function ; various scoring methods used in functional assessment ; reliability and validity of various functional assessment.

17 Stroke(physical) Rehabilitation ; overview of definite etiology pathophysiology ,symptomatology and sequelae of stroke ; various investigative procedures including MRI ,CTscan for diagnostic and evaluation of stroke medical management and effects of drugs on neuro muscular system .physical evaluation and assessment of stroke on the basis of various approaches –Neuro

developmental ,Brunstrom ,Roods and Motor relearning programme ; strategies for effective physiotherapeutic management during acute and post acute phase.

18. Physical rehabilitation of multiple sclerosis ;overview of pathology ,epidemiology etiology ,course and clinical symptoms of multiple sclerosis, diagnostic evaluative procedures. Rehabilitative management of patients with multiple sclerosis with emphasis on the role and contribution of physiotherapists in the long term management.

19. Traumatic head injury

Pathophysiology of traumatic head injury; clinical rating scale and their usefulness,investigative procedures including CT scan and MRI,medical surgical management and the effects of various drugs on neuromuscular system; physiotherapy management during acute stage, physiotherapy evaluation and treatment planning with due consideration of patients cognitive status; components of physiotherapy assessment; the role of physiotherapy-intervention as inter/intra disciplinary team approach.

20 Pulmonary dysfunction and physiotherapy

Overview of chronic obstructive pulmonary diseases ,asthma, cysticfibrosis and restrictive lung diseases in terms of definition ,biology,pathophysiology ,epidemiology ,investigations including lung function test and x-ray ;medical/surgical management in various stages and effects of drugs used on various stages and effects of drugs used on patients with pulmonary disease; identification of problems ,potential benefits and goals of pulmonary

physiotherapy; various physiotherapy management of a patients with pulmonary dysfunction.

21. Cardiac condition and physiotherapy ; overview of epidemiology ,pathophysiology ,symptomatology and sequel of coronary artery disease and congenital and other acquired heart diseases; diagnostic and evaluative procedures commonly associated with above diseases; physiotherapy evaluation and management of above conditions

22. Vascular problems and physiotherapy; overview of vascular problems its interventions ,evaluation and medical management ; physiotherapy management in acute and chronic stages.

23. Burns and physical rehabilitation ;overview of causes, percentage, types of burns ,evaluation and medical management ;physiotherapy management in acute and chronic stages.

Text book

Physical rehabilitation-susan o sullaiwan

**Non- university paper**

**MANAGEMENT, EDUCATION AND ETHICS**

**Module I Management**

**Unit:**

1. Management – Functions of Management
2. Management Process – Planning, Organisation, Direction, Controlling, Decision making

3. Introduction to Personnel Management – Staffing, Recruitment selection, Performance appraisal, Collective bargaining, Discipline, Job satisfaction
4. Quantitative methods in Management – Relevance of Statistical and/or techniques in Management
5. Marketing – Market segmentation, Marketing research, Product planning, Pricing, Channels of distribution, Promotion, Consumer behaviour
6. Total Quality Management – Basis of Quality Management, Aids for control, Quality assurance programme in hospitals, Medical audit, International quality systems
7. Hospital as an Organisation – Functions and types of Hospitals, Selected clinical, supportive and ancillary services of a hospital, Emergency department, Nursing, Physical Medicine and Rehabilitation, Clinical laboratory, Pharmacy and Dietary department

## **Module II Education**

### **Part I Methods of Teaching**

#### **Unit:**

1. Lecture and discussion.
2. Seminars and practices.

#### **Recommended Books:**

- Research methodology by Kothari.
- High Yield-biostatistics by Anthony N.Glaser.
- An Introduction to Biostatistics by P.S.S Sundar Rao.
- Research for PT project design and analysis by Carolyn M.Hicler.
- The Researching therapist by Sue Jenkins by Connie ,J. Price ,Leon.
- Physical therapy research by Domholds.

### **Part II Educational Technology**

#### **Unit:**

## **1. CONCEPTS OF TEACHING AND LEARNING:**

- Theories of learning
- Relationship between teaching and learning
- Psychology of education
- Dynamics of behavior ,motivational process of learning ,perception, individual differences, intelligence ,personality.

## **2. CURRICULUM**

- Curriculum meeting
- Development of curriculum for PT
- Types of curriculum
- Formation of Philosophy, objectives, course objectives.
- Placing, course placement ,time allotment
- Selection and organization of learning experience
- Master plans of courses.
- Master rotational plan – individual rotational plan
- Correction of theory and practice
- Hospital and community areas for clinical instruction.
- Clinical assignments
- Current trends and curriculum planning

## **3. PRINCIPLES AND METHODS OF TEACHING**

- Strategies of teaching
- Planning of teaching
- Organization, writing lesson plans.
- A.V aids
- Teaching methods – socialized teaching methods.

## **4. MEASUREMENT AND EVALUATION:**

- Nature of measurement of education, meaning process, personnel, standardized, non-standardized tests.

## **5. GUIDANCE AND COUNSELING:**

- Philosophy, principles and concepts, guidance and counseling services of students and faculty.
- Faculty development and development of personnel for PT services.

## **6. METHODS OF EVALUATION:**

- Project evaluation
- Classroom teaching
- Written test.

### **Module III Ethics**

#### **Part I PHYSICAL THERAPY AND LAW:**

##### **Unit:**

1. Medico – legal aspect of physical therapy
2. Liability
3. Megligence
4. Malpractice

#### **Part II P.T. ETHICS**

##### **Unit:**

1. Ethical issue in physical therapy
2. Moral and ethics
3. Ethical analysis of moral problem

## **SECOND YEAR**

### **PAPER V**

#### **RECENT ADVANCES AND EVIDENCE BASED PRACTICES IN PHYSIOTHERAPY**

1. Constrained induced movement therapy
2. Mental imaginary & motor imaging technique
3. Mirror box therapy; virtual imagery
4. Weight suspended gait training
5. Functional electrical stimulation
6. Transcranial magnetic stimulation
7. Core muscle training & Pilates
8. fludio therapy
- 9 pneumatic compression therapy
- 10 far infra red radition
- 11 shock wave therapy
- 13 phonophoresis
- 14 physiotherapy in obsterites & gynecology
- 15 fitness assessment and management
- 16 management of obesity and weight reduction
- 17 postural stress syndromes and management
- 18 review of different schools and concepts of manipulation
- 19 Advanced manual therapy technique
  - . Muscle Energy techniques
  - . High velocity low amplitude trust technique
  - . postional release technique
  - . Trigger point management
  - . Advancement in radio imaging
  - . Pect scan
  - . Functional MRI in Rehabilitation
- 20 Evidences based practices in physiotherapy
  - . Principles of evidences based practices
  - .Elements of evidences
  - .Apprasing the evidence

.Evidence in practice

21 Recent advancement and interventions in orthotics prosthetics and mobility aids

22 myoelectric Prosthesis

## **PAPER IV SPECIALITY**

### **Speciality I Physiotherapy in Musculo-Skeletal and Sports**

#### **Module I Anatomy, Physiology and Clinical conditions**

##### **Part I – Fundamentals in Orthopedics**

###### **Unit:**

1. Embryological development
2. Growth & maturation of musculoskeletal system
3. Anatomy and applied anatomy of musculoskeletal system
4. Physiology of musculoskeletal system
5. Applied biomechanics and pathomechanics of bones, joints & soft tissue

##### **Part II Fundamental in Sports**

###### **Unit:**

1. Anatomy & Physiology
  - Basic science and injury of muscle, tendon and ligament
  - Embryological development, growth & maturation of musculoskeletal system.
  - Applied anatomy & physiology of musculoskeletal system.
  - Applied biomechanics and pathomechanics of bones, joints & soft tissues.

- Basic exercise physiology - Physiological responses and adaptations to Exercise in central nervous, musculoskeletal, cardio respiratory, sensory, Autonomic nervous and endocrine systems

## 2. Clinical Conditions related to sporting emergencies Injuries of:

- Head, face and neck
- Shoulder
- Elbow, forearm, wrist and hand
- Trunk (Hip, Spine and Ribs)
- Internal (Abdominal/Thoracic)
- Knee and thigh
- Lower leg, ankle and foot
- Epiphysis
- Skeletally immature athletes, female athletes and differently baled
- Injuries Related to Specific Sports - E.g. Foot Ball, Volley Ball, Basket Ball, Swimming etc.

## **Module II Physiotherapy Assessment**

### **Part I Assessment**

#### **Unit:**

1. General Orthopaedic Physiotherapy assessment procedures which includes:

Demographic data collection, History

Observatory, Palpatory & examination findings

- assessment of pain,
- Motor examination,

- Joint laxity,
- Sensory
- examination,
- Posture and Gait evaluation and
- Other relevant system

E.g. Cardio-respiratory / Neurological examination methods along with disease specific / joint-specific/ soft tissue-specific tests assigned according to its sensitivity & specificity

## **Part II Assessment**

### **Unit:**

1. Basic skills of physical & functional and sports specific assessment of various sports injuries
  2. Pre participation evaluation
  3. Orientation to investigatory procedures in Orthopedics and Sports
    - Basics of X-ray and views taken
    - Basics of CT Scan
    - Basics of MRI Scan
    - Basics of biopsy procedures
    - Basics of critical care Investigatory procedures
    - Basics of electromyography & interpretation
- Basics of isokinetic testing

## **Module III Physiotherapy Management in Musculo-skeletal and Sports**

Physiotherapy management following fractures, dislocations and their complications,

Amputations, cumulative trauma disorders and Burns.

5. Physiotherapy management in degenerative disorders and allied conditions.

6. Physiotherapy in post operative management of metabolic, hormonal, neoplastic and infective

conditions of bones and joints.

7. Physiotherapy following arthroplasty, implants and soft tissue repairs.

8. Pre & post operative physiotherapy in tendon transfer. Electrical stimulation and biofeedback

procedures.

9. Kinetic and kinematics analysis for various functional activities.

10. Functional assessment (Hand function, Gait, Posture A.D.L; occupational work).

11. Hand Rehabilitation.

12. Assessment of locomotor impairments, disabilities and disability evaluation.

13. Physiotherapy management of locomotor disorder, principles of medical and surgical aspects,

sports psychology and retraining.

14. Neurological complications of locomotor disorders.

15. Analysis and classification of sports and sports specific injuries and its management.

16. Management of sport injuries, sports fitness

17. Principles of Injury Prevention

18. Medico legal issues in sports, Sports Psychology, Sports Nutrition and Sports pharmacology.

19. Rehabilitation of paediatric musculoskeletal disorders.

20. Orthopaedic implants-designs, materials, indications, post-operative assessment and training.

21. External aids, appliances, adaptive self-help devices; prescription, biomechanical compatibility,

check-out and training.

22. Manual therapy: soft tissue manipulations and mobilization, neural mobilization,

acupressure.(Cyriax, Maitland, Butler, McKenzie, Kaltenborn, Mulligan)

23. Pilates-school of thought, Chiropractic school of thought, Osteopathic school of thought

24. Myofascial Release technique and Muscle Energy technique

25. Joint manipulation – peripheral joints and vertebral joints.

26. Neuromuscular Taping Techniques

27. Electro diagnosis: Electromyography and evoked potential studies.

28. Community based rehabilitation in musculoskeletal disorders.

29. Recent Advances in Musculoskeletal Disorders and Sports Physiotherapy.

## **REFERENCE BOOKS:**

1. Manual of physical therapy practice - Rose sgarat myers
2. PT for amputess - Barbara engstrom.
3. Therapeutic exercise moving towards function - Carrie. M. Hall, Lori therin Brody
4. Therapeutic exercise foe spinal segmental Stabilization in low backpain - Carolyn Richardson, Julie Hides
5. Rehabilitation of person with spinal cord injury - Donaid E. Johnson
6. Orthopedic physical therapy assessment - David. J. Magee
7. Orthopedic physical therapy - R.A.Donatelli

8. Tidys physiotherapy - Anna Thomson, Asian Skinner
9. Text book of orthopedics for physiotherapist - Jayanth Joshi
10. Text Book of orthopedics - Mahaswari.J
11. Geriatric physiotherapy - Andrew .A. Gucciane

## **REFERENCE BOOKS**

1. Conservative of sports injuries - Thomas E.Hyde  
Marianne S.Gengenbach
2. Physical Rehabilitation of the injured athlete
3. Sports physiotherapy - Andrews harrelson wilk  
- Maria zuluaga, Christoper briggs, John Carlisle
4. Prevention & Treatment of running injuries - Robert D.D. Ambrosia, David Drez . jr
5. Treatment of athletic injuries - William F. Head
6. Sports biomechanics - Roger barlett

## **Speciality II Physiotherapy in Neurology**

### **Part I Adult Neurological Conditions**

#### **Unit:**

1. Neuroanatomy and Neurophysiology
2. Examination of Nervous System
3. Clinical Symptomatology and Pathophysiology of the Neurological Disorders, Syndromes caused by Lesions of the Frontal, Temporal, Parietal and Occipital lobes
4. Radiological Investigations in Neurology-CT,MRI, x ray
5. Electro-Diagnosis- EMG, NCV, Evoked Potentials, Strength Duration Curve, Brain Stem-Evoked Potential studies.

6. Common Facilitatory and Inhibitory Treatment Techniques and their Neurophysiological basis
7. Various Physiotherapeutic Treatment Approaches in Neurological Rehabilitation- Bobath, Neuro Developmental therapy, Brunnstrom, Roods, PNF, Vojta, Sensory integration, Motor relearning programme, Constrain induced therapy, Functional and Task oriented Training and Computer simulated Rehabilitation training.
8. Motor control, Theories of Motor Control and Motor Development, Principles of Motor Learning, Types of Learning, Neural Plasticity and clinical implication, Theories of Motor Learning.
9. Signs, symptoms, Classification, Differential diagnosis, Prognosis, Medical and Surgical

Management, Evaluation and Rehabilitation of:

- a) Infectious, Demyelinating, Degenerative, Developmental and Metabolic diseases of Nervous System
  - b) Diseases of Spinal Cord - Lathyrism, Transverse myelitis, Syringomyelia, Radiculopathy, Tumours of spinal cord, Vascular disorder, Compressive Myelopathies(post operative physiotherapy regime)
  - c) Diseases and Injuries of Cranial and Peripheral Nerves, Entrapment Neuropathies
  - d) Diseases of Muscles and Myoneural junctions
  - e) Diseases of Cerebellum
  - f) Space Occupying Lesion of Central Nervous System
10. Disorders of Movement and Gait, Gait analysis, Gait Deviations in different Neurological Disorders and Methods of Retraining , Advanced Training.
  11. Ataxia – Evaluation and Management
  12. Degenerative Diseases of Brain and Spinal Cord - Evaluation and Management

13. Autonomic Nervous System – Testing and Training.
14. Cerebro-vascular Accidents: Signs and Symptoms, Classification, Evaluation, Medical and  
Physiotherapy Management
15. Traumatic Brain injury : Acute Care, Evaluation and Prognostic outcome, Coma stimulation,  
Restoration of motor control, physical and Cognitive Rehabilitation
16. Traumatic Spinal Cord Injuries. : Acute care, Evaluation, Medical, Surgical and Physiotherapy  
Management, ASIA classification and Prognostic outcome. Rehabilitation with respect to the level of injury
17. Vestibular disorders: Evaluation and Management.
18. Medical, Surgical and Physiotherapy Management in disturbances of CSF and its circulation.
19. Musculoskeletal Treatment Concepts related to Neurology: - Adverse Neural Tissue Tension (upper limb and lower limb)
20. Orthosis , Splinting, Wheel Chair Prescription in various Neurological conditions.
21. Speech ,Cognitive and Perceptual disorders:Evaluation and Management.
22. Spasticity, Neuropathology, Assessment, Medical, Surgical Management and Rehabilitation  
Measures.
23. Oromotor Rehabilitation
24. Neurogenic Bladders and its Rehabilitation
25. Basic Knowledge of Pharmacological drugs used for Neurological conditions. Antiseizure,  
Antihypertensive, ICP- Intra Cranial Pressure Monitoring Drugs, Anti-Parkinson's Drugs, Anti- Spasticity Drugs (Baclofen, Botox)

26. Neuro-Surgical procedures – Assessment and its Interventions

27. Peripheral Nerve Lesions and Poly Neuropathies – Assessment and Interventions

28. Outcome measures in neurological rehabilitation

29. EMG Biofeedback - Training

## **Part II Psychosomatic Disorders**

### **Unit:**

Psychosomatic Disorders and its Physiotherapy Management

### **Reference Books**

1. Principles Of Neurology , Raynold D Adams
2. Bickerstaffs Neurological Examination in Clinical Practice, John Spillane
3. Human Physiology, Guyton
4. Human Neuroanatomy , Inderbir Sing
5. Neurological Rehabilitation, Darcy A Umphred
6. Motor Control Theory and Practical Applications, Anne Shumway-cook
7. A Motor Relearning Programme for Stroke, Janet H.Carr
8. Physical Rehabilitation Assessment and Treatment,O Sullivan
9. Management of Spinal Cord Injury, Cynthia Perry Zejdlik,R.N.
10. Rehabilitation Of The Adult and Child With Traumatic Brain Injury, Mitchell Rosenthal
11. Clinical Neuroanatomy - Snell

## **Specialty III Physiotherapy in Cardio Respiratory and intensive care**

### **Module I Anatomy, Physiology and Clinical conditions**

#### **Part I Fundamentals in cardio-respiratory conditions**

##### **Unit:**

1. Anatomy, physiology, biomechanics, pathomechanics & applied anatomy related to Cardiovascular & Pulmonary System
2. Development of the Cardio Vascular, Pulmonary systems and deviations from the normal development.
3. Age related changes in Cardiovascular & Pulmonary System
4. Physiology of microcirculation and edema
5. Body positioning and various systemic changes
6. Respiratory muscle physiology, fatigue and training
7. Normal and abnormal responses of Cardiovascular & Pulmonary System during exercise
8. Breathing mechanism in normal and diseased.

#### **Part II Clinical Conditions**

##### **Unit:**

1. Respiratory Conditions
  - Obstructive lung diseases
  - Restrictive lung diseases
  - Suppurative lung diseases
  - Infective lung diseases

- Occupational lung diseases
- Chest trauma
- Chest wall deformities
- Lung cancers
- Children with respiratory dysfunction
- Diaphragmatic diseases
- Sleep apnoea
- Hyperventilation syndrome

## 2. Cardio Vascular Conditions

- Congenital heart diseases
- Acquired heart diseases
- Myocardial infarction
- Hypertension
- Diseases of the myocardium
- Pericardial diseases
- Tumors of the heart
- Vascular diseases
- Peripheral vascular diseases

## **Part III Assessment of cardiorespiratory conditions**

### **Unit:**

1. Skills of physiotherapeutic & functional Assessment of Cardiopulmonary system.
2. Basic principles and concepts of thoracic imaging, Electrocardiogram, Pulmonary function tests, Respiratory And Cardio -Vascular stress test & Ergometry; Cardiac Catheterization & Coronary angiography, ABG
3. Evaluation of PVD
4. Risk factors and preventive measures in cardio respiratory conditions

## **Part IV Management of Cardio-respiratory Conditions**

### **Unit:**

1. Cardiorespiratory emergencies and management principles.
2. Intensive care unit - concept and set-up.
3. ICU equipments.
4. Ventilator management.
5. Oxygen therapy.
6. CPR
7. Pharmacology of cardiopulmonary system
8. Respiratory physiotherapy techniques.
9. physiotherapy management of icu conditions.
10. physiological changes in positioning.
11. PNF and respiratory training.
12. Physiotherapy management following general Medical and surgical conditions.
13. Physiotherapy management for PVD.
14. physiotherapy management in obstructive and restrictive lung disease.
15. Cardiac rehabilitation.
16. Pulmonary rehabilitation.

17. Outcome measures in cardiac rehabilitation
18. Outcome measures in pulmonary rehabilitation
19. Neonatal common problems physiotherapy management.
20. Pediatric respiratory care.
21. Poisoning and Drug overdose
22. Exercise training, planning and prescription.
23. Aerobic and anaerobic exercise training
24. Stress modification by exercises.
25. Fitness testing.
26. Exercise prescription for health promotion and for special populations.
27. Fitness testing and health promotion for children's.
28. Recent advances in cardio-respiratory physiotherapy.

### **Recommended Books**

1. Human Physiology by Guyton
2. Physiology of Human joints by Kapandji
3. Hand book of physiology in Aging - Masoro, C.R.C Press
4. Mechanical Ventilation by Irwin R.S. Bemers
5. Mechanical Ventilation by David W. Chang
6. ECG by Schamroth
7. Interpretation of Pulmonary Function Tests: A Practical Guide by Hyatt, Robert E.; Scanlon, Paul D
8. Principles of Exercise Testing and Interpretation: Including Pathophysiology and

Clinical Applications by Kalman Wasserman

9. Baum's text book of pulmonary diseases

10. Crofton and Douglas's Respiratory diseases

11. Egan's Fundamentals of Respiratory care by Robert Wilkins

12. Harrison's Textbook of medicine

13. Braunwald's Cardiology

14. API's Text book of Medicine

## **Specialty IV Physiotherapy in Pediatrics**

### **Module I Anatomy, Physiology and Clinical conditions**

#### **Part I Fundamentals in Pediatrics**

##### **Unit:**

##### 1. Nervous system

- Overview of growth and development
- Basic and applied neuroanatomy
- Neurophysiology

##### 2. Musculoskeletal System

- Overview of growth and development
- Musculoskeletal tissue systems - Connective tissue, muscles, bones and alignment of skeletal system.

##### 3. Cardio Pulmonary system

- Overview of growth and development
- Respiratory muscle physiology in normal and diseased

#### **Part II Clinical Conditions**

## **Unit:**

### 1. Neurological conditions

- Cerebral palsy
- Neural tube defects
- High-risk infants
- Brachial plexus injury
- Brain injuries
- Spinal cord injury
- Developmental coordination disorders
- Guillain Barre syndrome
- Spinal muscular atrophy
- Infectious diseases of brain

### 2. Musculoskeletal conditions

- Orthopedic conditions
- Juvenile rheumatoid arthritis
- Muscular dystrophy
- Poliomyelitis
- Congenital muscular torticollis
- Arthrogryposis multiplex congenita
- Osteogenesis imperfecta
- Sports injuries in children
- Limb deficiencies and amputations

### 3. Cardiopulmonary conditions

- Conditions requiring mechanical ventilation
- Pulmonary conditions - Asthma, Cystic Fibrosis, Infant Respiratory Distress Syndrome, Bronchopulmonary Dysplasia, Musculoskeletal System Impairments, Neuromuscular System Impairments

- Cardiac conditions - Cardiovascular structural deficits
  - Cardiac and thoracic surgeries
4. Genetic syndromes
- Genetics and development
  - Chromosomal Disorders
  - Single Gene Disorders
5. Pediatric oncology
- Etiology, types, signs & symptoms, physiotherapy management
6. Burns
- Classification and pathophysiology, Physiotherpay management

## **Module II Physiotherapy Assessment**

### **Part I Assessment guidelines**

#### **Unit:**

1. Detail assessment procedures related to the elective conditions  
Overview of pediatric neurological, musculoskeletal and cardiopulmonary Assessments
2. Principles of Laboratory investigations and other tests - Computerized Tomography Scan, Magnetic Resonance Imaging, Electromyography, Nerve Conduction Study, Evoked Potentials, Muscle Biopsy, Thoracic Imaging, Pulmonary Function Tests, and Exercise Testing.

## **Module III Physiotherapy Management in Paediatric conditions**

### **Part I Physiotherapy Management in Paediatric conditions**

#### **Unit:**

1. Neonatal care, risk babies and management.

2. Management of congenital Locomotor disorders including the prosthetic and orthotic management
3. Management of neuropaediatric patients
4. Motor learning process - Theory and Techniques
5. Disorders of perception and sensory integration
6. Integrated approach in management of paediatric disorders.
7. Paediatric surgeries and its post - operative management
8. CBR in paediatric conditions

## **CHECK LISTS**

### **APPENDIX 1 TEACHING SKILL EVALUATION FORM**

**Student:**

**Date:**

**Evaluator  
Rating of Skill**

- 5 - Outstanding
- 4 - Good
- 3 - Satisfactory
- 2 - Poor
- 1 – Unacceptable

Tasks:

1. Specifies purposes of the lecture clearly in the Introduction
2. Makes clear transitions between segments of the lecture
3. Presents divergent view points for contrast and comparison
4. Uses clear, relevant examples to illustrate main ideas
5. Clarifies technical terminology
6. Speaks at suitable volume/ pace, speaking style
7. Uses eye contact (Scans total audience)
8. Uses a variety of facial expressions
9. Uses hands and arms appropriately/moves purposefully
10. Effectively used Black Board, AV Aids
11. Summary of main points
12. Ask questions
13. Answer questions asked by audience
14. Content coverage
15. Rapport with students

Total Score

### **Overall Score**

- 61 – 75 : Excellent
- 51 – 60 : Good
- 41 – 50 : Satisfactory
- 31 – 20 : Poor
- Less than 20 : Unacceptable

## **APPENDIX 2**

### **JOURNAL CLUB PRESENTATION EVALUATION FORM**

Student :

Date :

Evaluator :

**Rating of Skill**

- 5 - Outstanding
- 4 - Good
- 3 - Satisfactory
- 2 - Poor
- 1 – Unacceptable

Tasks:

1. Article chosen
2. Specifies purposes / goal of the study
3. Whether cross references have been consulted
4. Presents the Methodology Clearly
5. Clarifies Outcome measures
6. Presents the Results Clearly
7. Power of the study
8. Presents the discussion clearly
9. Limitations of the study
10. Ethical issues
11. Describe how the results can or cannot be applied in our situation
12. Their own decision about the utility of the study in our practice
13. Does not need to reread article
14. Summarizes Presentation
15. Ability to defend their study

Total Score

**Overall Score**

- 61 – 75 : Excellent
- 51 – 60 : Good
- 41 – 50 : Satisfactory
- 31 – 20 : Poor
- Less than 20 : Unacceptable

**APPENDIX 3**

**PERFORMANCE EVALUATION FORM**

**Student :**

**Date :**

**Evaluator :**

**Rating of Skill**

- 5 - Outstanding
- 4 - Good
- 3 - Satisfactory
- 2 - Poor
- 1 – Unacceptable

Tasks:

1. Patient Interview
2. Physiotherapy observation skills
3. Physiotherapy assessment skills
4. Procedural skills
5. Knowledge of physiotherapy Instrumentation
6. Treatment planning
7. Principle of treatment intervention
8. Execution of treatment intervention
9. Evidence Based Practice
10. Practice based learning and improvement
11. Planning and conducting clinical research
12. Work Ethics
13. Interpersonal skills / Communication skills
14. Instructional skills
15. Documentation

Total Score

**Overall Score**

- 61 – 75 : Excellent
- 51 – 60 : Good
- 41 – 50 : Satisfactory
- 31 – 20 : Poor
- Less than 20 : Unacceptable

## **APPENDIX 4**

### **SEMINAR EVALUATION FORM**

**Student :**

**Date :**

**Evaluator :**

#### **Rating of Skill**

- 5 - Outstanding
- 4 - Good
- 3 - Satisfactory
- 2 - Poor
- 1 – Unacceptable

Tasks:

1. Met the Professional objectives
2. Makes clear transitions between segments of the lecture
3. Presents divergent view points for contrast and comparison
4. Presentation was logical and clear
5. Clarifies terminologies in Physiotherapy
6. Speaks at suitable volume/ pace, speaking style
7. Eye contact
8. Absence of distracting mannerisms
9. Effectively used Black Board, AV Aids
10. Content coverage
11. Provide appropriate duration
12. Interaction with others was beneficial
13. Provided concise and thoughtful answer to the questions asked by the audience
14. Demonstrated competence in Subject matter
15. Present the references and Sources effectively

Total Score

**Overall Score**

61 – 75 : Excellent

51 – 60 : Good

41 – 50 : Satisfactory

31 – 20 : Poor

Less than 20 : Unacceptable

**APPENDIX 5****CASE PRESENTATION EVALUATION FORM**

**Student :**

**Date :**

**Evaluator :**

**Rating of Skill**

5 - Outstanding

4 - Good

3 - Satisfactory

2 - Poor

1 – Unacceptable

Tasks:

1. Subjective Examination
2. Objective Examination
3. Logical sequences
4. Treatment planning
5. Demonstration of examination skills
6. Demonstration of intervention skills
7. Explain the rationale of Treatment interventions
8. Understanding of movement dysfunction
9. Clarity of Presentation
10. Answer to the questions

Total Score

**Overall Score**

41 – 50 : Excellent

31 – 40 : Good

21 – 30 : Satisfactory

15 – 20 : Poor

Less than 15 : Unacceptable

**APPENDIX 6**

**DESSERTATION PRESENTATION EVALUATION FORM**

**Student :**

**Date :**

**Evaluator :**

**Rating of Skill**

5 - Outstanding

4 - Good

3 - Satisfactory

2 - Poor

1 – Unacceptable

Tasks:

1. Selection of topic
2. Knowledge about the selected topic

3. Need of the study
4. Statement of hypothesis
5. Review of literature
6. Selection of research design
7. Selection of appropriate Sample size
8. Selection of appropriate Sampling technique
9. Selection of appropriate statistical tool
10. Selection of appropriate Outcome measures
11. Quality of protocol
12. Power of the study
13. Logical sequence of presentation
14. Answer questions asked by evaluators
15. Use of research terminologies

Total Score

**Overall Score**

61 – 75 : Excellent

51 – 60 : Good

41 – 50 : Satisfactory

31 – 20 : Poor

Less than 20 : Unacceptable

**APPENDIX 7**

**EVALUATION OF DESSERTATION WORK BY THE GUIDE**

**Student :**

**Date :**

**Guide :**

**Rating of Skill**

5 - Outstanding

4 - Good

3 - Satisfactory

2 - Poor

1 – Unacceptable

Tasks:

1. Periodic consultation with the guide
2. Regular collection of case material
3. Depth of analysis and discussion
4. Presentation of findings
5. Quality of final output

Total Score

**Overall score:**

21 – 25 - Outstanding

16 – 20 - Good

11 – 15 - Satisfactory

6 – 10 - Poor

5 and below 5 - Unacceptable

**CURRICULUM, CREDIT HOURS AND COURSE DURATION**

<b>YEAR</b>	<b>PAPER</b>	<b>SUBJECTS</b>		<b>No. of Hours per week</b>	<b>No. of weeks</b>	<b>Total No. of Hours</b>
	<b>Paper I</b> Basic Sciences	1	Biomechanics, Kinesiology and Pathomechanics	3	20	60
		2	Ergonomics	2	20	40
		3	Nutrition, Exercise	3	20	60

<b>I</b>			Physiology and Work Physiology				
	<b>Paper II</b> Research Methodology and Biostatistics	1	Research Methodology	3	20	60	
		2	Biostatistics	3	20	60	
	<b>Paper III</b> Management, Education and Ethics	1	Management	3	20	60	
		2	Education and Education Technology	2	20	40	
		3	Ethics in Physiotherapy Practice	2	20	40	
	<b>Paper IV</b> Physiotherapy Modalities	1	Exercisetherapy	3	20	60	
		2	Electrotherapy	3	20	60	
		3	Electrodiagnosis	2	20	40	
	<b>II</b>	<b>Paper V</b> Advanced Physiotherapy Management, Manual Therapy and Evidence-Based Practice	1	Advanced Physiotherapy Management	3	30	90
			2	Manual Therapy	3	30	90
			3	Evidence-Based Practice	2	20	40
		<b>Paper VI</b> Specialty Paper	1	Clinical condition	3	20	60
2			Physiotherapy assessment	3	20	60	
3			Foundational concepts and condition, management	3	20	60	
4			Special techniques	3	20	60	