

# Ordinance Governing Master of Physiotherapy (MPT) Degree Course 2015-16

## Syllabus / Curriculum

Master of Physiotherapy in :

- Cardio Vascular and Pulmonary
- Community and Rehabilitation
- Geriatrics
- Neurology
- Obstetrics and Gynecology (OBG)
- Orthopedic Manual Therapy
- Orthopedic
- Oncology
- Pediatric
- Sports



Accredited 'A' Grade by NAAC

Placed in Category 'A' by MHRD (GoI)

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## KLE UNIVERSITY

JNMC Campus, Nehru Nagar, Belgaum - 590 010. Karnataka, INDIA.

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## **VISION**

To be an outstanding University of excellence ever in pursuit of newer horizons to build self reliant global citizens through assured quality educational programs.

## **MISSION**

- To promote sustainable development of higher education consistent with statutory and regulatory requirements.
- To plan continuously provide necessary infrastructure, learning resources required for quality education and innovations.
- To stimulate to extend the frontiers of knowledge, through faculty development and continuing education programs.
- To make research a significant activity involving staff, students and society.
- To promote industry/organization, interaction/collaborations with regional/national/international bodies.
- To establish healthy systems for communication among all stakeholders for vision oriented growth.
- To fulfill the national obligation through rural health missions.

## **OBJECTIVES**

The objectives are to realize the following at university and its constituent institutions:

- To implement effectively the programs through creativity and innovation in teaching, learning and evaluation.
- To make existing programs more careers oriented through effective system of review and redesign of curriculum.
- To impart spirit of enquiry and scientific temperament among students through research oriented activities.
- To enhance reading and learning capabilities among faculty and students and inculcate sense of life long learning.
- To promulgate process for effective, continuous, objective oriented student performance evaluation.
- To ordinate periodic performance evaluation of the faculty.
- To incorporate themes to build values. Civic responsibilities & sense of national integrity.
- To ensure that the academic, career and personal counseling are in-built into the system of curriculum delivery.
- To strengthen, develop and implement staff and student welfare programs.
- To adopt and implement principles of participation, transparency and accountability in governance of academic and administrative activities.
- To constantly display sensitivity and respond to changing educational, social, and community demands.
- To promote public-private partnership.

## INSIGNIA



*The Emblem of the University is a Philosophical statement in Symbolic.*

### **The Emblem...**

*A close look at the emblem unveils a pillar, a symbol of the “University of Excellence” built on strong values & principles.*

### **The Palm and the Seven Stars...**

*The Palm is the palm of the teacher- the hand that acts, promises & guides the students to reach for the Seven Stars...*

*The Seven Stars signify the ‘Saptarishi Dnyanamandal’, the Great Bear-a constellation made of Seven Stars in the sky, each signifying a particular Domain. Our culture says: The true objective of human birth is to master these Knowledge Domains.*

*The Seven Stars also represent the Saptarishis, the founders of KLE Society whose selfless service and intense desire for “Dnyana Dasoha” laid the foundation for creating the knowledge called KLE Society.*

*Hence another significance of the raised palm is our tribute to these great Souls for making this University a possibility.*

### **Empowering Professionals...**

*‘Empowering Professionals’, inscription at the base of the Emblem conveys that our Organization with its strength, maturity and wisdom forever strive to empower the student community to become globally competent professionals. It has been a guiding force for many student generations in the past, and will continue to inspire many forthcoming generations.*



# KLE UNIVERSITY

(Formerly known as KLE Academy of Higher Education & Research, Belagavi)

[Declared as Deemed-to-be-University u/s 3 of the UGC Act, 1956 vide Government of India Notification No.F.9-19/2000-U.3(A)]

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JNMC Campus, Nehru Nagar, Belagavi-590 010, Karnataka State, India

☎: 0831-2444444/2493779 FAX: 0831-2493777 Web: <http://www.kleuniversity.edu.in> E-mail: [diracademic@kleuniversity.edu.in](mailto:diracademic@kleuniversity.edu.in)

Ref. No. KLEU/AC/14-15/D- 877 (C)

11<sup>th</sup> June 2014

## NOTIFICATION

Sub : **Ordinance governing the syllabus/curriculum for Master of Physiotherapy Courses.**

Ref : Minutes of the meeting of the Academic Council of the University held on 9<sup>th</sup> June 2014.

In exercise of the powers conferred under Rule A-04 (i) of the Memorandum of Association of the University, the Academic Council of the University is pleased to approve the Ordinance governing the syllabus / curriculum for **Master of Physiotherapy (MPT) Degree Course** Program in its meeting held on 9<sup>th</sup> June 2014.

- **Cardio Vascular and Pulmonary**
- **Community and Rehabilitation**
- **Geriatrics**
- **Neurology**
- **Obstetrics and Gynecology (OBG)**
- **Orthopedic Manual Therapy**
- **Orthopedic**
- **Pediatric**
- **Sports**

The Ordinance shall be effective for the students admitted to aforesaid **Master of Physiotherapy (MPT) Degree Course** under the Faculty of Physiotherapy in the constituent college of the University viz. **Institute of Physiotherapy, Belagavi** from the academic session 2015-16 onwards.

By Order

**REGISTRAR**

To  
The Dean  
Faculty of Physiotherapy,  
Institute of Physiotherapy,  
BELAGAVI.

CC to :

1. The Secretary, University Grants Commission, New Delhi,
2. The PA to Hon. Chancellor, KLE University, Belagavi.
3. The Special Officer to Hon. Vice-Chancellor, KLE University, Belagavi.
4. All Officers of the University - Academic Affairs / Allied Course / Examination Branch.



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Ref. No. KLEU/AC/14-15/D- 491(A)

30<sup>th</sup> April 2015

## NOTIFICATION

Sub : **Ordinance governing the syllabus/curriculum for Master of Physiotherapy (Oncology) Courses.**

Ref : Minutes of the meeting of the Academic Council of the University held on 27<sup>th</sup> April 2015.

In exercise of the powers conferred under Rule A-04 (i) of the Memorandum of Association of the University, the Academic Council of the University is pleased to approve the Ordinance governing the syllabus / curriculum for **Master of Physiotherapy (Oncology) Degree Course** Program in its meeting held on 27<sup>th</sup> April 2015.

The Ordinance shall be effective for the students admitted to **Master of Physiotherapy (Oncology) Degree Course** under the Faculty of Physiotherapy in the constituent college of the University viz. **Institute of Physiotherapy, Belagavi** from the academic session **2015-16** onwards.

By Order

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The Dean  
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## **Section - I**

### **Introduction**

#### **I. Master of Physiotherapy in Cardiovascular and pulmonary**

This course has an international reputation and is a dynamic course which is based on contemporary best practice. It creates the opportunity for physiotherapists currently working in the cardiovascular and pulmonary area to be challenged both academically and clinically. A high level of expert tuition is provided for all units and clinical placements. This course focuses on the integration between evidence-based practice and current clinical practice. Clinical reasoning is fundamental to all assessment, treatment, management and rehabilitation for both cardiovascular and pulmonary. It is designed to enhance knowledge, skill and clinical competencies in clinical practice, research and issues related to cardiovascular and pulmonary problems. Physiology of various cardiovascular and pulmonary disorders and their rehabilitation are integrated into clinical practice. Throughout the course, students review the literature critically and apply this information in the evaluation and management of cardiovascular and pulmonary disorders. Research projects are completed in cardiovascular and pulmonary physiotherapy and manuscripts will be submitted to a peer-review journal for publication.

#### **Objectives:**

The objectives of this programme are to :-

- Provide students with detailed training in cardiovascular and pulmonary physiotherapy theory and practice, including the use of other physiotherapy modalities.
- Ensure that students practice from cardiovascular and pulmonary physiotherapy, whilst integrating western medical information as appropriate, to ensure that graduates are safe and competent in the practice of cardiovascular and pulmonary physiotherapy.
- Provide students with quality clinical experience in hospitals and complementary health clinics from day one of the program.
- Provide students with opportunities for research and higher degree in cardiovascular and pulmonary physiotherapy on the completion of their undergraduate degree.

## **2. Master of Physiotherapy in Community and Rehabilitation**

This course has an international reputation and is a dynamic course which is based on contemporary best practice. It creates the opportunity for physiotherapists currently working in the Community area to be challenged both academically and clinically. A high level of expert tuition is provided for all units and clinical placements. This course focuses on the integration between evidence-based practice and current clinical practice. Clinical reasoning is fundamental to all assessment, treatment, management and rehabilitation for neurological, cardiac, respiratory and musculoskeletal disorders. It is designed to enhance knowledge, skill and clinical competencies in clinical practice, research and issues related to multi system problems in community. Functional activity analysis including rehabilitation of all the systems are integrated into clinical practice. Throughout the course, students review the literature critically and apply this information in the evaluation and management of multisystem disorders. Research projects will be completed in community physiotherapy and manuscripts will be submitted to a peer-review journal for publication.

### **Objectives :**

The objectives of this programme are to : -

- Provide students with detailed training in community physiotherapy theory and practice, including the use of other physiotherapy modalities.
- Ensure that students practice community physiotherapy, whilst integrating western medical information as appropriate, to ensure that graduates are safe and competent in the practice of community physiotherapy universally.
- Provide students with quality clinical experience in hospitals and complementary health clinics from day one of the program.
- Provide students with opportunities for research and higher degree in community physiotherapy on the completion of their undergraduate degree.

### **3. Master of Physiotherapy in Geriatrics**

This course has an international reputation and is a dynamic course which is based on contemporary best practice. It creates the opportunity for physiotherapists currently working in the geriatric area to be challenged both academically and clinically. A high level of expert tuition is provided for all units and clinical placements. This course focuses on the integration between evidence-based practice and current clinical practice. Clinical reasoning is fundamental to all assessment, treatment, management and rehabilitation of multi system disorders in geriatrics. It is designed to enhance knowledge, skill and clinical competencies in clinical practice, research and issues related to geriatric problems. Functional activity analysis including rehabilitation of all the systems in geriatric population are integrated into clinical practice. Throughout the course, students review the literature critically and apply this information in the evaluation and management of disorders in geriatrics. Research projects will be completed in geriatric physiotherapy and manuscripts will be submitted to a peer-review journal for publication.

#### **Objectives:**

The objectives of this programme are to :-

- Provide students with detailed training in geriatric physiotherapy theory and practice, including the use of other physiotherapy modalities.
- Ensure that students practice geriatric physiotherapy whilst integrating western medical information as appropriate, to ensure that graduates are safe and competent in the practice of geriatric physiotherapy universally.
- Provide students with quality clinical experience in hospitals and complementary health clinics from day one of the program.
- Provide students with opportunities for research and higher degree in geriatric physiotherapy on the completion of their undergraduate degree.

#### **4. Master of Physiotherapy in Neurology**

This course has an international reputation and is a dynamic course which is based on contemporary best practice. It creates the opportunity for physiotherapists currently working in the neurological area to be challenged both academically and clinically. A high level of expert tuition is provided for all units and clinical placements. This course focuses on the integration between evidence-based practice and current clinical practice. Clinical reasoning is fundamental to all assessment, treatment, management and rehabilitation for neurological disorders. It is designed to enhance knowledge, skill and clinical competencies in clinical practice, research and issues related to neurological problems. Physiology of pain, chronic pain management and functional activity analysis including rehabilitation of neurological system are integrated into clinical practice. Throughout the course, students review the literature critically and apply this information in the evaluation and management of neurological disorders. Research projects will be completed in neurological physiotherapy and manuscripts will be submitted to a peer-review journal for publication.

#### **Objectives:**

The objectives of this programme are to :-

- Provide students with detailed training in neurophysiotherapy theory and practice, including the use of other physiotherapy modalities.
- Ensure that students practice from neurophysiotherapy, whilst integrating western medical information as appropriate, to ensure that graduates are safe and competent in the practice of neurophysiotherapy universally.
- Provide students with quality clinical experience in hospitals and complementary health clinics from day one of the program.
- Provide students with opportunities for research and higher degree in neurophysiotherapy on the completion of their undergraduate degree.

## **5. Master of Physiotherapy in Obstetrics and Gynecology (OBG)**

This course has an international reputation and is a dynamic course which is based on contemporary best practice. It creates the opportunity for physiotherapists currently working in the obstetrics and gynecology area to be challenged both academically and clinically. A high level of expert tuition is provided for all units and clinical placements. This course focuses on the integration between evidence-based practice and current clinical practice. Clinical reasoning is fundamental to all assessment, treatment, management and rehabilitation for obstetrics and gynecological disorders. It is designed to enhance knowledge, skill and clinical competencies in clinical practice, research and issues related to obstetrics and gynecological problems. Functional activity analysis including rehabilitation of all the systems related to obstetrics and gynecology are integrated into clinical practice. Throughout the course, students review the literature critically and apply this information in the evaluation and management of obstetrics and gynecological disorders. Research projects will be completed in obstetrics and gynecological Physiotherapy and manuscripts will be submitted to a peer-review journal for publication.

### **Objectives :**

The objectives of this programme are to : -

- Provide students with detailed training in obstetrics and gynecological physiotherapy theory and practice, including the use of other physiotherapy modalities.
- Ensure that students practice from obstetrics and gynecological physiotherapy, whilst integrating western medical information as appropriate, to ensure that graduates are safe and competent in the practice of obstetrics and gynecological physiotherapy universally.
- Provide students with quality clinical experience in hospitals and complementary health clinics from day one of the program.
- Provide students with opportunities for research and higher degree in obstetrics and gynecological physiotherapy on the completion of their undergraduate degree.

## **6. Master of Physiotherapy in Orthopedic Manual Therapy**

This course has an international reputation and is a dynamic course which is based on contemporary best practice. It creates the opportunity for physiotherapists currently working in the musculoskeletal area to be challenged both academically and clinically. A high level of expert tuition is provided for all units and clinical placements. This course focuses on the integration between evidence-based practice and current clinical practice. Clinical reasoning is fundamental to all assessment, treatment, management and rehabilitation for both spinal and peripheral disorders. It is designed to enhance knowledge, skill and clinical competencies in clinical practice, research and issues related to musculoskeletal problems. Physiology of pain, chronic pain management and functional activity analysis including rehabilitation of musculoskeletal system are integrated into clinical practice. Throughout the course, students review the literature critically and apply this information in the evaluation and management of musculoskeletal disorders. Research projects will be completed in orthopaedic manual therapy and manuscripts will be submitted to a peer-review journal for publication.

### **Objectives:**

The objectives of this programme are to :-

- Provide students with detailed training in orthopaedic manual therapy theory and practice, including the use of other physiotherapy modalities.
- Ensure that students practice from orthopaedic manual therapy, whilst integrating western medical information as appropriate, to ensure that graduates are safe and competent in the practice of manual therapy universally.
- Provide students with quality clinical experience in hospitals and complementary health clinics from day one of the program.
- Provide students with opportunities for research and higher degree in orthopaedic manual therapy on the completion of their undergraduate degree.

## **7. Master of Physiotherapy in Orthopedic**

This course has an international reputation and is a dynamic course which is based on contemporary best practice. It creates the opportunity for physiotherapists currently working in the musculoskeletal area to be challenged both academically and clinically. A high level of expert tuition is provided for all units and clinical placements. This course focuses on the integration between evidence-based practice and current clinical practice. Clinical reasoning is fundamental to all assessment, treatment, management and rehabilitation for both spinal and peripheral disorders. It is designed to enhance knowledge, skill and clinical competencies in clinical practice, research and issues related to musculoskeletal problems. Physiology of pain, chronic pain management and functional activity analysis including rehabilitation of musculoskeletal system are integrated into clinical practice. Throughout the course, students review the literature critically and apply this information in the evaluation and management of musculoskeletal disorders. Research projects will be completed in orthopaedic physiotherapy and manuscripts will be submitted to a peer-review journal for publication.

### **Objectives:**

The objectives of this programme are to :-

- Provide students with detailed training in orthopaedic physiotherapy theory and practice, including the use of other physiotherapy modalities.
- Ensure that students practice from orthopaedic physiotherapy, whilst integrating western medical information as appropriate, to ensure that graduates are safe and competent in the practice of orthopaedic physiotherapy universally.
- Provide students with quality clinical experience in hospitals and complementary health clinics from day one of the program.
- Provide students with opportunities for research and higher degree in orthopaedic physiotherapy on the completion of their undergraduate degree.

## **8. Master of Physiotherapy in Oncology**

This course has an international reputation and is a dynamic course which is based on contemporary best practice. It creates the opportunity for physiotherapists currently working in the oncology area to be challenged both academically and clinically. A high level of expert tuition is provided for all units and clinical placements. This course focuses on the integration between evidence-based practice and current clinical practice. Clinical reasoning is fundamental to all assessment, treatment, management and rehabilitation for all oncology disorders. It is designed to enhance knowledge, skill and clinical competencies in clinical practice, research and issues related to oncology problems. Physiology of pain, chronic pain management and functional activity analysis including rehabilitation of oncology disorders are integrated into clinical practice. Throughout the course, students review the literature critically and apply this information in the evaluation and management of oncology disorders. Research projects will be completed in oncology physiotherapy and manuscripts will be submitted to a peer-review journal for publication.

### **Objectives:**

The objectives of this programme are to :-

- Provide students with detailed training in oncology physiotherapy theory and practice, including the use of other physiotherapy modalities.
- Ensure that students practice from oncology physiotherapy, whilst integrating western medical information as appropriate, to ensure that graduates are safe and competent in the practice of oncology physiotherapy universally.
- Provide students with quality clinical experience in hospitals and complementary health clinics from day one of the program.
- Provide students with opportunities for research and higher degree in oncology physiotherapy on the completion of their undergraduate degree.

## **9. Master of Physiotherapy in Pediatric**

This course has an international reputation and is a dynamic course which is based on contemporary best practice. It creates the opportunity for physiotherapists currently working in the pediatric area to be challenged both academically and clinically. A high level of expert tuition is provided for all units and clinical placements. This course focuses on the integration between evidence-based practice and current clinical practice. Clinical reasoning is fundamental to all assessment, treatment, management and rehabilitation for neurological, cardiac, respiratory and musculoskeletal disorders. It is designed to enhance knowledge, skill and clinical competencies in clinical practice, research and issues related to pediatric problems. Functional activity analysis including rehabilitation of all the systems in pediatric population are integrated into clinical practice. Throughout the course, students review the literature critically and apply this information in the evaluation and management of pediatric disorders. Research projects will be completed in pediatric physiotherapy and manuscripts will be submitted to a peer-review journal for publication.

### **Objectives:**

The objectives of this programme are to :-

- Provide students with detailed training in pediatric physiotherapy theory and practice, including the use of other physiotherapy modalities.
- Ensure that students practice from pediatric physiotherapy, whilst integrating western medical information as appropriate, to ensure that graduates are safe and competent in the practice of pediatric physiotherapy universally.
- Provide students with quality clinical experience in hospitals and complementary health clinics from day one of the program.
- Provide students with opportunities for research and higher degree in pediatric physiotherapy on the completion of their undergraduate degree.

## **10. Master of Physiotherapy in Sports.**

This course has an international reputation and is a dynamic course which is based on contemporary best practice. It creates the opportunity for physiotherapists currently working in the sports area to be challenged both academically and clinically. A high level of expert tuition is provided for all units and clinical placements. This course focuses on the integration between evidence-based practice and current clinical practice. Clinical reasoning is fundamental to all assessment, treatment, management and rehabilitation for both spinal and peripheral disorders. It is designed to enhance knowledge, skill and clinical competencies in clinical practice, research and issues related to sports related problems. Physiology of pain, chronic pain management and functional activity analysis including rehabilitation of sports injuries are integrated into clinical practice. Throughout the course, students review the literature critically and apply this information in the evaluation and management of sports disorders. Research projects will be completed in sports physiotherapy and manuscripts will be submitted to a peer-review journal.

### **Objectives:**

The objectives of this programme are to :-

- Provide students with detailed training in sports physiotherapy theory and practice, including the use of other physiotherapy modalities.
- Ensure that students practice from sports physiotherapy, whilst integrating western medical information as appropriate, to ensure that graduates are safe and competent in the practice of sports physiotherapy universally.
- Provide students with quality clinical experience in hospitals and complementary health clinics from day one of the program.
- Provide students with opportunities for research and higher degree in sports physiotherapy on the completion of their undergraduate degree.

## **Section - II**

### **Regulations Governing Master of Physiotherapy Course**

**1. ELIGIBILITY:**

A Candidate who has passed Bachelor of Physiotherapy (B.P.T/B.Ph.T/B.P.Th) as any equivalent degree course in physiotherapy recognized as equivalent by KLE University or Indian Association of Physiotherapist and who has scored not less than 50% of maximum marks in prescribed qualifying examination shall be eligible for the master of physiotherapy courses

**2. DURATION:**

The course study including submission of dissertation on the topic registered shall be of 24 months (two years) duration from the commencement of academic term.

**3. 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 MPT course and does not suffer from any contagious disease. Student with disability should produce certificate issued by the duly constituted District Medical Board

**4. ATTENDANCE AND PROGRESS OF STUDY:**

A candidate pursuing Master of Physiotherapy course shall study in the concerned department of the institution for entire period as a fulltime student. Candidates are not permitted to work as an employee in any laboratory/hospital/clinic/college etc., while studying the course. Candidates are not to join any other full time courses of study or appear for any other examination conducted by this university or any other university in India or abroad during the period of registration.

**5. TOTAL INTAKE OF STUDENTS**

The total intake of students per year will be four (4) per academic year.

## **6. COURSE FEES STRUCTURE**

The tuition fees and other fees structure will be as per the notifications by KLE University from time to time. The fees structure is different for resident Indians, non resident Indian and foreign students.

## **7. COURSE DURATION**

The course of study including submission of dissertation on the topic registered shall be of 24 months (Two years) duration from the commencement of academic term.

## **8. MEDIUM OF INSTRUCTION**

Medium of instruction shall be English for theory lectures, practical, laboratory works and clinical teaching.

## **9. COMMENCEMENT OF COURSE**

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

## **10. COURSE LOCATION**

This course is offered at KLEU Institute of Physiotherapy, Belagavi- 590010, Karnataka, India.

## **11. CLINICAL PLACEMENT**

Teaching clinics operate 48 weeks per year, and students will be required to attend clinical sessions on a rotation basis to maintain a public service and provide continuity of patient care.

## **12. 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, presentation of scientific papers from journal and clinical discussions with reflective practice. Every candidate will be given training in teaching of undergraduate students. They are specially trained to perform research activities in their Speciality.

### 13. COURSE STRUCTURE

#### I<sup>st</sup> MPT common subject to all specialty

| Sl. No.              | Subject  | Teaching Hours |                      |       |
|----------------------|--|----------------|----------------------|-------|
|                      |  | Theory         | Practical / Clinical | Total |
| 1                    | Paper-I Physiotherapy Research, Biostatistics & Ethics | 150            | 250                  | 400   |
| 2                    | Paper-II Basic science & Physiotherapeutic             | 150            | 250                  | 400   |
| 3                    | Clinical Training                                      | -              | 600                  | 600   |
| 4                    | Seminars   | -              | -                    | 175   |
| 5                    | Journal Club   | -              | -                    | 100   |
| 6                    | Research Club  | -              | -                    | 75    |
| Total Teaching Hours |  |                |                      | 2000  |

#### 2<sup>nd</sup> year subject of CBR specialty

|                      |                   |     |     |      |
|----------------------|-------------------|-----|-----|------|
| 3                    | Paper-III         | 150 | 250 | 400  |
| 4                    | Paper-IV          | 150 | 300 | 450  |
| 5                    | Paper-V           | 150 | 300 | 450  |
| 6                    | Clinical Training | -   | 600 | 600  |
| 7                    | Seminars          | -   | -   | 175  |
| 8                    | Journal Club      | -   | -   | 100  |
| 9                    | Research Club     | -   | -   | 75   |
| Total Teaching Hours |                   |     |     | 2000 |

#### **14. MONITORING PROCESS**

Every candidate shall maintain a work diary, log book and record of his/her participation in the training programs conducted by the department such as journal reviews, seminars, etc. The work diary shall be scrutinized and certified by the Head of the Department and Head of the Institution, and presented in the university practical examination if called for. Special mention may be made of the presentations by the candidate as well as details of experiments or laboratory procedures, conducted by the candidate. The presentations will be assessed by the faculty members and peers using relevant checklists.

#### **15. WRITTEN EXAMINATION (THEORY)**

A written examination consisting of five theory papers, each paper has three hours duration & each paper carrying 100 marks.

#### **16. CLINICAL EXAMINATION (PRACTICAL)**

A clinical examination of first year MPT consisting of 100 marks and second year MPT consisting of 150 marks with total of 250 marks that is aimed at examining clinical skills and competency of the candidates for under taking independent work

#### **17. VIVA-VOCE EXAMINATION (PRACTICAL)**

A Viva-Voce examination of both 1<sup>st</sup> and 2<sup>nd</sup> year MPT consisting 150(50+100) that is aimed at examining the depth of knowledge, logical reasoning, confidence & oral communication skills with special emphasis on dissertation work. The marks of Viva-Voce examination shall be included in the clinical examination to calculate the percentage and declaration of results.

#### **18. SCHEDULE OF EXAMINATION**

The examination for MPT course shall be held at the end of every academic year. The university shall conduct two examinations in the year such as.

- i. Regular
- ii. Supplementary at an interval of six months between two examinations. Not more than two exams shall be conducted in the academic year. To be eligible to write the second year examination the candidate should have cleared the first year examination with 50% of marks.

**Pattern of Question paper for theory examination in each specialization.**

| <b>Type of Questions</b> | <b>No. of Questions to be asked</b> | <b>No. of Questions to be answered</b> | <b>Marks for each Questions</b> | <b>Total</b> |
|--------------------------|-------------------------------------|--|---------------------------------|--------------|
| Long Essay               | 2                                   | 2                                      | 2 x 20                          | 40           |
| Short Essay              | 6                                   | 6                                      | 6 x 10                          | 60           |
| <b>Total</b>             |                                     |  |                                 | <b>100</b>   |

Theory examination is of three hours for all pre papers

| Type of Assessment |               | Maximum Marks       |                     |
|--------------------|---------------|---------------------|---------------------|
|                    |               | 1 <sup>st</sup> MPT | 2 <sup>nd</sup> MPT |
| Theory             |               |                     |                     |
| Theory             | Paper - I     | 100                 | -                   |
|                    | Paper -II     | 100                 | -                   |
|                    | Paper - III   | 100                 | -                   |
|                    | Paper – IV    | -                   | 100                 |
|                    | Paper – V     | -                   | 100                 |
| Practical          | Clinical      | 100                 | 150                 |
|                    | Dissertation  | -                   | 50                  |
|                    | Microteaching | -                   | 25                  |
|                    | Viva-Voce     | 50                  | 25                  |
| Total              |               | 450                 | 450                 |
| Grand total        |               | 900                 |                     |

Consolidated marks for MPT I<sup>st</sup> year II<sup>nd</sup> year

| MPT (I <sup>st</sup> Year) | MPT (II <sup>nd</sup> Year) | Grand Total |
|----------------------------|-----------------------------|-------------|
| 450                        | 450                         | 900         |

## **19. 1<sup>st</sup> Year MPT Practical / Clinical - 150 Marks**

Note : All cases for clinical examination should be on patients & not on models.

### **Day 1**

1. Case (1) – 1 x 50 = 50 Marks (SPECIALIZATION CASE)
  2. Case (2) – 1x 50 = 50 Marks (NON SPECIALIZATION CASE)
- Viva – Voce - 50 Marks

## **2<sup>nd</sup> Year MPT Practical/clinical - 150 Marks**

### **Day 1**

1. Long case- 1x 100=100- (SPECIALIZATION CASE)
2. Short case- 1x50=50 (SPECIALIZATION CASE)

### **Day 2**

- Viva-Voce - 25 Marks
- Dissertation - 50 Marks
- Micro teaching - 25 Marks

## **20. CRITERIA FOR QUESTION PAPER SETTING/ ANSWER SHEET EVALUATION**

For all theory subjects question paper setter and answer sheet evaluator must have minimum of 5 years of postgraduate teaching experience.

## **21. CRITERIA FOR EXAMINERS**

There shall be two examiners, one of them external, outside the university and the other internal preferably from the same college or as decided by the University.

## **22. NUMBER OF APPEARANCES**

Candidate registered for two years post graduate degree course should qualify in the examination within four years of date of admission. The candidate has to reregister for the course if he/she fails to complete within stipulated time.

## **23. DISSERTATION**

Every candidate pursuing M.P.T. course is required to carry out work on a selected research project under the guidance of a recognized postgraduate teacher. The results of such a work shall be submitted in the form of a dissertation.

The dissertation is aimed to train a postgraduate student in research methods and techniques. It includes identification of the problem, formulation of a hypothesis, review of literature, getting acquainted with recent advances, designing of a research study, collection of data, critical analysis, and comparison of results, drawing conclusions and evaluation of research project.

Every candidate shall submit the synopsis to the to the university in the prescribed proforma, a synopsis containing particulars of proposed dissertation work within 6 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.

Synopsis will be reviewed by the external evaluator and the university will register the dissertation topic. No change in the dissertation topic or guide shall be made without prior approval of the university.

The dissertation should be written under the following headings.

1. Introduction
2. Aims and objectives of study.
3. Review of literature.
4. Material and methods.
5. Results.
6. Discussion
7. Conclusion
8. Summary
9. References
10. Tables
11. Annexure.

The written text of dissertation shall not be less than 50 pages and shall not exceed 100 pages excluding references, tables, questionnaires and other annexure.

It should be neatly typed in double line spacing on one side of paper (A4 size, 8.27" x 11.69") and bound properly. Spiral binding should be avoided. The guide, head of the institution shall certify the dissertation.

#### **24. SUBMISSION OF DISSERTATION**

Four hard copies & a soft copy of the dissertation duly certified by the guide, Head of the dept and principal shall be submitted to the Controller of examination KLE University through the Head of the department three months before final examination.

The examiners appointed by the university shall value the dissertation. Approval of dissertation work is an essential precondition for a candidate to appear in the university examination. The dissertation shall be valued by the evaluator (examiners) apart from the guide out of which one is external outside the university and one internal from the same university. Any one-evaluator acceptance other than the guide will be considered as a precondition for eligibility to take up the examination.

#### **TIME PLAN FOR DISSERTATION**

| <b>Event</b>                      | <b>Probable date</b>              |
|-----------------------------------|-----------------------------------|
| Orientation                       | 1 <sup>st</sup> week of September |
| Workshop on research methodology  | 2 <sup>nd</sup> week of September |
| Proposal writing/protocol writing | 2 <sup>nd</sup> Week of October   |
| Synopsis review                   | 2 <sup>nd</sup> Week of January   |
| Submission of synopsis            | 15 <sup>th</sup> February         |
| Ethical clearance                 | 20 <sup>th</sup> February         |
| Data collection to start          | 1 <sup>st</sup> week of March     |
| 1 <sup>st</sup> review of data    | 30 <sup>th</sup> June             |
| 2 <sup>nd</sup> review of data    | 30 <sup>th</sup> September        |
| 3 <sup>rd</sup> review of data    | 23 <sup>th</sup> December         |
| Thesis presentation               | 30 <sup>th</sup> January          |
| Submission                        | 28 <sup>th</sup> February         |

## **25. GUIDE**

### **Criteria for recognition of MPT teacher / guide**

1. MPT with five years teaching experience working on a full time position at a recognized institution.
2. The age of guide / teacher shall not exceed 65 years.
3. The guide student ratio should be 1: 3.
4. Relaxation for the criteria one and two mentioned above will be considered in view of acute shortage of teachers, the persons having three years post MPT teaching experience working on a full time basis may be considered as P.G. teacher. Similarly persons with maximum age of 66 years may be considered for being guide and examiner in cases of acute shortage of examiners until further amendments by the University in this regard.

### **Change of Guide**

For change of guide in extra ordinary situations, a suitable guide will be provided from within the concerned department or HOD of the department will be given the responsibility. In absence of both, the registered PG may be allotted under the senior most professor or Head of the institute with prior permission from the university.

## **26. ASSESSMENT**

The final assessment of the student in this course will be by written, oral and practical examination at the completion of the every year. However, the student should submit the research dissertation prior to appearing for the 2<sup>nd</sup> year university examination. Student's dissertation should be accepted by the examiners prior to appearing for the 2<sup>nd</sup> year examination.

All journal, seminar and case presentations have to be compulsorily evaluated and every PG must obtain 60% marks in at least one presentation of each segment prior to filling up of the exam form.

## 27. CRITERIA FOR PASSING

Minimum of 50% of total marks in theory aggregate and minimum of 50% of total marks in clinical and Viva-Voce aggregate will be required for declaring a candidate pass.

## 28. DECLARATION OF CLASS

First class with distinction – 75% & above in aggregate provided the candidate pass the examination in 1<sup>st</sup> attempt.

First class – 60% & above in aggregate provided the candidate pass the examination in 1<sup>st</sup> attempt.

Pass – 50% of maximum marks in theory aggregate and 50% of maximum marks in clinical and Viva-Voce aggregate.

## 29. GRADED RESPONSIBILITY IN CARE OF PATIENTS AND OPERATIVE WORK

| Category | I year MPT | II year MPT |
|----------|------------|-------------|
| O        | 30 cases   | -           |
| A        | 30 cases   | 40 cases    |
| PA       | 125 cases  | 95 cases    |
| PI       | 50 cases   | 90 cases    |

**Key: O- Observes**

**A - Assisted a Physiotherapist in performing procedure**

**PA - Performed procedure under direct supervision of a senior Physiotherapist**

**PI - Performed procedure independently**

The case assessment books should be submitted before appearing for the exams.

Teaching activities – UG Teaching

Learning activities – Self Learning, Use of computers and library

### **Participation in departmental activities**

- |   |                          |
|---|--------------------------|
| a) Journal presentations                                  | Minimum 4 in 2 years     |
| b) Seminars   | Minimum 4 in 2 years     |
| c) Clinical Presentations                                 | Minimum 30 in 2 years    |
| d) Special clinics  | Minimum 20 in 2 years    |
| e) Community work /camps/ field visits                    | Minimum 4 in 2 years     |
| f) Clinical rounds  | Minimum 250 in 2 years   |
| g) Dissertation work                                      | Minimum 200 hrs in 2 yrs |
| h) Participation in conferences/<br>Presentation of paper | Minimum 2 in 2 years     |
| i) Paper presentation                                     | Minimum 1 in 2 years     |
| j) Technique demonstration                                | Minimum 2 in 2 years     |

## 1<sup>st</sup> Year M.P.T. Common Subjects to all Speciality

|  |  |                           |
|--|--|---------------------------|
| <b>TITLE OF THE PAPER I: PHYSIOTHERPAY RESEARCH, BIostatISTICS AND ETHICS.</b> |  |                           |
| <b>Duration : 0 - 12 months</b>  |  | <b>Maximum Mark = 100</b> |
| <b>Teaching Scheme</b>   |  |                           |
| <b>Theory : 150 hrs</b>  |  |                           |
| <b>Practical : 300 hrs</b>   |  |                           |
| <b>Course Description</b>  |  |                           |
| <b>Theory</b>  |  |                           |
| <b>Sl.No.</b>  | <b>Content</b>   | <b>Hours</b>              |
| 1.   | Principles of research   | 02                        |
| 2.   | Review of scientific methods.  | 03                        |
| 3.   | Research question, Research design, Quantitative and qualitative research paradigms.   | 04                        |
| 4.   | Sampling design, Data sampling and methods of data collection, Probability   | 04                        |
| 5.   | Measurement & scaling techniques.  | 03                        |
| 6.   | Introduction to Biostatistics  | 02                        |
| 7.   | Source and presentation of data  | 06                        |
| 8.   | Measures of location, average and percentile   | 04                        |
| 9.   | Measures of central tendency   | 05                        |
| 10.  | Variability and its measures   | 08                        |
| 11.  | Normal distribution and normal curve   | 04                        |
| 12.  | Demography Study   | 04                        |
| 13.  | Measures of population and statistics  | 04                        |
| 14.  | Data analysis: descriptive and inferential statistics, correlations and hypothesis testing.  | 10                        |
| 15.  | Quantitative data analysis: revision of descriptive and inferential statistics, correlations and hypothesis testing, general linear model, power and effect. | 10                        |

|                  |  |              |
|------------------|--|--------------|
| 16.              | Analysis of variance and covariance multivariate designs, nonparametric data analysis and selection of nonparametric tests.            | 10           |
| 17.              | Qualitative data analysis: major qualitative methodologies, techniques in data collection and analysis.                                | 10           |
| 18.              | Role of computers in research.   | 02           |
| 19.              | Protocol writing, Manuscript writing   | 06           |
| <b>B) ETHICS</b> |  |              |
| <b>Sl.No.</b>    | <b>Content</b>   | <b>Hours</b> |
| 1.               | Introduction, History & General Principles of ethics involving human participants.   | 02           |
| 2.               | Ethical consideration in physiotherapy practice- State, National & international rules & regulations governing physiotherapy practice. | 10           |
| 3.               | Ethical review procedures- protocol writing, ethical committee.  | 06           |
| 4.               | Informed consent process, Plagiarism   | 06           |
| 5.               | Good clinical practices (GCP)  | 05           |
| 6.               | Ethical codes and conduct for physiotherapy profession.  | 04           |
| 7.               | International classification of function (ICF)- Introduction, History, classification, components, coding & benefits of ICF            | 06           |
| 8.               | Influence of values & valuing on patient care  | 04           |
| 9.               | Documentation skills- History, examination, treatment planning, organization & execution.  | 06           |

### **Recommended reading:**

1. Domholdt, E. (2000) Physical therapy research: Principles and applications, 2nd ed. WB Saunders, Philadelphia, USA.
2. Kuzma, J. W., & Bohnenblust, S. E. (2004). Basic statistics for the health sciences. (5th ed.). Boston: McGraw Hill.
3. Munro, B. H. (1997). Statistical methods for health care research (3rd ed.). Philadelphia: Lippincott.
4. Coakes, S. J., & Steed, L. G. (2003). SPSS: Analysis without anguish: Version 11.0 for Windows. Milton, Australia: John Wiley & Sons Inc.
5. Jenkins, S., Price CJ, & Straker L. (1998). The researching therapist. A practical guide to planning, performing and communicating research. Edinburgh: Churchill Livingstone.
6. Campbell, M.J., & Machin, D. (1993). Medical statistics: A commonsense approach (2nd ed.). Chichester, UK: John Wiley.
7. American physical therapy association: Guide to physical therapy practice, 2<sup>nd</sup> edition 2001.
8. Professionalism in physical therapy: History, practice and development by Laura Lee Swisher and Catherine G.Page,(Elsevier publication 2005)
9. International classification of functioning, disability and health: Short version.(IT'S publication)
10. Effective Documentation for physical therapy professionals by Eric Shamus and Debra (McGraw Hill Company 2004).
11. Physical therapy Documentation: From examination to outcome by Mia Erickson, Ralph Utzman (Slack incorporated 2008)
12. Writhing SOAP notes with patient / Client management formats by Ginge Kettenbach PhD, PT, 3rd edition 2004, F.A. Davis company, Philadelphia.

13. Practical Evidence Based Physiotherapy, Rob Herbert, Gro Jamtvedt, Judy Mead, Kare Birger Hagen Elsevier Butter Worth Heinemann; Oxford UK (2005)
14. Guide to Evidence Based Physical Therapy Practice by Dianne V. Jewell, PT, PhD, Virginia Commonwealth University, Virginia.
15. Introduction to Research in Health Sciences – Polgar S, Churchill Livingstone, London, 1988
16. Handbook of Research Method – Sproull, Screcrow Press, 1998.
17. Elements of Research in Physical Therapy, Currier D. P, Williams & Wilkins, Baltimore, 1990, Ed 3.
18. Public Power and Administration – Wilenski, Hale and Iremonger, 1998.
19. Public Therapy Administrations and Management – Hickik Robert J.
20. Management Principles for Physiotherapists – Nosse Lorry J.

## 1<sup>st</sup> Year M.P.T. Common Subjects to all Speciality

| TITLE OF THE PAPER II: BASIC SCIENCE AND PHYSIOTHERAPEUTICS |  |                    |
|---|--|--------------------|
| Duration : 0 - 12 months                                    |  | Maximum Mark = 100 |
| Teaching Scheme   |  |                    |
| Theory : 150 hrs  |  |                    |
| Practical : 300 hrs   |  |                    |
| Course Description  |  |                    |
| Theory  |  |                    |
| Sl.No.  | Content  | Hours              |
| I.  | <b>BIOMECHANICS</b><br>1. Basic concepts in biomechanics<br>2. Biomechanics of bone, cartilage, tendon & ligaments, muscles & peripheral nerves.<br>3. Biomechanics of respiration and circulation.<br>4. Biomechanics of integrated function- Gait, Posture, Activities of daily living, Hand function.   | 15                 |
| II.   | <b>EXERCISE PHYSIOLOGY</b><br>1. Energy systems- energy sources, energy transfers, energy expenditure at rest & various physical activities.<br>2. Fitness, Exercises testing & prescription & documentation<br>3. Effect of exercises on various systems & their adaptation.<br>4. Influence of environmental factors on muscle work & acclimatization.<br>5. Obesity, weight control, nutrition & caloric balance. | 10                 |
| III.  | <b>ERGONOMICS</b><br>1. Introduction & History of ergonomics<br>2. Work plan management  | 15                 |

|                                   |  |              |
|-----------------------------------|--|--------------|
|                                   | 3. Fatigue, Assessment of fatigue, work rest regimes<br>4. Job/ Task/Site analysis<br>5. Work hardening programme<br>6. Work related injuries, Educational programme for prevention of work related injuries                                 |              |
| <b>IV.</b>                        | <b>ELECTROPHYSIOLOGY</b><br>1. Nerve muscle physiology<br>2. Instrumentation & principles of electrophysiological techniques<br>3. Kinesiological EMG, EMG biofeedback<br>4. Clinical electrophysiological testing- EEG, SSEP, VEP, BAER, LR | 10           |
| <b>V.</b>                         | Pain gate theories, Mechanism of pain control  | 05           |
| <b>VI.</b>                        | Motor development concepts, Motor Control and its training techniques.   | 05           |
| <b>VII.</b>                       | Recovery of function and neural plasticity, Electrical excitability of muscle and nerve and composition of peripheral nerves, Muscle Plasticity in response to electrical stimulation, Neural Control of locomotion                          | 15           |
| <b>B) PHYSIOTHERAPEUTICS (75)</b> |  |              |
| <b>Content</b>                    |  | <b>Hours</b> |
| 1                                 | Principles, Indication & contraindication & application of various schools of manual therapy   | 15           |
| 2                                 | Principles of sports injury, prevention & management   | 05           |
| 3                                 | Principles, instrumentation and application of electrotherapeutic modalities   | 05           |
| 4                                 | Assessment & clinical examination- Musculoskeletal system, cardiovascular & respiratory system, obstetrics & gynecology, pediatric and neurological assessment.  | 10           |

|    |  |    |
|----|--|----|
| 5  | Various neurological approaches in clinical practice, Facilitation & inhibition techniques   | 05 |
| 6  | Bladder and bowel management   | 05 |
| 7  | Motor learning , Biofeedback   | 05 |
| 8  | Cardio-respiratory physiotherapy- disorders & physiotherapy management   | 05 |
| 9  | Cardio-pulmonary resuscitation, monitoring systems & critical care management  | 05 |
| 10 | Physiotherapy in obstetrics and gynecology conditions  | 05 |
| 11 | Physiotherapy in common dermatological conditions  | 05 |
| 12 | Allied therapies- Magnetotherapy, Acupuncture, Naturopathy, Yoga & pranayama   | 05 |
| 13 | Rehabilitation principles & application in - Burns rehabilitation, Geriatric rehabilitation, Cancer rehabilitation, Pulmonary rehabilitation, Cardiac rehabilitation, Hand rehabilitation. | 10 |

**Recommended reading:**

1. Scientific basis of human movement – Gowditzke, Williams & Wilkins, Baltimore, 1988 .3<sup>rd</sup> edn
2. Basic Biomechanics of the musculoskeletal system – Margerat Nordin. And Victor H frankle 2<sup>nd</sup> edition.
3. Kinesiology – Brunnstrom Signe – FA Davis, Philadelphia. 1966
4. Clinical biomechanics of spine – White AA and Panjabi JB, Lippincott, Philadelphia 1978.
5. Joint structure and function- A comprehensive analysis - Pamela K Levangie and Cynthia C Norkin , Jaypee publishers 2006

6. Kinesiology: Application to pathological motion – Soderberg , Williams & Wilkins. 1997
7. Textbook of work physiotherapy – Guyton, Prim books , Bangalore 1991 8<sup>th</sup> edition
8. Handbook of physiology in ageing – Masoro CRC press 1981.
9. Kinesiology : The mechanics and pathomechanics of human movement – Carol Oatis, williams and wilkins, lippincott 2008.
10. The Physiology of joints - Kapandji and Matthew J Kendal, Churchill livingstone 2008.
11. Kinesiology of human body under normal and pathological condition- Arthur Steindler, 5<sup>th</sup> edition, 1977.
12. Industrial therapy - Glenda I key 1<sup>st</sup> edition, Mosby publication
13. Exercise physiology - Mc Ardle, Katch and Katch (lippincott), William and wilkins. 2000.
14. Clinical exercise testing and prescription Theory and applications – Scott O Roberts and Peter Hanson , CRC Press .1997
15. Exercise physiology : Exercise ,Performance, and Clinical Applications – Robert A Roberts and Scott O Roberts .1997
16. Electromyography in clinical practice – Michael J Aminoff 3<sup>rd</sup> edition, Churchill livingstone
17. The ABC of EMG: A practical Introduction to Kinesiological electromyography – Peter Conrad, Noroxon Inc, USA, 2005.
18. Clinical Neurophysiology – U. K. Misra & Kalita, 2<sup>nd</sup> Ed, Churchill Livingstone
19. Electrodiagnosis in Diseases of Nerve & Muscle: Principles & Practice – Jun Kimura, Oxford University Press
20. Hand Rehabilitation – Christine – Churchill Livingstone, London, 1995
21. Cardiac Rehabilitation - Amundsen IR, Churchill Livingstone, London, 1988

22. Pulmonary Rehabilitation: Guidelines to Success – Hoidkins, Butterworth, Boston, 1984
23. Physical Therapy of the Cancer Patient – Mc Garyex Charles, Churchill Livingstone, New York, 1989
24. Physiotherapy in Obstetrics & Gynaecology – Polden & Mantle, Jaypee Brothers, New Delhi, 1994.
25. Obstetrics & Gynecologic Physical Therapy – Wilder Elnine, Churchill Livingstone, New York, 1994.
26. Cardiopulmonary Physiotherapy – Irwin, C.V., Mosby, st. Louis, 1990
27. Motor Relearning Program for Stroke – Carr, Aspen Publication, Rock Ville, 1987
28. The neural basis of motor control – Black I, Churchill Livingstone, London, 1987
29. Grieve's Modern Manual Therapy: The vertebral column – Jeffery Boyling & Grad Dip Man Ther, Churchill Livingston
30. Physical Rehabilitation – Susan B O S Sullivan & Thomas J Schmitz, Jaypee Publication, 4<sup>th</sup> Ed
31. Physical Agents in Rehabilitation: From Research to Practical, Michell H Cameron, 2<sup>nd</sup> Ed, Saunders & Elsevier, 2003
32. Sports & Physical Therapy – Bernhardt Donna, Churchill Livingstone, London, 1995
33. Darcy A. Umphred: Neurological rehabilitation, Mosby, Sydney, 5<sup>th</sup> Edition.

**Branch : Master of Physiotherapy in Cardio Vascular and Pulmonary**

|  |  |              |
|--|--|--------------|
| <b>Paper - III</b>   | <b>Clinical, physical and functional diagnosis in Cardio-Vascular and Pulmonary Physiotherapy</b>  |              |
| <b>Paper - IV</b>  | <b>Cardio-Vascular and Pulmonary Physiotherapy</b>   |              |
| <b>Paper - V</b>   | <b>Recent advances &amp; Evidence Based Practice in Cardio-Vascular and Pulmonary Physiotherapy</b>  |              |
| <b>TITLE OF THE PAPER III : Clinical, physical and functional diagnosis in Cardio-Vascular and Pulmonary Physiotherapy</b> |  |              |
| <b>Duration : 0 - 12 months                      Maximum Mark = 100</b>  |  |              |
| <b>Theory     :    150 hrs</b>   |  |              |
| <b>Practical   :   300 hrs</b>   |  |              |
| <b>Sl.No.</b>  | <b>Content</b>   | <b>Hours</b> |
| <b>1.</b>  | <b>GENERAL:</b><br>1. Review of Anatomy, Embryology and Epidemiology of cardio-vascular, pulmonary and lymphatic pulmonary system.<br>2. Role of cardio respiratory therapist in patient assessment.<br>3. Patient clinician interaction and communication with assessment findings.<br>4. Confidentiality, concern and universal precautions.<br>5. A detailed and comprehensive cardio-respiratory health history.<br>6. Assessment standards, common scales, questionnaire indices used for patients with cardio-pulmonary dysfunction. | <b>25</b>    |
| <b>2.</b>  | <b>Detailed assessment of cardio- vascular and pulmonary symptoms (dyspnea, cough, sputum production, hemoptysis, clubbing, cyanosis, chest pain, syncope, fever, night sweating, headaches, altered sensorium, personality changes, snoring.</b>  | <b>04</b>    |
| <b>3.</b>  | <b>Vital signs assessment</b><br>1. Obtaining vital signs, clinical impressions<br>2. General clinical presentation  | <b>05</b>    |

|           |   |           |
|-----------|---|-----------|
|           | <ul style="list-style-type: none"> <li>3. Temperature</li> <li>4. Pulse including the peripheral pulses</li> <li>5. Blood pressure</li> <li>6. Respiratory rate</li> </ul>  |           |
| <b>4.</b> | <b>Fundamentals of physical examination with diagnosis in cardiovascular and respiratory physiotherapy</b> <ul style="list-style-type: none"> <li>1. Examination of head and neck</li> <li>2. Lung topography – thoracic cage landmarks</li> <li>3. Examination of Thorax/ pulmonary system</li> <li>4. Examination of Precordium/cardiac system</li> <li>5. Examination of Abdomen</li> <li>6. Examination of Extremities</li> </ul> | <b>10</b> |
| <b>5.</b> | <b>Assessment of neonatal and pediatrics patients – new born, critically ill infants, older infants and child</b>   | <b>02</b> |
| <b>6.</b> | <b>Comprehensive geriatric assessment – age related sensory deficits, cardio- respiratory deficits and diagnostic tests, standard scales and questionnaires used in geriatric assessment</b>  | <b>05</b> |
| <b>7.</b> | <b>Nutritional assessment of patients with cardio- respiratory diseases</b>   | <b>02</b> |
| <b>8.</b> | <b>Fitness assessment –</b> <ul style="list-style-type: none"> <li>1. Anthropometric and biophysical measurement and body composition</li> <li>2. Flexibility tests and standards</li> <li>3. Muscle strength and standard</li> <li>4. Endurance tests and standards</li> <li>5. Agility tests and coordination tests</li> </ul>  | <b>10</b> |
| <b>9.</b> | <b>Exercise testing and standardization and interpretation –</b> <ul style="list-style-type: none"> <li>1. TMT protocols- Maximal and submaximal protocols</li> <li>2. Field protocols</li> <li>3. Bicycle protocols</li> <li>4. Step test protocols</li> <li>5. 6, 9 and 12 minute walk tests</li> <li>6. Protocols for pediatric and geriatric population</li> </ul>  | <b>12</b> |

|            |  |    |
|------------|--|----|
| <b>10.</b> | <b>Investigation and their interpretation and clinical relevance in cardio- pulmonary physiotherapy</b>  |    |
| 1.         | Clinical laboratory studies – hematology, microbiology, urine analysis, histology, pathology   | 03 |
| 2.         | Pulmonary function tests – normal values<br>a. Spirometry, arterial blood gas analysis and its interpretation in cardio – respiratory physiotherapy, capnography and pulse oximetry and its relevance in cardio- pulmonary physiotherapy   | 10 |
| 3.         | Clinical application of chest radiograph – chest x-ray, examination, views; computed tomography, magnetic resonance imaging, lung scans - PET scan. Evaluation of chest radiography – clinical and radiographic findings in cardio- pulmonary disorders and its relevance cardio-pulmonary physiotherapy                                     | 10 |
| 4.         | Laboratory and bedside interpretation of ECG findings – interpretation of common <u>dysrhythmias</u> and its importance in cardio-respiratory physiotherapy and various ECG patterns in lung disease   | 08 |
| 5.         | Cardio respiratory monitoring in critically ill patients including patients with artificial airways<br>1. Ventilator assessment and evaluation of oxygenation in ICU<br>2. Assessment of cardiac output in ICU<br>3. Assessment of haemodynamic pressures in ICU<br>4. Clinical diagnosis in cardio- respiratory disorders in intensive care | 10 |
| 6.         | Blood flow studies-arteriography, venography, Color Doppler, ANS testing and interpretation used in cardio- respiratory physiotherapy and edema evaluation and interpretation.   | 03 |
| 7.         | Cardio respiratory assessment and diagnosis of patient on mechanical ventilator and interpretation of graphical forms, weaning modes and indices   | 11 |

|     |   |    |
|-----|---|----|
| 8.  | Risk factor stratification, disability evaluation with reference to cardio vascular and pulmonary disorders   | 03 |
| 9.  | Psychological evaluation with reference to stress and anxiety in cardio- pulmonary disorders, evaluation of stress and anxiety using various scales and questionnaires  | 03 |
| 10. | Effects of normal and abnormal response to exercise on various systems with emphasis on cardiovascular and pulmonary systems<br>1. Age related changes in cardiovascular and pulmonary system<br>2. Oxygen Debt, oxygen deficit, lactate threshold<br>3. VO <sub>2</sub> max, METs – its importance in calculating energy expenditure and physical activities<br>4. Calculating energy expenditure using calorimetry method, various formulae and equations with emphasis on its importance in prescribing exercise in various patient population | 12 |
| 11. | Evaluation and diagnosis of sleep and breathing disorders   | 02 |

**RECOMMENDED READING :**

1. Robert M Berne, Matthew N Levy (2001)-“Cardio-vascular physiology”, 8th edition, Mosby.
2. John B. West-“Respiratory Physiology-the essentials”, 6<sup>th</sup> edition, Lippincott Williams and Wilkins.
3. Macleod’s Clinical Examination-10<sup>th</sup> edition.
4. Andrews Davies and Carl Moores (2003)-“The Respiratory System”, illustrated by Robert Britton, Churchill Livingstone.
5. George G. Burton, John E Hodgkin, Jeffrey J Ward (1997)-“Respiratory Care-A Guide to Clinical Practice” 4<sup>th</sup> edition, Lippincott Williams and Wilkins, A Wolters Kluwer Company.

| <b>TITLE OF THE PAPER IV : Cardio-Vascular and Pulmonary Physiotherpay</b> |   |                           |
|--|---|---------------------------|
| <b>Duration : 13 - 24 months</b>   |   | <b>Maximum Mark = 100</b> |
| <b>Theory : 150 hrs</b>  |   |                           |
| <b>Practical : 300 hrs</b>   |   |                           |
| <b>Sl.No.</b>  | <b>Content</b>  | <b>Hours</b>              |
| <b>A.</b>  |   |                           |
| <b>I.</b>  | <b>Principles of exercise prescription and exercise program adherence.</b>  |                           |
|  | 1. Components of physical fitness and Basic principles of exercise program design.  | 12                        |
|  | 2. The art of science of exercise prescription in various patient population  | 05                        |
|  | 3. Bioenergetics of exercise and training   | 03                        |
|  | 4. Warm ups, stretching and cool down and its importance  | 02                        |
|  | 5. Exercise program adherence and factors affecting exercise adherence.   | 01                        |
|  | 6. Different forms of training methods.   | 05                        |
| <b>B.</b>  |   |                           |
| 1.   | Designing cardio-respiratory exercise programs for cardiac and pulmonary patients, geriatric and general population. Essentials of a C.R. exercise workout, Aerobic training. Methods and modes, personalized programs. | 10                        |
| 2.   | Designing Resistance exercise programs.<br>♦ Types of resistance training and developing respiratory exercise program including calisthenics.<br>♦ Resistance exercise program for children and older adults.           | 05                        |
| 3.   | Designing flexibility and stretching programs.  | 02                        |
| 4.   | Designing weight management (weight loss and weight gain) and Body composition programs.  | 03                        |
| 5.   | Application of exercise prescription principles in various cardio-pulmonary disorders including edema management.   | 05                        |

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| <b>C.</b> |   |    |
| 1.        | Nutrition and cardio-vascular and pulmonary diseases including diabetic population- Role of carbohydrates, proteins, fats, vitamins in health and disease.  | 05 |
| 2.        | Diet prescription in diabetic, hypertensive, cardio-metabolic syndromes, obesity and cancer patients according to calorie expenditure.  | 05 |
| 3.        | Exercise prescription/ physical activity in a high risk cardiac patient including L.V Dysfunction, chronic heart failure, myocardial ischemia.  | 07 |
| 4.        | Exercise prescription in prevention of CAD, obesity, renal dysfunction, diabetes mellitus, hypertension.  | 08 |
| 2.        | <p><b>CARDIO-VASCULAR DISORDERS AND PHYSIOTHERAPY MANAGEMENT INCLUDING EXERCISE PRESCRIPTION IN:</b></p> <ul style="list-style-type: none"> <li>i. Myocardial infarction</li> <li>ii. Acquired heart conditions</li> <li>iii. Hypertension, hypotension</li> <li>iv. Rheumatic fever, rheumatic heart disease and non- rheumatic valvular diseases.</li> <li>v. Diseases of myocardium ,pericardial diseases, cardiomyopathies</li> <li>vi. Vascular diseases, peripheral vascular diseases and lymphatic diseases</li> <li>vii. Tumors of heart</li> <li>viii. Athlete heart</li> <li>ix. Congestive cardiac failure</li> <li>x. Cardiac arrhythmias</li> <li>xi. Congenital heart diseases</li> <li>xii. Cardiac transplantation</li> </ul> | 25 |

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| <b>3.</b>  | <b>PULMONARY DISORDERS AND PHYSIOTHERAPY MANAGEMENT INCLUDING EXERCISE PRESCRIPTION IN:</b><br>i. Obstructive pulmonary diseases<br>ii. Restrictive pulmonary diseases<br>iii. Infective lung diseases<br>iv. Occupational lung diseases<br>v. Lung cancer<br>vi. Chest wall deformities and spinal cord injury<br>vii. Diaphragmatic diseases<br>viii. Sleep apnea/ hyperventilation syndrome<br>ix. Respiratory disorders in children, cystic fibrosis | <b>25</b> |
| <b>4.</b>  | Common emergency conditions in cardio-respiratory system in adults and children and ethical issues in intensive care   | 02        |
| <b>5.</b>  | Cardio-pulmonary problems and complications in various neuromuscular disorders, facilitatory and inhibitory techniques and pnf techniques in various pulmonary disorders, manual techniques for various pulmonary disorders.   | 02        |
| <b>6.</b>  | Physical agents used in various cardio-vascular and respiratory disorders  | 02        |
| <b>7.</b>  | Cardio-vascular and pulmonary pharmacology- Indications, contraindications and effects.  | 02        |
| <b>8.</b>  | Body positioning: art and its physiological importance in general and in ICUs  | 02        |
| <b>9.</b>  | Aerosol therapy- Principles and its role in physiotherapy.   | 02        |
| <b>10.</b> | Humidifiers and Atomizers role in physiotherapy.   | 02        |
| <b>11.</b> | Stress, Importance of exercise in stress management and various stress coping strategies , relaxation techniques including yogic postures and yogic breathing in various lifestyle disorders and other cardio-vascular and pulmonary conditions  | 05        |
| <b>12.</b> | Importance of Patient education and counseling in various cardio-vascular and pulmonary disorders in cardio-respiratory conditions, CBR in cardio vascular and respiratory conditions  | 03        |

### **RECOMMENDED READING:**

1. Richard d Branson/Robert L Chatburn-“Respiratory Care Equipment”,J B Lippincott Company.
2. N R Malentyre/R D Branson-“Mechanical Ventilation”, Saunders.
3. Joanne Watchie(1995)-“Cardio-Pulmonary Physical Therapy”, Saunders.
4. Hillegass and Sadowsky(2001)-“Essentials of Cardio-Pulmonayr Physical Therapy”, Saunders,Elsiviers.
5. Michael L.Pollock and Donald H Schmidt- “Heart disease and Rehabilitation”.
6. Scot Irvin, Lan Stiphen Tecklin(2004)-“Cardio-Pulmonary physical therapy-a guide to practice”, Mosby.
7. Frances J Brannon, Margaret W Foley, Julie Ann Stars, Lauren M Saul(1998)-“Cardio-Pulmonary Rehabilitation-Basic Theory and Application”, F A Davis Company.
8. George G.Burton, John E Hodgkin, Jeffrey J Ward( 1997)- “Respiratory Care-A Guide to Clinical Practice” 4<sup>th</sup> edition, Lippincott Williams and Wilkins, A Wolters Kluwer Company.

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|--|--|---------------------------|
| <b>TITLE OF THE PAPER V : Recent advances and Evidence Based Practice in Cardio-Vascular and Pulmonary Physiotherapy</b> |  |                           |
| <b>Duration : 13 - 24 months</b>   |  | <b>Maximum Mark = 100</b> |
| <b>Theory : 150 hrs</b>  |  |                           |
| <b>Practical : 300 hrs</b>   |  |                           |
| <b>Sl.No.</b>  | <b>Content</b>   | <b>Hours</b>              |
| <b>A.</b>  | <b>I. Principles of exercise prescription and exercise program adherence.</b>  |                           |
| I.   | GENERAL:   |                           |
|  | i. Optimizing treatment prescription: relating treatment to the underlying pathophysiology of cardio-vascular and pulmonary disorders- an evidence based practice  | 15                        |
|  | ii. Documentation of the data, Report writing –prescription of exercises   | 05                        |
|  | iii.Importance of creating awareness in community, Patient education and psychological counseling in various cardio-vascular and pulmonary disorders- evidence based practice                                  | 10                        |
|  | iv.Recent advancement in Cardio- pulmonary resuscitation (basic and advanced)  | 05                        |
| 2.   | Bronchial hygiene- Physiological basis and clinical application, evidence based practice and recent advances of airway clearance techniques, including Facilitating airway clearance with coughing techniques. | 13                        |
| 3.   | Care of a dying patient – ethical issues and recent guidelines   | 02                        |
| 4.   | Cardiopulmonary training in various patient populations. Athletes, Geriatric and pediatric population  | 05                        |
| 5.   | Medical gas therapy including oxygen therapy: physiological basis, modes of administration, and home delivery care- an evidence based practice and recent advances including hyperbaric oxygen therapy.        | 05                        |

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| 6.  | Aerosol therapy- An Evidence based practice in chest physiotherapy.   | 05 |
| 7.  | Recent advances and evidence based practice in Exercise testing, planning, principles of exercise prescription and PT management in cardio-vascular and pulmonary conditions.   | 05 |
| 8.  | Recent advances and evidence based practice in cardio-respiratory physiotherapy and exercise prescription in special populations like cancer, renal conditions, burns, abdominal surgeries, Diabetic mellitus patients. | 10 |
| 9.  | Recent advances in the use of physical agents and PT management in wounds, ulcers, grafts and incisions and vascular disorders.   | 05 |
| 10. | Evidence based practice of core muscle strengthening, resistance training, endurance training, and other training methods in cardiac and pulmonary rehabilitation   | 10 |
| 11. | Pilates- school of thought for cardiopulmonary conditions.  | 05 |
| 12. | Physiotherapy management in oncology- Evidence based practice and recent advances.  | 05 |
| 13. | Recent advances and evidence based practice in Respiratory physiotherapy training techniques and respiratory physiotherapy devices.   | 05 |
| 14. | Evidence based practice and recent advances in improving Cardio-respiratory fitness training in all populations including general, pediatric and geriatric population.  | 15 |
| 15. | Evidence based practice and Recent guidelines in cardiac rehabilitation and pulmonary rehabilitation  | 10 |
| 16. | Role of exercise and quality of life and cardio-pulmonary rehabilitation, health status measurements and recent advances.   | 10 |

### **RECOMMENDED READING:**

1. Froelicher /Myers-“Exercise and heart’ published by Saunders.
2. Jean Jobin,Francois Maltais,Pierrie Le Blanc,Clermont ,Simard-“Advances in Cardio-Pulmonary Rehabilitation”
3. Scot Irvin,Lan Stiphen Tecklin(2004)-“Cardio-Pulmonary physical therapy-a guide to practice”,Mosby .
4. Frances J Brannon,Margaret W Foley,Julie Ann Stars,Lauren M Saul (1998)-“Cardio-Pulmonary Rehabilitation-Basic Theory and Application”,F A Davis Company.
5. Cynthia Coffin Zadai-“Pulmonary management in Physical therapy”,Churchill Livingstone.
6. Barbara A Webber and Jennifer A Pryor-“Physiotherapy for respiratory and cardiac problems”, Churchill Livingstone.
7. George G.Burton,John E Hodgin,Jeffrey J Ward ( 1997 )-“Respiratory Care-A Guide to Clinical Practice” 4<sup>th</sup> edition, Lippincott Williams and Wilkins, A Wolters Kluwer Company.

### **RECOMMENDED JOURNALS**

1. Physical Therapy (APTA, America)
2. Physiotherapy (CSP, London)
3. American Journal of Physical Medicine & Rehabilitation
4. Physiotherapy (Canada)
5. Australian Journal Of Physiotherapy
6. Journal of Indian Association of Physiotherapy
7. Clinical Kinesiology
8. Journal of Biomechanics
9. Pediatric Physical Therapy
10. Journal of Rehabilitation Research & Development
11. Archives Of Physical Medicine & Rehabilitation
12. Clinical Rehabilitation
13. Gait & Posture

### Branch : Master of Physiotherapy in Community and Rehabilitation

|   |  |                           |
|---|--|---------------------------|
| <b>Paper - III</b>  | <b>Clinical, physical and functional diagnosis in community physiotherapy &amp; Rehabilitation</b>   |                           |
| <b>Paper - IV</b>   | <b>Community Physiotherapy &amp; Rehabilitation</b>  |                           |
| <b>Paper - V</b>  | <b>Recent advances &amp; Evidence Based Practice in community physiotherapy and Rehabilitation.</b>  |                           |
| <b>TITLE OF THE PAPER III : Clinical, physical and functional diagnosis in community physiotherapy &amp; Rehabilitation</b> |  |                           |
| <b>Duration : 0 - 12 months</b>   |  | <b>Maximum Mark = 100</b> |
| <b>Theory : 150 hrs</b>   |  |                           |
| <b>Practical : 300 hrs</b>  |  |                           |
| <b>Sl.No.</b>   | <b>Content</b>   | <b>Hours</b>              |
| 1.  | Assessment of various pediatric, musculo-skeletal, OBG, neurological, cardio-respiratory conditions at community   | 10                        |
| 2.  | Outcome measures used in community physical therapy, Clinical decision making in rehabilitation.   | 15                        |
| 3.  | Patho-mechanics of posture, movement and gait, Gait analysis and diagnosis   | 10                        |
| 4.  | Diagnostic imaging (CT, MRI, Ultra sound, bone scan and other diagnostic imaging for diagnosis of congenital anomalies and normal variants, traumatic injuries, scoliosis).            | 15                        |
| 5.  | Diagnosis of clinical pediatric musculo-skeletal, OBG, neurological, cardio-respiratory conditions, problem based learning relevant to clinical conditions typically seen in community | 10                        |
| 6.  | Clinical examination in general and detection of movement dysfunction.   | 10                        |

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| 7.  | Principles of pathological investigations and imaging techniques related to multi-system disorders with interpretation.  | 10 |
| 8.  | Developmental disorders, screening and diagnosis.  | 10 |
| 9.  | Hand function-Assessment and diagnosis   | 05 |
| 10. | Voluntary control assessment Electro-diagnosis, clinical and kinesiological electromyography and evoked potential studies  | 10 |
| 11. | Anthropometric measurements.   | 05 |
| 12. | Physical fitness assessment by<br>a) Range of motion.<br>b) Muscle strength, endurance and skills.<br>c) Body composition.<br>d) Cardiac efficiency tests and spirometry.<br>e) Fitness testing. | 10 |
| 13. | Physical disability evaluation Methods and disability diagnosis.   | 15 |
| 14. | Equipment's in community physiotherapy such as:<br>i. Biofeedback<br>ii. Proprioception assessment equipment<br>iv. Goniometer (indigenous)<br>v. Orthotics (Recent advances only)               | 10 |
| 15. | Community survey – Demography, Disability, mental health, occupational health, nutrition, Environment  | 05 |

### **Recommended Reading:**

1. Chew, F. (1997). *Skeletal radiology: The bare bones* (2nd ed.). Baltimore, MD: Williams & Wilkins.
2. Eisenberg, R. L., & Johnson, N. M. (2003). *Comprehensive radiographic pathology* (3rd ed.). St Louis, MO: Mosby.
3. Hughes, J., & Hughes, M. (1997). *Imaging: Picture tests*. Edinburgh: Churchill Livingstone.
4. Mace, J. D., & Kowalczyk, N. (1994). *Radiographic pathology for technologists* (2nd ed.). St Louis, MO: Mosby.
5. Redhead, D. N. (1995). *Imaging: Colour guide*. Edinburgh: Churchill Livingstone.
6. Yochum, T. R., & Rowe, L. R. (2005). *Yochum and Rowe's essentials of skeletal radiology* (3rd ed., Vols. 1-2). Baltimore, MD: Lippincott Williams & Wilkins.
7. Gunn, C. (1997). *Bones and joints: A guide for students*. London: Churchill Livingstone.
8. Haines, D. E. (2002). *Fundamental neuroscience* (2nd ed.). W. B. Saunders Co.
9. Kandel, E. R., Schwartz, J. H., & Jessell, T. M. (2000). *Principles of neural science* (4th ed.). USA: McGraw-Hill.
10. Longmore, J., Wilkinson, I., & Rajagopalan, S. (2004). *Oxford handbook of clinical medicine* (6th ed.). Oxford: OUP.
11. Newman Dorland, W. A. (2003). *Dorland's illustrated medical dictionary* (30th ed.). W. B. Saunders Co.
12. Nolte, J. (2002). *The human brain: An introduction to its functional anatomy* (5th ed.). St Louis, MO: Mosby.
13. Nolte, J., & Angevine, Jr. J. B. (2000). *The human brain in photographs and diagrams* (2nd ed.). St Louis, MO: Mosby.
14. Wicke, L. (1997). *Atlas of radiologic anatomy* (6th ed.). Munich, Germany: Lea & Febiger.

15. Seidel, H. (1995). Mosby's guide to physical examination. St Louis, MO: C.V. Mosby.
16. Cailliet, R. (1991). Neck and arm pain (3rd ed.). Philadelphia: FA Davis.
17. Cailliet, R. (1991). Shoulder pain (3rd ed.). Philadelphia: FA Davis.
18. Cailliet, R. (1991). Knee pain and disability (3rd ed.). Philadelphia: FA Davis.
19. Cailliet, R. (1994). Hand pain and impairment (4th ed.). Philadelphia: FA Davis.
20. Cailliet, R. (1995). Low back pain syndrome (5th ed.). Philadelphia: FA Davis.
21. Cailliet, R. (1996). Soft tissue pain and disability (3rd ed.). Philadelphia: FA Davis.
22. Chaitow, L. (2005). Cranial manipulation: Theory and practice (2nd ed.). Edinburgh: Churchill Livingstone.
23. Greenman, P. E. (2003). Principles of manual medicine (3rd ed.). Philadelphia: Lippincott Williams & Wilkins.
24. Wilson, A. (2002). Effective management of musculoskeletal injury: A clinical ergonomics approach to prevention. Churchill Livingstone.
25. O'Sullivan, F.A. Davis, Philadelphia 1994. Physical rehabilitation: assessment and treatment.

| <b>TITLE OF THE PAPER IV : Community Physiotherapy &amp; Rehabilitation</b> |  |                           |
|---|--|---------------------------|
| <b>Duration : 13 - 24 months</b>  |  | <b>Maximum Mark = 100</b> |
| <b>Theory : 150 hrs</b>   |  |                           |
| <b>Practical : 300 hrs</b>  |  |                           |
| <b>Sl.No.</b>   | <b>Content</b>   | <b>Hours</b>              |
| 1.  | Concept, principles, components of community based rehabilitation, Planning and implementation, resources for CBR and disability rehabilitation. | 10                        |
| 2.  | Physiotherapy management for Ergonomics and industrial issues.   | 10                        |
| 3.  | Physiotherapy management of Neurological and pediatric condition at Community level  | 10                        |
| 4.  | Physiotherapy management of Orthopedic and medical condition at Community level  | 10                        |
| 5.  | Physiotherapy management of OBG, surgical and Geriatric condition at Community level   | 10                        |
| 6.  | Physiotherapy management of cardiac and pulmonary conditions at Community level  | 10                        |
| 7.  | Physiotherapy management of Nutritional, metabolic and developmental condition at Community level  | 10                        |
| 8.  | Health education, care & communication for community based rehabilitation of patients.   | 05                        |
| 9.  | Persons with disabilities, their health & expectations from health system.   | 05                        |
| 10.   | Multicultural influences on rehabilitation training & services.  | 05                        |
| 11.   | Welfare of the aged.   | 05                        |
| 12.   | Extension services & mobile units  | 05                        |
| 13.   | National District level rehabilitation programme.  | 05                        |
| 14.   | Concept of Impairment, disability, handicap (ICIDH) and early intervention and awareness program in <u>CBR</u> .                                 | 10                        |
| 15.   | Rehabilitation Approaches at Community levels  | 10                        |

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| 16. | National rehabilitation policies and benefits extended to Disabled   | 10 |
| 17. | Mobility Aids and appliances, adaptive functional devices to improve overall dysfunction. Architectural barriers, ADL Training | 10 |
| 18. | Role of various members of community physiotherapy team  | 05 |
| 19. | Role of physiotherapist as a master trainer in community physiotherapy & rehabilitation  | 05 |

**Recommended Reading:**

1. Community rehabilitation services for people with disabilities. ORV.C. Karan and Stephen Greenspan 1995.
2. Perspectives on disability and rehabilitation, contesting assumptions; challenging practice. Karen whalley Hammell. Churchill Livingstone. Elsevier 2006
3. Clinical decision making in rehabilitation by John V. Basmajian and Sikhar N. Banerjee Churchill Livingstone. 1996.
4. Objective evaluation of impairment & ability in locomotor handicapped – RAMAR 1993; SAI Publications.
5. Sociology & health care an introduction for nurses & other health care professionals 2nd edition Churchill Livingstone – John Bond, Senga Bond.
6. Friendships & community connections between people with & without development disabilities by Angela Novak, Amado, Poul H Brookes Publishing company 1993.
7. Training manual for the trainer of community level functionary of medical rehabilitation. Units I to VIII by Dr.R.K.Srivastava sponsored by WHO.
8. Ethical foundations of health care responsibilities in decision making by Jane Singleton, Susan McLaren Mosby.
9. Disability evaluation – Demeter, Anderson, Smit, (Mosby)
10. Industrial therapy by Glenda. Z. Key mosby 2002
11. Clinical reasoning in physical disabilities. Rebacca Dutton (Williams & Wilkims)

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|--|--|--------------------------|
| <b>TITLE OF THE PAPER V : Recent advances &amp; Evidence Based Practice in community physiotherapy and Rehabilitation.</b> |  |                          |
| <b>Duration : 13 - 24 months</b>   |  | <b>Maximum Mark =100</b> |
| <b>Theory : 150 hrs</b>  |  |                          |
| <b>Practical : 300 hrs</b>   |  |                          |
| <b>Sl.No.</b>  | <b>Content</b>   | <b>Hours</b>             |
| 1.   | Recent advances in Principles of fitness training for health promotion in community.   | 05                       |
| 2.   | Disability presentation & physiotherapy.   | 08                       |
| 3.   | Recent concepts in Home and self-help programs in community physiotherapy.   | 05                       |
| 4.   | Recent advances in Pediatric disorders screening including mental retardation & parental education programs.                       | 08                       |
| 5.   | Recent advances in management of musculos-skeleatal, neurological, cardiac, pulmonary, geriatric, OBG and other medical disorders. | 15                       |
| 6.   | New concepts in rural physiotherapy incorporated with Primary Health Centers   | 08                       |
| 7.   | Community awareness & participation in preventive aspects & demands on physiotherapy services.                                     | 08                       |
| 8.   | Recent advances in Vocational management of vocational problems.   | 06                       |
| 9.   | Ethical considerations, Recent Advances and Controversies in community physiotherapy.  | 05                       |
| 10.  | New trends in Research in community physiotherapy  | 06                       |
| 11.  | Legislative provisions for welfare of disabled including persons with disability act.  | 06                       |
| 12.  | Recent advance in clinical application of exercise & various techniques in rehabilitation. Current trends in rehabilitation.       | 06                       |
| 13.  | Recent advances in aids & appliances used in rehabilitation.   | 06                       |

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| 14. | Recent advances & controversies in rehabilitation approaches of multi-system conditions.   | 05 |
| 15. | Research in rehabilitation.  | 05 |
| 16. | Utilization of (ICF) International Classification of Functioning, Disability & health in community physiotherapy & rehabilitation. | 08 |
| 17. | Recent advances in instrumentations  | 05 |
| 18. | Evidence based physiotherapy in Neurological, orthopedic, pediatric, geriatric and other medical condition.                        | 15 |
| 19. | Evidence based physiotherapy in <u>CBR</u>   | 15 |
| 20. | Evidence based physiotherapy in <u>Aids</u> and appliances.  | 05 |

**Recommended Reading:**

1. TB of preventive & social medicine. By Gupta & Mahajan JP-3rd edition.
2. Park's T.B. of preventive & social medicine. By K. Park, 15th edition.
3. Rehabilitation surgery for deformities due to Poliomyelitis. Techniques for the district hospital.
4. Physical Rehabilitation assessment and treatment 3rd edition, Susan B. Osullivan, Thomas J. Schmitz.
5. Impairment rating and disability evaluation. Rondinelli, Katz. (2000) WB Saunders.
6. Physical rehabilitation –Outcome measures 2nd edition Finch. Brooks. Stratford. Mayo (Lippincott, Williams & Wilkins)
7. Innovation in community care & primary health the marylebone experiment by Patrick Pietroni, Christopher Pietroni. Churchill Livingstone.
8. Essential readings in rehabilitation outcomes measurement, application, Methodology & Technology. Edward A Dobrzykowski; Aspen Publications.
9. Community care for health professionals by Ann Compton & Mary Ashwin 2nd edition (Butterworth Heinemann).
10. Rehabilitation / restorative care in the community. Shirley P Hoeman C.V. Mosby Company.

## **RECOMMENDED JOURNALS**

1. Physical Therapy (APTA, America)
2. Physiotherapy (CSP, London)
3. American Journal of Physical Medicine & Rehabilitation
4. Physiotherapy (Canada)
5. Australian Journal Of Physiotherapy
6. Journal of Indian Association of Physiotherapy
7. Clinical Kinesiology
8. Journal of Biomechanics
9. Pediatric Physical Therapy
10. Journal of Neurologic Physical Therapy
11. Journal of Rehabilitation Research & Development
12. Archives Of Physical Medicine & Rehabilitation
13. Journal of Neurological Sciences
14. Clinical Rehabilitation
15. Spine
16. Gait & Posture

**Branch : Master of Physiotherapy in Geriatrics**

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|--|--|--------------|
| <b>Paper - III</b>   | <b>Clinical, physical and functional diagnosis in Geriatric Physiotherapy</b>  |              |
| <b>Paper - IV</b>  | <b>Geriatric Physiotherapy</b>   |              |
| <b>Paper - V</b>   | <b>Recent advances &amp; Evidence Based Practice in Geriatric Physiotherapy</b>  |              |
| <b>TITLE OF THE PAPER III : Clinical, physical and functional diagnosis in Geriatric Physiotherapy</b> |  |              |
| <b>Duration : 0 - 12 months                      Maximum Mark = 100</b>                                |  |              |
| <b>Theory     :    150 hrs</b>   |  |              |
| <b>Practical   :    300 hrs</b>  |  |              |
| <b>Sl.No.</b>  | <b>Content</b>   | <b>Hours</b> |
| 1.   | Review of Theories of ageing, concepts of ageing, physiology, and exercise physiology.   | 08           |
| 2.   | Assessment of various geriatric, musculo-skeletal, OBG, neurological, cardio-respiratory conditions.   | 10           |
| 3.   | Assessment of posture, movement and gait in elderly.   | 06           |
| 4.   | Diagnostic imaging (CT, MRI, Ultra sound, bone scan and other diagnostic imaging for diagnosis of geriatrics anomalies and normal variants, traumatic injuries, scoliosis).                    | 10           |
| 5.   | Clinical tests in geriatrics.  | 04           |
| 6.   | Clinical examination in general and detection of movement dysfunction. Principles of pathological investigations and imaging techniques related to multi-system disorders with interpretation. | 10           |
| 7.   | Hand function-Assessment, diagnosis & management.  | 10           |
| 8.   | Voluntary control assessment.  | 06           |
| 9.   | Electro-diagnosis, clinical and kinesiological electromyography and evoked potential studies, late responses and nerve conduction studies.   | 15           |
| 10.  | Outcome measures used in geriatric physiotherapy.  | 04           |
| 11.  | Principles & concepts of geriatric assessment.   | 02           |

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| 12. | Functional assessment, environmental design, cognitive impairment & depression in elderly.  | 10 |
| 13. | Geriatric screening with assessment of falls.   | 04 |
| 14. | Podiatric assessment of geriatric patients.   | 03 |
| 15. | Physical disability evaluation and disability diagnosis. Gait analysis and diagnosis.   | 10 |
| 16. | Arthrokinesiologic, sensory motor changes & adaptations in the geriatric population.  | 10 |
| 17. | Functional changes in hearing, vision, speech & sleep with ageing.  | 08 |
| 18. | Anthropometrics measurements.   | 20 |
|     | <b>Physical fitness assessment by</b><br>1. Range of motion.<br>2. Muscle strength, endurance and skills.<br>3. Body composition.<br>4. Cardiac efficiency tests and spirometry.<br>5. Fitness test for sports. |    |

| <b>TITLE OF THE PAPER IV : Geriatric Physiotherapy</b> |   |                           |
|--|---|---------------------------|
| <b>Duration : 13 - 24 months</b>                       |   | <b>Maximum Mark = 100</b> |
| <b>Theory : 150 hrs</b>                                |   |                           |
| <b>Practical : 300 hrs</b>                             |   |                           |
| <b>Sl.No.</b>  | <b>Content</b>  | <b>Hours</b>              |
| 1.   | Review of geriatrics physiotherapy. Concept of geriatrics physiotherapy science, philosophy, development and scope of geriatrics in India etc.  | 15                        |
| 2.   | Implications of ageing population for rehabilitation.   | 10                        |
| 3.   | Geriatric counseling and guidance.  | 04                        |
| 4.   | Patient education & awareness as intervention.  | 05                        |
| 5.   | Home and self help programs in geriatrics physiotherapy.  | 08                        |
| 6.   | Management of following problems in geriatric people - Impaired ventilation, muscle fatigue, impaired muscle endurance, balance problem & falls, chronic dermal wounds, pain, urinary incontinence & pelvic floor impairment. | 20                        |
| 7.   | Functional training.  | 10                        |
| 8.   | Training for gait & balance.  | 10                        |
| 9.   | Orthotic and prosthetic management in aged population.  | 07                        |
| 10.  | Aids and appliances and adaptive functional devices used in geriatric physiotherapy.  | 08                        |
| 11.  | The frail & institutionalized elder, well elders & their management.  | 10                        |
| 12.  | Physiotherapy management & rehabilitation of older athlete & older persons with developmental disabilities.   | 10                        |
| 13.  | Postural issues and its management in old age.  | 08                        |
| 14.  | Role of modern medicine and alternative medicine in geriatric physical therapy.   | 10                        |
| 15.  | Diet planning and prescription for Geriatric care.  | 05                        |

| <b>TITLE OF THE PAPER V : Recent advances and Evidence Based Practice in Geriatric-Physiotherapy</b> |  |                           |
|--|--|---------------------------|
| <b>Duration : 13 - 24 months</b>   |  | <b>Maximum Mark = 100</b> |
| <b>Theory : 150 hrs</b>  |  |                           |
| <b>Practical : 300 hrs</b>   |  |                           |
| <b>SI.No.</b>  | <b>Content</b>   | <b>Hours</b>              |
| RECENT ADVANCES  |  |                           |
| i.   | Current trends in geriatric rehabilitation.  | 08                        |
| ii.  | Recent advances in aids & appliances used in geriatric rehabilitation.   | 07                        |
| iii.   | Recent advances & controversies in geriatric rehabilitation approaches of multi-system conditions.   | 10                        |
| iv.  | Research in geriatric rehabilitation.  | 10                        |
| v.   | Utilization of (ICF) International Classification of Functioning, Disability & health in geriatric physiotherapy & rehabilitation.                                     | 10                        |
| vi.  | Recent advances in electrotherapy.   | 05                        |
| vii.   | Recent Socio-cultural aspects in geriatrics.   | 05                        |
| EVIDENCE BASED PRACTICE  |  |                           |
| 1.   | Management of Endocrine & metabolic disorders in geriatrics.   | 07                        |
| 2.   | Sexual dysfunction, neoplasms, dermatological, infectious, gastrointestinal & urological diseases in elderly.  | 08                        |
| 4.   | Nutritional deficiency disorders.  | 10                        |
| 5.   | Early intervention in geriatric rehabilitation.  | 10                        |
| 6.   | Physiotherapy management of psychiatric, locomotor, neurological & cardio-respiratory impairments, and disabilities at institutional & community levels in geriatrics. | 12                        |
| 7.   | ICU Physiotherapy management of geriatric patients.  | 10                        |

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|-----|---|----|
| 8.  | Foot care in geriatrics.  | 05 |
| 9.  | Effects of immobilization and its management in geriatric population                              | 10 |
| 10. | Evidence based clinical application of exercise & various techniques in geriatric rehabilitation. | 10 |
| 11. | Ethical & legal issues in geriatric physiotherapy.  | 08 |

#### RECOMMENDED BOOKS (PAPER III, IV, V)

1. Chew, F. (1997). *Skeletal radiology : The bare bones* (2nd Ed.). Baltimore, MD: Williams & Wilkins.
2. Eisenberg, R. L., & Johnson, N. M. (2003). *Comprehensive radiographic pathology* (3rd Ed.). St Louis, MO: Mosby.
3. Hughes, J., & Hughes, M. (1997). *Imaging: Picture tests*. Edinburgh: Churchill Livingstone.
4. Mace, J. D., & Kowalczyk, N. (1994). *Radiographic pathology for technologists* (2nd ed.). St Louis, MO: Mosby.
5. Redhead, D. N. (1995). *Imaging: Colour guide*. Edinburgh: Churchill Livingstone.
6. Yochum, T. R., & Rowe, L. R. (2005). *Yochum and Rowe's essentials of skeletal radiology* (3rd ed., Vols. 1-2). Baltimore, MD: Lippincott Williams & Wilkins.
7. Gunn, C. (1997). *Bones and joints: A guide for students*. London: Churchill Livingstone.
8. Haines, D. E. (2002). *Fundamental neuroscience* (2nd ed.). W. B. Saunders Co.
9. Kandel, E. R., Schwartz, J. H., & Jessell, T. M. (2000). *Principles of neural science* (4th ed.). USA: McGraw-Hill.
10. Longmore, J., Wilkinson, I., & Rajagopalan, S. (2004).
11. *Oxford handbook of Clinical medicine* (6th ed.). Oxford: OUP.

12. Newman Dorland, W. A. (2003). *Dorland's illustrated medical dictionary* (30th ed.). W. B. Saunders Co.
13. Nolte, J. (2002). *The human brain: An introduction to its functional anatomy* (5th ed.). St Louis, MO: Mosby.
14. Nolte, J., & Angevine, Jr. J. B. (2000). *The diagrams* (2nd ed.). St Louis, MO: Mosby. *human brain in photographs and*
15. Wicke, L. (1997). *Atlas of radiologic anatomy* (6th ed.). Munich, Germany: Lea & Febiger.
16. Seidel, H. (1995). *Mosby's guide to physical examination*. St Louis, MO: C.V. Mosby.
17. Cailliet, R. (1991). *Neck and arm pain* (3rd ed.). Philadelphia: FA Davis.
18. Cailliet, R. (1991). *Shoulder pain* (3rd ed.). Philadelphia: FA Davis.
19. Cailliet, R. (1991). *Knee pain and disability* (3rd ed.). Philadelphia: FA Davis.
20. Cailliet, R. (1994). *Hand pain and impairment* (4th ed.). Philadelphia: FA Davis.
21. Cailliet, R. (1995). *Low back pain syndrome* (5th ed.). Philadelphia: FA Davis.
22. Cailliet, R. (1996). *Soft tissue pain and disability* (3rd ed.). Philadelphia: FA Davis.
23. Chaitow, L. (2005). *Cranial manipulation: Theory and practice* (2nd ed.). Edinburgh: Churchill Livingstone.
24. Greenman, P. E. (2003). *Principles of manual medicine* (3rd ed.). Philadelphia: Lippincott Williams & Wilkins.
25. Wilson, A. (2002). *Effective management of musculoskeletal injury: A clinical ergonomics approach to prevention*. Churchill Livingstone.
26. O'Sullivan, F.A. Davis, Philadelphia 1994. *Physical rehabilitation: assessment and treatment*.
27. *Geriatric physical therapy* by Andrew A. Guccione, 2<sup>nd</sup> edition(Mosby 2000)
28. *Developing cultural competence in physical therapy practice* by Jill Black Lattanzi,Larry D. Purnell(F.A.Davis company, Philadelphia 2006)

29. Rehabilitation of the ageing & elderly patient by Gerald Felsenthal, Susan J. Garrison, Franz U. Steinberg (Williams & Wilkins 1994)
30. Physical therapy of the geriatric patient by Jackson Osa. Churchill Livingstone. New York.
31. Geriatric physical therapy: A clinical approach by Carole B. Lewis and Jennifer Bottomley (1993).
32. Geriatric rehabilitation manual by Timothy L. Kauffman (1999).
33. Manual of geriatric rehabilitation by David X. Cifu (2003).
34. Functional fitness for older adults by Patricia A. Brill (2004)
35. Epidemiology of ageing- An ecological approach by William A. Satariano (Jones & Bartlett publishers, 2006).
36. Little black book of geriatrics, by Karen Gershman, McCullough Dennis 4<sup>th</sup> Edition (Jones & Bartlett publishers, 2008)
37. Burnside's working with older adults, group process & techniques by Barbara Haight, Faith Gibson; 4<sup>th</sup> edition (Jones & Bartlett publishers, 2005).
38. Geriatric care. A Textbook of geriatrics & gerontology, 2004 & 2005.
39. Oxford textbook of geriatric medicine, J. Grimley Evans, T. Franklin Williams, B. Lynn Beatlie, J.P. Michel, G.K. Willcock. 2<sup>nd</sup> edition, 2000.
40. Geriatric medicine for students, Brocklehurst. J.C., 1976.
41. Geriatric secrets, Foricea. M.A, Mourey. R.J.L.-1996
42. Geriatric surgical emergencies by Joseph Harkins, 1963.
43. Current geriatric therapy, Covington, T.R.; 1984
44. Physiological basis of ageing & geriatrics, Timiras P.S. 1994.
45. Handbook of Geriatric drug therapy; Eletcher. K.
46. Physiotherapy practice in residential aged care; Jennifer C Nitz; Susan. R. Hourigan. 2004.
47. Principles of geriatric physiotherapy, Narinder kaur Multani, Satish kumar Varma; 2007.
48. Naturopathy for the elderly ; Dr. H.K. Bakhru-1999

## RECOMMENDED JOURNALS

1. Physical Therapy (APTA, America)
2. Physiotherapy (CSP, London)
3. American Journal of Physical Medicine & Rehabilitation
4. Physiotherapy (Canada)
5. Australian Journal Of Physiotherapy
6. Journal of Indian Association of Physiotherapy
7. Clinical Kinesiology
8. Journal of Biomechanics
9. Pediatric Physical Therapy
10. Journal of Neurologic Physical Therapy
11. Journal of Rehabilitation Research & Development
12. Archives Of Physical Medicine & Rehabilitation
13. Journal of Neurological Sciences
14. Clinical Rehabilitation
15. Spine
16. Gait & Posture

**Branch : Master of Physiotherapy Neurology**

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|--|---|--------------|
| <b>Paper - III</b>   | <b>Clinical, physical and functional diagnosis in Neuro-Physiotherapy</b>   |              |
| <b>Paper - IV</b>  | <b>Neurological Physiotherapy</b>   |              |
| <b>Paper - V</b>   | <b>Recent advances &amp; Evidence Based Practice in Neurological Physiotherapy</b>  |              |
| <b>TITLE OF THE PAPER III : Clinical, physical and functional diagnosis in Neuro-Physiotherapy</b> |   |              |
| <b>Duration : 0 - 12 months                      Maximum Mark = 100</b>                            |   |              |
| <b>Theory     :    150 hrs</b>   |   |              |
| <b>Practical   :   250 hrs</b>   |   |              |
| <b>Sl.No.</b>  | <b>Content</b>  | <b>Hours</b> |
| 1.   | Assessment, differential diagnosis and diagnosis of various Neurological Conditions   | 05           |
| 2.   | Associated functional disturbances of higher function and their testing.  | 05           |
| 3.   | Outcome measures used in Neuro-physiotherapy-for Cognitive impairment and disability, Focal disabilities, Global measures of disability, Motor impairment, ADL and extended ADL tests, Handicap and quality of life, Multiple Sclerosis, Parkinson's disease, Stroke, Head injury, Spinal cord injury, Pain scales. | 25           |
| 4.   | Clinical analysis of posture, movement and gait, use of gait analyzer.  | 05           |
| 5.   | Diagnostic imaging (CT, MRI, Ultra sound, PET, fMRI, bone scan and other diagnostic imaging) for diagnosis of Neurological conditions.  | 08           |
| 6.   | Clinical examination and detection of movement dysfunction.   | 05           |
| 7.   | Principles of pathological investigations and imaging techniques related to Neurology disorders with interpretation.  | 05           |
| 8.   | Evaluation of ANS dysfunction with reference to Psycho physiological testing  | 07           |
| 9.   | Motor control assessment, reflexes and automatic reactions.   | 05           |

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| 10. | Neurodevelopment assessment   | 08 |
| 11. | Hand function-Assessment, diagnosis & management  | 05 |
| 12. | Voluntary control assessment  | 05 |
| 13. | Neuropsychological tests.   | 05 |
| 14. | Electro therapeutics stimulation systems, Electrophysiological assessment devices and NMES - instrumentation, Characteristics and components.     | 10 |
| 15. | Electro-diagnosis, clinical and kinesiological electromyography and evoked potential studies (EMG, NCV, RNS, EP, EEG, ECG), Conventional Methods. | 10 |
| 16. | EMG with reference to pathophysiology and patho-mechanics. Quantitative, Qualitative EMG,   | 10 |
| 17. | Physical disability evaluation and disability diagnosis.  | 07 |
| 18. | Assessment of progressive locomotor disorder- Neuropathic and myopathic conditions.   | 10 |
| 19. | Assessment and scales for diagnosis of pain.  | 05 |
| 20. | Anthropometry   | 05 |

| <b>TITLE OF THE PAPER IV : Neurological Physiotherapy</b> |  |                           |
|---|--|---------------------------|
| <b>Duration : 13 - 24 months</b>                          |  | <b>Maximum Mark = 100</b> |
| <b>Theory : 150 hrs</b>                                   |  |                           |
| <b>Practical : 300 hrs</b>                                |  |                           |
| <b>Sl.No.</b>   | <b>Content</b>   | <b>Hours</b>              |
| 1.  | History of neurological physiotherapy, Epidemiology, classification of Neurology disorders, symptomatology, patho-physiology and management of Neurological disorders. | 10                        |
| 2.  | Physiotherapy interventions of various disorders of central motor control  | 06                        |
| 3.  | Physiotherapy interventions of various disorders of the motor unit – Neuropathies, Myopathies, Neuromuscular junction.   | 05                        |
| 4.  | Physiotherapy interventions for autonomous Nervous system dysfunction  | 05                        |
| 5.  | Physiotherapy intervention for Peripheral nervous system conditions (injuries and lesions)   | 06                        |
| 6.  | Physiotherapy interventions for tonal abnormalities.   | 03                        |
| 7.  | Physiotherapy intervention for traumatic conditions of CNS   | 05                        |
| 8.  | Physiotherapy management for demyelinating inflammatory infectious and degenerative conditions.  | 05                        |
| 9.  | Physiotherapy management for CNS neoplasia.  | 05                        |
| 10.   | Metabolic and deficiency disorders and their management  | 05                        |
| 11.   | Congenital neurological disorders and management   | 05                        |
| 12.   | Disorders of perception & cognition & their management, Learning and behavioral disorders and its management   | 10                        |
| 13.   | Sensory system dysfunction and rehabilitation  | 05                        |

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| 14. | Oromotor dysfunctions and Management   | 03 |
| 15. | Visual deficits and its management   | 03 |
| 16. | Vestibular dysfunction and its rehabilitation  | 03 |
| 17. | Psychosomatic conditions and management.   | 03 |
| 18. | Neuro - surgical conditions and its postoperative management.  | 05 |
| 19. | Neuro-Physiotherapy management in Intensive care units (ICU).  | 03 |
| 20. | Physiotherapy interventions for muscle imbalances and corrective measures. Musculo-skeletal and Neurological complications of locomotor disorders  | 05 |
| 21. | Pain management  | 05 |
| 22. | Aids and appliances, adaptive functional devices to improve Neurology dysfunction  | 05 |
| 23. | Management of bladder and bowel dysfunction  | 05 |
| 24. | Neuro-physiotherapeutic approaches – Compensatory training approach, Muscle re-education approach, Neuro-physiological approaches - NDT, Brunnstrom, Roods, PNF, Sensory integration therapy.  |    |
|     | Motor relearning program, Constraint Induced movement therapy, Task oriented approach, Novel approach, Vojta therapy.  |    |
|     | Biofeedback training, Neural mobilization and neuro dynamics, Sensory rehabilitation, Body weight supported treadmill training, Myofacial release technique, Inhibitory and facilitation technique, Functional re-education, Learning skills, A.D.L, Tapping in neurological conditions. | 25 |
| 25. | FES, NMES, Biofeedback, Various equipments used in Neuro-physiotherapy   | 05 |
| 26. | Problem based learning clinical conditions in Neurology physiotherapy.   | 03 |
| 27. | Pharmacology in Neurophysiotherapy   | 02 |

| <b>TITLE OF THE PAPER V : Recent advances and Evidence Based Practice in Neurological Physiotherapy</b> |  |                           |
|---|--|---------------------------|
| <b>Duration : 13 - 24 months</b>  |  | <b>Maximum Mark = 100</b> |
| <b>Theory : 150 hrs</b>   |  |                           |
| <b>Practical : 300 hrs</b>  |  |                           |
| <b>Sl.No.</b>   | <b>Content</b>   | <b>Hours</b>              |
| 1.  | Recent advances in Neuro-physiotherapy   | 10                        |
| 2.  | Genetic counseling, Stem cell therapy, Gene therapy  | 08                        |
| 3.  | Recent advances in pain modulation and rehabilitation.   | 08                        |
| 4.  | Recent advances in Vocational rehabilitation in Neurology disorders with disability  | 10                        |
| 5.  | Recent advancement in Neurology Orthosis – prescription and training.  | 10                        |
| 6.  | Psychiatry problems in Neurological conditions and physiotherapy (BAT, CBT). Psychological aspects of adaptation during various aspects of neurological disabilities   | 14                        |
| 7.  | Institutional & community based rehabilitation for Neurological Dysfunction.   | 05                        |
| 8.  | Self treatment, management and exercise prescription for home program, Report writing. Conceptual framework for clinical practice. Requirements for medical opinion or treatment, documentation, prescription, management and advice.  | 10                        |
| 9.  | Recent Neuro Physiotherapy technique - Mental imagery technique, virtual reality therapy, robotic movement therapy, Pilates therapy, Mirror box therapy, Mime therapy, cranio-sacral therapy, Neurodynamics in neurological conditions and neural mobilization, Hydrotherapy, Hippo-therapy. | 20                        |
| 10.   | Eclectic approach  | 04                        |

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| 11. | History of Evidence based practice in neurological physiotherapy, clinical decision making, importance of evidence based practice, Evidence about prognosis, experience and diagnosis, locating evidences, challenges and barriers in EBP. | 10 |
| 12. | Evidences in interventions for neurological impairments  | 10 |
| 13. | Evidences for physiotherapy in traumatic CNS conditions  | 04 |
| 14. | Evidences in physiotherapy management of stroke, CP, Cerebellar Ataxia.  | 04 |
| 15. | Evidences in physiotherapy management of peripheral nerve injuries   | 04 |
| 16. | Evidences in physiotherapy management of Parkinson's disease   | 04 |
| 17. | Evidences in physiotherapy management of myopathies and other neurological conditions.   | 10 |
| 18. | Sports training in neurological physiotherapy  | 05 |

**Recommended Reading** For paper III, IV, V.

1. American Psychological Association. (2001). Publication manual of the American Psychological Association (5th ed.). Washington, DC: Author.
2. Chichester, UK: John Wiley. Domholdt, E. (2000) Physical therapy research: Principles and applications, 2nd ed. WB Saunders, Philadelphia, USA.
3. Kuzma, J. W., & Bohnenblust, S. E. (2004). Basic statistics for the health sciences. (5th ed.). Boston: McGraw Hill.
4. Munro, B. H. (1997). Statistical methods for health care research (3rd ed.). Philadelphia: Lippincott.
5. Coakes, S. J., & Steed, L. G. (2003). SPSS: Analysis without anguish: Version 11.0 for Windows. Milton, Australia: John Wiley & Sons Inc. Jenkins, S., Price CJ, & Straker L. (1998).
6. The researching therapist. A practical guide to planning, performing and communicating research. Edinburgh: Churchill Livingstone.
7. Campbell, M.J., & Machin, D. Medical statistics: A commonsense approach (2nd ed.). Chichester, UK: John Wiley.

8. Domholdt, E. (2000). Physical therapy research: Principles and applications (2nd ed.). Philadelphia: WB Saunders.
9. Gowitzke, Williams and Wilkins. Scientific Basis of Human Movement. Baltimore, 3<sup>rd</sup> edn.
10. Handbook of Physiology in Aging- Masoro, C.R.C. Press, 1981.
11. Hicks C: Research of Physiotherapists. Churchill Livingstone, Edinburgh 1995 5<sup>th</sup> edn.
12. Polgar S.: Introduction to Research in Health Sciences. Livingstone London, 1988.
13. Currier D.P: Elements of Research Physical Therapy. Williams & Wilkins, Baltimore, 1990, 3<sup>rd</sup> Edition.
14. Sproull: Hand Book of Research method. Scarecrow Press 1998.
15. Wilenski, Hale & Iremonger: Public Power and Administration. 1986.
16. Hickik Robert J: Physical Therapy Administration and management.
17. Nosse Lorry J: Management Principles for Physiotherapists.
18. Carpenter M.B: Human Neuroanatomy. Williams & Wilkins, Baltimore, 1983, 9<sup>th</sup> edition.
19. Fraser: Physical Management of Multiple Handicapped. William & Wilkins, Baltimore.
20. Aisen: Orthotics in neurological rehabilitation. Demos Publication, New York 1992
21. Delisa: Manual of nerve conduction velocity techniques. Raven press, New York, 1982.
22. Kimura J, F.A Davis: Electrodiagnosis in diseases of nerve and muscle. Philadelphia , 2<sup>nd</sup> edition.
23. O' Sullivan, F. A Davis: Physical rehabilitation: Assessment and treatment. Philadelphia ,5<sup>th</sup> edition
24. Farber: Neuro – rehabilitation. W.B. Saimders , Philadelphia 1982
25. Kerb D: Bio- Feedback – A practitioners guide. Guiford press.
26. Black I: The neural basis of motor control. Churchill, Livingstone , London - 1987

27. Turnbull Gerode I: Physical therapy management of Parkinson's disease. Churchill , Livingstone , London -1994
28. Bobath B: Abnormal postural reflex activity caused by Brain Lesions. Aspen publications, Rockville ,1897
29. Eigel: Disorders of Voluntary Muscle. Churchill, Living stone Edingburgh 1988.
30. Knot M. and Voss: Proprioception, neuro muscular facilitation techniques. Harper and Row , New York 1972 2<sup>nd</sup> Edition.
31. Laidler, Capman and Hall: Stroke rehabilitation. London 1994
32. Carr J.H, Shephered R.B: Motor relearning programme for stroke. Aspen publication, Rock Ville, 1987.2<sup>nd</sup> edition
33. Bobath B. Heinmann: Adult hemiplegia evaluation and treatment: London 1983, 3<sup>rd</sup> edition
34. Brombley: Paraplegia and tetraplegia. Churchill, Livingstone, Edingburgh 1991.4<sup>th</sup> edition
35. Measurement in Physical therapy – Churchill, Livingstone, London 1988.
36. Maria stokes: Physical management neurological rehabilitation, Elsevier,Mosby.2nd edn
37. Misra U.K, Kalita J: Clinical Neurophysiology NCV, EMG, Evoked Potentials, Elsevier, New Delhi, 2005.5<sup>th</sup> edition
38. Joel A Delisa, Gans B.M: Rehabilitation medicine principles and practice, rewan, Philadelphia, New York, 1998 3<sup>rd</sup> Edition.
39. Robert Gunzbnng, Marek Szpalski: Whiplash Injuries, current concepts in prevention diagnosis and treatment, Lippincot Williams & wilkins.
40. Krusen's: Hand book of physical rehabilitation, kottke, lehman saunder's, 4<sup>th</sup> Edition.
41. Ropper A.H, Brown R.H: Adam and victors principle of neurology, Mc graw – hill companies USA 2005 8<sup>th</sup> Edition.
42. Richard S. Snell: Clinical Neuroanatomy for medical students, Lippincott Williams & wilkins 2001 5<sup>th</sup> Edition.
43. Martha Freeman Somers: Spinal cord injury functional rehabilitation 1992.

44. David S Butler: Mobilisation of the nervous system Churchill Livingstone, New York.
45. Darcy A. Umphred: Neurological rehabilitation, Mosby, Sedney, 5<sup>th</sup> Edition.
46. Kenneth W. Lindsay, Ian Bone: Neurology & Neurosurgery illustrated, 4<sup>th</sup> Edition.
47. M Flint Beal, Anthony.E. Lang, Albert Ludolph: Neurodegenerative Diseases, Cambridge University Publication, USA 2005 1st edition.
48. Jose .I. Suarez :Critical Care Neurology and Neurosurgery, HUMANA PRESS PUBLICATIONS,USA 1st edition.
49. David .R. Lynch:Neurogenetics-Scientific & Clinical Advances,Taylor & Francis Group Publication New York 2006 3rd edition.
50. Asbury, Mckann, Medonald: Diseases of Nervous System- Vol .I and Vol II, Mcarthur public, 3rd edition.

#### **RECOMMENDED JOURNALS**

1. Physical Therapy (APTA, America)
2. Physiotherapy (CSP, London)
3. American Journal of Physical Medicine & Rehabilitation
4. Physiotherapy (Canada)
5. Australian Journal Of Physiotherapy
6. Journal of Indian Association of Physiotherapy
7. Clinical Kinesiology
8. Journal of Biomechanics
9. Pediatric Physical Therapy
10. Journal of Neurologic Physical Therapy
11. Journal of Rehabilitation Research & Development
12. Archives Of Physical Medicine & Rehabilitation
13. Journal of Neurological Sciences
14. Clinical Rehabilitation
15. Spine
16. Gait & Posture

**Branch : Master of Physiotherapy in Obstetrics and Gynecology (OBG)**

|  |   |                           |
|--|---|---------------------------|
| <b>Paper - III</b>   | <b>Clinical, physical and functional diagnosis in OBG Physiotherapy</b>   |                           |
| <b>Paper - IV</b>  | <b>OBG Physiotherapy</b>  |                           |
| <b>Paper - V</b>   | <b>Recent advances &amp; Evidence Based Practice in OBG Physiotherapy</b>   |                           |
| <b>TITLE OF THE PAPER III : Clinical, physical and functional diagnosis in OBG Physiotherapy</b> |   |                           |
| <b>Duration : 0 - 12 months</b>  |   | <b>Maximum Mark = 100</b> |
| <b>Theory</b>  | <b>: 150 hrs</b>  |                           |
| <b>Practical</b>   | <b>: 300 hrs</b>  |                           |
| <b>Sl.No.</b>  | <b>Content</b>  | <b>Hours</b>              |
| <b>I</b>   | <p><b>REVIEW OF ANATOMY, PHYSIOLOGY, BIOMECHANICS AND DISORDERS OF MENSTRUAL CYCLE</b></p> <ol style="list-style-type: none"> <li>1. Anatomy of female reproductive system and abdominal wall</li> <li>2. Contents of the pelvic cavity- Pelvic diaphragm, Pelvic floor muscles, Perineum and external genitalia</li> <li>3. Pelvic axis, position, obstetric diameters and shape and abnormal bony pelvis</li> <li>4. Clinical biomechanics and patho-mechanics of spine, female pelvis, posture, movement and gait.</li> <li>5. Ovulation induction, Ovarian function, clinical aspects of ovulation</li> <li>6. Pre menstrual syndrome and</li> <li>7. Polycystic ovarian syndrome</li> <li>8. Menstruation cycle and other clinical phenomena such as amenorrhoea, dysmenorrhoea, menorrhoea, polymenorrhoea, oligomenorrhoea and hypothalamic pituitary dysfunction</li> </ol> | <b>25 hrs</b>             |
| <b>II</b>  | <p><b>REVIEW OF PREGNANCY, LABOR AND PUERPERIUM</b></p> <ol style="list-style-type: none"> <li>1. Preconception health, factors affecting conception</li> <li>2. Conception</li> </ol>  | <b>25 hrs</b>             |

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|            | <ul style="list-style-type: none"> <li>3. Physiological changes during pregnancy</li> <li>4. Physiology of labor</li> <li>5. Physiological changes and physical problems in puerperium</li> <li>6. Injuries of uterine support &amp; pelvic joints during labor, Repair of perineum after delivery</li> <li>7. Anatomical &amp; physiological changes during postpartum period</li> </ul>  |               |
| <b>III</b> | <p><b>REVIEW OF CONTRACEPTION, STERILIZATION AND FERTILITY</b></p> <ul style="list-style-type: none"> <li>1. Inject able and implantable contraception</li> <li>2. Intra uterine devices</li> <li>3. Abortion and Miscarriage</li> <li>4. MTP and Sterilization</li> <li>5. Fertility, infertility, sub fertility</li> </ul>   | <b>10 hrs</b> |
| <b>IV</b>  | <p><b>CLINICAL DIAGNOSIS AND INVESTIGATIONS IN HIGH RISK PREGNANCY</b></p> <ul style="list-style-type: none"> <li>1. Abortion, ectopic pregnancy</li> <li>2. Heart disease in pregnancy assessment</li> <li>3. Diabetes mellitus in pregnancy</li> <li>4. UTI in pregnancy</li> <li>5. HIV in pregnancy</li> <li>6. Trauma in pregnancy</li> <li>7. Hypertension in pregnancy</li> <li>8. Gastrointestinal disorders in pregnancy</li> <li>9. Viral exposure during pregnancy</li> <li>10. Vaginal birth after cesarean section</li> </ul> | <b>20 hrs</b> |

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|-------------|---|--|
| <b>V</b>    | <b>UROGYNAECOLOGY SYSTEM</b><br>1. Review of mechanism of continence and voiding difficulties<br>2. Review of Sexual dysfunction in Urogynecology<br>3. Assessment of Urinary bladder dysfunction<br>4. Genital Prolapse, Assessment and diagnosis<br>5. Other displacements of uterus, assessment and diagnosis<br>6. Overactive bladder syndrome, assessment and diagnosis          | <b>20 hrs</b>  |
| <b>VI</b>   | <b>THE AGEING FEMALE</b><br>1. Anatomical & physiological & psychological changes of Menopause<br>2. Assessment and diagnosis of Senile osteoporosis & related complications<br>3. The climacteric- assessment and diagnosis  | <b>10 hrs</b>  |
| <b>VII</b>  | <b>INVESTIGATIONS IN OBSTETRICS AND GYNECOLOGY WITH INTERPRETATION</b><br>1. Pregnancy tests and investigations<br>2. Imaging techniques in obstetrics and gynecology<br>3. Urodynamics investigations<br>4. Investigations of endocrinal disorders in females<br>5. Instrumentation for assessment of Pelvic floor muscles- Perineometer<br>6. Outcome measures in OBG Physiotherapy | <b>20 hrs</b>  |
| <b>VIII</b> | <b>MISCELLANEOUS</b><br>1. Antenatal physiotherapy assessment<br>2. Postnatal physiotherapy assessment<br>3. Breast function, disorders and assessment<br>4. Abdominal incisions & assessment<br>5. Anthropometric measurements<br>6. Assessment, clinical tests and diagnosis of movement dysfunction and other musculoskeletal dysfunctions during pregnancy and postpartum period  | <b>20 hrs</b><br><br><br><br><br><br><br><br><br><br><b>15 hrs</b> |

### **Recommended Reading :**

1. Gray, Henry. 1918. Anatomy of the Human Body, 20th ed.
2. C.Guyton, John E. Hall, Textbook of medical physiology, W.B.Saunders company- Harcourt Brace Jovanovich, Inc.
3. D.K.James et al. High Risk Pregnancy-management options, Saunders-An imprint of Elsevier.
4. Margaret Polden, Jill Mantle, Physiotherapy in obstetric and gynecology, Butterworth-Heinemann, Linacre house, Jordan Hill, Oxford, 1990.
5. Ann Thomson, Tidy's physiotherapy, Varghese publishing House, Bombay.
6. Ruth Sapsford, Joanne Bullock-Saxton, Sue Markwell. Women's Health: A Textbook for Physiotherapists, 1997.
7. Scientific basis of human movement –Gowitzke, Williams and Wilkins, Baltimore, 1988, III edition.
8. Clinical biomechanics of spine – White A, and Panjabi- J, B. Lippincot, Philadelphia 1978.
9. Physiotherapy in Obstetrics and Gynaecology- 2nd edition- Jill Mantle, Jeanette Haslam, Sue Bartom. Forwarded by Professor Linda Cardow
10. Physiotherapy in Obstetrics & Gynaecology – Polden & Mantle, Jaypee Brothers, New Delhi, 1994.
11. D.C Datta -Textbook of Gynaecology. 1st edition
12. Women's Health- A textbook for Physiotherapists R.Sapsford J. Bullock. Saxton. S, Markwell.- (W.B. Saunders)
13. Obstetrics & Gynaecologic care in Physical Therapy- 2nd edition-Rebecca.C. Stephenson, Linda.J.O'contuor
14. Clinical Cases in Obstetreibs & Gynaecology- Haresh U. Doshi, published by Arihant publishers

15. Advanced in Obstetrics & Gynaecology(vol 2)- Shalini Rajaram, Sumita Mehta,Niraj Goel(Jaypee brothers.
16. Physiotherapy Care for Women's Health – R. Baranitharan, V. Mahala Kshmi (jaypee brothers)
17. Williams Obstetrics- 22nd edition- F.Gary Cunningham, Krenneth J Leveno, Steven L Bloom.
18. Women's Health- 5th edition edited by Deborah Waller, Ann McPherso (oxford) Steven G Gabbe, Jennifer.R. Niebyl Joe Leigh simpson- Obstetrics Normal & Problem Pregnancies - 5th edition- associate editors : Henry Galon, Laura Guetzi, Mark Landson, Eric.R.M. Jauniau

|  |  |                           |
|--|--|---------------------------|
| <b>TITLE OF THE PAPER IV : Obstetrics and Gynecology (OBG) Physiotherapy</b> |  |                           |
| <b>Duration : 13 - 24 months</b>   |  | <b>Maximum Mark = 100</b> |
| <b>Theory : 150 hrs</b>  |  |                           |
| <b>Practical : 250 hrs</b>   |  |                           |
| <b>Sl.No.</b>  | <b>Content</b>   | <b>Hours</b>              |
| <b>I</b>   | <b>PHYSIOTHERAPY MANAGEMENT OF MENSTRUAL PROBLEMS</b><br>1. Nutrition in adolescence<br>2. Physiotherapy management of puberty disorders   | <b>10 hrs</b>             |
| <b>II</b>  | <b>PHYSIOTHERAPY MANAGEMENT OF MATERNAL MUSCULOSKELETAL DISORDERS</b><br>1. Neck & upper back strain<br>2. TMJ pain<br>3. Thoracic outlet syndrome, costal rib pain<br>4. Carpal tunnel syndrome<br>5. Dequervain's diseases<br>6. Diastasis recti abdominis<br>7. Sacroiliac joint dysfunction (anterior & posterior innominate)<br>8. Symphysis pubis dysfunction<br>9. Low back pain, piriformis syndrome, coccyx pain<br>10. Knee & patella dysfunction<br>11. Nerve palsies, muscle & tendon injuries | <b>20 hrs</b>             |
| <b>III</b>   | <b>PHYSICAL THERAPY MANAGEMENT DURING ANTENATAL PERIOD</b><br>1. Early bird classes<br>2. Methods of relieving pregnancy discomfort<br>3. Preparation for labour<br>4. Relaxation Techniques and Stress management during pregnancy<br>5. Aquanatal exercises during antenatal period  | <b>25 hrs</b>             |

|           |  |               |
|-----------|--|---------------|
|           | 6. Exercise Prescription during antenatal period<br>7. Orthotic management during pregnancy<br>8. Ergonomics in pregnancy  |               |
| <b>IV</b> | <b>PHYSICAL THERAPY MANAGEMENT DURING LABOR PAIN</b><br>1. Perinatal care- Coping strategies for labour<br>2. TENS in labour<br>3. Traditional practices related to pregnancy and postpartum management<br>4. Positions for delivery, types of delivery<br>5. Pain management and management of discomforts during labor<br>6. Maternal position and state during labour<br>7. Stress management during labor<br>8. Relaxation techniques<br>9. Breathing techniques<br>10. Massage                        | <b>20 hrs</b> |
| <b>V</b>  | <b>PHYSICAL THERAPY MANAGEMENT DURING POSTPARTUM PERIOD</b><br>1 Exercise Prescription during postpartum period<br>2 Lactation management & Breast Clinic<br>3 The postnatal period, postnatal exercises and advise<br>4 Alternative therapies related to pregnancy and postpartum management<br>5 Schools of Manual Therapy and joint mobilization techniques<br>6 Aquanatal exercises during postnatal period<br>7 Orthotic management during postpartum<br>8 Stress management during postpartum period | <b>20 hrs</b> |

|             |  |               |
|-------------|--|---------------|
|             | <ul style="list-style-type: none"> <li>9. Maternal position and state during postpartum period</li> <li>10. Ergonomic advice in postpartum period</li> <li>11. Massage techniques</li> <li>12. Handling techniques of new born</li> </ul>  |               |
| <b>VI</b>   | <p><b>GENERAL GYNAECOLOGICAL CONDITIONS</b></p> <ul style="list-style-type: none"> <li>1. Physiotherapy management for incontinence</li> <li>2. Physiotherapy management for genital prolapse</li> <li>3. Physiotherapy management for endometriosis</li> <li>4. Physiotherapy management for chronic pelvic pain and dyspareunia</li> <li>5. Physiotherapy management for sexual dysfunction</li> <li>6. Physiotherapy management for Pelvic Inflammatory Disease</li> <li>7. Physiotherapy management for sexually transmitted diseases</li> </ul> | <b>20 hrs</b> |
| <b>VIII</b> | <p><b>OPERATIVE PROCEDURES AND PHYSIOTHERAPY MANAGEMENT</b></p> <ul style="list-style-type: none"> <li>1. Principles of surgery and Physiotherapy management of intra operative complications</li> <li>2. Pre operative and post operative care</li> <li>3. Hysterectomy and Physiotherapy management</li> <li>4. Fertility awareness and family planning methods</li> <li>5. Cancer Rehabilitation (Breast &amp; Cervical cancer)</li> </ul>  | <b>20 hrs</b> |
| <b>X</b>    | <p><b>MISCELLANEOUS</b></p> <ul style="list-style-type: none"> <li>1. Physiotherapy Management for musculoskeletal complications during menopause</li> <li>2. Nutrition for menopause women</li> <li>3. The methods of infection control for physiotherapist working with women's health</li> <li>4. Assisted reproduction treatments</li> </ul>   | <b>15 hrs</b> |

**Recommended Reading:**

1. Gray, Henry. 1918. Anatomy of the Human Body, 20th ed.
2. C.Guyton, John E. Hall, Textbook of medical physiology, W.B.Saunders company- Harcourt Brace Jovanovich, Inc.
3. D.K.James et al. High Risk Pregnancy-management options, Saunders-An imprint of Elsevier.
4. Margaret Polden, Jill Mantle, Physiotherapy in obstetric and gynecology, Butterworth-Heinemann, Linacre house, Jordan Hill, Oxford, 1990.
5. Ann Thomson, Tidy's physiotherapy, Varghese publishing House, Bombay.
6. Ruth Sapsford, Joanne Bullock-Saxton, Sue Markwell. Women's Health: A Textbook for Physiotherapists, 1997.
7. Scientific basis of human movement –Gowitzke, Williams and Wilkins, Baltimore, 1988, III edition.
8. Clinical biomechanics of spine – White A, and Panjabi- J, B. Lippincot, Philadelphia 1978.
9. Physiotherapy in Obstetrics and Gynaecology- 2nd edition- Jill Mantle, Jeanette Haslam, Sue Bartom. Forwarded by Professor Linda Cardow
10. Physiotherapy in Obstetrics & Gynaecology – Polden & Mantle, Jaypee Brothers, New Delhi, 1994.
11. D.C Datta -Textbook of Gynaecology. 1st edition
12. Women's Health- A textbook for Physiotherapists. R.Sapsford J. Bullock. Saxton. S, Markwell.- (W.B. Saunders)
13. Obstetrics & Gynaecologic care in Physical Therapy- 2nd edition-Rebecca.C. Stephenson, Linda.J.O'contuor
14. Clinical Cases in Obstetrics & Gynaecology- Haresh U. Doshi, published by Arihant publishers
15. Advanced in Obstetrics & Gynaecology(vol 2)- Shalini Rajaram, Sumita Mehta,Niraj Goel(Jaypee brothers).

16. Physiotherapy Care for Women's Health – R. Baranitharan, V. Mahala Kshmi (jaypee brothers)
17. Williams Obstetrics- 22nd edition- F.Gary Cunningham, Krenneth J Leveno, Steven L Bloom.
18. Women's Health- 5th edition edited by Deborah Waller, Ann McPherso (oxford) Steven G Gabbe, Jennifer.R. Niebyl Joe Leigh simpson- Obstetrics Normal & Problem Pregnancies - 5th edition- associate editors : Henry Galon, Laura Guetzi, Mark Landson, Eric.R.M. Jauniau

| <b>TITLE OF THE PAPER V : Recent advances &amp; Evidence Based Practice in OBG<br/>Physiotherapy</b> |  |                           |
|--|--|---------------------------|
| <b>Duration : 13 - 24 months</b>   |  | <b>Maximum Mark = 100</b> |
| <b>Theory : 150 hrs</b>  |  |                           |
| <b>Practical : 250 hrs</b>   |  |                           |
| <b>Content</b>   |  | <b>Hours</b>              |
| 1  | Antenatal Pilates and post natal Pilates   | 5                         |
| 2  | Alternative therapies in OBG conditions  | 15                        |
| 3  | Alternate approaches to fitness in antenatal & postpartum period   | 15                        |
| 4  | Recent advances in Outcome measures used in OBG physical therapy   | 15                        |
| 5  | Recent advances in evaluation and treatment of maternal musculoskeletal disorders in Obstetrics and Gynecology | 20                        |
| 6  | EBP and recent advances of Electrotherapy in OBG Physiotherapy   | 10                        |
| 7  | EBP and recent advances of Exercise therapy in OBG Physiotherapy   | 10                        |
| 8  | EBP and recent advances of Hydrotherapy in OBG Physiotherapy   | 5                         |
| 9  | EBP and recent advances of Thermotherapy in OBG Physiotherapy  | 5                         |
| 10   | EBP and recent advances of Cryotherapy in OBG Physiotherapy  | 5                         |
| 11   | EBP and recent advances of joint mobilization techniques in OBG Physiotherapy                                  | 15                        |
| 12   | Recent advances in instrumentations, theories, Obstetrics and Gynaecology physical therapy techniques          | 20                        |
| 13   | EBP of Nutrition in women from adolescence to menopause  | 10                        |

### **Recommended Reading:**

1. Gray, Henry. 1918. Anatomy of the Human Body, 20th ed.
2. C.Guyton, John E. Hall, Textbook of medical physiology, W.B.Saunders company- Harcourt Brace Jovanovich, Inc.
3. D.K.James et al. High Risk Pregnancy-management options, Saunders-An imprint of Elsevier.
4. Margaret Polden, Jill Mantle, Physiotherapy in obstetric and gynecology, Butterworth-Heinemann, Linacre house, Jordan Hill, Oxford, 1990.
5. Ann Thomson, Tidy's physiotherapy, Varghese publishing House, Bombay.
6. Ruth Sapsford, Joanne Bullock-Saxton, Sue Markwell. Women's Health: A Textbook for Physiotherapists, 1997.
7. Scientific basis of human movement –Gowitzke, Williams and Wilkins, Baltimore, 1988, III edition.
8. Clinical biomechanics of spine – White A, and Panjabi- J, B. Lippincot, Philadelphia 1978.
9. Physiotherapy in Obstetrics and Gynaecology- 2nd edition- Jill Mantle, Jeanette Haslam, Sue Bartom. Forwarded by Professor Linda Cardow
10. Physiotherapy in Obstetrics & Gynaecology – Polden & Mantle, Jaypee Brothers, New Delhi, 1994.
11. D.C Datta -Textbook of Gynaecology. 1st edition
12. Women's Health- A textbook for Physiotherapists. R.Sapsford J. Bullock. Saxton. S, Markwell.- (W.B. Saunders)
13. Obstetrics & Gynaecologic care in Physical Therapy- 2nd edition-Rebecca.C. Stephenson, Linda.J.O'connor
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18. Women's Health- 5th edition edited by Deborah Waller, Ann McPherso (oxford) Steven G Gabbe, Jennifer.R. Niebyl Joe Leigh simpson- Obstetrics Normal & Problem Pregnancies - 5th edition- associate editors : Henry Galon, Laura Guetzl, Mark Landson, Eric.R.M. Jauniau

#### **RECOMMENDED JOURNALS**

1. Physical Therapy (APTA, America)
2. Physiotherapy (CSP, London)
3. American Journal of Physical Medicine & Rehabilitation
4. Physiotherapy (Canada)
5. Australian Journal Of Physiotherapy
6. Journal of Indian Association of Physiotherapy
7. Clinical Kinesiology
8. Journal of Biomechanics
9. Pediatric Physical Therapy
10. Journal of Neurologic Physical Therapy
11. Journal of Rehabilitation Research & Development
12. Archives Of Physical Medicine & Rehabilitation
13. Journal of Neurological Sciences
14. Clinical Rehabilitation
15. Spine
16. Gait & Posture

**Branch : Master of Physiotherapy in Orthopedic Manual Therapy Courses**

|  |   |              |
|--|---|--------------|
| <b>Paper - III</b>   | <b>Clinical, physical and functional diagnosis in Orthopedic Manual Therapy</b>   |              |
| <b>Paper - IV</b>  | <b>Orthopedic Manual Therapy</b>  |              |
| <b>Paper - V</b>   | <b>Recent advances &amp; Evidence Based Practice in Orthopedic Manual Therapy</b>   |              |
| <b>TITLE OF THE PAPER III : Clinical, physical and functional diagnosis in Orthopedic Manual Therapy</b> |   |              |
| <b>Duration : 0 - 12 months                      Maximum Mark = 100</b>                                  |   |              |
| <b>Theory     :   150 hrs</b>  |   |              |
| <b>Practical   :   250 hrs</b>   |   |              |
| <b>Sl.No.</b>  | <b>Content</b>  | <b>Hours</b> |
| 1.   | Clinical assessment, clinical tests and diagnosis of clinical orthopaedic conditions  | 15           |
| 2.   | Manual therapy assessment and manual therapy diagnosis of various orthopaedic conditions  | 15           |
| 3.   | Differential diagnosis in musculoskeletal conditions  | 10           |
| 4.   | Outcome measures used in orthopaedic manual therapy   | 05           |
| 5.   | Functional assessment (Hand function, Gait, Posture A.D.L; occupational work)   | 05           |
| 6.   | Pathomechanics and clinical biomechanics of peripheral and spinal joints,   | 15           |
| 7.   | problem based learning relevant to clinical conditions typically seen in orthopaedic  | 10           |
| 8.   | Assessment and clinical examination of Movement dysfunction and Muscle imbalances   | 06           |
| 9.   | Principles of pathological investigations and Diagnostic imaging techniques(CT, MRI, Ultra sound, bone scan and other diagnostic imaging's) related to musculoskeletal disorders with interpretation. | 10           |
| 10.  | Developmental bone disorders and diagnosis.   | 05           |

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|-----|--|----|
| 11. | Anthropometric measurements.   | 05 |
| 12. | Physical fitness assessment by   | 15 |
|     | <ul style="list-style-type: none"> <li>a) Range of motion</li> <li>b) Muscle strength, endurance and skills.</li> <li>c) Body composition</li> <li>d) Cardiac efficiency tests and spirometry</li> <li>e) Fitness test for sports</li> </ul> |    |
| 13. | Aids and appliances, adaptive functional devices to improve dysfunction.   | 16 |
| 14. | Physical disability evaluation and disability diagnosis.   | 06 |

| <b>TITLE OF THE PAPER IV : Orthopedic Manual Therapy</b> |  |                           |
|--|--|---------------------------|
| <b>Duration : 13 - 24 months</b>                         |  | <b>Maximum Mark = 100</b> |
| <b>Theory : 150 hrs</b>                                  |  |                           |
| <b>Practical : 300 hrs</b>                               |  |                           |
| <b>Sl.No.</b>  | <b>Content</b>   | <b>Hours</b>              |
| 1.   | Introduction to Manual Therapy: Concept of manual therapy, mobilization and manipulation, concept of barriers and movement and concept of movement science etc.  | 15                        |
| 2.   | Biomechanics of different tissues and activities: Muscle, ligaments, tendons, fascia, articular cartilage, joints, gait, spinal cord and peripheral nerves, vessels and day to day activities.   | 10                        |
| 3.   | Exercise planning and Exercise Prescription  | 7                         |
| 4.   | Pain: Concept, theories, causes, presentations, assessments, differential diagnosis and principles of management.  | 5                         |
| 5.   | Classification of manual therapy and other related therapies: Philosophies, historical aspects, types / classification, physiological basis of manual therapy, principles, indications & contraindications of various manual therapy techniques such as: Maitland, Mulligan, Mckenzie, Cyriax, Soft tissue therapies, Myofascial release therapy, Stretching, Positional release therapy or counter strain therapy, Muscle energy technique, neuromuscular technique and etc. (Definition/concept, types, principles of assessment and techniques, indications, contraindications etc) | 15                        |
| 6.   | General principles of assessment and diagnosis in manual medicine or therapy. Clinical Applications of Manual Therapies in the treatment of peripheral & spinal and cranial component<br><br>i. Peripheral Segments mobilization and manipulations (Traumatic and nontraumatic musculoskeletal disorders):   | 20                        |

|     |   |    |
|-----|---|----|
|     | <ul style="list-style-type: none"> <li>a. Spinal components in general.</li> <li>b. Cervical spine components.</li> <li>a. Shoulder joint and shoulder girdle components</li> <li>b. Elbow and forearm components</li> <li>c. Wrist and hand components</li> <li>d. Hip, knee, ankle and foot components</li> <li>e. Temporomandibular components.</li> <li>ii. Spine and cranium. (Traumatic and nontraumatic musculoskeletal disorders): <ul style="list-style-type: none"> <li>a. Spinal components in general.</li> <li>b. Cervical spine components.</li> <li>c. Thoracic spine and thorax components</li> <li>d. Lumbo sacral spine components</li> <li>e. S I joint components</li> <li>f. Lumbo pelvic hip complex</li> <li>g. Cranium mobilization/ manipulations</li> </ul> </li> </ul> |    |
| 7.  | Manual Therapy in Occupational Dysfunctions: Principles of Assessment and Diagnosis Management  | 05 |
| 8.  | Diagnosis of dysfunctions, selection and application of techniques etc.   | 10 |
| 9.  | Pilates – school of thought.  | 10 |
| 10. | Home and self help programmes in Manual Therapy   | 05 |
| 11. | Adjunct Therapies to Manual Therapy: Relaxation, Posture Programmes, Biofeedback, Electrotherapeutics, Tappings, Orthotics, Neuromobilization etc.  | 20 |

| <b>TITLE OF THE PAPER V : Recent advances and Evidence Based Practice in Orthopedic Manual Therapy</b> |   |                           |
|--|---|---------------------------|
| <b>Duration : 13 - 24 months</b>   |   | <b>Maximum Mark = 100</b> |
| <b>Theory : 150 hrs</b>  |   |                           |
| <b>Practical : 300 hrs</b>   |   |                           |
| <b>Sl.No.</b>  | <b>Content</b>  | <b>Hours</b>              |
| 1.   | EBP and Recent advances in clinical assessment, laboratory investigations and diagnosis of musculoskeletal disorders          | 07                        |
| 2.   | EBP In Management of pain in musculoskeletal disorders  | 05                        |
| 3.   | Recent Advances in management of orthopedic conditions (Medical and Surgical)   | 08                        |
| 4.   | Recent Advances in Manual Therapy management for spinal disorders   | 06                        |
| 5.   | Recent Advances in Manual Therapy management in arthritis and allied conditions   | 08                        |
| 6.   | Recent Advances and Controversies in Electrotherapy   | 07                        |
| 7.   | Recent advances in Kinematic & kinetic analysis   | 05                        |
| 8.   | Current trends and EBP in Taping techniques   | 06                        |
| 9.   | Current trends in sports injuries and management.   | 08                        |
| 10.  | Evidence Based physiotherapy in management of metabolic and hormonal, neoplastic and infective conditions of bones and joints | 08                        |
| 11.  | Recent Advances in Physiotherapy following arthroplasty, implants and soft tissue repairs                                     | 09                        |
| 12.  | EBP and recent advances in physiotherapy after tendon transfer, Electrical stimulation and biofeedback procedures.            | 07                        |
| 13.  | EBP in Rehabilitation of congenital conditions and malformation of musculoskeletal disorders                                  | 06                        |

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| 14. | Recent Advances in External aids, appliances, adaptive self-help devices; prescription, biomechanical compatibility, check- out and training.            | 08 |
| 15. | EBP and Recent advances in electro diagnosis, Electromyography, NCV and evoked potential studies.  | 07 |
| 16. | Ergonomics assessment and management at work place.  | 08 |
| 17. | Recent Advances and Controversies in Manual Therapy.   | 07 |
| 18. | Evidence based physiotherapy practice in orthopedic manual therapy.  | 04 |
| 19. | Current trends in orthopedic implants - designs, materials indications, post – operative physiotherapy   | 07 |
| 20. | Current trends in Fractures, joint instabilities, soft tissue disorders, deformities, nerve injuries and physiotherapy                                   | 08 |
| 21. | Recent advances in Amputation - physiotherapy management and prosthetic prescription   | 06 |
| 22. | Equipment in orthopedic physiotherapy such as:<br>a. Isokinetic<br>b. EMG and Biofeedback<br>c. Proprioception assessment equipment<br>d. Gait analyzers | 05 |

**Recommended Reading: Paper III, IV, V**

1. Chew, F. (1997). Skeletal radiology: The bare bones (2nd ed.). Baltimore, MD: Williams & Wilkins.
2. Eisenberg, R. L., & Johnson, N. M. (2003). Comprehensive radiographic pathology (3rd ed.). St Louis, MO: Mosby.
3. Hughes, J., & Hughes, M. (1997). Imaging: Picture tests. Edinburgh: Churchill Livingstone.
4. Mace, J. D., & Kowalczyk, N. (1994). Radiographic pathology for technologists (2nd ed.). St Louis, MO: Mosby.

5. Redhead, D. N. (1995). *Imaging: Colour guide*. Edinburgh: Churchill Livingstone.
6. Yochum, T. R., & Rowe, L. R. (2005). *Yochum and Rowe's essentials of skeletal radiology* (3rd ed., Vols. 1-2). Baltimore, MD: Lippincott Williams & Wilkins.26
7. Gunn, C. (1997). *Bones and joints: A guide for students*. London: Churchill Livingstone.
8. Haines, D. E. (2002). *Fundamental neuroscience* (2nd ed.). W. B. Saunders Co.
9. Kandel, E. R., Schwartz, J. H., & Jessell, T. M. (2000). *Principles of neural science* (4th ed.). USA: McGraw-Hill.
10. Longmore, J., Wilkinson, I., & Rajagopalan, S. (2004). *Oxford handbook of clinical medicine* (6th ed.). Oxford: OUP.
11. Newman Dorland, W. A. (2003). *Dorland's illustrated medical dictionary* (30th ed.). W. B. Saunders Co.
12. Nolte, J. (2002). *The human brain: An introduction to its functional anatomy* (5th ed.). St Louis, MO: Mosby.
13. Nolte, J., & Angevine, Jr. J. B. (2000). *The human brain in photographs and diagrams* (2nd ed.). St Louis, MO: Mosby.
14. Wicke, L. (1997). *Atlas of radiologic anatomy* (6th ed.). Munich, Germany: Lea & Febiger.
15. Seidel, H. (1995). *Mosby's guide to physical examination*. St Louis, MO: C.V. Mosby.
16. Cailliet, R. (1991). *Neck and arm pain* (3rd ed.). Philadelphia: FA Davis.
17. Cailliet, R. (1991). *Shoulder pain* (3rd ed.). Philadelphia: FA Davis.
18. Cailliet, R. (1991). *Knee pain and disability* (3rd ed.). Philadelphia: FA Davis.
19. Cailliet, R. (1994). *Hand pain and impairment* (4th ed.). Philadelphia: FA Davis.
20. Cailliet, R. (1995). *Low back pain syndrome* (5th ed.). Philadelphia: FA Davis.
21. Cailliet, R. (1996). *Soft tissue pain and disability* (3rd ed.). Philadelphia: FA Davis.

22. Chaitow, L. (2005). Cranial manipulation: Theory and practice (2nd ed.). Edinburgh: Churchill Livingstone. 27
23. Greenman, P. E. (2003). Principles of manual medicine (3rd ed.). Philadelphia: Lippincott Williams & Wilkins.
24. Wilson, A. (2002). Effective management of musculoskeletal injury: A clinical ergonomics approach to prevention. Churchill Livingstone.
25. O'Sullivan, F.A. Davis, Philadelphia 1994. Physical rehabilitation: assessment and treatment.
26. Victor H. Frankel and Mangareta Nordin Basic Biomechanics of the Musculoskeletal system 2nd Edition
27. Leon chaitow, and Judith Walker Delany - Clinical application on neuromuscular techniques: Vol-2 (The lower body)
28. Jones, M. A., & Rivett, D. A. (2004). Clinical reasoning for manual therapists. Edinburgh: Butterworth Heinemann.
29. Eyal Lederman - Fundamentals of manual therapy. 30. Grieve's modern manual therapy
31. Walter Herzog - Clinical Biomechanics of spinal manipulation 32. Sandy Fritz, Kathleen Paholsky and M.Janes Grosenbach - Basic Science for soft tissue and movement therapies.
33. Jean Sayne Adams, Steve Wright - Theory and practice of therapeutic touch.
34. Akhoury Gourang Sinha – Principle and practice of therapeutic massage
35. Carol Manheim – The Myofascial release manual 3rd Edition
36. Maitland's – Peripheral manipulation 3rd Edition
37. Maitland's – Vertebral manipulation 6th Edition
38. Chaitow – Cranial manipulation theory and practice
39. Lynn Paul Taylor – Taylor's manual of physical evaluation and treatment
40. Denise Deic – Positional release technique from a dynamic systems perspective.

41. Goodman and Snyder – Differential diagnosis in physical therapy 2nd Edition.
42. Chaitow - Muscle energy technique, Management of Common Musculoskeletal Disorder (P.T. Principles and Methods): 3rd Edition
43. Jones, M. A., & Rivett, D. A. (2004). Clinical reasoning for manual therapists. Edinburgh: Butterworth Heinemann.
44. Eyal Lederman - Fundamentals of manual therapy.
45. Grieve's modern manual therapy
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50. Carol Manheim – The Myofascial release manual 3rd Edition
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52. Maitland's – Vertebral manipulation 6th Edition
53. Chaitow – Cranial manipulation theory and practice
54. Lynn Paul Taylor – Taylor's manual of physical evaluation and treatment
55. Denise Deic – Positional release technique from a dynamic systems perspective.
56. Goodman and Snyder – Differential diagnosis in physical therapy 2nd Edition.
57. Chaitow - Muscle energy technique
58. Reid et al – Sports injury assessment and rehabilitation.
59. Kjaer et al – Text book of sports medicine
60. Scudder Mc Can - Sports medicine, A comprehensive approach 2nd Edition
61. Norris – Sports injuries, diagnosis and management for physiotherapists.
62. Werner Kuprian – Physical therapy for sports.
63. Mc Ginnis – Biomechanics of sports and exercises.

**Branch : Master of Physiotherapy in Orthopedic**

|   |  |              |
|---|--|--------------|
| <b>Paper - III</b>  | <b>Clinical, physical and functional diagnosis in Orthopedic Physiotherapy</b>   |              |
| <b>Paper - IV</b>   | <b>Orthopedic Physiotherapy</b>  |              |
| <b>Paper - V</b>  | <b>Recent advances &amp; Evidence Based Practice in Orthopedic Physiotherapy</b>   |              |
| <b>TITLE OF THE PAPER III : Clinical, physical and functional diagnosis in Orthopedic Physiotherapy</b> |  |              |
| <b>Duration : 0 - 12 months                      Maximum Mark = 100</b>                                 |  |              |
| <b>Theory     :    150 hrs</b>  |  |              |
| <b>Practical   :    250 hrs</b>   |  |              |
| <b>Sl.No.</b>   | <b>Content</b>   | <b>Hours</b> |
| 1   | Physiotherapy assessment of various orthopedic conditions.   | 15           |
| 2   | Differential diagnosis in musculoskeletal conditions.  | 10           |
| 3   | Functional assessment (Hand function, Gait, Posture, A.D.L, Occupational work)   | 10           |
| 4   | Outcome measures used in Orthopedic physiotherapy.   | 05           |
| 5   | Biomechanical and Pathomechanical assessment of peripheral and spinal joints.  | 15           |
| 6   | Principles of pathological investigations and Diagnostic imaging for diagnosis of orthopedic conditions with interpretation. | 10           |
| 7   | Clinical assessment and diagnosis of soft tissue disorders.  | 15           |
| 8   | Manual therapy – assessment and diagnosis of joint and soft tissue dysfunction.  | 15           |
| 9   | Clinical examination of Muscle imbalances in orthopedic conditions.  | 06           |
| 10  | Assessment and diagnosis of Developmental bone disorders.  | 05           |
| 11  | Anthropometric measurements.   | 05           |
| 12  | Physical fitness assessment by<br>a) Range of motion<br>b) Muscle strength, endurance and skills.                            | 15           |

|    |   |    |
|----|---|----|
|    | c) Body composition<br>d) Cardiac efficiency tests and spirometry<br>e) Fitness test for sports |    |
| 13 | Physical disability evaluation and disability diagnosis.  | 06 |
| 14 | Gait analysis and diagnosis.  | 07 |
| 15 | Pain assessment and Psychosocial effects and illness behavior of chronic pain.                  | 06 |
| 16 | Checkouts of orthotics and prosthetics for neuromusculoskeletal problems.                       | 10 |

| <b>TITLE OF THE PAPER IV : Orthopedic Physiotherapy</b> |   |                           |
|---|---|---------------------------|
| <b>Duration : 13 - 24 months</b>                        |   | <b>Maximum Mark = 100</b> |
| <b>Theory : 150 hrs</b>                                 |   |                           |
| <b>Practical : 300 hrs</b>                              |   |                           |
| <b>Sl.No.</b>   | <b>Content</b>  | <b>Hours</b>              |
| 1   | Advanced instruction in treatment and follow-up of the musculoskeletal system.  | 02                        |
| 2   | Muscle imbalances leading to dysfunction with corrective measures.  | 06                        |
| 3   | Exercise planning and Exercise Prescription.  | 06                        |
| 4   | Management of pathological gaits and Postural deviations.   | 07                        |
| 5   | Orthopaedic implants - designs, materials indications, post – operative physiotherapy.  | 04                        |
| 6   | Manual therapy – Principles, indications, contraindications, and methods of application of joint mobilization techniques and soft tissue manipulations.   | 15                        |
| 7   | Cumulative Traumatic Disorders and management.  | 05                        |
| 8   | Aids and appliances, adaptive functional devices to improve neuromusculoskeletal dysfunctions.  | 05                        |
| 9   | Physiotherapy management of locomotor impairments, and disabilities at institutional & community levels.  | 04                        |
| 10  | Taping techniques in orthopedic conditions.   | 06                        |
| 11  | Sports injuries and their management.   | 06                        |
| 12  | Physiotherapy management in Fractures, Joint Instabilities, Soft Tissue Disorders, Deformities, Nerve Injuries, Metabolic, Hormonal Conditions, Neoplastic, Infective Conditions Of Bones and Joints. | 18                        |
| 13  | Pre and Post surgical Rehabilitation of Joint replacement surgeries.  | 05                        |

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| 14 | Physiotherapy management after tendon transfer, Electrical stimulation and biofeedback procedures                                      | 03 |
| 15 | Rehabilitation of Spinal cord injuries – Tetraplegia and paraplegia.   | 06 |
| 16 | Electrotherapeutic management in orthopedic conditions.  | 12 |
| 17 | Rehabilitation of congenital conditions and malformation of musculoskeletal disorders.   | 05 |
| 18 | Physiotherapy management in Amputation and Prosthetic Prescription.  | 06 |
| 19 | Equipments in orthopedic physiotherapy such as: Isokinetic, EMG and Biofeedback, Proprioception assessment equipments, Gait analyzers. | 12 |
| 20 | Home and self help programme in orthopedic physiotherapy.  | 05 |
| 21 | Disability prevention and management.  | 03 |
| 22 | Clinical decision making in orthopedic physiotherapy.  | 03 |

| <b>TITLE OF THE PAPER V : Recent advances and Evidence Based Practice in Orthopedic Physiotherapy</b> |  |                           |
|---|--|---------------------------|
| <b>Duration : 13 - 24 months</b>  |  | <b>Maximum Mark = 100</b> |
| <b>Theory : 150 hrs</b>   |  |                           |
| <b>Practical : 300 hrs</b>  |  |                           |
| <b>Sl.No.</b>   | <b>Content</b>   | <b>Hours</b>              |
| 1   | EBP and Recent advances in clinical assessment, laboratory investigations and diagnosis of musculoskeletal disorders.          | 07                        |
| 2   | EBP In Management of pain in musculoskeletal disorders.  | 06                        |
| 3   | Recent Advances in management of orthopedic conditions- medical, surgical and physiotherapy.                                   | 18                        |
| 4   | Recent Advances in Physiotherapy management in arthritis and allied conditions.  | 08                        |
| 5   | Recent Advances and Controversies in Electrotherapy for orthopedic conditions.   | 10                        |
| 6   | Pilates – school of thought.   | 04                        |
| 7   | Recent advances in Kinematic & kinetic analysis.   | 05                        |
| 8   | Current trends and EBP in Taping techniques.   | 06                        |
| 9   | Current trends in sports injuries and management.  | 08                        |
| 10  | Evidence Based physiotherapy in management of metabolic and hormonal, neoplastic and infective conditions of bones and joints. | 08                        |
| 11  | Recent Advances in Physiotherapy following arthroplasty, implants and soft tissue repairs.                                     | 12                        |
| 12  | EBP and recent advances in physiotherapy after tendon transfer, Electrical stimulation and biofeedback procedures.             | 08                        |
| 13  | EBP in Rehabilitation of congenital conditions and malformation of musculoskeletal disorders.                                  | 06                        |

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| 14 | Recent Advances in External aids, appliances, adaptive self-help devices; prescription, biomechanical compatibility, check- out and training. | 08 |
| 15 | EBP and Recent advances in electro diagnosis, Electromyography, NCV and evoked potential studies.   | 10 |
| 16 | Community based rehabilitation in musculoskeletal disorders.  | 08 |
| 17 | Recent Advances and Controversies in Orthopaedic physiotherapy.   | 10 |
| 18 | Ergonomics assessment and management at work place.   | 08 |

### **Recommended Reading for Paper III, IV & V**

1. Jones, M. A., & Rivett, D. A. (2004). Clinical reasoning for manual therapists. Edinburgh: Butterworth Heinemann.
2. Eyal Lederman - Fundamentals of manual therapy.
3. Grieve's modern manual therapy
4. Walter Herzog - Clinical Biomechanics of spinal manipulation
5. Sandy Fritz, Kathleen Paholsky and M.Janes Grosenbach - Basic Science for soft tissue and movement therapies.
6. Jean Sayne Adams, Steve Wright - Theory and practice of therapeutic touch.
7. Akhoury Gourang Sinha – Principle and practice of therapeutic massage
8. Carol Manheim – The Myofascial release manual 3<sup>rd</sup> Edition
9. Maitland's – Peripheral manipulation 3<sup>rd</sup> Edition
10. Maitland's – Vertebral manipulation 6<sup>th</sup> Edition
11. Chaitow – Cranial manipulation theory and practice
12. Lynn Paul Taylor – Taylor's manual of physical evaluation and treatment
13. Denise Deic – Positional release technique from a dynamic systems perspective.
14. Goodman and Snyder – Differential diagnosis in physical therapy 2<sup>nd</sup> Edition.
15. Chaitow - Muscle energy technique

16. Reid et al – Sports injury assessment and rehabilitation.
17. Kjaer et al – Text book of sports medicine
18. Scudder Mc Can - Sports medicine, A comprehensive approach 2<sup>nd</sup> Edition
19. Norris – Sports injuries, diagnosis and management for physiotherapists.
20. Werner Kuprian – Physical therapy for sports.
21. Mc Ginnis – Biomechanics of sports and exercises.
22. Chew, F. (1997). Skeletal radiology: The bare bones (2nd ed.). Baltimore, MD: Williams & Wilkins.
23. Eisenberg, R. L., & Johnson, N. M. (2003). Comprehensive radiographic pathology (3rd ed.). St Louis, MO: Mosby.
24. Hughes, J., & Hughes, M. (1997). Imaging: Picture tests. Edinburgh: Churchill Livingstone.
25. Mace, J. D., & Kowalczyk, N. (1994). Radiographic pathology for technologists (2nd ed.). St Louis, MO: Mosby.
26. Redhead, D. N. (1995). Imaging: Colour guide. Edinburgh: Churchill Livingstone.
27. Yochum, T. R., & Rowe, L. R. (2005). Yochum and Rowe's essentials of skeletal radiology (3rd ed., Vols. 1-2). Baltimore, MD: Lippincott Williams & Wilkins.
28. Gunn, C. (1997). Bones and joints: A guide for students. London: Churchill Livingstone.
29. Haines, D. E. (2002). Fundamental neuroscience (2nd ed.). W. B. Saunders Co.
30. Kandel, E. R., Schwartz, J. H., & Jessell, T. M. (2000). Principles of neural science (4th ed.). USA: McGraw-Hill.
31. Longmore, J., Wilkinson, I., & Rajagopalan, S. (2004). Oxford handbook of clinical medicine (6th ed.). Oxford: OUP.
32. Newman Dorland, W. A. (2003). Dorland's illustrated medical dictionary (30th ed.). W. B. Saunders Co.

33. Nolte, J. (2002). *The human brain: An introduction to its functional anatomy* (5th ed.). St Louis, MO: Mosby.
34. Nolte, J., & Angevine, Jr. J. B. (2000). *The human brain in photographs and diagrams* (2nd ed.). St Louis, MO: Mosby.
35. Wicke, L. (1997). *Atlas of radiologic anatomy* (6th ed.). Munich, Germany: Lea & Febiger.
36. Seidel, H. (1995). *Mosby's guide to physical examination*. St Louis, MO: C.V. Mosby.
37. Cailliet, R. (1991). *Neck and arm pain* (3rd ed.). Philadelphia: FA Davis.
38. Cailliet, R. (1991). *Shoulder pain* (3rd ed.). Philadelphia: FA Davis.
39. Cailliet, R. (1991). *Knee pain and disability* (3rd ed.). Philadelphia: FA Davis.
40. Cailliet, R. (1994). *Hand pain and impairment* (4th ed.). Philadelphia: FA Davis.
41. Cailliet, R. (1995). *Low back pain syndrome* (5th ed.). Philadelphia: FA Davis.
42. Cailliet, R. (1996). *Soft tissue pain and disability* (3rd ed.). Philadelphia: FA Davis.
43. Chaitow, L. (2005). *Cranial manipulation: Theory and practice* (2nd ed.). Edinburgh: Churchill Livingstone.
44. Greenman, P. E. (2003). *Principles of manual medicine* (3rd ed.). Philadelphia: Lippincott Williams & Wilkins.
45. Wilson, A. (2002). *Effective management of musculoskeletal injury: A clinical ergonomics approach to prevention*. Churchill Livingstone.
46. O'Sullivan, F.A. Davis, Philadelphia 1994. *Physical rehabilitation: assessment and treatment*.
47. Victor H. Frankel and Mangareta Nordin *Basic Biomechanics of the Musculoskeletal system* 2<sup>nd</sup> Edition
48. *Essentials of Orthopedics for physiotherapists* by John Ebenezer – Jaypee Publications
49. *Practical Fracture Treatment* by Ronald Mc Rae, Max Esser – Churchill Livingstone

50. Oxford Textbook of Orthopedics & Trauma – Christopher Bulstrode, Joseph Buckwalter, Oxford University Press
51. Fractures & Joint Injuries – By Watson Jones – Churchill Livingstone
52. Measurement in Physical Therapy – Churchill Livingstone, London
53. Soft Tissue Pain & Disability – Cailliet Rene, Jaypee Brothers, New Delhi
54. Physical therapy of the low back –Twomey, Churchill, Livingstone, London
55. Clinical Orthopaedic Examination by Ronald McRae – Churchill Livingstone
56. Campbell's operative orthopedics – By S. Terry Can ale, James H. Beaty – Mosby
57. Orthopedic Physical Assessment, By David J. Magee – Saunders
58. Diagnostic Imaging for Physical Therapists – by James Swain, Kenneth W. Bush & Juliette Brosing – Elsevier
59. Differential Diagnosis For Physical Therapists: Screening for Referral – by Catherine C. Goodman & Teresa Kelly Snyder – Saunders
60. Lynn Paul Taylor – Taylor's manual of physical evaluation and treatment
61. Goodman and Snyder – Differential diagnosis in physical therapy 2<sup>nd</sup> Edition.
62. Leon Chaitow, and Judith Walker Delany - Clinical application on neuromuscular techniques: Vol-2 (The lower body) Cailliet, R. (1991). Neck and arm pain (3rd ed.). Philadelphia: FA Davis.
63. Cailliet, R. (1991). Shoulder pain (3rd ed.). Philadelphia: FA Davis.

**Branch : Master of Physiotherapy in Oncology**

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|--|--|--------------|
| <b>Paper - III</b>   | <b>Clinical, physical and functional diagnosis in Oncological Physiotherapy</b>  |              |
| <b>Paper - IV</b>  | <b>Oncological Physiotherapy</b>   |              |
| <b>Paper - V</b>   | <b>Recent advances &amp; Evidence Based Practice in Oncological Physiotherapy</b>  |              |
| <b>TITLE OF THE PAPER III : Clinical, physical and functional diagnosis in Oncological Physiotherapy</b> |  |              |
| <b>Duration : 0 - 12 months                      Maximum Mark = 100</b>                                  |  |              |
| <b>Theory     :    150 hrs</b>   |  |              |
| <b>Practical   :    250 hrs</b>  |  |              |
| <b>Sl.No.</b>  | <b>Content</b>   | <b>Hours</b> |
| 1.   | Assessment, differential diagnosis and diagnosis of various oncological conditions   | 7            |
| 2.   | Clinical measures of cardiorespiratory fitness in cancer patients.   | 05           |
| 3.   | Outcome measures used in oncological physiotherapy- for Cognitive impairment and disability, Focal disabilities, Global measures of disability, Motor impairment, ADL and extended ADL tests, quality of life, Pain scales, stress and anxiety scale.  | 20           |
| 4.   | Clinical analysis of posture, movement and gait in cancer patients.  | 05           |
| 5.   | Diagnostic imaging- types of diagnostic imaging techniques in various types of cancer, clinical interpretation and significance (Chest X-Ray, Barium swallow, Barium enema, USG abdomen, Endoscopy, colonoscopy Mammography and mammogram, MRI, Ultra sound, PET and SPECT, CT scan Gastroscopy, Laparoscopy, Pap smear test, bone scan and other diagnostic imaging, fiber optic endoscopy for diagnosis) histo-pathological, hematological, bacteriological investigations. Nuclear and radio imaging. | 20           |
| 6.   | Clinical signs and symptoms, physical and functional evaluation in all types of cancer.  | 05           |
| 7.   | Clinical examination and detection of movement dysfunction in cancer patients.   | 05           |

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| 8.  | Principles of pathological, hematological, bacteriological investigations related to oncological disorders with interpretation.                            | 10 |
| 9.  | Influence of physical activity, diet, nutrition, life style cancer   | 05 |
| 10. | Neuropsychological tests.  | 05 |
| 11. | Electrophysiological assessment devices like EMG, Qualitative and quantitative EMG, Biofeedback, Evoked potentials, EEG, ECG, SD curve in cancer patients. | 20 |
| 12. | Evaluation of Cancer Complications like Lymphedema, musculoskeletal, neurological, cardio respiratory.   | 10 |
| 13. | EMG with reference to pathophysiology and patho-mechanics. Quantitative, Qualitative EMG,  | 10 |
| 14. | Physical disability evaluation and disability diagnosis.   | 05 |
| 15. | Exercise and cancer related fatigue and its evaluation   | 10 |
| 16. | Assessment of pain and scales related to pain evaluation.  | 05 |
| 17. | Anthropometry and obesity relation in cancer   | 03 |

| <b>TITLE OF THE PAPER IV : Oncology Physiotherapy</b> |  |                           |
|---|--|---------------------------|
| <b>Duration : 13 - 24 months</b>                      |  | <b>Maximum Mark = 100</b> |
| <b>Theory : 150 hrs</b>                               |  |                           |
| <b>Practical : 300 hrs</b>                            |  |                           |
| <b>Sl.No.</b>   | <b>Content</b>   | <b>Hours</b>              |
| 1.  | Oncology- Epidemiology, classification, symptomatology, patho-physiology and management of different oncological condition.                  | 10                        |
| 2.  | Pediatric oncology   | 10                        |
| 3.  | Physical therapy for metastatic cancer   | 06                        |
| 4.  | Physiotherapy interventions in Head Neck Cancer including oral cancers.  | 08                        |
| 5.  | Physiotherapy interventions in Breast and Reproductive cancer, Exercises for prevention and treatment of prostate cancer- cellular mechanism | 05                        |
| 6.  | Physiotherapy intervention for Bone tumors   | 06                        |
| 7.  | Chemotherapy and post chemotherapy Physiotherapy intervention including Neuro-musculoskeletal complications                                  | 05                        |
| 8.  | Physiotherapy management for Systemic cancer.  | 05                        |
| 9.  | Physiotherapy management for CNS neoplasia.  | 05                        |
| 10.   | Nutrition and deficiency management in cancer patients   | 05                        |
| 11.   | Radiotherapy and post radiotherapy Physiotherapy management of Neuro musculoskeletal complications   | 05                        |
| 12.   | Physiotherapy management of Lung and respiratory tract cancer  | 10                        |
| 13.   | Supportive and palliative therapy in cancer patients   | 05                        |
| 15.   | Rehabilitation act and financial aid for cancer patients.  | 03                        |
| 16.   | Sexual dysfunction in cancer patients and its rehabilitation   | 03                        |
| 17.   | Psychosomatic conditions in cancer and their management.   | 03                        |
| 18.   | Postoperative management of Cancer patients.   | 05                        |

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| 19. | Physiotherapy management in Intensive care units (ICU) of cancer patients.   | 03 |
| 20. | Adjunct therapy and home care for cancer   | 05 |
| 21. | Palliative care and Pain management in cancer  | 05 |
| 22. | Aids and appliances, adaptive functional devices to improve dysfunction in cancer patients   | 05 |
| 23. | Management of bladder and bowel dysfunction in cancer  | 05 |
| 24. | Muscle reeducation approach, Biofeedback training, Sensory rehabilitation, Myofascial release technique, Inhibitory and facilitation technique, Functional re-education, skill training, A.D.L training, Tapping in oncological conditions. Balance training | 20 |
| 25. | FES, NMES, Biofeedback, Various equipment used in oncology physiotherapy   | 05 |
| 26. | Problem based learning for various clinical conditions in oncology physiotherapy.  | 03 |

| <b>TITLE OF THE PAPER V : Recent advances and Evidence Based Practice in Oncology Physiotherapy</b> |   |                           |
|---|---|---------------------------|
| <b>Duration : 13 - 26 months</b>  |   | <b>Maximum Mark = 100</b> |
| <b>Theory : 150 hrs</b>   |   |                           |
| <b>Practical : 300 hrs</b>  |   |                           |
| <b>Sl.No.</b>   | <b>Content</b>  | <b>Hours</b>              |
| 1.  | Recent advances in oncological physiotherapy  | 10                        |
| 2.  | Genetic counseling, Stem cell therapy, Gene therapy   | 08                        |
| 3.  | Recent advances in pain modulation and rehabilitation.  | 08                        |
| 4.  | Recent advances in Vocational rehabilitation in oncology disorders with disability  | 10                        |
| 5.  | Recent advancement in oncology Orthosis – prescription and training. Prosthetic management for mastectomy   | 10                        |
| 6.  | Psychiatry problems in oncological conditions and physiotherapy (BAT, CBT). Psychological aspects of adaptation during various aspects of disabilities  | 14                        |
| 7.  | Institutional & community based rehabilitation for oncological patients.  | 05                        |
| 8.  | Self-treatment, Exercise precaution, management and exercise prescription for home program, Report writing. Conceptual frame work for clinical practice. Requirements for medical opinion or treatment, documentation, prescription, management and advice. | 10                        |
| 9.  | Recent oncological Physiotherapy technique - Mental imagery technique, virtual reality therapy, Pilate’s therapy, Hydrotherapy etc  | 15                        |
| 10  | Aqua Lymphatic Therapies: An Alternate Approach to Controlling, Treating & Preventing Lymphedema  | 05                        |
| 11.   | Impact of cancer treatment on function and its rehabilitation<br>Psychosocial impact on cancer patient, spouse, family members, society,  | 04                        |

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| 12. | History of Evidence Based Practice in physiotherapy, clinical decision making, importance of evidence based practice, Evidence about diagnosis, prognosis and therapy. Locating evidences, challenges and barriers in EBP. | (10 |
| 13. | Evidences in interventions for oncology related impairments  | 10  |
| 14. | Evidences for physiotherapy in head Neck cancer  | 04  |
| 15. | Evidences in physiotherapy management of breast cancer   | 04  |
| 16. | Evidences in physiotherapy management of Bone tumors   | 04  |
| 17. | Evidences in physiotherapy management of Lung and respiratory tract cancer   | 04  |
| 18. | Evidences in physiotherapy management of systemic cancer   | 10  |
| 19. | Sports and physical training in oncological conditions   | 05  |

**Recommended Reading** For paper III, IV, V.

1. Cancer Rehabilitation: Principles and Practice by Michael Stubblefield & Michael O'Dell 1<sup>st</sup> Edition
2. Cancer Rehabilitation and Survivorship: Trans disciplinary approaches to Personalized care by Joanne L & Patricia Schmitt 1<sup>st</sup> Edition
3. Palliative Care & Rehabilitation of Cancer Patients (Cancer Treatment and research) by Charles F. Von Gunten 1<sup>st</sup> edition
4. Textbook of Palliative Medicine and Supportive Care by Eduino Bruera 2<sup>nd</sup> edition
5. ACSM's Guide to Exercise and Cancer survivorship By American College of Sports medicine, Melinda Irvin
6. Fatigue in Cancer: A Multidimensional Approach by Maryl Lynne Winningham, Margaret Barton Burke
7. The Concise Guide to Physiotherapy - Volume 2: Treatment edited by Tim Ainslie.

8. Innovations in Cancer and Palliative Care Education by Lorna Foyle, Janis Hostad.
9. Practical Evidence-based Physiotherapy By Rob Herbert 1<sup>st</sup> edition
10. Oxford Textbook of Palliative Medicine By Geoffrey Hanks, Nathan I. Cherny, Nicholas A. Christakis, Stein Kaasa 4th Edition
11. Legal Aspects of Physiotherapy By Bridgit Dimond 2<sup>nd</sup> Edition
12. Rehabilitation and palliation of cancer patients: (Patient care) By Herrmann Delbrück 1<sup>st</sup> edition
13. Physiotherapy a Psychosocial Approach edited by Sally French 1<sup>st</sup> Edition
14. Everyone's Guide to Cancer Survivorship: A Road Map for Better Health By Ernest Rosenbaum, Holly Gautier, R.N 1<sup>st</sup> edition
15. Lymphedema: A Concise Compendium of Theory and Practice By Byung-Boong Lee, John Bergan, Stanley G. Rockson 1<sup>st</sup> edition
16. Contemporary Issues in Women's Cancers By Suzanne Lockwood 1<sup>st</sup> Edition
17. Rehabilitation in Cancer Care by Rankin 1<sup>st</sup> Edition
18. Occupational Therapy In Oncology by Cooper 2<sup>nd</sup> edition
19. Cancer Rehabilitation: An Introduction for Physiotherapists and Allied Professions by Patricia A. Downie 1<sup>st</sup> Edition
20. Potential & Possibility Rehabilitation at end of life by Jenny Taylor 1<sup>st</sup> Edition
21. Cancer Pain Management: A Comprehensive Approach by Karen H. Simpson, Keith Budd
22. Exercise and Cancer Survivorship: Impact on Health Outcomes and Quality of Life edited by John Saxton, Amanda Daley 1<sup>st</sup> edition
23. Physical Rehabilitation by Osullivan.S.B. & Schmitz.T.J 3<sup>rd</sup> Edition
24. Physiological Basis of Rehabilitation Medicine by Downey.J.A. & Myers.S.J 2<sup>nd</sup> Edition
25. Krusens Handbook Of Physical Medicine And Rehabilitation Kottke.F.J. & Lehmann.J.F 4<sup>th</sup> Edition

26. Clinical Decision Making In Rehabilitation by Basmajian.J.V. & Banerjee.G.N  
10<sup>th</sup> Edition.
27. Rehabilitation Medicine by Delisa.J.A.& Gans.B.M 2<sup>nd</sup> Edition
28. Physical Medicine and Rehabilitation by Braddom.R.L 1<sup>st</sup> edition
29. Evidence-Based Rehabilitation; a Guide to Practice by Law.M. 1<sup>st</sup> edition
30. Assistive Technologies; Principles and Practice by Cook.A.M. & Hussey.S.M.  
1<sup>st</sup> Edition
31. Home Rehabilitation; Guide To Clinical Practice by Anemaet.W.K. & Moffa-  
Trotter.M 1<sup>st</sup> Edition
32. Manual Of Physical Medicine And Rehabilitation by Brammer.C.M.;Spires.M  
1<sup>st</sup> edition
33. Essential Physical Medicine And Rehabilitation by Cooper 1<sup>st</sup> Edition
34. Management In Rehabilitation by Schuch C. P & Sekerak D. K 1<sup>st</sup> edition
35. American Cancer Society Textbook Of Clinical Oncology By  
Murphy.G.P.;Lawrence.W 2<sup>nd</sup> Edition
36. Cancer: Principles And Practice Of Oncology By Devita.V.T; Hellman.S. 7th  
Ed
37. Clinical Oncology; By Abeloff.M.D; Armitage.J.O. 3rd Ed.
38. Bone Tumours (A Clinico Pathological Study) by Vastrad.M.C. 1<sup>st</sup> edition
39. Therapeutic Exercise by Caroline Kisner 5<sup>th</sup> edition
40. Exercise Management: Concepts and Professional Practice by Laurel T.  
Mackinnon 2<sup>nd</sup> Edition
41. Advances In Exercise Immunology By Laurel T. Mackinnon 2<sup>nd</sup> Edition
42. Principles Of Exercises In Physiotherapy 2<sup>nd</sup> edition
43. Kinesiology Of The Musculoskeletal System : Foundations Of Rehabilitation By  
Donald A. Neumann 2nd Edition
44. Exercise Therapy: Prevention & Treatment Of Disease by John Gormley, Juliette  
Hussey 1<sup>st</sup> edition

45. Physical Examination & Health Assessment by Carolyn Jarvis 5<sup>nd</sup> Edition
46. Practical Evidence-Based Physiotherapy By Robert Herbert, Gro Jamtvedt 4<sup>th</sup> edition
47. Principles Of Exercise Therapy by M. Dena Gardiner 6<sup>th</sup> edition
48. Clinical Decisions In Therapeutic Exercise by Patricia E. Sullivan, Prudence D. Markos 2<sup>nd</sup> edition
49. Therapeutic Exercise : Treatment Planning For Progression Frances E. Huber, Chris L. Wells 1<sup>st</sup> edition
50. Textbook Of Therapeutic Exercises By Narayanan 1<sup>st</sup> edition
51. Exercise Management Concepts And Professional Practice by Laurel T. Mackinnon 1<sup>st</sup> Edition
52. Clinical Exercise Testing And Prescription 1<sup>st</sup> Edition
53. Evidence-Based Guide To Therapeutic Physical Agents 1<sup>st</sup> Edition
54. Therapeutic Exercise Moving Toward Function by Lori Thein Brody, Carrie M. Hall 2<sup>nd</sup> edition
55. Exercise In Health And Disease 2<sup>nd</sup> edition
56. Aquatic Rehabilitation by Richard Gene Ruoti, David Michael Morris, Andrew J. Cole 1<sup>st</sup> Edition
57. ACSM Resources For Clinical Exercise Physiology 1<sup>st</sup> Edition
58. Advanced Fitness Assessment And Exercise Prescription 3<sup>rd</sup> Edition
59. ACSMS Resource Manual For Guidelines For Exercise Testing And Prescription 4<sup>th</sup> Edition
60. ACSMS Guidelines For Exercise Testing And Prescription 6<sup>th</sup> Edition
61. Exercise Testing And Exercise Prescription For Special Cases by James S. Skinner 2<sup>nd</sup> Edition
62. Therapeutic Exercise by Basmajian,J.V. & Wolf.S.L 5th Edition.
63. Yogic Exercises: Physiologic And Psychic Processes by Ray.D.S 1<sup>st</sup> edition

64. Fitness Programming And Physical Disability by Miller.P.D 1<sup>st</sup> Edition
65. Community Rehabilitation Services For People With Disabilities by Karan.O.C. & Greenspan.S 1<sup>st</sup> edition
66. Essential Readings In Rehabilitation Outcomes Measurement by Dobrzykowski.E.A 1<sup>st</sup> edition
67. Disability Evaluation by Demeter.S.L. & Andersson.G.B.I 1<sup>st</sup> edition
68. Safer Lifting For Patient Care by Hollis.M. 3<sup>rd</sup> edition
69. Disabled Village Children by Werner.D. 1<sup>st</sup> edition
70. Conditioning With Physical Disabilities by Lockette.K.F. & Keyes.A.M. 1<sup>st</sup> edition
71. Community Based Rehabilitation Of Persons With Disabilities by Pruthvish.S 1<sup>st</sup> edition

#### **RECOMMENDED JOURNALS**

1. Physical Therapy (APTA, America)
2. Physiotherapy (CSP, London)
3. American Journal of Physical Medicine & Rehabilitation
4. Physiotherapy (Canada)
5. Australian Journal Of Physiotherapy
6. Journal of Indian Association of Physiotherapy
7. Clinical Kinesiology
8. Journal of Biomechanics
9. Pediatric Physical Therapy
10. Journal of Neurologic Physical Therapy
11. Journal of Rehabilitation Research & Development
12. Archives Of Physical Medicine & Rehabilitation
13. Journal of Neurological Sciences
14. Clinical Rehabilitation
15. Spine
16. Gait & Posture
17. Annals of oncology
18. British journal of Cancer

**Branch : Master of Physiotherapy in Pediatric**

|  |  |              |
|--|--|--------------|
| <b>Paper - III</b>   | <b>Clinical, physical and functional diagnosis in Pediatric Physiotherapy</b>  |              |
| <b>Paper - IV</b>  | <b>Pediatric Physiotherapy</b>   |              |
| <b>Paper - V</b>   | <b>Recent advances &amp; Evidence Based Practice in Pediatric Physiotherapy</b>  |              |
| <b>TITLE OF THE PAPER III : Clinical, physical and functional diagnosis in Pediatric Physiotherapy</b> |  |              |
| <b>Duration : 0 - 12 months                      Maximum Mark = 100</b>                                |  |              |
| <b>Theory     :    150 hrs</b>   |  |              |
| <b>Practical   :    250 hrs</b>  |  |              |
| <b>Sl.No.</b>  | <b>Content</b>   | <b>Hours</b> |
| 1.   | Review of Embryology   | 02           |
| 2.   | Maturational, patho -physiological & recovery process in the CNS   | 02           |
| 3.   | Genetic basis of pediatric disorders   | 02           |
| 4.   | Pain assessment in neonates & children   | 06           |
| 5.   | Patho-mechanics and clinical biomechanics of posture and movement in various Pediatric conditions  | 10           |
| 6.   | Analysis and diagnosis of functional mechanics and patho-mechanics of gait in children   | 10           |
| 7.   | Principles, procedure, interpretation and significance of Diagnostic imaging (CT, MRI, Ultra sound, bone scan, PET scan, fMRI) for clinical and functional diagnosis in various orthopedic, cardio-respiratory and neurological conditions in children | 04           |
| 8.   | Clinical examination in general and physical and functional diagnosis for detection of movement dysfunction  | 08           |
| 9.   | Principles of pathological investigations, Electro-diagnosis and its interpretation related to common pediatric disorders- Laboratory investigation, clinical tests (EEG, ECG, Evoked potentials, qualitative and quantitative EMG, NCV & Biofeedback) | 04           |
| 10.  | Evaluation of typical and atypical development of children in various domains of development (Gross, fine, cognitive, speech & language, personal social and adaptive functions)   | 15           |

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|-----|---|----|
| 11. | Evaluation, epidemiology, symptomatology and patho-physiology of common Pediatric congenital, cardio-respiratory, neurological and musculo-skeletal disorders   | 10 |
| 12. | Clinical, physical and functional diagnosis of developmental disorders  | 08 |
| 13. | Neurodevelopment assessment   | 05 |
| 14. | Hand function-Assessment and diagnosis  | 04 |
| 15. | Theories of Motor control and Motor learning processes  | 04 |
| 16. | Principles, administration and interpretation of Developmental screening tools  | 10 |
| 17. | Voluntary control assessment  | 05 |
| 18. | Outcome measures used in Pediatric Physiotherapy  | 02 |
| 19. | Pre and post- surgical physiotherapeutic (Physical and functional) evaluation for various surgical conditions in children   | 04 |
| 20. | Anthropometrics measurements in children- Principles, methods, normal values for different ages, deviation and its clinical and functional significance   | 05 |
| 21. | Exercise testing & Physical fitness assessment in children with & without disability (Range of motion, Muscle strength, endurance and skills, Body composition, Cardiac efficiency tests and spirometry)          | 05 |
| 22. | Fitness evaluation in children for sports   | 04 |
| 23. | Physical and functional assessment for Aids, appliances& adaptive devices in Pediatric disorders  | 04 |
| 24. | Physical disability evaluation and disability diagnosis   | 06 |
| 25. | Assessment of various pediatric medical and surgical conditions   | 03 |
| 26. | Equipment's in Pediatric physical therapy such as:<br>a. EMG and Biofeedback<br>b. Gym ball<br>c. NMES<br>d. Gait analyzer<br>e. Treadmill<br>f. Test manual & kits used for developmental evaluation & screening | 08 |

| <b>TITLE OF THE PAPER IV : Pediatric Physiotherapy</b> |  |                           |
|--|--|---------------------------|
| <b>Duration : 13 - 26 months</b>                       |  | <b>Maximum Mark = 100</b> |
| <b>Theory : 150 hrs</b>                                |  |                           |
| <b>Practical : 300 hrs</b>                             |  |                           |
| <b>Sl.No.</b>  | <b>Content</b>   | <b>Hours</b>              |
| 1.   | Genetic counseling   | 02                        |
| 2.   | Physiotherapy management of growth and developmental disorders (gross motor, fine, speech & language, personal- social -adaptive)  | 15                        |
| 3.   | Therapeutic techniques used in Neuro- pediatric conditions- Handling & positioning techniques, NDT, Vojta, Roods, CIMT, Sensor-motor re-education, PNF, Peto, Temple Fay, Phelps | 10                        |
| 4.   | Adjunct therapies- Manipulation, mobilization, taping, MFR, Cranio-sacral therapy, Body suits, hydrotherapy, hippo-therapy   | 10                        |
| 5.   | Pain control & management in children  | 05                        |
| 6.   | Motor learning techniques  | 06                        |
| 7.   | Sensory integration disorders and management   | 06                        |
| 8.   | Management of perceptual and cognitive disorders   | 06                        |
| 9.   | Play behavior & its clinical application in therapy  | 04                        |
| 10.  | Integrated approach in management of Pediatric disorders   | 04                        |
| 11.  | Neonatal care and early intervention for risk babies   | 08                        |
| 12.  | Physiotherapy management for congenital loco-motor disorders including prosthetic and orthotic prescription  | 08                        |
| 13.  | Pediatric disability management at institutional & community levels  | 04                        |
| 14.  | Pre and Post-operative management of pediatric surgeries   | 04                        |
| 15.  | Rehabilitation of common pediatric musculo-skeletal disorders  | 06                        |

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|-----|--|----|
| 16. | Management of progressive loco-motor disorders- Neuropathic and Myopathic conditions                             | 06 |
| 17. | Management of learning disabilities, ADHD, Autism, Developmental coordination disorders and behavioral disorders | 06 |
| 18. | Physiotherapeutic management of A.D.L and functional activities  | 04 |
| 19. | Sports training in pediatrics  | 04 |
| 20. | Psychological and mental health problems in children   | 04 |
| 21. | Management of Child abuse and its associated problems  | 04 |
| 22. | Management of common congenital, neurological, musculo-skeletal and cardio- respiratory disorders                | 07 |
| 23. | Vocational rehabilitation for pediatric disorders  | 04 |
| 24. | Metabolic disorders and their management   | 04 |
| 25. | Exercise prescription for pediatric disorders  | 04 |
| 26. | Oromotor dysfunction in children   | 05 |

| <b>TITLE OF THE PAPER V : Recent advances and Evidence Based Practice in Pediatric Physiotherapy</b> |   |                           |
|--|---|---------------------------|
| <b>Duration : 13 - 24 months</b>   |   | <b>Maximum Mark = 100</b> |
| <b>Theory : 150 hrs</b>  |   |                           |
| <b>Practical : 300 hrs</b>   |   |                           |
| <b>Sl.No.</b>  | <b>Content</b>  | <b>Hours</b>              |
| 1.   | Advanced instruction in physical examination, diagnosis, treatment and reassessment of the Pediatric neurological, musculoskeletal, cardio – respiratory system | 14                        |
| 2.   | Psychosocial affects in children and parents  | 08                        |
| 3.   | Evidence based practice for exercise prescription for home program<br>Report writing for clinical cases & research  | 18                        |
| 4.   | Recent advances in prescription, indications, assessment and training or orthosis, prosthesis and adaptive equipment in physically challenged children          | 10                        |
| 5.   | EBP in Musculoskeletal and Neurological loco-motor disorders in children  | 10                        |
| 6.   | Rationale of basic and advanced investigative procedures with differential diagnosis  | 05                        |
| 7.   | EBP & recent advances on the role of Physical therapy in public and special schools   | 07                        |
| 8.   | Recent advances in exercise prescription for children   | 10                        |
| 9.   | EBP for management of pediatric oncology & burns  | 08                        |
| 10.  | Recent advances in Pain control, assessment & management in children  | 10                        |
| 11.  | Equipment's, assessment & treatment in neonatal & pediatric intensive care units  | 10                        |
| 12.  | Recent advances in instrumentations, theories, handling and pediatric physical therapy techniques   | 15                        |
| 13.  | Problem based learning relevant to clinical conditions typically seen in pediatrics   | 25                        |

**Recommended Reading:**

1. Scientific basis of human movement –Gowitzke, Williams and Wilkins, Baltimore, 1988, III edition
2. Clinical biomechanics of spine – White A, and Panjabi- J, B. Lippincot, Philadelphia 1978.
3. Human Neuroanatomy – Carpenter M.B. Williams & Wilkins, Baltimore, 1983
4. Physical therapy in early infancy – Wilhelm, Churchill Livingstone, New York 1993
5. Physical therapy for children – Campbell Suzann K. W.B Saunders, Philadelphia, 1994
6. Physical management of multiple handicapped – Fraser, William and Wilkins, Baltimore.
7. Elements of paediatric physiotherapy – Eckersley, Churchill Livingstone, Edinburgh, 1993.
8. Physiotherapy in paediatrics - Shepherd R Heinmann, London, 1980 2<sup>nd</sup> edition.
9. The growth chart – WHO, Geneva, 1986.
10. Orthotics in neurological rehabilitation – Aisen, Demos Publication, New York 1992.
11. Electrodiagnosis in diseases of nerve and muscle – Kimura J, F.A. Davis, Philadelphia.
12. Orthopaedic physical therapy – Donatteli, London, Churchill Livingstone, 1994.
13. Gait analysis – Perry J., Black Thosofare, New Jersey, 1992.
14. Biofeedback – A practitioner’s guide – Kerb D, Guilford press.
15. Abnormal postural reflex activity caused by Brain lesions – Bobath B. Aspen publications, Rockville, 1897.
16. Disorders of voluntary muscle – Egel, Churchill, Livingstone, Edinburgh 1988.

17. Proprioceptive Neuro muscular facilitation techniques – Knot M. and Voss, Haroer and Row, New York 1972 2<sup>nd</sup> edition,
18. Child with Spina Bifida – Anderson E.M, and Spain B. Methun, London 1977.
19. A manual of neonatal intensive care – Robert N.R.C, Edward Arnold, London 1986.
20. Pulmonary rehabilitation: guidelines to success – Hoidkina, Butterworth, Boston, 1984.
21. Cardiac rehabilitation – Amundsen L.R, Churchill, Livingstone, London 1988.

**Branch : Master of Physiotherapy in Sports**

|   |  |              |
|---|--|--------------|
| <b>Paper - III</b>  | <b>Clinical, physical and functional diagnosis in Sports Physiotherapy</b>   |              |
| <b>Paper - IV</b>   | <b>Sports Physiotherapy</b>  |              |
| <b>Paper - V</b>  | <b>Recent advances &amp; Evidence Based Practice in Sports Physiotherapy</b>   |              |
| <b>TITLE OF THE PAPER III : Clinical, physical and functional diagnosis in Sports Physiotherapy</b> |  |              |
| <b>Duration : 0 - 12 months                      Maximum Mark = 100</b>                             |  |              |
| <b>Theory     :    150 hrs</b>  |  |              |
| <b>Practical   :   250 hrs</b>  |  |              |
| <b>Sl.No.</b>   | <b>Content</b>   | <b>Hours</b> |
| 1.  | Assessment and Diagnosis of various sports injuries  | 20           |
| 2.  | Outcome measures used in sports physiotherapy  | 10           |
| 3.  | Testing and training for various athletes of different disciplines   | 10           |
| 4.  | Basic functional biomechanics Nature of Biomechanics, Function of Biomechanics, Importance of Biomechanics in Sports, Introduction to analysis equipment, Pelvic mechanics and the Biomechanics of running, Gait analysis, Biomechanics of rowing, throwing, Swimming, jumping and landing. Patho-mechanics and clinical biomechanics of peripheral and spinal joints. | 22           |
| 5.  | Diagnostic imaging (CT, MRI, Ultra sound, bone scan and other diagnostic imaging's) for diagnosis of congenital anomalies and normal variants, traumatic injuries, scoliosis, degenerative disorders and infections)   | 10           |
| 6.  | Principles of pathological investigations and imaging techniques related to musculoskeletal disorders with interpretation  | 10           |
| 7.  | Physical fitness assessment by<br>a) Range of motion<br>b) Muscle strength, endurance and skills.  | 12           |

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|-----|---|----|
|     | c) Body composition<br>d) Cardiac efficiency tests and spirometer<br>e) Fitness test for sports<br>f) Assessment of age |    |
| 8.  | Physical disability evaluation and disability diagnosis in sports   | 12 |
| 9.  | Gait analysis and diagnosis   | 12 |
| 10. | Anthropometric measurements   | 12 |
| 11. | Kinoanthropometric evaluation in various athletic groups.   | 10 |
| 12. | Testing for tightness and contracture of soft-tissue structures   | 10 |

| <b>TITLE OF THE PAPER IV : Sports Physiotherapy</b> |   |                           |
|---|---|---------------------------|
| <b>Duration : 13 - 24 months</b>                    |   | <b>Maximum Mark = 100</b> |
| <b>Theory : 150 hrs</b>                             |   |                           |
| <b>Practical : 300 hrs</b>                          |   |                           |
| <b>Sl.No.</b>                                       | <b>Content</b>  | <b>Hours</b>              |
| 1.  | Educational Psychology as an applied sciences in sports Scope of Sports Psychology, Role of Sports Psychology in Sports performance, Factors affecting growth and development & role of heredity & environment, Growth and development, Biological inheritance. | 08                        |
| 2.  | Mental Health – Concept, Meaning and importance. Characteristics of mentally healthy person, Factors affecting mental health, Role of Physical Education in promotion of mental Health.   | 05                        |
| 3.  | Emotion – controlling and training of emotions and its importance, Contribution of sports to emotional health, sentiment its importance and formation.  | 05                        |
| 4.  | Dynamic of Human Behavior – Instincts, Killer instinct, drives and needs, Attention, interest & motivation, Intelligence, aptitude, its nature, characteristics, meaning and types.   | 05                        |
| 5.  | Dynamic nature of personality, Types of personality, Role of sports in development of personality.  | 05                        |
| 6.  | Group Behavior and leadership and its influence on sports   | 05                        |
| 7.  | Modelling Stress, Stress and Performance, Motivation and performance, Performance Factors, Contemporary Stress Reduction Strategies, Sex and performance  | 10                        |
| 8.  | Isolated Training, Sudden change in opponent, Audience Stresses, Strategy changes, Cognitive stress modeling  | 05                        |
| 9.  | Biofeedback, Mental coping strategies, Visual Imagery, Meditation   | 04                        |

| <b>EXERCISE PHYSIOLOGY</b> |  |    |
|----------------------------|--|----|
| 10.                        | Nutrition and managing nutritional issues, Nutrition for performance, pre-game meal, carbohydrate loading.   | 04 |
| 11.                        | Energy Transfer for Physical activity  | 03 |
| 12.                        | Exercise Prescription, Effect of exercise on Cardio Vascular System, Respiratory System, Exercises and Skeletal System, Exercise and Gastrointestinal Tract and Endocrine system   | 08 |
| 13.                        | Body Composition and Weight Control –  |    |
| 14.                        | Aging and Exercise, Temperature Regulation during exercise.  | 08 |
| <b>MISC. TOPICS</b>        |  |    |
| 15.                        | High Altitude Training , Sports Diving, Hazards of underwater environment  | 03 |
| 16.                        | Muscle tissue fiber typing and its significance -  | 03 |
| 17.                        | Doping in athletes   | 03 |
| 18.                        | Exercise for mood enhancement & anxiety –  | 04 |
| 19.                        | Protective equipment's used in sports  | 04 |
| 20.                        | Analysis and classification of sports & sports injuries  | 05 |
| <b>PHYSICAL MEDICINE</b>   |  |    |
| 21.                        | Production, Physiological effects, indications, contraindications and specific uses in sports of the following –<br>a. Heat Therapy<br>b. Hydrotherapy<br>c. Electrotherapy<br>d. Functional Bandages & Orthotic Aids<br>e. Cryotherapy<br>f. Manual Therapy | 10 |
| 22.                        | Exercises and congestive heart failure, exercise for post coronary & bypass patients, exercise for diabetics   | 03 |

|     |  |    |
|-----|--|----|
| 23. | Prevention of Sports injuries, Role of teachers and coaches in prevention of injuries, Recovery modalities and strategies, Overuse injuries in sports, Mechanism of injury occurrence in sports and preventive measures, Traumatic injuries in sports, Warm – up: Conditioning and Training                            | 05 |
| 24. | Sports in geriatric  | 02 |
| 25. | Illness, Hypertension, Exercise induced Asthma, Delayed onset muscle soreness (DOMS), disuse atrophy; Runner's high & exercise addiction.  | 04 |
| 26. | Problems in female athlete, injury to female reproductive organ, Menstrual Synchrony, Exercise and pregnancy.  | 03 |
| 27. | Sports medicine  | 02 |
| 28. | Common soft tissue injuries and their management, criteria for return to sport.  | 04 |
| 29. | Emergency Care and Athletic First Aid, Cardio pulmonary Resuscitation; Shock management, Internal and External bleeding, Splinting, Stretcher use-Handling and transfer, Management of Cardiac arrest, Acute asthma, epilepsy, drowning, burn, Medical management of mass participation. Heat stroke and Heat illness. | 06 |

| <b>TITLE OF THE PAPER V : Recent advances and Evidence Based Practice in Sports Physiotherapy</b> |   |                           |
|---|---|---------------------------|
| <b>Duration : 13 - 26 months</b>  |   | <b>Maximum Mark = 100</b> |
| <b>Theory : 150 hrs</b>   |   |                           |
| <b>Practical : 300 hrs</b>  |   |                           |
| <b>Sl.No.</b>   | <b>Content</b>  | <b>Hours</b>              |
| 1.  | Advances in management of injuries in gymnastics, track & field, football, swimming, boxing, wrestling, weightlifting, cycling etc.   | 18                        |
| 2.  | Recent concepts and evidence based practice in manipulative medicine (Vertebral and Peripheral)   | 07                        |
| 3.  | Recent advancement in Rehabilitation and Therapeutic Exercises in sports, Modern concepts in rehabilitation. Dynamic Exercises, Plyometric Exercise, Isokinetic Exercises, Kinetic chain exercises, cardio-pulmonary endurance. Mobilization and Strengthening Techniques, Various methods of progressive resisted exercise, Aquatic therapy, Neuromuscular Training, Management of kinesthetic sensation | 30                        |
| 4.  | Recent advances and evidence based practice of PNF in sports.   | 03                        |
| 5.  | Recent concepts in Emergency Care and Athletic First Aid  | 08                        |
| 6.  | Health club & fitness.  | 04                        |
| 7.  | Recent advance in Exercise Prescription   | 06                        |
| 8.  | Evidence based clinical application of exercise and techniques in musculoskeletal disorders   | 14                        |
| 9.  | Evidence based physiotherapy practice in sports physiotherapy   | 06                        |
| 10.   | Taping techniques and current trends  | 10                        |
| 11.   | Current trend in management of sports injury  | 04                        |
| 12.   | Recent advances in protective equipment   | 04                        |

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|-----|--|----|
| 13. | Sports Pharmacology and medico-legal issues in sports                              | 04 |
| 14. | Recent Advances and Controversies in sports physiotherapy                          | 04 |
| 15. | Research in Sports Physiotherapy   | 04 |
| 16. | Problem based learning relevant to clinical conditions typically seen in athletes. | 08 |
| 17. | Evidenced based practice in functional rehabilitation – return to sports criteria. | 09 |

**Recommended Reading** For paper III, IV, V.

1. Chew, F. (110107). Skeletal radiology: The bare bones (2nd ed.). Baltimore, MD: Williams & Wilkins.
2. Eisenberg, R. L., & Johnson, N. M. (2003). Comprehensive radiographic pathology (3rd ed.). St Louis, MO: Mosby.
3. Hughes, J., & Hughes, M. (110107). Imaging: Picture tests. Edinburgh: Churchill Livingstone.
4. Mace, J. D., & Kowalczyk, N. (110104). Radiographic pathology for technologists (2nd ed.). St Louis, MO: Mosby.
5. Redhead, D. N. (110105). Imaging: Colour guide. Edinburgh: Churchill Livingstone.
6. Yochum, T. R., & Rowe, L. R. (2005). Yochum and Rowe's essentials of skeletal radiology (3rd ed., Vols. 1-2). Baltimore, MD: Lippincott Williams & Wilkins.
7. Nolte, J., & Angevine, Jr. J. B. (2000). The human brain in photographs and diagrams (2nd ed.). St Louis, MO: Mosby.
8. Wicke, L. (110107). Atlas of radiologic anatomy (6th ed.). Munich, Germany: Lea & Febiger.
9. Seidel, H. (110105). Mosby's guide to physical examination. St Louis, MO: C.V. Mosby.
10. Cailliet, R. (110101). Neck and arm pain (3rd ed.). Philadelphia: FA Davis.
11. Cailliet, R. (110101). Shoulder pain (3rd ed.). Philadelphia: FA Davis.

12. Cailliet, R. (110101). Knee pain and disability (3rd ed.). Philadelphia: FA Davis.
13. Cailliet, R. (110104). Hand pain and impairment (4th ed.). Philadelphia: FA Davis.
14. Cailliet, R. (110105). Low back pain syndrome (5th ed.). Philadelphia: FA Davis.
15. Cailliet, R. (110106). Soft tissue pain and disability (3rd ed.). Philadelphia: FA Davis.
16. Wilson, A. (2002). Effective management of musculoskeletal injury: A clinical ergonomics approach to prevention. Churchill Livingstone.
17. O'Sullivan, F.A. Davis, Philadelphia 110104. Physical rehabilitation: assessment and treatment.
18. Kuprian: Physical Therapy for Sports, W.B. Saunders
19. Malone: Orthopaedic and Sports Physical Therapy, C.V. Mosby.
20. Zulunga et al: Sports Physiotherapy, W.B. Saunders.
21. Reed: Sports Injuries – Assessment and Rehabilitation, W.B. Saunders.
22. Gould: Orthopaedic Sports Physical Therapy, Mosby.
23. C. Norris: Sports Injuries – Diagnosis and Management for Physiotherapists, Heinmann.
24. Gait analysis – Perry J., Black Thorofare, New Jersey, 110102.
25. Mc Ardle, Katch, Katch: Exercise Physiology Edition IV.
26. Era Volinski: Nutrition and exercise in Sports - CRC Press, New York.
27. George A. Brooks, Thomas D. Fahey: Exercise Physiology – Human Bioenergetics and its applications 11084, John Wiley & Sons, New York.
28. Astrand & Rodahl: Text Book of Work Physiology, McGraw Hill.
29. Fox and Mathews - The Physiological Basis of Physical Education and athletics – Holt Saunders.
30. Erston and Reilly - Kinanthropometry and Exercise Physiology Laboratory Manual tests, Procedures and Data - F & FN Spon Madras.

31. Rowland - Developmental Exercise Physiology - Human Kinetics.
32. Clarke - Exercise Physiology - Prentice Hall.
33. Gardiner M. Dena: The Principles of Exercise Therapy - CBS Publishers Delhi.
34. Kisner and Colby: Therapeutic Exercises – Foundations and Techniques, F.A. Davis.
35. Basmajian John V.: Therapeutic Exercise, Williams & Wilkins.
36. Wood & Baker: Beard's Massage, W.B. Saunders.
37. William E. Prentice: Rehabilitation Techniques - Mosby.
38. Werner Kuprian: Physical Therapy for Sports, W.B. Saunders.
39. Kennedy: Mosby's Sports Therapy Taping Guide.
40. Malone: Orthopedic and Sports Physical Therapy, C.V. Mosby.
41. William E. Prentice: Therapeutic Modalities in Sports Medicine - Mosby.
42. William E. Prentice: Rehabilitation Techniques - Mosby.
43. O' Sullivan, Schmitz: Physical Rehabilitation – Assessment and Treatment - F.A. Davis.
44. John Low & Reed: Electrotherapy Explained, Butterworth.
45. Meryl Roth Gersh: Electrotherapy in Rehabilitation, FA Davis.
46. Joseph Kahn: Principles and Practice of Electrotherapy, Churchill Livingstone.
47. Harrelson and Andrews: Physical Rehabilitation of Injured Athlete.
48. Nelson and Currier: Clinical Electrotherapy, Prentice Hall.
49. Greenman: Principles of Manual medicine, William and Wilkins.
50. Kuprian: Physical Therapy for Sports, W.B. Saunders.
51. Bates: Aquatic Exercise Therapy, W.B. Saunders.
52. Michlovitz - Thermal agents in Rehabilitation - F.A. Davis.
53. Lehmann - Therapeutic Heat and Cold - Williams & Wilkins

54. Morgan and King: Introduction to Psychology - Tata McGraw Hill.
55. Suinn: Psychology in Sports: Methods and applications, Surjeet Publications.
56. Grafiti: Psychology in contemporary sports, Prentice Hall.
57. Manual of nerve conduction velocity techniques – De Lisa, Raven press, New York, 11082.
58. Physical rehabilitation: assessment and treatment – O’Sullivan, F.A. Davis, Philadelphia 110104.
59. Bio-feedback – A practitioners guide – Kerb D, Guiford press
60. James G. Hay – The Biomechanics of Sports Techniques, Prentice Hall. Brunnstrom - Clinical Kinesiology, F.A. Davis.
61. Luttgens K., Hamilton N.: Kinesiology – Scientific Basis of Human Motion 9th Edi, 1997, Brown & Benchmark.
62. Kreighbaum E., Barthels K.: Biomechanics – A Qualitative approach for studying Human Motion, 2nd edi. 1985, MacMillan.
63. Rasch and Burk: Kinesiology and Applied Anatomy, Lee and Fabiger.
64. White and Punjabi - Biomechanics of Spine - Lippincott.
65. Norkin & Levangie: Joint Structure and Function - A Comprehensive Analysis - F.A. Davis.
66. Kapandji: Physiology of Joints Vol. I, II & III, W.B. Saunders.
67. Northrip et al: Analysis of Sports Motion: Anatomic and Biomechanic perspectives, W.C. Brown Co., IOWA.
68. Leveac B.F.: Basic Biomechanics in Sports and Orthopeadic Therapy, C.V. Mosby.
69. Morris B. Mellion: Office Sports Medicine, Hanley & Belfus.
70. Richard B. Birrer: Sports Medicine for the primary care Physician, CRC Press.
71. Torg, Welsh & Shephard: Current Therapy in Sports Medicine III - Mosby.

72. Zulunga et al: Sports Physiotherapy, W.B. Saunders.
73. Brukner and Khan: Clinical Sports Medicine, McGraw Hill.
74. Reed: Sports Injuries – Assessment and Rehabilitation, W.B. Saunders.
75. Gould: Orthopaedic Sports Physical Therapy, Mosby.
76. C. Norris: Sports Injuries – Diagnosis and Management for Physiotherapists, Heinmann.
77. D. Kulund: The Injured Athlete, Lippincott.
78. Nicholas Hershman:
79. Vol. I The Upper Extremity in Sports Medicine.
80. Vol. II The Lower Extremity and Spine in Sports Medicine.
81. Vol. III The Lower Extremity and Spine in Sports Medicine. Mosby.
82. Lee & Dress: Orthopaedic Sports Medicine - W.B Saunders.
83. Fu and Stone: Sports Injuries: Mechanism, Prevention and Treatment, Williams and Wilkins.
84. Scuderi, McCann, Bruno: Sports Medicine – Principles of Primary Care, Mosby.
85. First Aid to Injured: St. John’s Ambulance Association.
86. Andrea Bates and Norm Hanson: Aquatic Exercise Therapy, W.B. Saunders.
87. Dvir: Isokinetics: Muscle Testing, Interpretation and Clinical Applications.
88. W.B. Saunders.
89. Hartley: Practical Joint Assessment, A Sports Medicine Manual, upper and lower quadrants, C.V. Mosby.
90. Albert: Eccentric Muscle Training in Sports and Orthopedics, W.B. Saunders.
91. Voss et al - Proprioceptive Neuromuscular Facilitation - Patterns & Techniques - Williams & Wilkins

**30. APPENDIX**

**MODEL CHECK-LIST FOR EVALUTION OF CRITICAL APPRAISAL  
OF RESEARCH ARTICLE**

Name of the Student:

Name of Faculty/Observer:

Date:

| Sl. No. | Items for observation during presentation                                       | Poor (0) | Below Average (1) | Average (2) | Good (3) | Very Good (4) |
|---------|---|----------|-------------------|-------------|----------|---------------|
| 1       | Article chosen  |          |                   |             |          |               |
| 2       | Extent of understanding of scope and objectives of the article by the candidate |          |                   |             |          |               |
| 3       | Whether cross reference have been consulted                                     |          |                   |             |          |               |
| 4       | Whether other relevant publications consulted                                   |          |                   |             |          |               |
| 5       | Ability to respond to questions on the article                                  |          |                   |             |          |               |
| 6       | Audio-visual aids used  |          |                   |             |          |               |
| 7       | Ability to defend the article   |          |                   |             |          |               |
| 8       | Clarity of presentation   |          |                   |             |          |               |
| 9       | Level of Interaction form audience  |          |                   |             |          |               |
| 10      | Overall Performance   |          |                   |             |          |               |
|         | Total Score   |          |                   |             |          |               |

\_\_\_/40

Remark

Signature of Posting Incharge

## MODEL CHECK-LIST FOR EVALUATION OF REVIEW OF LITERATURE

Name of the Student:

Name of Faculty/Observer:

Date:

| Sl. No. | Items for observation during presentation       | Poor (0) | Below Average (1) | Average (2) | Good (3) | Very Good (4) |
|---------|---|----------|-------------------|-------------|----------|---------------|
| 1       | Whether relevant publications consulted         |          |                   |             |          |               |
| 2       | Whether relevant references have been consulted |          |                   |             |          |               |
| 3       | Competence of preparation                       |          |                   |             |          |               |
| 4       | Clarity of presentation                         |          |                   |             |          |               |
| 5       | Extent of understanding by the presenter        |          |                   |             |          |               |
| 6       | Ability to respond to questions                 |          |                   |             |          |               |
| 7       | Time scheduling                                 |          |                   |             |          |               |
| 8       | Appropriate use of audio-visual aids            |          |                   |             |          |               |
| 9       | Level of Interaction from audience              |          |                   |             |          |               |
| 10      | Overall Performance                             |          |                   |             |          |               |
|         | Total Score                                     |          |                   |             |          |               |

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Remark

Signature of Posting Incharge

## EVALUATION OF CLINICAL PRESENTATION

Name of the student :

Name of the faculty/observer :

Date :

| Sl. No. | Items for observation during presentation                    | Poor<br>(0) | Below Average<br>(1) | Average<br>(2) | Good<br>(3) | Very Good<br>(4) |
|---------|--|-------------|----------------------|----------------|-------------|------------------|
| 1       | Competence of history  |             |                      |                |             |                  |
| 2       | Whether all points elicited                                  |             |                      |                |             |                  |
| 3       | Clarity of presentation                                      |             |                      |                |             |                  |
| 4       | Logical order  |             |                      |                |             |                  |
| 5       | Mentioned all positive & negative points of importance       |             |                      |                |             |                  |
| 6       | Accuracy of general physical examinations elicited correctly |             |                      |                |             |                  |
| 7       | Major signs elicited appropriately                           |             |                      |                |             |                  |
| 8       | Diagnosis done appropriately                                 |             |                      |                |             |                  |
| 9       | Investigations required, Interpretation of investigations    |             |                      |                |             |                  |
| 10      | Aims and Treatment   |             |                      |                |             |                  |
|         | Total Score  |             |                      |                |             |                  |

\_\_\_/40

Remark

Signature of Posting Incharge

## EVALUATION OF DISSERTATION

Name of the student:

Name of the faculty/observer:

Date:

| Sl. No. | Items for observation during presentation                         | Poor<br>(0) | Below Average<br>(1) | Average<br>(2) | Good<br>(3) | Very Good<br>(4) |
|---------|---|-------------|----------------------|----------------|-------------|------------------|
| 1       | Selection of topic  |             |                      |                |             |                  |
| 2       | Need of the study   |             |                      |                |             |                  |
| 3       | Statement of hypothesis   |             |                      |                |             |                  |
| 4       | Review of literature  |             |                      |                |             |                  |
| 5       | Selection of research design and ethical clearance                |             |                      |                |             |                  |
| 6       | Selection of appropriate sample size and sampling technique       |             |                      |                |             |                  |
| 7       | Selection of appropriate statistical tool                         |             |                      |                |             |                  |
| 8       | Selection of appropriate outcome measures and quality of protocol |             |                      |                |             |                  |
| 9       | Logical sequence of presentation                                  |             |                      |                |             |                  |
| 10      | Answer questions asked by evaluators                              |             |                      |                |             |                  |
|         | Total Score   |             |                      |                |             |                  |

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Remark

Signature of Posting Incharge

## EVALUATION OF THERAPY/DEMONSTRATION SESSIONS

Name of the student:

Name of the faculty/observer:

Date:

| Sl. No. | Items for observation during presentation | Poor (0) | Below Average (1) | Average (2) | Good (3) | Very Good (4) |
|---------|---|----------|-------------------|-------------|----------|---------------|
| 1       | Competence of Preparation                 |          |                   |             |          |               |
| 2       | Clarity of presentation                   |          |                   |             |          |               |
| 3       | Logical order                             |          |                   |             |          |               |
| 4       | Accuracy of technique demonstration       |          |                   |             |          |               |
| 5       | Extent of Understanding by Presenter      |          |                   |             |          |               |
| 6       | Time Scheduling – 3 hrs.                  |          |                   |             |          |               |
| 7       | Ability to respond to questions           |          |                   |             |          |               |
| 8       | Supervision & clearing doubts             |          |                   |             |          |               |
| 9       | Level of Interaction form audience        |          |                   |             |          |               |
| 10      | Overall performance                       |          |                   |             |          |               |
|         | Total Score                               |          |                   |             |          |               |

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Remark

Signature of Posting Incharge

## EVALUATION OF CLINICAL WORK IN WARD / OPD

Name of the student:

Name of the unit head:

Date:

| Sl. No. | Items for observation during presentation                        | Poor<br>(0) | Below Average<br>(1) | Average<br>(2) | Good<br>(3) | Very Good<br>(4) |
|---------|--|-------------|----------------------|----------------|-------------|------------------|
| 1       | Regularity of attendance   |             |                      |                |             |                  |
| 2       | Punctuality  |             |                      |                |             |                  |
| 3       | Interaction with colleagues and supportive staff                 |             |                      |                |             |                  |
| 4       | Maintenance of case record                                       |             |                      |                |             |                  |
| 5       | Presentation of cases during rounds                              |             |                      |                |             |                  |
| 6       | Investigations work up   |             |                      |                |             |                  |
| 7       | Bedside manners  |             |                      |                |             |                  |
| 8       | Rapport with patients  |             |                      |                |             |                  |
| 9       | Patient education to patients relatives, follow up and home care |             |                      |                |             |                  |
| 10      | Overall quality of ward work                                     |             |                      |                |             |                  |
|         | Total score  |             |                      |                |             |                  |

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Remark

Signature of Posting Incharge

## CONTINUOUS EVALUATION OF DISSERTATION WORK BY GUIDE / CO-GUIDE

Name of the student:

Name of the faculty:

Date:

| Sl. No. | Point to be considered                      | Poor<br>(0) | Below Average<br>(1) | Average<br>(2) | Good<br>(3) | Very Good<br>(4) |
|---------|---|-------------|----------------------|----------------|-------------|------------------|
| 1       | Periodic consultation with guide / co-guide |             |                      |                |             |                  |
| 2       | Regular collection of case material         |             |                      |                |             |                  |
| 3       | Depth of analysis/ discussion               |             |                      |                |             |                  |
| 4       | Departmental presentation of findings       |             |                      |                |             |                  |
| 5       | Quality of final output                     |             |                      |                |             |                  |
| 6       | Others                                      |             |                      |                |             |                  |
|         | Total Score                                 |             |                      |                |             |                  |

Remark

Signature of Guide

Signature of Co-guide