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Loni Bk - 413 736, Tal. Rahata, Dist. Ahamadanagar (M.S.)

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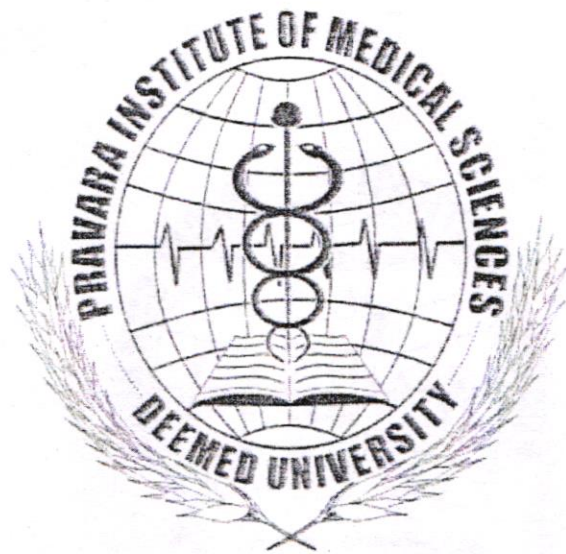
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MASTER OF PHYSIOTHERAPY IN ORTHOPEDICS



PRAVARA INSTITUTE OF MEDICAL SCIENCES
(DEEMED UNIVERSITY), LONI, MAHARASHTRA, INDIA, 413 736

ORDINANCE GOVERNING
MASTER OF PHYSIOTHERAPY IN
ORTHOPEDECS
(M.P.Th. ORTHOPEDICS) COURSE 2011 – 2012



PRAVARA INSTITUTE OF MEDICAL SCIENCES

(DEEMED UNIVERSITY)

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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 and 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 & 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.

NOTIFICATION

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MASTER OF PHYSIOTHERAPY (ORTHOPEDECS)

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1. Preamble: The Master of Physiotherapy with orthopedics specialty is a dynamic academic course offered for qualified physiotherapists. It creates the opportunity for qualified and experienced clinicians to broaden their knowledge, clinical skills in orthopedic physiotherapy field. The course recognizes the need to adopt principles of adult learning and emphasizes the importance of facilitating graduates to develop independent, self-directed and critical philosophies in the field of orthopedics physiotherapy.

The course consists of four subjects that include one stream subject and three core subjects namely research methods, orthopedic biomechanics, clinical orthopedics and orthopedic physiotherapy. The contents of these subjects are chosen critically so as to support the physiological basis of physiotherapy practice, provide a framework for evaluation of evidence for physiotherapy and develop advanced communication skills and awareness of professional and ethical issues in physiotherapy and the broader healthcare community.

The course contents present advanced knowledge and understanding of orthopedics biosciences, current issues in orthopedics, and their application to clinical practice. It also provides opportunities for students to acquire cutting edge information and skills related to treatment and management in orthopedics physiotherapy. The clinical placement allows students to broaden or deepen their clinical practice experience and expertise.

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, 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 orthopedic physiotherapy and manuscripts will be submitted to a peer-review journal.

2. Objectives: The objectives of this Master degree program offered by Pravara Institute of Medical Sciences;

- To provide comprehensive training in orthopedic physiotherapy theory and practice, including the use of other physiotherapy modalities.
- To provide an opportunity for the students to take up a research project in the field of pediatric Physiotherapy.
- To provide students with quality clinical experience in hospitals and complementary health clinics from year one of the program.

- To ensure that students practice Pediatric Physiotherapy, whilst integrating western medical information as appropriate, to ensure that graduates are safe and competent in the practice of pediatric physiotherapy universally.
- To provide an opportunity for higher education opportunity like post doctoral study or post master fellowship after completion of the course.

3. **Career opportunities:** Currently there is shortage of qualified specialist Physiotherapist with Orthopaedic Physiotherapy specialty. Hence, there is demand for this specialty and employment opportunities are excellent. Graduates with this qualification are recognized throughout India and abroad. As there is a shortage of highly qualified Physiotherapists with Orthopaedic Physiotherapy, it commands increasing employment & remuneration. They can be employed in super specialty hospitals, Orthopaedic specialty hospitals, general hospitals, teaching institutes, rehabilitation centers for children's, schools and can also practice in private setups independently.

4. **Professional recognitions:** Graduates who are registered with the Indian Association of Physiotherapists and Maharashtra PT and OT council can apply to have this qualification listed. The award of Master of Orthopaedic Physiotherapy qualifies graduates for membership of the Orthopedic Physiotherapy interest groups in India as well as abroad.

5. **Eligibility:** A candidate who has passed Bachelor of Physiotherapy (BPTH/BPhT/BPT/B.Physio/Bsc Physiotherapy) or any equivalent degree examination of a recognized Indian university by law in India or any other degree course in physiotherapy recognized as equivalent by PIMS, Association of Indian Universities or Indian Association of Physiotherapists and who has scored not less than 50% of maximum marks in prescribed qualifying examination shall be eligible for the M.P.Th. Orthopaedic course.

6. **Total intake of students:** The total intake of students will be three (03) per academic year of the Pravara Institute of Medical Sciences, Deemed University, Loni.

7. **Course fee structure:** The tuition fee and other fee structure will be as per the notifications by Pravara Institute of Medical Sciences, Deemed University from time to time. The fee structure is different for resident Indians, non-resident Indian and foreign students.

8. **Course duration:** The course duration shall be two academic years or 24 months. This duration includes also includes submission of dissertation on the research topic. No additional time is given for the submission of the dissertation.

9. **Medium of instructions:** The medium of instructions for this course shall be only English. This includes theory lectures, practicals, laboratory works and assignments and clinical training.

10. Course location: This course is offered at College of Physiotherapy, Pravara Institute of Medical Sciences, Loni, Taluka: Rahata, District: Ahmednagar 413 736, Maharashtra, India.

11. Course structure: The details of M. P.Th. Orthopaedic course structure are as follows;

Sl.No	Subject	Teaching hours		Total
		Theory	Practical/clinical	
1	Research Methods	150	250	400
2	Orthopedic Biomechanics	200	350	550
3	Clinical Orthopedics	200	350	550
4	Orthopedic Physiotherapy	200	350	550
5	Clinical training	-	1200	1200
6	Journal club	-	-	200
7	Research club	-	-	150
8	Seminars	-	-	400
Total teaching hours				4000

12. Clinical placement: Clinical placement will be at Orthopedic Physiotherapy department, orthopedic wards, surgical intensive care unit, rural public health centers and artificial Limb Centre. Since the teaching clinics operate 48 weeks per year, students will be required to attend clinical sessions on a rotation basis to maintain public service and provide continuity of patient care.

13. Monitoring process: A candidate pursuing M. P.Th. orthopedic course shall study in the concerned department of the college of physiotherapy, Pravara Institute of Medical Sciences, Loni for the entire period as full time student. No candidate is permitted to work in any other hospital, clinic, college etc., while studying this postgraduate course. No candidate should join another course 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. Each year shall be taken as a unit for the purpose of calculating attendance. Every student shall attend lectures, practicals, laboratory works, seminars, research clubs, journal clubs, review meeting, tele-physiotherapy sessions and state level conferences, national level conferences or occasionally international conferences during each year as prescribed by the Pravara Institute of medical Sciences, Deemed University, Loni. Candidate who has put in a minimum of 80 % of attendance in the theory and practical assignments separately shall be permitted to appear for M. P.Th. examination. Candidate who has put in a minimum of 80 % of attendance in first year of M. P.Th. shall only be eligible to submit the dissertation. Any student who fails to complete the course in the manner stated above shall not be permitted to appear for the University examination.

Every candidate shall maintain a work diary 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 the Principal, College of Physiotherapy, and presented in the university practical examination if called for. Every clinical case discussion, case presentation, seminars, journal clubs and research clubs will be monitored by faculty members, guide and peers using relevant checklists and CPA cards.

14. Dissertation: Every candidate pursuing M.P.Th. 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 a research proposal or synopsis containing particulars of proposed dissertation to the Registrar of the university in the prescribed Form within 6 months from the date of commencement of the course on or before the dates notified by the university. The research proposal or synopsis shall be sent through the proper channel. Such synopsis will be reviewed 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 or 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 & Principal, college of Physiotherapy shall certify the dissertation. Four copies of dissertation thus prepared shall be submitted to the Controller of Examinations, three months before final examination on or before the dates notified by the university.

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.

15. Guide: The criteria for recognition of M. P. Th. orthopedics guide shall be as follows;

- M. P. Th. Orthopaedics with five years post PG full time teaching experience in a recognized teaching institute.
- The age of guide shall not exceed 60 years.
- The guide student ratio should be 1: 5.
- Considering the shortage of qualified teachers, relaxation may be given to the teachers with three years of post PG teaching experience till 2015 or until further amendments by the university in this regard.

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

16. Assessment: The final assessment of the student in this course will be by written, oral and practical examination at the completion of the two years. However, the student should submit the research dissertation prior to appearing for the final university examination. Student's dissertation should be accepted by the examiners prior to appearing for the final examination.

17. Schedule of examination: The examination for M. P. Th. orthopedics course shall be held at the end of two academic years (four academic terms). The university shall conduct two examinations in a year such as regular and supplementary at an interval of six months between the two examinations. No more than two exams shall be conducted in one academic year.

18. Scheme of examination: The detailed scheme of examination for theory and practical or clinical component is described here.

Sl. No	Type of assessment	Maximum Marks
1	Theory	400
2	Practical /clinical	200
3	Viva voce	100
TOTAL		700

Theory (written examination): A written examination consisting of four question papers, each of three hours duration & each paper carrying 100 marks. Particulars of Theory question paper & distribution of marks are as follows;

Paper	Subject	Marks
I	Research methods	100
II	Orthopedic Biomechanics	100
III	Clinical Orthopedics	100
IV	Orthopedic Physiotherapy	100

Pattern of model question paper: The pattern of theory question paper for all four subjects shall be as follows;

Sl.No.	Type of question	Distribution	Marks
1	M C Q (25 questions)	25 X 1	25
2	Long essay (2 questions, no choice)	2 X 25	50
3	Short essay (5 questions, one choice)	5 X 5	25
TOTAL			100

Clinical Examination (Practical): A clinical examination consisting of two hundred marks (300) that is aimed at examining clinical skills and competency of the candidates for undertaking independent work as a Orthopaedic physiotherapy specialist.

Viva-Voce Examination (Practical): A Viva-Voce examination consisting of one hundred marks (100) that are aimed at examining depth of knowledge, logical reasoning, confidence & oral communication skills with special emphasis on dissertation work. Viva voce includes general viva questions pertaining to course contents and dissertation. The marks of Viva-Voce examination shall be included in the clinical examination to calculate the percentage and declaration of results.

Sl.No.	Type of practical /clinical assessment	Distribution	Marks
1	Long case	150 X 1	150
2	Short case	1 X 50	50
3	Viva voce (general & dissertation)	-	100
TOTAL			300

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

19. Criteria for passing: The criteria for passing includes, minimum of 50 % of total marks in theory aggregate and minimum of 50 % of total marks in clinical and Viva-Voce aggregate.

20. Declaration of class: The declaration of class shall be as follows;

First class with distinction: 75 % & above in aggregate provided the candidate passes the examination in first attempt.

First class: 60 % & above in aggregate provided the candidate passes the examination in first attempt.

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

22. Course contents

RESEARCH METHODS FOR PHYSIOTHERAPY

Teaching Hours: 400 hours (Theory: 150 hours & practical 250 hours)

Maximum Marks: 100 (Theory: 100)

Assessment: Written University examinations

Objectives:

1. To understand the basic research terminologies, methods and approaches.
2. Evaluate different types of research designs.
3. Explain research methods relevant to research in Orthopaedic Physiotherapy.
4. To recognize the significance of consent, confidentiality and other ethical considerations in relation to Orthopaedic physiotherapy research.
5. To understand evidence based physiotherapy practice.

I Basic concepts

- Meaning and definition
- Research process
- Research types and approaches
- Objectives of research in physiotherapy
- Barriers for research in physiotherapy
- Research problem or research question

II. Research ethics

- Overview
- Consent
- Confidentiality
- Helsinki's declaration
- Plagiarism

III. Literature search

- Overview
- Steps in literature search
- Purpose
- Methods and techniques

IV. Research designs

- Meaning and definition
- Types of research designs
- Steps in preparation of research designs
- Factors affecting research designs

V. Sampling

- Overview
- Principles
- Methods
- Designs
- Process

VI. Research variables

- Overview
- Types
- Reliability and validity
- Specificity and sensitivity

VII. Pilot study and pre-testing

- Overview
- Need
- Advantages

VIII. Data collection

- Overview
- Sources
- Methods
- Types

IX. Biostatistics

- Steps in data processing
- Tabulation
- Measures of central tendency

- Tests of significance

X. Research report

- Overview
- Types
- Publication

Suggested Readings

1. Jerry R .Thomas :Research methods in physical activity 5th ed ,human kinetics, U. S. A, 2005.
2. Carolyn Hicks: Research for physiotherapists: project design and analysis, 2nd Ed, Churchill Livingstone, New York, 1995.
3. Domholdt E: Physical therapy research – Principles and applications. 2nd Ed, W. B. Saunders Co, Philadelphia, 2000.
4. Drummond Avril: Research methods for therapists. 1st Ed, Chapman & Hall, Madras, 1996.
5. Thomas JR, Nelson JK: Research methods in physical Activity. 4th Ed, Human Kinetics, New Zealand, 2001.
6. Dean P. Currier: Elements of research in physical therapy. 3rd Ed, Williams & Wilkins, NY, 1990.
7. Ram Ahuja :Research methods ,Rawat Publication ,New Delhi , india, 2001.
8. Stephen Polger: Introduction to research in the health sciences, 5th Ed , Churchill Livingstone, New York, 2008.
9. David S Moore. W H Freeman :The basic practice of statistics, , USA, 1999.
10. Michael Quinn Patton, Sage:, Qualitative evaluation and research methods, USA, 1990.

Journals

1. BMC Medical Research Methodology.
2. Physiotherapy Research International.

ORTHOPEDIC BIOMECHANICS

Teaching Hours: 550 hours (Theory: 200 hours and Practical: 350 hours)

Maximum Marks: 100 (Theory: 100)

Assessment: Written and oral university examinations.

Objectives:

1. To understand the biomechanical principles necessary for the practice of the orthopedic physiotherapy.
2. To analyze the forces at skeletal joints for various static and dynamic activities.
3. To understand pathomechanics pertaining to trauma, paralysis and deformities.
4. To identify the factors responsible for abnormal movements.
5. To identify the corrective biomechanical interventions for abnormal movements.

Theory Contents

I. Basic concepts

- Overview.
- Principles.
- Movement analyses.
- Applications.

II. Spine biomechanics

- Overview.
- Static stability
- Dynamic stability
- Kinematic & kinetic analysis
- Pathomechanics .

III. Shoulder biomechanics

- Overview
- Static stability

- Dynamic stability
- Kinematic & kinetic analysis
- Pathomechanics

IV. Elbow biomechanics

- Overview
- Static stability
- Dynamic stability
- Kinematic & kinetic analysis
- Pathomechanics

V. Wrist & hand biomechanics

- Overview
- Static stability
- Dynamic stability
- Kinematic & kinetic analysis
- Pathomechanics

VII. Hip biomechanics

- Overview
- Static stability
- Dynamic stability
- Kinematic & kinetic analysis
- Pathomechanics

VIII. Knee biomechanics

- Overview
- Static stability
- Dynamic stability
- Kinematic & kinetic analysis
- Pathomechanics

IX. Ankle & foot biomechanics

- Overview
- Static stability
- Dynamic stability

- Kinematic & kinetic analysis
- Pathomechanics

X. Applied biomechanics.

- Overview.
- Fracture biomechanics.
- Gait analysis.
- Orthotics & implants biomechanics
- Clinical biomechanics.
- Sports biomechanics.

Practical contents

1. Postural measurements
2. Scapular angles
3. Carrying angle
4. Cobb's angle
5. Pelvic tilts and lumbosacral angles
6. Femoral torsion and neck shaft angles
7. Q angle
8. Tibial torsion and anteversion
9. Talar tilts
10. Distance and temporal parameters of gait

Suggested reading

1. Carol A Otis: Kinesiology: The mechanics and pathomechanics of human movement: 2 Ed, Lippincott Williams and Wilkins Philadelphia: 2009.
2. Dutta SK, Data D: Applied biomechanics, BI Publications, New Delhi, 2008.
3. Frank Bell: Principles of biomechanics, Stanley Thomas Ltd, Cheltenham, 1998.
4. Low and Reed: *Basic Biomechanics Explained*, Butterworth-Hienmann Ltd, USA: 1996
5. Margareta Nordin: *Basic Biomechanics of Musculoskeletal System*, Lippincott Williams and Wilkins, USA : 2001
6. Joseph Hamill, 2nd Edition *Biomechanical basis of human movement*, Lippincott Williams and Wilkins, USA : 2003

7. Iwan W. Griffiths; *Principles of biomechanics and motion analysis*, Lippincott Williams and Wilkins, USA; 2006
8. Michelle Lusardi; *orthotic & prosthetics in rehabilitation*: Woburn, USA:2000
9. Cynthia Norkin: *Joint structure and function*:4th edition:Jaypee brothers, New Delhi: 2006
10. Jacquelin Perry; *Gait analysis – Normal and pathological function*, Slack Incorporated, USA, 1992

Journals

1. Journal of Biomechanics.
2. Gait and posture.
3. Journal of applied Biomechanics.
4. Sports biomechanics.
5. Clinical Biomechanics.

Paper III (SUBJECT CODE: COPT 2206)

CLINICAL ORTHOPEDICS

Teaching Hours: 550 hours (Theory: 200 hours and Practical: 350 hours)

Maximum Marks: 100 (Theory: 100)

Assessment: Written, Oral and Practical University examinations

Objectives:

1. To comprehend the fundamental concepts pertaining to orthopedic disorders.
2. To understand the clinical signs and symptoms of musculoskeletal disorders.
3. To be aware of the investigations performed to rule out the orthopedic diseases and disorders.
4. To know the differential diagnosis.
5. To get acquainted with various clinical orthopedic surgeries & other procedures.

Theory Contents

I. Fundamental concepts

- Historical aspects.
- Classification of musculoskeletal disorders.
- Musculoskeletal dysfunctions.
- Psychological reactions to injury.
- Role of physiotherapist.

II. Macro- trauma

- Overview.
- Classification.
- Spinal macro trauma.
- Peripheral joint macro trauma.
- Investigations.
- Management.

III. Micro-trauma

- Overview.
- Classification.
- Soft tissue disorders.
- Hard tissue disorders.
- Special tissue disorders.
- Investigations.
- Management.

IV. Metabolic disorders

- Overview
- Rickets & Osteomalacia.
- Osteoporosis.
- Connective tissue syndrome.
- Investigations.
- Management.

V. Congenital disorders

- Overview.
- Spinal disorders.
- Peripheral disorders.
- Investigations.
- Management.

VI. Inflammatory disorders

- Overview.
- Arthritic disorders.
- Spondyloarthropathies.

- Investigations.
- Management.

VII. Degenerative disorders

- Overview.
- Spinal joint degenerative disorders.
- Peripheral degenerative joint disorders.
- Investigations.
- Management.

VIII. Infective disorders

- Overview.
- Infections of bone.
- Infections of joints.
- Investigations.
- Management.

IX. Deformities

- Overview.
- Spinal deformities.
- Peripheral deformities.
- Investigations.
- Management.

X. Orthopedic procedures

- Overview.
- Spinal surgeries.
- Peripheral surgeries.
- Immobilization techniques.
- Orthopedic tractions.

Practical contents

1. Evaluation/assessment procedures.
2. Orthopedic implant identification.
3. Plaster of Paris Night splints.
4. Prosthetic prescription, check outs and training.
5. Orthotic prescription, check outs and training.
6. Bandaging, dressing, strapping & sling techniques.
7. Orthopedic appliances prescription & training.
8. Diagnostic procedures.
9. Observation of orthopedic tractions & surgical procedures.
10. Determine the need for physiotherapy.

Suggested reading

1. Campbell's, operative orthopaedics, 11th Edition, Mosby Elsevier, 2008.
2. Brotzman S. Brent, Clinical Orthopaedic Rehabilitation, 2nd Ed, Mosby Inc
11830 Westline Industrial Drive St. Louis, 2003.
3. Ralph M. Buschbacher, Practical Guide to Musculoskeletal Disorders, Diagnosis
& Rehabilitation Butterworth Heiemann, Boston, 2002.
4. American College of Sport Medicine, Exercise Management for Persons with
Chronic Diseases and Disabilities, Human Kinetics, 2000
5. Berkow R, The Merck Manual Of Diagnosis and Therapy, 17 Edition, New
Jersey, Merck Research Laboratories 1999.
6. Magee, D.J. Orthopaedic Physical Assessment, 3rd Edition, W. B.
Saunders, Philadelphia 1997.
7. Hertling, D. & Kessler, R. M. Management Of Common Musculoskeletal Disorders
Physical Therapy Principles & Methods, 3rd Edition, JB
Lippincott, Philadelphia, 1996.
8. Richardson , J.K. & Iglarsh, Z.A. Clinical Orthopaedic Physical therapy, W. B.

- Saunders, Baltimore, 1994.
9. Reid, D. C. Sport Injury Assessment & Rehabilitation, Churchill Livingstone, New York, 1992.
 10. Copeman W. S. C, Rhumatism, Gerald Duckworth & Co. Ltd, London, 1986.

Journals

1. Clinical Orthopaedics and related Research
2. Australian Physical Therapy Association Journal
3. Canadian Physiotherapy
4. Journal of Orthopaedics and sports Physical Therapy
5. Journal of Physical Therapy

Paper IV (SUBJECT CODE: COPT 2207)

ORTHOPEDIC PHYSIOTHERAPY

Teaching Hours: 550 hours (Theory: 200 hours and Practical: 350 hours)

Maximum Marks: 100 (Theory: 100)

Assessment: Written, Oral and Practical examinations

Objectives:

1. To outline the role of physiotherapy in orthopedic evaluation.
2. Identify the disability and set the treatment goal.
3. Understand the principles and procedures of various physiotherapy approaches.
4. To identify the needs of the special patients with special problems and plan appropriate therapy.
5. To understand the importance of Community based rehabilitation in orthopedic physiotherapy.
6. To understand the clinical reasoning and evidence based practice in orthopaedic physiotherapy.

I. Orthopedic physiotherapy assessment

- Overview
- Tools for assessment
- Physical assessment
- Biomechanical assessment
- Clinimetrics
- Investigations –Imaging, Laboratory and Performance tests

II. Taping

- Overview
- Indications
- Contraindications
- Precautions
- Techniques

III. Orthopedic manual therapy

- Overview
- Types
- Biomechanical Principles
- Clinical Reasoning strategies
- Approaches
 - Cyriax Technique
 - Kaltenborn Technique
 - Maitland Technique
 - Mulligans Technique
 - Mc Kenzie Technique
 - Soft Tissue Techniques
 - Neurodynamic Release
- Indications
- Contraindication
- Evidence based Practice

IV. Compression & traction

- Overview
- Types
- Methods

- Effects
- Indications
- Contraindications
- Precautions

V. Electrophysiological modalities

- Overview
- Principles
- Team
- Community physiotherapy

VI. Neurodynamic release

- Overview
- Effects
- Indications
- Contraindications
- Precautions

VII. Postoperative physiotherapy interventions

- Overview
- Preoperative Physiotherapy
- Post-op physiotherapy
- Follow up

VIII. Orthopedic aids & appliances

- Overview
- Types
- Prescription
- Checkouts
- Training

IX. Community based rehabilitation

- Overview
- Indications
- Interventions

- Advantages
- Limitations

X. Recent advances

- Overview
- Advances in orthopedic manual therapy.
- Advances in electrophysical agents
- Clinical reasoning

Practical contents

1. Peripheral and spinal joints mobilization techniques.
2. Peripheral and spinal joints manipulation techniques.
3. Gait retraining.
4. Physical fitness, Assessment and Training.
5. Strength, Endurance, Balance & Proprioception.
6. Orthotics and Prosthetics prescription, checkouts and Training.
7. Taping, bandaging and strapping techniques.
8. Application of electro physical agents.
9. Compression and Traction intervention/procedure/techniques.
10. Physical Assessment – History, Physical examination, Special tests and outcome measures.

Suggested reading

1. Boyling J: Grievess Modern Manual Therapy The Vertebral Column, 3rd Ed, Churchill Livingstone Philadelphia, 2004.
2. Maitland G. D: Peripheral Manipulation, 6th Ed, Butterworth Heinemann Linacre House Jordan Hill Oxford Ox28dp, 2001.
3. Maitland G. D: Maitland's Vertebral Manipulation, 7th Ed, Butterworth Heinemann Linacre House Jordan Hill Oxford Ox28dp, 2009.
4. Mulligan BR: Manual Therapy 'NAGs', 'SNAGs', 'MWMs' etc, 4th Ed. Plane View Services, Wellington, New Zealand, 1999

5. McKenzie RA: The Lumbar Spine. Mechanical diagnosis and therapy. Spinal Publications, Waikanae, New Zealand?
6. Cyriax J.H: Cyriax's Illustrated Manual Of Orthopaedic Medicine, 2nd Ed, Butterworth Heinemann Linacre House Jordan Hill Oxford Ox28dp, 1996.
7. Chaitow Leon: Clinical Application Of Neuromuscular Techniques, 2nd Ed, Churchill Livingstone Elsevier, 2008.
8. Butler David : Mobilization Of The Nervous System, Churchill Livingstone, 1996
9. Macdonald R.: Taping Techniques Principles and Practice, 2nd Ed, Butterworth Heinemann Philadelphia, 2006.
10. Brotzman S. Brent: Clinical Orthopedic Rehabilitation, 2nd Ed, Mosby Inc 11830 Westline Industrial Drive St. Louis, 2003.

Journals

1. Manual therapy
2. Journal of manual and manipulative therapy
3. The spine journal
4. European spine journal
5. Indian journal of occupational and physiotherapy

MASTER OF PHYSIOTHERAPY IN COMMUNITY PHYSIOTHERAPY



**PRAVARA INSTITUTE OF MEDICAL SCIENCES
(DEEMED UNIVERSITY), LONI, MAHARASHTRA, INDIA, 413 736**

ORDINANCE GOVERNING
MASTER OF PHYSIOTHERAPY IN COMMUNITY
PHYSIOTHERAPY

(M.P.Th. COMMUNITY PHYSIOTHERAPY) COURSE 2011 - 2012



PRAVARA INSTITUTE OF MEDICAL SCIENCES

(DEEMED UNIVERSITY)

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 & 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.

NOTIFICATION

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MASTER OF PHYSIOTHERAPY

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(Community Physiotherapy)

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1. Preamble: The Master of Physiotherapy with community physiotherapy specialty is a dynamic academic course offered for qualified physiotherapists. It creates the opportunity for qualified and experienced clinicians to broaden their knowledge, clinical skills in community based rehabilitation field. The course recognizes the need to adopt principles of adult learning and emphasizes the importance of facilitating graduates to develop independent, self-directed and critical philosophies in the field of community based rehabilitation.

The course consists of four subjects that include one stream subject and three core subjects namely research methods, Public health, Community physiotherapy , Community Based Rehabilitation. The contents of these subjects are chosen critically so as to support the physiological basis of physiotherapy practice, provide a framework for evaluation of evidence for physiotherapy and develop advanced communication skills and awareness of professional and ethical issues in physiotherapy and the broader healthcare community.

The course contents present advanced knowledge and understanding of community physiotherapy , current issues in CBR, and their application to clinical practice. It also provides opportunities for students to acquire cutting edge information and skills related to treatment and management in community based rehabilitation. The clinical placement allows students to broaden or deepen their clinical practice experience and expertise.

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, throughout the course students review the literature critically and apply this information in the evaluation and managements in community based rehabilitation. Research projects will be completed in community physiotherapy and manuscripts will be submitted to a peer-review journal.

2. Objectives: The objectives of this Master degree program offered by Pravara Institute of Medical Sciences;

- To provide comprehensive training in community physiotherapy theory and practice, including the use of other physiotherapy modalities.
- To provide an opportunity for the students to take up a research project in the field of community physiotherapy.
- To provide students with quality clinical experience in hospitals and complementary health clinics from year one of the program.
- To 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.
- To provide an opportunity for higher education opportunity like post doctoral study or post master fellowship after completion of the course.

3. Career opportunities: Currently there is shortage of qualified specialist Physiotherapist with Community Physiotherapy specialty. Hence, there is demand for this specialty and employment opportunities are excellent. Graduates with this qualification are recognized throughout India and abroad. As there is a shortage of highly qualified Physiotherapists with Community physiotherapy, it commands increasing employment & remuneration. They can be employed in Super specialty hospitals, Government organization, Non-governmental organizations, General hospitals, Teaching institutes, Rehabilitation centers, Handicapped schools and also can practice in Industrial setup independently.

4. Professional recognitions: Graduates who are registered with the Indian Association of Physiotherapists can apply to have this qualification listed. The

award of Master of community physiotherapy qualifies graduates for membership of the community physiotherapy interest groups in India as well as abroad.

5. Eligibility: A candidate who has passed Bachelor of Physiotherapy (BPT/BPhT/BPT/B.Physio/Bsc Physiotherapy) or any equivalent degree examination of a recognized Indian university by law in India or any other degree course in physiotherapy recognized as equivalent by PIMS, Association of Indian Universities or Indian Association of Physiotherapists and who has scored not less than 50% of maximum marks in prescribed qualifying examination shall be eligible for the M.P.Th. in community physiotherapy course.

6. Total intake of students: The total intake of students will be three (03) per academic year of the Pravara Institute of Medical Sciences, Deemed University, Loni.

7. Course fee structure: The tuition fee and other fee structure will be as per the notifications by Pravara Institute of Medical Sciences, Deemed University from time to time. The fee structure is different for resident Indians, non-resident Indian and foreign students.

8. Course duration: The course duration shall be two academic years or 24 months. This duration also includes submission of dissertation on the research topic. No additional time is given for the submission of the dissertation.

9. Medium of instructions: The medium of instructions for this course shall be only English. This includes theory lectures, practicals, laboratory works and assignments and clinical training.

10. Course location: This course is offered at College of Physiotherapy, Pravara Institute of Medical Sciences, Loni, Taluka: Rahata, District: Ahmednagar 413 736, Maharashtra, India.

11. Course structure: The details of M.P.Th. physiotherapy course structure are as follows;

Sl.No	Subject	Teaching hours		Total
		Theory	Practical/clinic	
1	Research Methods	150	250	400
2	Public health	200	350	550
3	Community physiotherapy	200	350	550
4	Community Based Rehabilitation	200	350	550
5	Clinical training	-	1200	1200
6	Journal club	-	-	200
7	Research club	-	-	150
8	Seminars	-	-	400
Total teaching hours				4000

12. Clinical placement: Clinical placement of Community physiotherapy department will be at gynecology wards, surgical wards, old age home, industrial setup and rural primary health centers. Since the teaching clinics operate 48 weeks per year, students will be required to attend clinical sessions on a rotation basis to maintain public service and provide continuity of patient care.

13. Monitoring process: A candidate pursuing M.P.Th. community physiotherapy course shall study in the concerned department of the college of physiotherapy, Pravara Institute of Medical Sciences, Loni for the entire period as full time student. No candidate is permitted to work in any other hospital, clinic, college etc., while studying this postgraduate course. No candidate should join another course 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. Each year shall be taken as a unit for the purpose of calculating attendance. Every student shall attend lectures, practicals, laboratory works, seminars, research clubs, journal clubs, review meeting, tele-physiotherapy

sessions and state level conferences, national level conferences or occasionally international conferences during each year as prescribed by the Pravara Institute of medical Sciences, Deemed University, Loni. Candidate who has put in a minimum of 80% of attendance in the theory and practical assignments separately shall be permitted to appear for M.P.Th. examination. Candidate who has put in a minimum of 80% of attendance in first year of M.P.Th. shall only be eligible to submit the dissertation. Any student who fails to complete the course in the manner stated above shall not be permitted to appear for the University examination.

Every candidate shall maintain a work diary 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 the Principal, College of Physiotherapy, and presented in the university practical examination if called for. Every clinical case discussion, case presentation, seminars, journal clubs and research clubs will be monitored by faculty members, guide and peers using relevant checklists and CPA cards.

14. Dissertation: Every candidate pursuing M.P.Th. 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 a research proposal or synopsis containing particulars of proposed dissertation to the Registrar of the university in the prescribed Performa within 6 months from the date of commencement of the course on or before the dates notified by the university. The research proposal or synopsis shall be sent through the proper channel. Such synopsis will be reviewed 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 or 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 & Principal, college of Physiotherapy shall certify the dissertation. Four copies of dissertation thus prepared shall be submitted to the Controller of Examinations, three months before final examination on or before the dates notified by the university.

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.

15. Guide: The criteria for recognition of M.P.Th. Community physiotherapy guide shall be as follows;

- M.P.Th. Community physiotherapy with five years post PG full time teaching experience in a recognized teaching institute.
- The age of guide shall not exceed 60 years.
- The guide student ratio should be 1: 5.
- Considering the shortage of qualified teachers, relaxation may be given to the teachers with three years of post PG teaching experience till 2015 or until further amendments by the university in this regard.

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

16. Assessment: The final assessment of the student in this course will be by written, oral and practical examination at the completion of the two years. However, the student should submit the research dissertation prior to appearing for the final university examination. Student's dissertation should be accepted by the examiners prior to appearing for the final examination.

17. Schedule of examination: The examination for M.P.Th. Community physiotherapy course shall be held at the end of two academic years (four academic terms). The university shall conduct two examinations in a year such as regular and supplementary at an interval of six months between the two examinations. No more than two exams shall be conducted in one academic year.

18. Scheme of examination: The detailed scheme of examination for theory and practical or clinical component is described here.

Sl. No	Type of assessment	Maximum Marks
1	Theory	400
2	Practical /clinical	200
3	Viva voce	100
TOTAL		700

Theory (written examination): A written examination consisting of four question papers, each of three hours duration & each paper carrying 100 marks. Particulars of Theory question paper & distribution of marks are as follows;

Paper	Subject	Marks
I	Research methods	100

II	Public health	100
III	Community physiotherapy	100
IV	Community Based Rehabilitation	100

Pattern of model question paper: The pattern of theory question paper for all four subjects shall be as follows;

Sl.No	Type of question	Distribution	Marks
1	MCQ(25 questions)	25X1	25
2	Long essay(2 questions, no choice)	2X25	50
3	Short essay (5 questions, one choice)	5X5	25
TOTAL			100

Clinical Examination (Practical): A clinical examination consisting of two hundred marks (200) that is aimed at examining clinical skills and competency of the candidates for undertaking independent work as a Community physiotherapy specialist.

Viva-Voce Examination (Practical): A Viva-Voce examination consisting of one hundred marks (100) that are aimed at examining depth of knowledge, logical reasoning, confidence & oral communication skills with special emphasis on dissertation work. Viva voce includes general viva questions pertaining to course contents and dissertation. The marks of Viva-Voce examination shall be included in the clinical examination to calculate the percentage and declaration of results.

Sl.No	Type of practical /clinical assessment	Distribution	Marks
1	Long case	150X1	150
2	Short case	1X50	50
3	Viva voce (general & dissertation)	-	100

TOTAL	300
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Examiners: There shall be two examiners, one of them shall be external outside the university and the other shall be internal preferably from the same college or as decided by the University.

19. Criteria for passing: The criteria for passing includes, minimum of 50% of total marks in theory aggregate and minimum of 50% of total marks in clinical and Viva-Voce aggregate.

20. Declaration of class: The declaration of class shall be as follows;

First class with distinction: 75% & above in aggregate provided the candidate passes the examination in first attempt.

First class: 60% & above in aggregate provided the candidate passes the examination in first attempt.

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

22. Course contents

Paper I (SUBJECT CODE: COPT 2201)

RESEARCH METHODS FOR PHYSIOTHERAPY

Teaching Hours: 400 hours (Theory: 150 hours & practical 250 hours)

Maximum Marks: 100 (Theory: 100)

Assessment: Written University examinations

Objectives:

1. To understand the basic research terminologies, methods and approaches.
2. Evaluate different types of research designs.
3. Explain research methods relevant to research in community Physiotherapy.
4. To recognize the significance of consent, confidentiality and other ethical considerations in relation to Community physiotherapy research.
5. To understand evidence based physiotherapy practice.

I. Basic concepts

- Meaning and definition
- Research process
- Research types and approaches
- Objectives of research in physiotherapy
- Barriers for research in physiotherapy
- Research problem or research question

II. Research ethics

- Overview
- Consent
- Confidentiality
- Helsinki's declaration
- Plagiarism

III. Literature search

- Overview
- Steps in literature search
- Purpose
- Methods and techniques

IV. Research designs

- Meaning and definition
- Types of research designs
- Steps in preparation of research designs
- Factors affecting research designs

V. Sampling

- Overview
- Principles
- Methods
- Designs
- Process

VI. Research variables

- Overview
- Types
- Reliability and validity
- Specificity and sensitivity

VII. Pilot study and pre-testing

- Overview
- Need
- Advantages

VIII. Data collection

- Overview
- Sources
- Methods

- Types

IX. Biostatistics

- Steps in data processing
- Tabulation
- Measures of central tendency
- Tests of significance

X. Research report

- Overview
- Types
- Publication

Suggested Readings

1. Jerry R .Thomas :Research methods in physical activity 5th ed ,human kinetics,U.S.A,2005.
2. Carolyn Hicks: Research for physiotherapists: project design and analysis, 2nd Ed, Churchill Livingstone, New York, 1995.
3. Domholdt E: Physical therapy research – Principles and applications. 2nd Ed, W.B.Saunders Co, Philadelphia, 2000.
4. Drummond Avril: Research methods for therapists. 1st Ed, Chapman & Hall, Madras, 1996.
5. Thomas JR, Nelson JK: Research methods in physical Activity. 4th Ed, Human Kinetics, New Zealand, 2001.
6. Dean P. Currier: Elements of research in physical therapy. 3rd Ed, Williams & Wilkins, NY, 1990.
7. Ram Ahuja :Research methods ,Rawat Publication ,New Delhi , india,2001.

8. Stephen Polger: Introduction to research in the health sciences, 5th Ed , Churchill Livingstone, New York, 2008.
9. David S Moore. W H Freeman :The basic practice of statistics, , USA, 1999.
10. Michael Quinn Patton, Sage:,Qualitative evaluation and research methods, USA, 1990.

Paper II (SUBJECT CODE: COPT 2205)

Public health

Teaching Hours: 550 hours (Theory: 200 hours and Practical: 350hours)

Maximum Marks: 100 (Theory: 100)

Assessment: Written, Oral and Practical examinations

Objectives:

1. To outline the role of physiotherapy in Public health
2. Understand the basic concept of Health care delivery system.
3. To understand the importance of health promotion in community
4. Identify the disability and set the treatment goals

I. National Health care delivery system

- Overview
- Health care delivery system at state level
- Health care delivery system at central level
- National health programme
- Role of Physiotherapist

II. Disability Evaluation

- Overview
- Disability Evaluation for neurological disorders
- Disability Evaluation for Cardio-respiratory disorders
- Disability Evaluation for Orthopaedic disorders
- Disability acts (PDA,ADA,BDA)

III. Health organizations

- Overview
- WHO
- UNICEF
- ILO
- NGO's
- Voluntary health organizations

IV. Government Schemes for Disabled Persons

- Overview
- Indications
- Implementations
- Advantages
- Limitations

V. Disaster management

- Overview
- Disaster management team
- Role of physiotherapist in Disaster management

- Advances in Disaster management

VI. Community Obstetrics

- Overview
- Antenatal Care
- Intra-natal Care
- Post-natal Care
- Family Planning

VII. Community Pediatrics

- Overview
- Early Neonatal Care
- Congenital Malfunction
- Identification of Disability/Impairment
- School Health Services

VIII. Preventive Medicine & Geriatrics

- Overview
- Evaluation in the elderly
- Exercise Prescription
- Nutrition in geriatrics
- Psychological Issues

IX. Occupational Health

- Overview
- Occupational Environment
- Occupational Hazards
- Prevention of Occupational Diseases
- Health protection of Workers

X. Recent advances in Community Health & Rehabilitation

- Overview
- Advances in the management of community health.
- Sustainable health care delivery system

Practical contents

1. Assessment tools in Community Health
2. Assessment of patients
3. ICDH2, ICF.
4. Disability Evaluation
5. Antenatal Exercises
6. Postnatal Exercises
7. Visits to PHC's & Industry.
8. Functioning of National Health care delivery system.
9. Assessment & Evaluation of Disabled Children.

Suggested Readings

1. Demeter Stephen: Disability evaluation: 2nd ed: 2003.
2. Harder HG: Comprehensive Disability Management: 2005.
3. Park K: Parks Textbook of preventive and social medicine: 15th ed: 1998.
4. Ratan Vidya: Community medicine viva in preventive and social medicine (Hygiene and public health) : 4th ed: 2000.
5. Compton Ann: Community care for health professionals: 2nd ed: 2000.
6. Higgs Joy: Clinical reasoning in the health professions: 2nd ed: 2000.

7. Dhaar G.M.: Foundations of community medicine: 2006.
8. Braddom R.L.: Handbook of physical medicine and rehabilitation: 2006.
9. Dunn Winnie: Best practice occupational therapy in community service with children and families: 2000.
10. Pruthivsh S: Community based rehabilitation of persons with disabilities:2006
11. Michelle Lusardi; orthotic & prosthetics in rehabilitation: Woburn, USA:2000

Journals

1. WHO-IPCS
2. WHO - BULLETIN
3. JOURNAL OF EPIDEMIOLOGY & COMMUNITY HEALTH
4. Indian Journal of Occupational Therapy
5. Physiotimes

Community Physiotherapy

Teaching Hours: 550 hours (Theory: 200 hours and Practical: 350hours)

Maximum Marks: 100 (Theory: 100)

Assessment: Written and oral university examinations.

Objectives:

1. To understand the changes in human due to work environment.
2. To analyze the work environment.
3. To analyze work station by anthropometric measurements.
4. To understand the application of ergonomics in industrial therapy.
5. To understand the physiological changes in geriatrics.
6. To acquire knowledge and understanding of the etiology, path physiology, & diagnosis.
7. Treatment planning for geriatrics

Theory Contents

I. Assessment

- Overview.
- Physical
- Environmental
- Psychosocial
- Occupational.

II. Mechanotherapy

- Overview
- Evaluation
- Home exercises for mobility
- Home exercises for strengthening

- Home modification

III. Assistive devices

- Overview
- Ambulatory devices
- Orthotics
- Prosthetics
- Wheel chairs

IV. Electrotherapy

- Overview
- Mobile unit
- Modified heat and cold application
- Indications
- Precautions

V. Patient education

- Overview
- Treatment plan
- Role of care taker
- Follow up

VI. Patient counseling

- Overview
- Prognosis
- Life style modifications
- Job modifications
- Coping up strategy

VII. Group therapy

- Overview

- Principles
- Application
- Advantages
- Disadvantages

VIII. Ergonomics

- Overview
- History
- Principles
- Programming
- Advantages

IX. Obstetrics and gynecology.

- Overview.
- Adolescence stage
- Child bearing year
- Menopause
- Pelvic floor dysfunction

X. Obesity

- Overview.
- Causes.
- Types
- Obesity Assessment.
- Obesity reduction regime

Practical contents

1. Clinical postings in PHC

2. Screening of workers in industries
3. Assessment of work place
4. Ergonomic advice to workers
5. Fitness program for workers
6. Work related stress management
7. Screening of geriatric population
8. Fitness program for geriatrics
9. Gait training in geriatric.
10. Home modification for geriatrics

Suggested reading

1. Martha J. Sanders: Ergonomics and management of musculoskeletal disorders Kinesiology: 2 Ed, Butterworth Heinemann, Elsevier (USA) 2004.
2. Glenda L Key: Industrial therapy, Mosby, 1ED .
3. Karl H.E. Kroemer and Anne D. Kroemer : Office ergonomics, Taylor and Francis 2001.
4. Iwan W. Griffiths; Principles of biomechanics and motion analysis, Lippincott Williams and Wilkins, USA; 2006
5. Cynthia Norkin: Joint structure and function: 4th edition: Jaypee brothers, New Delhi: 2006
6. Jacquelin Perry; Gait analysis – Normal and pathological function, Slack Incorporated, USA, 1992
7. Pedrettil.W: Occupational therapy practice skills for physical dysfunction: 5th edition, 2001.
8. Baxter Peter J: Hunters diseases of occupation 9th edition: 2000
9. Menckel Ewa: Evaluation in occupational health practice : 1999
10. Hendrick David J: Occupational disorders of the lung: 2002.
11. Snashall David: ABC of work related disorders: 1997.
12. Higgs Joy: Clinical reasoning in the health professionals 2nd edition: 2000.
13. Latella Donna: Occupational therapy manual of evaluation of range of motion and muscle strength: 2003.

14. Bowler R.M.:Occupational medicine secrets :1st edition:1999.
15. Kroemer K.H.E.:Fitting the task to the human a textbook of occupational ergonomics: 5th edition: 2005.
16. Dunn Winnie: Best practice occupational therapy in community service with children and families :2000.
17. Pendleton H.M.: Pedrettis occupational therapy: 6th edition: 2007.
18. Banks D.E.: Occupational lung disease an international perspective: 1998.
19. Sanders. M.J.: Ergonomics and the management of musculoskeletal disorders: 2nd edition:2nd edition: 2004.
20. McIntyre Anne: Occupational therapy and old people:2005.
21. Slaich Veena: Occupational therapy and rehabilitation:2006.
22. Crepeau Elizabeth B.: Willard and spackmans occupational therapy: 11th edition: 2009.
23. Bonder Bette R.: Functional performance in older adults: 3rd edition: 2009.
24. Banks,John E: Occupational lung diseases an international perspective:1998.
25. Fast, Becky: Strength based care management for older adults: 2000.
26. Worth David: Moving in an occupational injury:2000.
27. Johnson Caryn: Occupational therapy examination review guide:2nd edition: 2001.
28. Pellerito J M: Driver rehabilitation and community mobility principles and practice: 2006.
29. Dorey Grace: Pelvic floor exercises for erectile dysfunction:2004.

Journals

1. Physiotimes
2. Ageing and health

3. Journal of Geriatric Physical Therapy
4. Jr. Of Stroke & Cerebrovascular Diseases
5. Indian Jr. Of Physiotherapy & Occupational therapy

Paper IV (SUBJECT CODE: COPT 2207)

Community Based Rehabilitation

Teaching Hours: 550 hours (Theory: 200 hours and Practical: 350hours)

Maximum marks: 100 (theory: 100)

Assessment: Written, Oral and Practical University examinations

Objectives:

1. To understand normal anatomy and physiology of female reproductive system
2. To understand the disorders in Adolescence, Ante-natal, Post-Natal and postmenopausal period.
3. To get acquainted with various obstetric and gynecological conditions and surgeries.
4. To be aware of principles of health promotion.

Theory Contents

I. Basic concepts

- Overview
- Rehabilitation team
- IBR
- CBR
- Comparison between CBR and IBR

II. Cardiac rehabilitaion

- Overview
- Indications
- Interventions
- Equipments
- Rehabilitation in III and IV phase

III. Pulmonary rehabilitation

- Overview
- Indications
- Interventions
- Equipments
- Rehabilitation in chronic stage

IV. Orthopedic rehabilitation

- Overview
- Indications
- Interventions
- Equipments
- Rehabilitation in chronic stage

V. Geriatric rehabilitation

- Overview
- Evaluation

- Exercise prescription
- Nutrition
- Psychosocial issues

VI. Pediatric rehabilitation

- Overview
- Indications
- Interventions
- Equipments
- Rehabilitation of children with physical disability

VII. Neuro rehabilitation

- Overview
- Indications
- Interventions
- Equipments
- Rehabilitation in chronic phase

VIII. Vocational rehabilitation

- Overview
- Indications
- Interventions
- Role of vocational counsellor
- Role of physiotherapist

IX. Industrial rehabilitation

- Overview
- Indications
- Interventions
- Work station modifications
- Work conditioning and work hardening

X. specific rehabilitation

- Overview.
- Cancer rehabilitation in conservative stage
- Post op cancer rehabilitation
- Burns rehabilitation in sub acute stage
- Burns rehabilitation in post operative stage

Practical contents

1. Evaluation/assessment antenatal women.
2. Evaluation/assessment postnatal women
3. Evaluation/assessment postmenopausal women
4. Exercise testing.
5. Exercise prescription.
6. Exercise training for health promotion in community.
7. Fitness training for normal, sedentary
8. Fitness training for athletes.
9. Fitness training for disabled
10. Fitness training for geriatric, postmenopausal women

Suggested reading

1. Ruth Sapasford : Women's Health ,11th Edition, Mosby Elsevier, 2008.
2. Ralph M. Buschbacher, Practical Guide to Musculoskeletal Disorders,Diagnosis & Rehabilitation Butterworth Heiemann, Boston, 2002.
3. American College of Sport Medicine, Exercise Management for Persons with Chronic Diseases and Disabilities,Human Kinetics, 2000
4. Berkow R, The Merck Manual Of Diagnosis and Therapy,17 Edition,New Jersey,Merck Research Laboratories 1999.

5. Magee,D.J. Orthopaedic Physical Assessment, 3rd Edition,W. B. Saunders,Philadelphia 1997.
6. Hertling, D. & Kessler, R.M.Management Of Common Musculoskeletal Disorders Physical Therapy Principles & Methods, 3rd Edition,JB Lippincott,Philadephia,1996.
7. Richardson , J.K. & Iglarsh, Z.A. Clinical Orthopaedic Physical therapy, W.B. Saunders, Baltimore, 1994.
8. Reid, D.C. Sport Injury Assessment & Rehabilitation, Churchill Livingstone,New York,1992.
9. Copeman W.S.C, Rhumatism,Gerald Duckworth & Co. Ltd, London,1986.
10. Yogendra Sit Adevi: Yoga physical education for women: 1997.
11. Yogendra HJ: Pregnancy parenthood and yoga: 1994.
12. Johnson Cynda: Womens health care hand book:1996.
13. WHO:Complications of abortion:1995.
14. Yogendra J: Yoga at home:1997.
15. Mantle Jill: Physiotherapy in obstetrics and gynaecology:2nd edition:2005.
16. Madhuri G.B.:Textbook of physiotherapy for obstetric and gynecological conditions:2008.
17. Patel Nilima: Yoga and rehabilitation: 1st edition:2008.
18. Jarvis Sardh: Womens health for life medical advice you can trust symptoms treatment and prevention.: DK publications: 2009.
19. Bourcier Alain P: Pelvic floor disorders: 2004.
20. Campbell ian: Your questions answered obesity:2006.
21. Fordham john: Your questions answered osteoporosis:2005.
22. Pollock M.L.: Exercise in health and disease evaluation and prescription for prevention and rehabilitation:2nd ed: 1990.

Journals

1. Journal of Women's health Physical Therapy
2. Jr. Of Exercise Science & Sports Physiotherapy

3. International Jr. Of Disability Community & Rehabilitation
4. APTA
5. Canadian Physiotherapy
6. Australian Physiotherapy
7. IJOPT

MASTER OF PHYSIOTHERAPY IN NEUROSCIENCES



PRAVARA INSTITUTE OF MEDICAL SCIENCES
(DEEMED UNIVERSITY), LONI, MAHARASHTRA, INDIA, 413 736



PRAVARA INSTITUTE OF MEDICAL SCIENCES

(DEEMED UNIVERSITY)

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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 and 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 & 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.

NOTIFICATION

MASTER OF PHYSIOTHERAPY (NEUROLOGY)

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1. Preamble: The Master of Physiotherapy with Neurology specialty is a dynamic academic course offered for qualified physiotherapists. It creates the opportunity for qualified and experienced clinicians to broaden their knowledge, clinical skills in Neuro- Physiotherapy field. The course recognizes the need to adopt principles of adult learning and emphasizes the importance of facilitating graduates to develop independent, self-directed and critical philosophies in the field of Neuro-Physiotherapy.

The course consists of four subjects that include one stream subject and three core subjects namely research methods, Neuro-medicine, Neuro-surgery and Neuro- Physiotherapy. The contents of these subjects are chosen critically so as to support the physiological basis of physiotherapy practice, provide a framework for evaluation of evidence for physiotherapy and develop advanced communication skills and awareness of professional and ethical issues in physiotherapy and the broader healthcare community.

The course contents present advanced knowledge and understanding of neurology biosciences, current issues in neurology, and their application to clinical practice. It also provides opportunities for students to acquire cutting edge information and skills related to treatment and management in neurology. The clinical placement allows students to broaden or deepen their clinical practice experience and expertise.

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, 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 Neuro-Physiotherapy and manuscripts will be submitted to a peer-review journal.

2. Objectives: The objectives of this Master degree program offered by Pravara

Institute of Medical Sciences;

- To provide comprehensive training in Neuro-Physiotherapy theory and practice, including the use of other physiotherapy modalities.
- To provide an opportunity for the students to take up a research project in the field of Neuro- Physiotherapy.
- To provide students with quality clinical experience in hospitals and complementary health clinics from year one of the program.
- To ensure that students practice Neuro-Physiotherapy, whilst integrating western medical information as appropriate, to ensure that graduates are safe and competent in the practice of Neuro-Physiotherapy universally.
- To provide an opportunity for higher education opportunity like post doctoral study or post master fellowship after completion of the course.

3. Career opportunities: Though there is excellent qualified specialist Physiotherapist with Neuro-Physiotherapy specialty still there is more demand for this specialty and employment opportunities are excellent. Graduates with this qualification are recognized throughout India and abroad. As there is a shortage of highly qualified Physiotherapists with Neuro-Physiotherapy, it commands increasing employment & remuneration. They can be employed in super specialty hospitals, Neurology specialty hospitals, general hospitals, teaching institutes, rehabilitation centers for disables ,children's, schools and also can practice in private setups independently.

4. Professional recognitions: Graduates who are registered with the Indian Association of Physiotherapists can apply to have this qualification listed. The award of Master of Neuro- Physiotherapy qualifies graduates for membership of the Neuro- Physiotherapy interest groups in India as well as abroad.

5. Eligibility: A candidate who has passed Bachelor of Physiotherapy (BPT/ BPhT/ BPT/ B.Physio/ Bsc Physiotherapy) or any equivalent degree examination of a recognized Indian university by law in India or any other degree course in physiotherapy recognized as equivalent by PIMS, Association of Indian Universities or Indian Association of Physiotherapists and who has scored not less than 50% of maximum marks in prescribed qualifying examination shall be eligible for the M.P.Th. Neurology course.

6. Total intake of students: The total intake of students will be three (03) per academic year of the Pravara Institute of Medical Sciences, Deemed University, Loni.

7. Course fee structure: The tuition fee and other fee structure will be as per the notifications by Pravara Institute of Medical Sciences, Deemed University from time to time. The fee structure is different for resident Indians, non-resident Indian and foreign students.

8. Course duration: The course duration shall be two academic years or 24 months. This duration includes also includes submission of dissertation on the research topic. No additional time is given for the submission of the dissertation.

9. Medium of instructions: The medium of instructions for this course shall be only English. This includes theory lectures, practicals, laboratory works and assignments and clinical training.

10. Course location: This course is offered at College of Physiotherapy, Pravara Institute of Medical Sciences, Loni, Taluka: Rahata, District: Ahmednagar 413 736, Maharashtra, India.

11. Course structure: The details of M.P.Th. Neurology course structure are as follows;

Sl. No	Subject	Teaching hours		Total
		Theory	Practical/clinic	
1	Research Methods	150	250	400
2	Neuro- Medicine	200	350	550
3	Neuro- Surgery	200	350	550
4	Neuro- Physiotherapy	200	350	550
5	Clinical training	-	1200	1200
6	Journal club	-	-	200
7	Research club	-	-	150
8	Seminars	-	-	400
Total teaching hours				4000

12. Clinical placement: Clinical placement will be at Neuro-Physiotherapy department, Neuro ward, Neuro surgery ward, Intensive care unit, and rural public health centers. Since the teaching clinics operate 48 weeks per year, students will be required to attend clinical sessions on a rotation basis to maintain public service and provide continuity of patient care.

13. Monitoring process: A candidate pursuing M.P.Th. Neurology course shall study in the concerned department of the college of physiotherapy, Pravara Institute of Medical Sciences, Loni for the entire period as full time student. No candidate is permitted to work in any other hospital, clinic, college etc., while studying this postgraduate course. No candidate should join another course 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. Each year shall be taken as a unit for the purpose of calculating attendance. Every student shall attend lectures, practicals, laboratory works, seminars, research clubs, journal clubs, review meeting, tele-physiotherapy sessions and state level conferences, national level conferences or occasionally international conferences during each year as prescribed by the Pravara Institute of medical

Sciences, Deemed University, Loni. Candidate who has put in a minimum of 80% of attendance in the theory and practical assignments separately shall be permitted to appear for M.P.Th. examination. Candidate who has put in a minimum of 80% of attendance in first year of M.P.Th. shall only be eligible to submit the dissertation. Any student who fails to complete the course in the manner stated above shall not be permitted to appear for the University examination.

Every candidate shall maintain a work diary 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 the Principal, College of Physiotherapy, and presented in the university practical examination if called for. Every clinical case discussion, case presentation, seminars, journal clubs and research clubs will be monitored by faculty members, guide and peers using relevant checklists and CPA cards.

14. Dissertation: Every candidate pursuing M.P.Th. 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 a research proposal or synopsis containing particulars of proposed dissertation to the Registrar of the university in the prescribed Performa within 6 months from the date of commencement of the course on or before the dates notified by the university. The research proposal or synopsis shall be sent through the proper channel. Such synopsis will be reviewed 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 or 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 & Principal, college of Physiotherapy shall certify the dissertation. Four copies of dissertation thus prepared shall be submitted to the Controller of Examinations, three months before final examination on or before the dates notified by the university.

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.

15. Guide: The criteria for recognition of M.P.Th. Neurology guide shall be as follows;

- M.P.Th. Neurology with five years post PG full time teaching experience in a recognized teaching institute.
- The age of guide shall not exceed 60 years.
- The guide student ratio should be 1: 3.
- Considering the shortage of qualified teachers, relaxation may be given to the teachers with three years of post PG teaching experience till 2015 or until further amendments by the university in this regard.

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

16. Assessment: The final assessment of the student in this course will be by written, oral and practical examination at the completion of the two years. However, the student should submit the research dissertation prior to appearing for the final university examination. Student's dissertation should be accepted by the examiners prior to appearing for the final examination.

17. Schedule of examination: The examination for M.P.Th. Neurology course shall be held at the end of two academic years (four academic terms). The university shall conduct two examinations in a year such as regular and supplementary at an interval of six months between the two examinations. No more than two exams shall be conducted in one academic year.

18. Scheme of examination: The detailed scheme of examination for theory and practical or clinical component is described here.

Sl. No	Type of assessment	Maximum Marks
1	Theory	400
2	Practical /clinical	200
3	Viva voce	100
TOTAL		700

Theory (written examination): A written examination consisting of four question papers, each of three hours duration & each paper carrying 100 marks. Particulars of Theory question paper & distribution of marks are as follows;

Paper	Subject	Marks
I	Research methods	100
II	Neuro- Medicine	100

III	Neuro- Surgery	100
IV	Neuro- Physiotherapy	100

Pattern of model question paper: The pattern of theory question paper for all four subjects shall be as follows;

Sl.No	Type of question	Distribution	Marks
1	MCQ(25 questions)	25X1	25
2	Long essay(2 questions, no choice)	2X25	50
3	Short essay (5 questions, one choice)	5X5	25
TOTAL			100

Clinical Examination (Practical): A clinical examination consisting of two hundred marks (300) that is aimed at examining clinical skills and competency of the candidates for undertaking independent work as a Neuro- Physiotherapy specialist.

Viva-Voce Examination (Practical): A Viva-Voce examination consisting of one hundred marks (100) that are aimed at examining depth of knowledge, logical reasoning, confidence & oral communication skills with special emphasis on dissertation work. Viva voce includes general viva questions pertaining to course contents and dissertation. The marks of Viva-Voce examination shall be included in the clinical examination to calculate the percentage and declaration of results.

Sl.No	Type of practical /clinical assessment	Distribution	Marks
1	Long case	150X1	150
2	Short case	1X50	50
3	Viva voce (general & dissertation)	-	100
TOTAL			300

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

19.Criteria for passing: The criteria for passing includes, minimum of 50% of total marks in theory aggregate and minimum of 50% of total marks in clinical and Viva-Voce aggregate.

20.Declaration of class: The declaration of class shall be as follows;

First class with distinction: 75% & above in aggregate provided the candidate passes the examination in first attempt.

First class: 60% & above in aggregate provided the candidate passes the examination in first attempt.

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

22. Course contents

Paper I (SUBJECT CODE: COPT 2501)

RESEARCH METHODS FOR PHYSIOTHERAPY

Teaching Hours: 400 hours (Theory: 150 hours & practical 250 hours)

Maximum Marks: 100 (Theory: 100)

Assessment: Written University examinations

Objectives:

1. To understand the basic research terminologies, methods and approaches.

2. Evaluate different types of research designs.
3. Explain research methods relevant to research in Neuro- Physiotherapy.
4. To recognize the significance of consent, confidentiality and other ethical considerations in relation to Neuro-Physiotherapy research.
5. To understand evidence based physiotherapy practice.

I. Basic concepts

- Meaning and definition
- Research process
- Research types and approaches
- Objectives of research in physiotherapy
- Barriers for research in physiotherapy
- Research problem or research question

II. Research ethics

- Overview
- Consent
- Confidentiality
- Helsinki's declaration
- Plagiarism

III. Literature search

- Overview
- Steps in literature search
- Purpose
- Methods and techniques

IV. Research designs

- Meaning and definition

- Types of research designs
- Steps in preparation of research designs
- Factors affecting research designs

V. Sampling

- Overview
- Principles
- Methods
- Designs
- Process

VI. Research variables

- Overview
- Types
- Reliability and validity
- Specificity and sensitivity

VII. Pilot study and pre-testing

- Overview
- Need
- Advantages

VIII. Data collection

- Overview
- Sources
- Methods
- Types

IX. Biostatistics

- Steps in data processing
- Tabulation
- Measures of central tendency
- Tests of significance

X. Research report

- Overview
- Types
- Publication

Suggested Readings

1. Jerry R .Thomas :Research methods in physical activity, 5th Ed.,human kinetics,U.S.A,2005.
2. Carolyn Hicks: Research for physiotherapists: project design and analysis, 2nd Ed., Churchill Livingstone, New York, 1995.
3. Domholdt E: Physical therapy research – Principles and applications, 2ndEd., W.B.Saunders Co, Philadelphia, 2000.
4. Drummond Avril: Research methods for therapists, 1st Ed., Chapman & Hall, Madras, 1996.
5. Thomas JR, Nelson JK: Research methods in physical Activity, 4th Ed., Human Kinetics, New Zealand, 2001.
6. Dean P. Currier: Elements of research in physical therapy, 3rd Ed., Williams & Wilkins, NY, 1990.

7. C.R.Kothari :Research methodology ;methods and techniques ,2nd Ed.,new age international publishers,delhi ,2009.
8. Stephen Polger: Introduction to research in the health sciences, 5th Ed., Churchill Livingstone, New York, 2008.
9. David S Moore. W H Freeman :The basic practice of statistics, USA, 1999.
10. Michael Quinn Patton, Sage:Qualitative evaluation and research methods, USA, 1990.

Paper II (SUBJECT CODE: COPT 2502)

NEURO- MEDICINE

Teaching Hours: 550 hours (Theory: 200 hours and Practical: 350hours)

Maximum Marks: 100 (Theory: 100)

Assessment: Written, Oral and Practical University examinations

Objectives:

1. To understand the neurological diseases and disorders and their classification.
2. To understand signs and symptoms of neurological diseases.
3. To understand pathophysiology of neurological diseases and disorders.
4. To get familiar with neurological investigations.
5. To get acquainted with medical management of neurological diseases and disorders and their after effect related to movement dysfunctions.

I. Diseases & disorders of brain

- Over view
- Congenital
- Cerebro vascular
- Metabolic
- Infective
- Degenerative
- Demyelinating
- Tumors
- Trauma
- Investigations
- Medical management

II. Disorders of cranial nerve

- Over view
- Metabolic
- Infective
- Degenerative
- Demyelinating
- Tumor
- Trauma
- Investigations
- Medical management

III. Disorders of spinal cord

- Over view
- Congenital
- Vascular
- Metabolic
- Infective
- Degenerative
- Demyelinating
- Tumor
- Trauma
- Investigations
- Medical management

IV. Disorders of peripheral nervous system

- Over view
- Classification
- Congenital
- Vascular
- Metabolic
- Infective
- Degenerative
- Demyelinating
- Tumor
- Trauma
- Investigations
- Medical management

V. Disorders of autonomic nervous system

- Over view
- Cardio vascular
- Bladder and bowel
- Investigations
- Medical management

VI .Neuromuscular junctional disorders

- Over view
- Investigations
- Medical management

VII. Disease & disorders of muscles

- Over view
- classification
- Investigations
- Medical management

VIII. Psycho somatic disorders

- Over view
- Investigation
- Medical management

IX. Specific disorders

- Over view
- Limbic System
- Cerebrospinal Fluid
- Communication
- Special Senses
- Investigations
- Medical management

Suggested Readings

1. Maurice Victor: Adams and victor's principles of neurology 9th Ed., McGraw-Hill Professional, USA ,2009.
2. Leiwis P.Rowland: Merritt's Neurology 12th Ed.,Lippincott wiliams&wilkins, Philadelphia, 2010.
3. Jun Kimura:Electrodiagnosis in Diseases of Nerve and Muscle: Principles and Practice, 3rdEd.,Oxford University Press, USA, 2001.

4. Paul A.Young,paul.H.Young:Clinical neuro science 2nd Ed., Lippincott wiliams&wilkins, Philadelphia, 2008.
5. Richard E. Behrman& Nelson: Textbook of Pediatrics 8th Ed., W.B. Saunders Co Philadelphia, 2003.
6. Michael S.Gazzaniga,Richard B.Ivry :Cognitive neuro science,3rd Ed., W. W. Norton & Company;2008.
7. David Robertson: Primer on the Autonomic Nervous System, 2nd Ed., Elsevier, USA ,2004.
8. David M.YousemAnd Robert I.Grossman :Neuro radiology 3rd Ed., Mosby Elsevier, Philadelphia ,2010.
9. Jhon pattern: Neurological differential diagnosis ,2nd Ed.,Springer,new York ,2005.
10. Loren S. Rolak:Neurological secrets 5th Ed.,Mosby ,Elsevier 2010.

Journals

- Neurosciences today India
- Journal of American Academy of Neurology.
- Canadian Journal of Neurological Sciences (CJNSA)
- Archives of Neurology(ARNEA).
- International Journal of Developmental Neuroscience (IJDND)

Paper III (Subject code: COPT 2503)

NEURO –SURGERY

Teaching Hours: 200 hours (Theory: 100 hours and Practical: 100hours)

Maximum Marks: 200 (Theory: 100 and Practical and viva 100)

Assessment: Written, Oral and Practical University examinations

Objectives:

1. To evaluate surgical patient pre and post operatively.
2. To understand the pre and post operative diagnostic procedure.
3. To identify the post operative complications and plan the appropriate physiotherapy.
4. To outline the goals of surgery and physiotherapy.
5. To demonstrate the limitation imposed by the surgery on physical therapy.

I. Disorders of Brain

- Overview
- General principles
- Pre and post Operative evaluation
- Investigations
- Post operative complications
- Physiotherapy

II. Disorders of CSF Fluid & circulation

- Overview
- General principles
- Pre and post Operative evaluation
- Investigations
- Post operative complication
- Physiotherapy

III. Disorders of Spinal cord

- Overview
- General principle
- Pre and post Operative evaluation
- Investigations
- Post operative complication
- Physiotherapy

IV. Disorders of cranial nerves

- Overview
- General principle
- Pre and post Operative evaluation
- Investigations
- Post operative complication
- Physiotherapy

V. Disorders of Peripheral nerve

- Overview
- General principles
- Pre and post Operative evaluation
- Investigations
- Post operative complication
- Physiotherapy

VI. Disorders of muscles

- Overview
- General principle
- Pre and post Operative evaluation
- Investigations
- Post operative complication
- Physiotherapy

VII. Neurovascular surgery

- Overview
- General principles
- Pre and post Operative evaluation
- Investigations
- Post operative complication
- Physiotherapy

VIII. Spasticity

- Overview
- General principle
- Pre and post Operative evaluation
- Investigations
- Post operative complication
- Physiotherapy

X. Disorders of Autonomic nervous system

- Overview
- General principle
- Pre and post Operative evaluation
- Investigations
- Post operative complication
- Physiotherapy

IX. Recent advances in neurosurgery

- Overview
- General principle
- Pre and post Operative evaluation
- Investigations
- Post operative complication
- Physiotherapy

Suggested Readings

1. David G. McLone :Pediatric Neurosurgery: Surgery of the Developing Nervous System.4th Ed.,Saunders 2001.
2. Wilkins ,Rengachar :Neurosurgery Update I: Diagnosis, Operative Technique, and Neuro, 1st Ed. ,McGraw–Hill Professional, 1990.
3. Brian T. Andrews: Neurosurgical Intensive Care, 1st, Ed. , McGraw–Hill Professional 1993.
4. Philip L. Gildenberg :Textbook of Stereotactic and Functional Neurosurgery, 1st Ed. ,McGraw–Hill Professional Publishing;, 1997.
5. Lindsay Kenneth:Neurology and neuro surgery illustrated ,1st Ed.,churchil livingstone , 1986.
6. Hans Otto Luders:Epilepsy Surgery , 2nd Ed.,Lippincott Williams & Wilkins, 2001.
7. Erwin B. Montgomery :Deep Brain Stimulation Programming: Principles and Practice, 1st Ed.,Oxford University Press, USA,2010.
8. Phillip Starr, Nicholas Barbaro :Functional Neurosurgery, 2ndEd., Thieme, 2008.
9. Jonathan Citow ,R. Macdonald: Comprehensive Neurosurgery Board Review , 2nd Ed. , Thieme, 2009.
10. Setti Rengachary (Author), Richard Ellenbogen :Principles of Neurosurgery, 2nd Ed. ,Mosby, 2004.

Journals

- British Journal of Neurosurgery (BJNEE)
- Journal of Neurosurgical Sciences (JNSSB)
- Stereotactic and Functional Neurosurgery (SFUNE)
- Neurosurgery
- Journal of Neurosurgery

Paper IV (SUBJECT CODE: COPT 2504)

NEURO – PHYSIOTHERAPY

Teaching Hours: 550 hours (Theory: 200 hours and Practical: 350hours)

Maximum Marks: 100 (Theory: 100)

Assessment: Written, Oral and Practical examinations

Objectives:

1. To identify the goals of physiotherapy treatment pertaining to neurological patients.
2. To plan for neuro- physiotherapy interventions Plan.
3. To master the hands on skills required for neuro- physiotherapy interventions.
4. To get acquainted with clinical reasoning and treatment for neuro- physiotherapy.
5. To understand the role and participate in neuro- rehabilitation.

Theory

I. Motor control

- Overview
- Theories
- Training
- Re-learning
- Methods
- Approaches
- Indications
- Limitations

II. Strength &Endurance

- Overview
- Assessment
- Methods /approaches
- Indications
- limitations

III. Sensory re-education

- Overview
- Sensory testing
- Methods /approaches
- Indications &contra indications

IV. Co-ordination

- Overview
- Assessment
- Methods /approaches
- Indications
- Limitations

V. Gait Re-education

- Overview
- Gait assessment
- Methods
- Indications
- limitations

VI. Balance training

- Overview
- Balance assessment
- Methods
- Indications
- limitations

VII. Functional Re-education

- Overview

- Functional assessment
- Methods /approaches
- Indications
- limitations

VIII. Relaxation Training

- Overview
- Methods /approaches
- Indications
- limitations

IX. Neuro- rehabilitation

- Overview
- Indications
- Team
- Neurogenic pain
- Vestibular dysfunction
- Aids and appliances
- Community based physiotherapy

X. Recent advances

- Over view
- Robotic therapy
- Stem cell therapy
- Mental Imaginary techniques
- Current advances

List of Practicals

- Coma stimulation program

- Proprioceptive neuromuscular facilitation
- Root's approach
- Bobath approach
- Motor re-learning program
- Mobilization of nervous system
- Sensory integration & re-education
- Cawthorne- cooksey exercise
- Functional reeducation
- Balance retraining
- Gait reeducation
- Neuro muscular electrical stimulation
- Crede maneuver
- Neurogenic pain management
- Bio-feedback therapy

Suggested Readings

1. Martin & kessler :Neurologic Interventions for Physical Therapy , 2nd Ed.,Elsevier 2006.
2. Anneshumway-cook:Motor Control: Translating Research into Clinical Practice,4thEd., Lippincott Williams & Wilkins;, North American , 2011.
3. Susan Herdman :Vestibular Rehabilitation, 3rd Ed.,F.A. Davis Company, 2007.
4. Darcy Ann Umphred: Neurological Rehabilitation 5thEd., Mosby ,Philaelphia, 2006.
5. Campbell K .Suzann: Physical therapy for children, 3rd Ed., W.B Saunders, Philadelphia , 2003.
6. Susan O'Sullivan:Physical Rehabilitation ,5th Ed.,Jaypee brothers ,New delhi ,India,2007.
7. Kerb D: Bio-feed back – A practitioners guide, Guiford press.
8. Knot M. and Voss: Proprioception neuro muscular facilitation techniques, 3rd Ed.,Springer, New York, , 2008.

9. SueRane,linzi meadows,mary cynch ellerington: Bobath concept theory and practice in neurological rehabilitation ,wiley Blackwell,U.K 2009.
10. Janet H.Carr : Motor relearning program for stroke,2ndEd.,Butterworth Heinemann ,1997.

Journals

1. Journal of neurologic physiotherapy .
2. Indian Journal of physiotherapy.
3. Australian journal of physiotherapy.
4. Achieves of physical medicine & Rehab.
5. Archives in pediatrics.

MASTER OF PHYSIOTHERAPY IN CARDIO- RESPIRATORY SCIENCES



**PRAVARA INSTITUTE OF MEDICAL SCIENCES
(DEEMED UNIVERSITY), LONI, MAHARASHTRA, INDIA, 413 736**

ORDINANCE GOVERNING
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RESPIRATORY SCIENCES

(M.P.Th.in CARDIO-RESPIRATORY SCIENCES) COURSE 2011 - 2012



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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.
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- 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 & 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.

NOTIFICATION

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**MASTER OF PHYSIOTHERAPY (CARDIO-RESPIRATORY
SCIENCES)**

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1. Preamble: The Master of Physiotherapy with Cardio-Respiratory specialty is a dynamic academic course offered for qualified physiotherapists. It creates the opportunity for qualified and experienced clinicians to broaden their knowledge, clinical skills in Cardio-Respiratory physiotherapy field. The course recognizes the need to adopt principles of adult learning and emphasizes the

importance of facilitating graduates to develop independent, self-directed and critical philosophies in the field of Cardio-Respiratory physiotherapy.

The course consists of four subjects that include one stream subject and three core subjects namely research methods, Cardio-Respiratory biomechanics, clinical Cardio-Respiratory and Cardio-Respiratory physiotherapy. The contents of these subjects are chosen critically so as to support the physiological basis of physiotherapy practice, provide a framework for evaluation of evidence for physiotherapy and develop advanced communication skills and awareness of professional and ethical issues in physiotherapy and the broader healthcare community.

The course contents present advanced knowledge and understanding of Cardio-Respiratory biosciences, current issues in Cardio-Respiratory, and their application to clinical practice. It also provides opportunities for students to acquire cutting edge information and skills related to treatment and management in Cardio-Respiratory physiotherapy. The clinical placement allows students to broaden or deepen their clinical practice experience and expertise.

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, throughout the course students review the literature critically and apply this information in the evaluation and management of Cardio-Respiratory disorders. Research projects will be completed in Cardio-Respiratory physiotherapy and manuscripts will be submitted to a peer-review journal.

2. Objectives: The objectives of this Master degree program offered by Pravara Institute of Medical Sciences;

- To provide comprehensive training in Cardio-Respiratory physiotherapy theory and practice, including the use of other physiotherapy modalities.

- To provide an opportunity for the students to take up a research project in the field of Cardio-Respiratory Physiotherapy.
- To provide students with quality clinical experience in hospitals and complementary health clinics from year one of the program.
- To ensure that students practice Cardio-Respiratory Physiotherapy, whilst integrating western medical information as appropriate, to ensure that graduates are safe and competent in the practice of Cardio-Respiratory physiotherapy universally.
- To provide an opportunity for higher education opportunity like post doctoral study or post master fellowship after completion of the course.

3. Career opportunities: Currently there is shortage of qualified specialist Physiotherapist with Cardio-Respiratory Physiotherapy specialty. Hence, there is demand for this specialty and employment opportunities are excellent. Graduates with this qualification are recognized throughout India and abroad. As there is a shortage of highly qualified Physiotherapists with Cardio-Respiratory Physiotherapy, it commands increasing employment & remuneration. They can be employed in super specialty hospitals, Cardio-Respiratory specialty hospitals, general hospitals, teaching institutes, rehabilitation centers for children's, schools and also can practice in private setups independently.

4. Professional recognitions: Graduates who are registered with the Indian Association of Physiotherapists can apply to have this qualification listed. The award of Master of Cardio-Respiratory Physiotherapy qualifies graduates for membership of the Cardio-Respiratory Physiotherapy interest groups in India as well as abroad.

5. Eligibility: A candidate who has passed Bachelor of Physiotherapy (BPT/BPhT/BPT/B.Physio/Bsc Physiotherapy) or any equivalent degree examination of a recognized Indian university by law in India or any other degree course in physiotherapy recognized as equivalent by PIMS, Association

of Indian Universities or Indian Association of Physiotherapists and who has scored not less than 50% of maximum marks in prescribed qualifying examination shall be eligible for the M.P.Th. Cardio-Respiratory Sciences course.

6. Total intake of students: The total intake of students will be three (03) per academic year of the Pravara Institute of Medical Sciences, Deemed University, Loni.

7. Course fee structure: The tuition fee and other fee structure will be as per the notifications by Pravara Institute of Medical Sciences, Deemed University from time to time. The fee structure is different for resident Indians, non-resident Indian and foreign students.

8. Course duration: The course duration shall be two academic years or 24 months. This duration includes also includes submission of dissertation on the research topic. No additional time is given for the submission of the dissertation.

9. Medium of instructions: The medium of instructions for this course shall be only English. This includes theory lectures, practicals, laboratory works and assignments and clinical training.

10. Course location: This course is offered at College of Physiotherapy, Pravara Institute of Medical Sciences, Loni, Taluka: Rahata, District: Ahmednagar 413 736, Maharashtra, India.

11. Course structure: The details of M.P.Th. Cardio-Respiratory course structure are as follows;

Sr. No	Subject	Teaching hours		Total
		Theory	Practical/clinical	
1	Research Methods	150	250	400
2	Cardio-Respiratory Medicine	200	350	550
3	Cardio-Respiratory Surgery	200	350	550
4	Cardio-Respiratory Physiotherapy	200	350	550

5	Clinical training	-	1200	1200
6	Journal club	-	-	200
7	Research club	-	-	150
8	Seminars	-	-	400
Total teaching hours				4000

12. Clinical placement: Clinical placement will be at Cardio-Respiratory Physiotherapy department, Medicine wards, surgery wards, Burns ward intensive care unit and rural public health centers. Since the teaching clinics operate 48 weeks per year, students will be required to attend clinical sessions on a rotation basis to maintain public service and provide continuity of patient care.

13. Monitoring process: A candidate pursuing M.P.Th. Cardio-Respiratory course shall study in the concerned department of the college of physiotherapy, Pravara Institute of Medical Sciences, Loni for the entire period as full time student. No candidate is permitted to work in any other hospital, clinic, college etc., while studying this postgraduate course. No candidate should join another course 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. Each year shall be taken as a unit for the purpose of calculating attendance. Every student shall attend lectures, practicals, laboratory works, seminars, research clubs, journal clubs, review meeting, tele-physiotherapy sessions and state level conferences, national level conferences or occasionally international conferences during each year as prescribed by the Pravara Institute of medical Sciences, Deemed University, Loni. Candidate who has put in a minimum of 80% of attendance in the theory and practical assignments separately shall be permitted to appear for M.P.Th. examination. Candidate who has put in a minimum of 80% of attendance in first year of M.P.Th. shall only be eligible to submit the dissertation. Any student who fails to complete the course in the manner stated above shall not be permitted to appear for the University examination.

Every candidate shall maintain a work diary 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 the Principal, College of Physiotherapy, and presented in the university practical examination if called for. Every clinical case discussion, case presentation, seminars, journal clubs and research clubs will be monitored by faculty members, guide and peers using relevant checklists and CPA cards.

14. Dissertation: Every candidate pursuing M.P.Th. 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 a research proposal or synopsis containing particulars of proposed dissertation to the Registrar of the university in the prescribed Performa within 6 months from the date of commencement of the course on or before the dates notified by the university. The research proposal or synopsis shall be sent through the proper channel. Such synopsis will be reviewed 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 or objectives of study.
3. Research Question
4. Review of literature.
5. Material and methods.
6. Outcome Measures
7. Results.
8. Discussion
9. Conclusion
10. Summary
11. References

12. Tables

13. 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 & Principal, college of Physiotherapy shall certify the dissertation. Four copies of dissertation thus prepared shall be submitted to the Controller of Examinations, three months before final examination on or before the dates notified by the university.

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.

15. Guide: The criteria for recognition of M.P.Th. Cardio-Respiratory guide shall be as follows;

- M.P.Th. Cardio-Respiratorys with five years post PG full time teaching experience in a recognized teaching institute.
- The age of guide shall not exceed 60 years.
- The guide student ratio should be 1: 5.
- Considering the shortage of qualified teachers, relaxation may be given to the teachers with three years of post PG teaching experience till 2015 or until further amendments by the university in this regard.

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

16. Assessment: The final assessment of the student in this course will be by written, oral and practical examination at the completion of the two years. However, the student should submit the research dissertation prior to appearing for the final university examination. Student's dissertation should be accepted by the examiners prior to appearing for the final examination.

17. Schedule of examination: The examination for M.P.Th. Cardio-Respiratory course shall be held at the end of two academic years (four academic terms). The university shall conduct two examinations in a year such as regular and supplementary at an interval of six months between the two examinations. No more than two exams shall be conducted in one academic year.

18. Scheme of examination: The detailed scheme of examination for theory and practical or clinical component is described here.

Sl. No	Type of assessment	Maximum Marks
1	Theory	400
2	Practical /clinical	200
3	Viva voce	100
TOTAL		700

Theory (written examination): A written examination consisting of four question papers, each of three hours duration & each paper carrying 100 marks. Particulars of Theory question paper & distribution of marks are as follows;

Paper	Subject	Marks
I	Research methods	100
II	Cardio-Respiratory Medicine	100
III	Cardio-Respiratory Surgery	100
IV	Cardio-Respiratory Physiotherapy	100

Pattern of model question paper: The pattern of theory question paper for all four subjects shall be as follows;

Sl.No	Type of question	Distribution	Marks
1	MCQ(25 questions)	25 X 1	25

2	Long essay(2 questions, no choice)	2 X 25	50
3	Short essay (5 questions, one choice)	5 X 5	25
TOTAL			100

Clinical Examination (Practical): A clinical examination consisting of two hundred marks (300) that is aimed at examining clinical skills and competency of the candidates for undertaking independent work as a Cardio-Respiratory physiotherapy specialist.

Viva-Voce Examination (Practical): A Viva-Voce examination consisting of one hundred marks (100) that are aimed at examining depth of knowledge, logical reasoning, confidence & oral communication skills with special emphasis on dissertation work. Viva voce includes general viva questions pertaining to course contents and dissertation. The marks of Viva-Voce examination shall be included in the clinical examination to calculate the percentage and declaration of results.

Sl.No	Type of practical /clinical assessment	Distribution	Marks
1	Long case	150 X 1	150
2	Short case	1 X 50	50
3	Viva voce (general & dissertation)	-	100
TOTAL			300

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

19.Criteria for passing: The criteria for passing includes, minimum of 50% of total marks in theory aggregate and minimum of 50% of total marks in clinical and Viva-Voce aggregate.

20.Declaration of class: The declaration of class shall be as follows;
First class with distinction: 75% & above in aggregate provided the candidate passes the examination in first attempt.

First class: 60% & above in aggregate provided the candidate passes the examination in first attempt.

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

22. Course contents

Paper I (SUBJECT CODE: COPT 2601)

RESEARCH METHODS FOR PHYSIOTHERAPY

Teaching Hours: 400 hours (Theory: 150 hours & practical 250 hours)

Maximum Marks: 100 (Theory: 100)

Assessment: Written University examinations

Objectives:

1. To understand the basic research terminologies, methods and approaches.
2. Evaluate different types of research designs.
3. Explain research methods relevant to research in Cardio-Respiratory Physiotherapy.
4. To recognize the significance of consent, confidentiality and other ethical considerations in relation to Cardio-Respiratory physiotherapy research.
5. To understand evidence based physiotherapy practice.

I. Basic concepts

- Meaning and definition

- Research process
- Research types and approaches
- Objectives of research in physiotherapy
- Barriers for research in physiotherapy
- Research problem or research question

II. Research ethics

- Overview
- Consent
- Confidentiality
- Helsinki's declaration
- Plagiarism

III. Literature search

- Overview
- Steps in literature search
- Purpose
- Methods and techniques

IV. Research designs

- Meaning and definition
- Types of research designs
- Steps in preparation of research designs
- Factors affecting research designs

V. Sampling

- Overview

- Principles
- Methods
- Designs
- Process

VI. Research variables

- Overview
- Types
- Reliability and validity
- Specificity and sensitivity

VII. Pilot study and pre-testing

- Overview
- Need
- Advantages

VIII. Data collection

- Overview
- Sources
- Methods
- Types

IX. Biostatistics

- Steps in data processing
- Tabulation
- Measures of central tendency
- Tests of significance

X. Research report

- Overview
- Types

- Publication

Suggested Readings

1. Jerry R .Thomas :Research methods in physical activity 5thed ,human kinetics,U.S.A,2005.
2. Carolyn Hicks: Research for physiotherapists: project design and analysis, 2nd Ed, Churchill Livingstone, New York, 1995.
3. Domholdt E: Physical therapy research – Principles and applications. 2nd Ed, W.B.Saunders Co, Philadelphia, 2000.
4. Drummond Avril: Research methods for therapists. 1st Ed, Chapman & Hall, Madras, 1996.
5. Thomas JR, Nelson JK: Research methods in physical Activity. 4th Ed, Human Kinetics, New Zealand, 2001.
6. Dean P. Currier: Elements of research in physical therapy. 3rd Ed, Williams & Wilkins, NY, 1990.
7. Ram Ahuja :Research methods ,Rawat Publication ,New Delhi , india,2001.
8. Stephen Polger: Introduction to research in the health sciences, 5thEd ,Churchill Livingstone, New York, 2008.
9. David S Moore. W H Freeman :The basic practice of statistics, , USA, 1999.
10. Michael Quinn Patton, Sage:.,Qualitative evaluation and research methods, USA, 1990.

Paper II (SUBJECT CODE: COPT 2602)

CARDIORESPIRATORY MEDICINE

Teaching Hours: 550 hours (Theory:200 hours and Practical:350 hours)

Assessment : Written, Oral, and Practical University examinations

Objectives:

1. To comprehend the fundamental concepts pertaining to Cardio-respiratory disorders.
2. To understand the clinical signs and symptoms of Cardio-respiratory disorders.
3. To be aware of investigations performed to rule out Cardiological and Respiratory disorders.
4. To know the Differential Diagnosis.
5. To get acquainted with various disorders and other procedures.

Theory Contents

I. Fundamental concepts:

- Mechanism of breathing

- Gas exchange and transport
- Acid base balance
- Chemical control of breathing
- Dynamics of cardiorespiratory system

II. Obstructive Respiratory Diseases:

- Overview
- Pathophysiology
- Clinical Features
- Investigations
- Management

III. Restrictive lung diseases:

- Overview
- Pathophysiology
- Clinical features
- Investigations
- Management

IV. Congenital Heart Disease:

- Introduction
- Pathophysiology
- Signs and Symptoms
- Investigations
- Medical management

V Acquired Heart Diseases

- Introduction
- Pathophysiology
- Classification
- Investigations
- Management

VI. Infective Respiratory Disorders

- Introduction
- Signs and symptoms Investigations
- Investigations
- Clinical Implications of physical therapy
- Management

VII. Occupational Lung Diseases

- Introduction
- Classification
- Etiology and Pathogenesis
- Signs and symptoms
- Medical Management

VIII .Respiratory Failure

- Introduction
- Classification
- Etiology and Pathogenesis

- Signs and symptoms
- Medical Management

IX. Cardiac Failure

- Classification
- Etiology and Pathogenesis
- Signs and symptoms Investigations
- Investigations
- Medical Management

X. Recent Advances in Cardiopulmonary Medicine

- Recent advances in cardiopulmonary Assessment
- Recent advances in investigations
- Recent advances in management
- Evidence based practice

Practical contents

1. Evaluation and assessment procedures
2. Instruments used for physiotherapy techniques
3. Diagnostic Procedures
4. Use of Nebulizer and Humidification process
5. Handling of ICU equipment
6. Handling of Monitors and other Life support equipment
7. Determine the need of physiotherapy

Suggested reading

1. Dry Thomas J , Manual Of Cardiology . 2nd Edition , W. B. Saunders Co., Philadelphia, 1
2. Reveine, Samuel A ., Clinical Heart Disease, 2nd Edition, W.B. Saunders Co., Philadelphia ,1941 .
3. Master, Arthue M., Cardiac Emmergencies And Heart Failure Prevention And Treatment Leaandfebgier, Philadelphia, 1955.
4. Haslett Christopher, Davidson's Principles And Practice Of Medicine, 18th edition, Churchill Livingstone Edinburgh London New York., 1999.
5. Pare J.A.P Synopsis Of Diseases Of The Chest , W.B.Saunders Co. London, 1983.
6. Braunwald Eugene., Heart Diseases A Textbook Of Cardiovascular Medicine, W.B.Saunders Co.London, 1980.
7. Wright F.J., Davidsons Principles And Practice Of Medicine A Textbook For Students, 11th edition And Doctors , E.L.B.S. And Churchill Livngstone 1974.
8. Braunwald Eugene. Harrisons Principles Of Internal Medicine , 15th edition Mcgraw Hill Medical Publishing Division, New York, 2001.
9. Guenter I.A., Pulmonary Medicine, J.B.Lippincott Co., Philadelphia, 2nd edition, 1982.
10. Datey K.K., API Textbook Of Medicine, 3rd edition, Association Of Physicians Of India, Mumbai 1979.
11. Flenley D.C., Recent Advances In Respiratory Medicine No 3, Churchill Livingstone, London, 1983.

PAPER III Subject Code COPT:2603)

CARDIO –RESPIRATORY SURGERY

Teaching Hours: 550 hours (Theory: 200 hours and Practical: 350hours)

Maximum Marks: 100 (Theory: 100)

Assessment: Written and oral university examinations.

Objectives:

1. To be introduced to important role of surgery in cardiac disease
2. To appreciate the emphasis on the role of exact investigation in planning surgery
3. To understand the important role of surgery and other techniques in the management of coronary artery disease
4. To be introduced to the role of surgery in heart valve disorders
5. To be aware of specialism of surgery of congenital heart disease
6. To be aware of the impact of cardiac disease on surgical outcome

Theory contents

1. Fundamental concepts:

- Historical aspects
- Classification of surgeries
- Complications of surgeries
- Psychological reactions
- Role of physiotherapist

II. Surgical investigations

- Overview
- Microbiological investigations
- Pathological investigations
- Biochemical investigations
- Radiological investigations

III. Cardiac Surgery

- Overview
- Open heart surgeries
- Closed heart surgeries
- Complications
- Management

IV. Pulmonary surgeries

- Overview
- Pleural surgeries
- Lung surgeries
- Indications
- Complications

V. Abdominal surgeries:

- Overview
- Indications
- Surgical procedures
- Complications
- Management

VI. Peripheral vascular surgery

- Overview
- Indications
- Surgical management
- Precautions
- Complications

VII. Pediatric cardiopulmonary surgeries

- Overview
- Indications
- Surgical interventions
- Complications
- Management

VIII. Post surgical intensive care

- Overview
- Patient's Monitoring
- Positioning
- Airway clearance
- Prevention of complications

IX. Surgical oncology

- Overview
- Pulmonary oncology
- Complications
- Management

X. Recent advances

- Overview
- Recent advances in surgical investigations
- Recent advances in surgical management

Practical contents

1. Evaluation and assessment procedures
2. Bandaging, Dressing, strapping techniques
3. Diagnostic Procedures
4. Observation of Surgical Procedures
5. Handling of ICU equipment
6. Handling of Monitors and other Life support equipment
7. Cardiological Implant identification
8. Determine the need of physiotherapy

Suggested readings

1. Bakey Michael.R, Year Book of General Surgery, Year Book of General Surgery, 1967.
2. Russell R.C.G, Bailey And Loves Short Practice Of Surgery, H.K Lawis And Co Ltd, I 36 Gower Street London. 23rd Ed 2000.

3. Sabiston David C, Textbook of Surgery, 11th edition, W.B.Saunders, 24.28 Oval Road London, 1977.
4. Blakes, Brain., Surgical Diseases Of The Chest, 2nd edition , C.V. Mosby Co.Saintlouis. 1966,
5. Belcher, J.R. Thoracic Surgical Management,, 3rd edition, Baillure Tindall Andco. Cox 7and8 Henrl Ett Street, London, 1962.
6. Sabiston David C, Davis Christopher Textbook Of Surgery The Biological Basis Of Modern Surgical Practice, 12th edition, W.B.Saunders Co., London. 1981.
7. Das Soman, Manual On Clinical Surgery, 5th Edition, Das S 13 Old, Mayors Court Calcutta, 2000.
8. Glemm,W.W.L. Baue,A.E. Ed., Thoracic And Cardiovascular Surgery, 4th edition, Appleton Century Crofts.1983.
9. Nora P.F. Ed., Operative Surgery Principles And Techniques, 2nd edition, W.B.Saunders Co., Philadelphia, 1980.
10. Irwin Scot: Cardiopulmonary physical therapy A guide to practice, 4th Ed, London, 1995.

Journal Reading:

- 1.European Journal of Cardiovascular Prevention and Rehabilitation
2. Journal of cardiopulmonary rehabilitation and prevention (jcrp)
- 3.Journal of exercise science and sports physiotherapy(patiala)
4. journal of physiotherapy (formerly australian journal of physiotherapy)
- 5.Journal of rehabilitation medicine
6. newzealand journal of physiotherapy
- 7.Pediatrics physical therapy
- 8.Physical medicine and rehabilitation clinics of north america

9. Physiotherapy Canada

10. Journal of Orthopaedic & Sports Physical Therapy (JOSPT).

PAPER IV (Code no.2604)

CARDIORESPIRATORY PHYSIOTHERAPY

Teaching hours: 550 hours (Theory 200 hours, Practical 350 hours.)

Maximum marks: 100

Assessment, Written and Practical examinations

Objectives:

1. To outline the need of physiotherapy in Cardio Respiratory Evaluation.
2. To identify impairments and set the treatment goal.
3. To understand the principles and procedures of various Physiotherapy approaches.
4. To identify the needs of Special patients with special problems and plan the treatment accordingly.
5. To understand the clinical reasoning and evidence based practice in Physiotherapy

I. Cardio-respiratory assessment

- Overview
- Material used in cardio-respiratory assessment
- Investigations
- Physical examination in detail

- Medical chart review

II. Airway clearance techniques:

- Introduction
- Techniques used in physiotherapy
- Indications
- Contraindications
- Precautions in spatial conditions

III. Mechanical Ventilation

- Introduction
- Weaning criteria
- Indications
- Contraindications
- Precautions

IV. Therapeutic positioning

- Introduction
- Techniques & Mechanism
- Indications
- Contraindications
- Precautions

V. Breathing exercises

- Introduction
- Exercise with & without equipments

- Indications
- Contraindications
- Precautions

VI. Exercise testing & prescription

- Introduction
- Techniques
- Indications
- Contraindications
- Precautions

VII. Cardiac rehabilitation

- Introduction
- Team
- Equipments
- Phases
- Exercise interventions

VIII. Pulmonary rehabilitation

- Introduction
- Team
- Equipments
- Phases
- Exercise interventions

IX. Physiotherapy in cardiopulmonary surgeries

- Overview
- Indications
- Physiotherapy techniques
- Contraindications
- Precautions

X. Exercise Prescription in special cases

- Introduction
- Exercise prescription for hypertension
- Exercise prescription for diabetes
- Exercise prescription for peripheral vascular diseases.
- Exercise prescription for chronic obstructive pulmonary disease.

Practical contents

1. Evaluation and assessment procedures
2. Diagnostic Procedures related to physiotherapy
3. Exercise prescription with specific protocol.
4. Clinical reasoning for all techniques
5. Use of Nebulizer and Humidification process
6. Handling of ICU equipment, Monitors and other Life support equipment
7. Use of Respiratory devices like Incentive Spirometer, Inspiratory Muscle Trainer etc.
8. Determine the need of physiotherapy
9. Practical application of techniques

10. Basic and advanced Cardiopulmonary resuscitation

Suggested reading

1. Downie Patricia A., Cash's Textbook Of Chest Heart And Vascular Disorders For Physiotherapists, 4th edition, Jaypee Brothers Medical Pub (P Ltd B-3 Emca House 23/23b Ansari Road Daryaganj New Delhi 1993.
2. Desai Armaiti N., Yogic Life A Cure For Asthma And Bronchitis, 1st edition Jayandra Yogendra And Yoga Institute Prabhat Colony Santacruz Mumbai 400055, 1997.
3. Morgan Mike, Practical Pulmonary Rehabilitation, Chapman and Hall 2.6 Boundary Row London Se1 8hn UK, 1997.
4. Smith Mandy, Cash's Textbook of Cardiovascular Respiratory Physiotherapy, 2nd edition 2005.
5. Hough Alexandra, Physiotherapy in Respiratory Care, 3rd edition, Chennai Micro (P) Ltd Chennai - 292001.
6. Prayer, J. A., Physiotherapy for Respiratory and Cardiac Problem, 3rd edition, Churchill Livingstone, Edinburgh 2005.
7. Pierce L. N. B., Management of the Mechanically Ventilated Patient, 2nd edition, Saunders Elsevier St Louis Missouri, 2007.
8. Frownfelter Donna, Cardiovascular And Pulmonary Physical Therapy Evidence And Practice, 4th edition, St. Louis, Missouri, Mosby Elsevier, 2006.
9. Dhalavi Girinath, Cardiac Rehabilitation For Physiotherapist, 1st edition, 2000.
10. Sadhakas ,Yoga Therapy In Asthma Diabetes And Heart Disease (Principles Practice Scientific Results), Jayandra Yogendra And Yoga Institute Prabhat Colony Santacruz Mumbai 400055 1997.

Journal Reading:

1. European Journal of Cardiovascular Prevention and Rehabilitation
2. Journal of cardiopulmonary rehabilitation and prevention (JCRP)
3. Journal of exercise science and sports physiotherapy (Patiala)

4. Journal of physiotherapy (formerly Australian journal of physiotherapy)
5. Journal of rehabilitation medicine
6. New Zealand journal of physiotherapy
7. Pediatrics physical therapy
8. Physical medicine and rehabilitation clinics of North America
9. Physiotherapycanada
10. Physical therapy journal

MASTER OF PHYSIOTHERAPY IN PEDIATRICS



PRAVARA INSTITUTE OF MEDICAL SCIENCES
(DEEMED UNIVERSITY), LONI, MAHARASHTRA, INDIA, 413 736

ORDINANCE GOVERNING
MASTER OF PHYSIOTHERAPY IN PEDIATRICS
(M.P.Th. PEDIATRICS) COURSE 2010 - 2011



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- To promote sustainable development of higher education consistent with statutory and regulatory requirements.
- To plan and 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 & 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.

NOTIFICATION

MASTER OF PHYSIOTHERAPY (PEDIATRICS)

CONTENTS

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1. Preamble: The Master of Physiotherapy with pediatric specialty is a dynamic academic course offered for qualified physiotherapists. It creates the opportunity for qualified and experienced clinicians to broaden their knowledge, clinical skills in pediatric physiotherapy field. The course recognizes the need to adopt principles of adult learning and emphasizes the importance of facilitating graduates to develop independent, self-directed and critical philosophies in the field of pediatric physiotherapy.

The course consists of four subjects that include one stream subject and three core subjects namely research methods, pediatric medicine, pediatric surgery and pediatric physiotherapy. The contents of these subjects are chosen critically so as to support the physiological basis of physiotherapy practice, provide a framework for evaluation of evidence for physiotherapy and develop advanced communication skills and awareness of professional and ethical issues in physiotherapy and the broader healthcare community.

The course contents present advanced knowledge and understanding of pediatric biosciences, current issues in pediatric, and their application to clinical practice. It also provides opportunities for students to acquire cutting edge information and skills related to treatment and management in pediatric neurological, cardiothoracic, and musculoskeletal physiotherapy. The clinical placement allows students to broaden or deepen their clinical practice experience and expertise.

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, 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.

2. Objectives: The objectives of this Master degree program offered by Pravara Institute of Medical Sciences;

- To provide comprehensive training in pediatric physiotherapy theory and practice, including the use of other physiotherapy modalities.

- To provide an opportunity for the students to take up a research project in the field of pediatric Physiotherapy.
- To provide students with quality clinical experience in hospitals and complementary health clinics from year one of the program.
- To ensure that students practice Pediatric Physiotherapy, whilst integrating western medical information as appropriate, to ensure that graduates are safe and competent in the practice of pediatric physiotherapy universally.
- To provide an opportunity for higher education opportunity like post doctoral study or post master fellowship after completion of the course.

3. Career opportunities: Currently there is shortage of qualified specialist Physiotherapist with Pediatric Physiotherapy specialty. Hence, there is demand for this specialty and employment opportunities are excellent. Graduates with this qualification are recognized throughout India and abroad. As there is a shortage of highly qualified Physiotherapists with Pediatric Physiotherapy, it commands increasing employment & remuneration. They can be employed in super specialty hospitals, Pediatric specialty hospitals, general hospitals, teaching institutes, rehabilitation centers for children's, schools and also can practice in private setups independently.

4. Professional recognitions: Graduates who are registered with the Indian Association of Physiotherapists can apply to have this qualification listed. The award of Master of Pediatric Physiotherapy qualifies graduates for membership of the Paediatric Physiotherapy interest groups in India as well as abroad.

5. Eligibility: A candidate who has passed Bachelor of Physiotherapy (BPT/BPhT/BPT/B.Physio/Bsc Physiotherapy) or any equivalent degree examination of a recognized Indian university by law in India or any other degree course in physiotherapy recognized as equivalent by PIMS, Association of Indian Universities or Indian Association of Physiotherapists and who has

scored not less than 50% of maximum marks in prescribed qualifying examination shall be eligible for the M.P.Th. pediatrics course.

6. Total intake of students: The total intake of students will be three (03) per academic year of the Pravara Institute of Medical Sciences, Deemed University, Loni.

7. Course fee structure: The tuition fee and other fee structure will be as per the notifications by Pravara Institute of Medical Sciences, Deemed University from time to time. The fee structure is different for resident Indians, non-resident Indian and foreign students.

8. Course duration: The course duration shall be two academic years or 24 months. This duration includes also includes submission of dissertation on the research topic. No additional time is given for the submission of the dissertation.

9. Medium of instructions: The medium of instructions for this course shall be only English. This includes theory lectures, practicals, laboratory works and assignments and clinical training.

10. Course location: This course is offered at College of Physiotherapy, Pravara Institute of Medical Sciences, Loni, Taluka: Rahata, District: Ahmednagar 413 736, Maharashtra, India.

11. Course structure: The details of M.P.Th. pediatrics course structure are as follows;

Sl.No	Subject	Teaching hours		Total
		Theory	Practical/clinic	
1	Research Methods	150	250	400
2	Pediatric Medicine	200	350	550

3	Pediatric Surgery	200	350	550
4	Pediatric Physiotherapy	200	350	550
5	Clinical training	-	1200	1200
6	Journal club	-	-	200
7	Research club	-	-	150
8	Seminars	-	-	400
Total teaching hours				4000

12. Clinical placement: Clinical placement will be at Pediatric Physiotherapy department, Pediatric ward, Pediatric surgery ward, pediatric intensive care unit, Neonatal intensive care unit and rural public health centers. Since the teaching clinics operate 48 weeks per year, students will be required to attend clinical sessions on a rotation basis to maintain public service and provide continuity of patient care.

13. Monitoring process: A candidate pursuing M.P.Th. pediatrics course shall study in the concerned department of the college of physiotherapy, Pravara Institute of Medical Sciences, Loni for the entire period as full time student. No candidate is permitted to work in any other hospital, clinic, college etc., while studying this postgraduate course. No candidate should join another course 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. Each year shall be taken as a unit for the purpose of calculating attendance. Every student shall attend lectures, practicals, laboratory works, seminars, research clubs, journal clubs, review meeting, tele-physiotherapy sessions and state level conferences, national level conferences or occasionally international conferences during each year as prescribed by the Pravara Institute of medical Sciences, Deemed University, Loni. Candidate who has put in a minimum of 80% of attendance in the theory and practical assignments separately shall be permitted to appear for M.P.Th. examination. Candidate who has put in a minimum of 80% of attendance in first year of M.P.Th. shall only be eligible to submit the dissertation. Any student who fails to complete the course in the manner stated above shall not be permitted to appear for the University examination.

Every candidate shall maintain a work diary 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 the Principal, College of Physiotherapy, and presented in the university practical examination if called for. Every clinical case discussion, case presentation, seminars, journal clubs and research clubs will be monitored by faculty members, guide and peers using relevant checklists and CPA cards.

14. Dissertation: Every candidate pursuing M.P.Th. 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 a research proposal or synopsis containing particulars of proposed dissertation to the Registrar of the university in the prescribed Performa within 6 months from the date of commencement of the course on or before the dates notified by the university. The research proposal or synopsis shall be sent through the proper channel. Such synopsis will be reviewed 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 or 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 & Principal, college of Physiotherapy shall certify the dissertation. Four copies of dissertation thus prepared shall be submitted to the Controller of Examinations, three months before final examination on or before the dates notified by the university.

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.

15. Guide: The criteria for recognition of M.P.Th. Pediatrics guide shall be as follows;

- M.P.Th. Pediatrics with five years post PG full time teaching experience in a recognized teaching institute.
- The age of guide shall not exceed 60 years.
- The guide student ratio should be 1: 3.
- Considering the shortage of qualified teachers, relaxation may be given to the teachers with three years of post PG teaching experience till 2015 or until further amendments by the university in this regard.

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

16.Assessment: The final assessment of the student in this course will be by written, oral and practical examination at the completion of the two years. However, the student should submit the research dissertation prior to appearing for the final university examination. Student's dissertation should be accepted by the examiners prior to appearing for the final examination.

17. Schedule of examination: The examination for M.P.Th. Pediatrics course shall be held at the end of two academic years (four academic terms). The university shall conduct two examinations in a year such as regular and supplementary at an interval of six months between the two examinations. No more than two exams shall be conducted in one academic year.

18. Scheme of examination: The detailed scheme of examination for theory and practical or clinical component is described here.

Sl. No	Type of assessment	Maximum Marks
1	Theory	400
2	Practical /clinical	200
3	Viva voce	100
TOTAL		700

Theory (written examination): A written examination consisting of four question papers, each of three hours duration & each paper carrying 100 marks. Particulars of Theory question paper & distribution of marks are as follows;

Paper	Subject	Marks
I	Research methods	100
II	Pediatric medicine	100
III	Pediatric surgery	100
IV	Pediatric physiotherapy	100

Pattern of model question paper: The pattern of theory question paper for all four subjects shall be as follows;

Sl.No	Type of question	Distribution	Marks
1	MCQ(25 questions)	25X1	25
2	Long essay(2 questions, no choice)	2X25	50
3	Short essay (5 questions, one choice)	5X5	25
TOTAL			100

Clinical Examination (Practical): A clinical examination consisting of two hundred marks (300) that is aimed at examining clinical skills and competency of the candidates for undertaking independent work as a pediatric physiotherapy specialist.

Viva-Voce Examination (Practical): A Viva-Voce examination consisting of one hundred marks (100) that are aimed at examining depth of knowledge, logical reasoning, confidence & oral communication skills with special emphasis on dissertation work. Viva voce includes general viva questions pertaining to course contents and dissertation. The marks of Viva-Voce examination shall be included in the clinical examination to calculate the percentage and declaration of results.

Sl.No	Type of practical /clinical assessment	Distribution	Marks
1	Long case	150X1	150
2	Short case	1X50	50
3	Viva voce (general & dissertation)	-	100
TOTAL			300

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

19.Criteria for passing: The criteria for passing includes, minimum of 50% of total marks in theory aggregate and minimum of 50% of total marks in clinical and Viva-Voce aggregate.

20. Declaration of class: The declaration of class shall be as follows;

First class with distinction: 75% & above in aggregate provided the candidate passes the examination in first attempt.

First class: 60% & above in aggregate provided the candidate passes the examination in first attempt.

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

22. Course contents

Paper I (SUBJECT CODE: COPT 2201)

RESEARCH METHODS FOR PHYSIOTHERAPY

Teaching Hours: 400 hours (Theory: 150 hours & practical 250 hours)

Maximum Marks: 100 (Theory: 100)

Assessment: Written University examinations

Objectives:

1. To understand the basic research terminologies, methods and approaches.
2. Evaluate different types of research designs.
3. Explain research methods relevant to research in pediatric Physiotherapy.
4. To recognize the significance of consent, confidentiality and other ethical considerations in relation to pediatric physiotherapy research.
5. To understand evidence based physiotherapy practice.

I. Basic concepts

- Meaning and definition
- Research process
- Research types and approaches
- Objectives of research in physiotherapy
- Barriers for research in physiotherapy
- Research problem or research question

II. Research ethics

- Overview
- Consent
- Confidentiality
- Helsinki's declaration
- Plagiarism

III. Literature search

- Overview
- Steps in literature search
- Purpose
- Methods and techniques

IV. Research designs

- Meaning and definition
- Types of research designs
- Steps in preparation of research designs
- Factors affecting research designs

V. Sampling

- Overview
- Principles
- Methods
- Designs
- Process

VI. Research variables

- Overview
- Types
- Reliability and validity
- Specificity and sensitivity

VII. Pilot study and pre-testing

- Overview
- Need
- Advantages

VIII. Data collection

- Overview
- Sources
- Methods
- Types

IX. Biostatistics

- Steps in data processing
- Tabulation
- Measures of central tendency
- Tests of significance

X. Research report

- Overview
- Types
- Publication

Suggested Readings

1. Jerry R .Thomas :Research methods in physical activity, 5th ed.,human kinetics,U.S.A,2005.
2. Carolyn Hicks: Research for physiotherapists: project design and analysis,
2nd ed., Churchill Livingstone, New York, 1995.
3. Domholdt E: Physical therapy research – Principles and applications,
2nded., W.B.Saunders Co, Philadelphia, 2000.
4. Drummond Avril: Research methods for therapists, 1st ed., Chapman & Hall, Madras, 1996.
5. Thomas JR, Nelson JK: Research methods in physical Activity, 4th ed., Human Kinetics, New Zealand, 2001.
6. Dean P. Currier: Elements of research in physical therapy, 3rd ed., Williams & Wilkins, NY, 1990.
7. C.R.Kothari :Research methodology ;methods and techniques ,2nd ed.,new age international publishers,delhi ,2009.
8. Stephen Polger: Introduction to research in the health sciences, 5th ed., Churchill Livingstone, New York, 2008.
9. David S Moore. W H Freeman :The basic practice of statistics, USA, 1999.

10. Michael Quinn Patton, Sage:Qualitative evaluation and research methods, USA, 1990.

Paper II (SUBJECT CODE: COPT 2202)

PEDIATRIC MEDICINE

Teaching Hours: 550 hours (Theory: 200 hours and Practical: 350hours)

Maximum Marks: 100 (Theory: 100)

Assessment: Written, Oral and Practical University examinations

Objectives:

1. To demonstrate knowledge in embryology, anatomy and physiology as is necessary for the study and practice of the physiotherapy.
2. To demonstrate the general understanding of the disease.
3. To explain the etiology, pathology, clinical feature and resultant functional disability.
4. To demonstrate the limitations imposed by the disease on any therapy.
5. To explain the goals of physiotherapy to identify the common abnormalities.

SECTION A : GENERAL MEDICINE

I.Embryology

- General and systemic Embryology

II. Anatomy and physiology of cardio respiratory system

- Normal fetal circulation
- Mechanics of respiration
- Anatomical , physiological differences of cardio vascular & respiratory system in neonates , childhood & adolescents.

III. Problems of low birth weight infants (LBW) and physiotherapy

- Overview
- Respiratory problems
- Infections, Jaundice
- Periventricular hemorrhage
- Periventricular leucomalacia
- Necrotizing enterocolitis
- Temperature control.

IV. Disease of cardio vascular and physiotherapy

- Overview
- Congenital and Rheumatic heart disease
- Cardiac arrhythmia and pericarditis
- Systemic arterial hypertension , congestive heart failure

V. Disease of Respiratory system and physiotherapy

- Overview
- Infections of upper & lower respiratory tract
- Chest wall deformity
- Bronchial asthma, cystic fibrosis, Inhaled foreign tracheal esophageal fistula

SECTION B : PEDIATRIC NEUROLOGY

Embryology, Growth and development

- Nervous system

Anatomy & Physiology Of nervous system

- Central, Peripheral nervous system
- Autonomic nervous system
- Primitive, brainstem, cortical reflexes
- Neurophysiological basis of tone, posture, movement, co-ordinations, balance

Congenital disorders and physiotherapy

- Overview
- High risk babies
- Spina bifida
- Learning disabilities
- Autism
- ADHD

Inherited disorders and physiotherapy

- Overview
- Myopathies and myotonias
- Spinal muscular atrophy

Traumatic injury and physiotherapy

- Overview
- Peripheral & Cranial nerve injuries
- Traumatic brain injury
- Spinal cord injury

Infectious disease and physiotherapy

- Overview
- Poliomyelitis
- Transverse Myelitis
- Meningitis & encephalitis

Specific condition and physiotherapy:

- Overview
- Syringomyelia
- Sub acute combined degeneration
- Movement disorders
- Neuro vascular

Suggested Readings

1. Edward m. Brett: Pediatric neurology, 3rd ed., New York, 1997.
2. Anne. Creenough: Neonatal respiratory disorder, Great Britain, 1996.
3. Kenneth, Swaiman: Pediatric neurology (Principles & Practice), Toronto, ST, Louis, 1989.
4. Ghai, Gupta, Paul: Essential pediatrics, 6th ed., Delhi, 1994.
5. Richard E. Behrman: Nelson textbook of pediatrics, W.B. Saunders Co, 8th ed, Philadelphia, 2003.
6. Mark L. Batshaw, children with disabilities, Brookes publishing company, 5th ed, 2002.
7. William M. Hay: current treatment and diagnosis in pediatrics, McGraw-Hill Medical, 18th ed, 2006
8. Philip A. Pizzo: Principles and practice of pediatric oncology, Williams & Wilkins, 5th ed, 2005

9. Fleisher, Gary R: Textbook of pediatric emergency medicine, Lippincott Williams & Wilkins, 6th ed, 2010.
10. Eckerley P: Elements of Pediatric Physiotherapy, Churchill Livingstone, Edingburgh, 1993.

Journals

1. Pediatrics Today
2. Indian Pediatrics
3. Developmental medicine & child neurology
4. Pediatric physical therapy
5. Physical therapy and occupational therapy in pediatrics

Paper III (Subject code: COPT 2203)

PEDIATRIC SURGERY

Teaching Hours: 200 hours (Theory: 100 hours and Practical: 100hours)

Maximum Marks: 200 (Theory: 100 and Practical and viva 100)

Assessment: Written, Oral and Practical University examinations

Objectives:

1. To evaluate surgical patient pre and post operatively.
2. To understand the pre and post operative diagnostic procedure.
3. To identify the post operative complications and plan the appropriate physiotherapy.
4. To outline the goals of surgery and physiotherapy.

5. To demonstrate the limitation imposed by the surgery on physical therapy.

SECTION A : GENERAL SURGERY

I. Cardiac surgery and physiotherapy

- Overview
- Congenital heart disease
- Valvular Heart Disease
- Pericardial disease
- Heart transplantation
- Pericardiocentesis
- Pre and post operative evaluation
- Post operative complication

II. Pulmonary surgery and physiotherapy

- Pneumonectomy
- Lobectomy
- Pleural tapping
- Intercostals drainage
- Pre and post Operative evaluation
- Post operative complication

III. Plastic Surgery , Burns and physiotherapy

- Outline
- Principles and procedure
- Excision and grafting
- cosmetic and reconstructive proceures
- Rehabilitation

IV. Oncology and physiotherapy

- Acute leukemia
- Hodgkins and Non Hodgkins lymphoma
- Wilms tumour
- Neuroblastoma,
- Soft tissue sarcoma
- Pre and post operative evaluation
- Post operative complication

V. Neuro surgery and physiotherapy

- Overview
- Nerve repair and grafting
- Neurovascular surgeries
- Rhizotomies
- Stereotactic surgeries
- Spinal decompression
- Surgeries for cerebral palsy
- Surgeries for poliomyelitis
- Traumatic brain Injury
- Traumatic spinal cord injury

SECTION B : MUSCULO SKELETAL SURGERY

I. Congenital disorders and physiotherapy

- Overview
- Congenital talipes equino varus (CTEV)
- Congenital dislocation of hip
- Spina bifida
- Scoliosis, torticollis

- Radial club hand
- Trigger thumb
- Arthrogyposis
- Osteogenesis imperfect
- Perthes disease
- Osgood - schlatter's diseases
- sever's disease
- scheuermann's diseases

II. Infection of bones and joints and physiotherapy

- Overview
- Osteomyelitis
- Tom smith arthritis
- Pyogenic arthritis
- Pott's spine

III. Inflammatory conditions and physiotherapy

- Overview
- Juvenile rheumatic arthritis
-

IV. Traumatic

- Overview
- Limb , spinal fracture
- complications

V. Tumors and physiotherapy

Suggested Readings

1. Edward M. Brett :Pediatric neurology,3rd ed., Newyork, 1997.
2. Anne. Creenough: Neonatal respiratory disorder, Great Britain, 1996.
3. Kenneth,Swaiman: Pediatric neurology(Principles & Practise), Toronto,ST,Louis, 1989
4. Ghai,Gupta,Paul: Essential pediatrics ,6th ed., Delhi, 1994
5. Kliegman.Behrman.Jenson: Nelson textbook of pediatrics 8th ed., Philadelphia, 2007.
6. James A.o neill :Pediatric surgery, Mosby; 6th ed. , 2006.
7. Philip L.glick :Pediatric surgery secrets, Hanley & Belfus; 1st ed., 2000.
8. Menkes, John H: Child neurology, Lippincott Williams & Wilkins, 7th ed,2005.
9. Walter w. Tunnessen.Jr : Signs and symptoms in pediatrics,Jb.lippincott company ,Philadelphia.
10. Muges h Agarwal :Text books of pediatrics, Bhalani publishers 1st ed., 2008.

Journals

1. Archives in Pediatrics
2. Pediatrics Today
3. Indian Pediatrics
4. Australien journal of physiotherapy
5. Indian Journal of Physiotherapy

Paper IV (SUBJECT CODE: COPT 2204)

PAEDIATRIC PHYSIOTHERAPY

Teaching Hours: 550 hours (Theory: 200 hours and Practical: 350hours)

Maximum Marks: 100 (Theory: 100)

Assessment: Written, Oral and Practical examinations

Objectives:

1. To outline the role of physiotherapy in pediatric evaluation.
2. Identify the disability and set the treatment goal.
3. Understand the principles and procedures of various physiotherapy approaches.
4. To identify the needs of the special children and plan appropriate therapy.

5. To understand the importance of Community based rehabilitation in pediatric physiotherapy.

I. Pediatric physiotherapy assessment

- Overview
- Tools for assessment
- Behavioral
- Sensory-motor
- Developmental
- Musculoskeletal
- Cardio-respiratory
- Clinimetrics

II. Investigations

- Overview
- Imaging
- Laboratory
- Neuro physiological
- Lung function tests
- Performance tests

III. Neuro physiotherapy interventions

- Overview
- Motor learning theory and techniques
- Phylogenetic approaches
- Neuro developmental technique
- Facilitation and inhibition techniques
- Sensory integration
- Neuro developmental technique

- Rood's approach
- Proprioceptive neuromuscular facilitation
- Brunnstrom's and conductive education approach
- Bobath
- Vojta
- Phelps , Temple fay approach
- Constrained induced movement therapy
- Motor relearning program
- Biofeedback

IV.Musculoskeletal physiotherapy

- Muscle re-education approach
- Myofacial release
- Pediatric manual therapy

V.Chest physiotherapy

- Manual techniques
- Postural drainage
- Breathing exercise
- Incentive Spirometry
- Suctioning
- Oxygen therapy
- Aerosal therapy
- Cardio pulmonary resuscitation
- Exercise testing and exercise prescription
- Cardiac rehabilitation
- Pulmonary rehabilitation

VI.Pediatric rehabilitation

- Overview

- Principles
- Team
- Community physiotherapy

VII.Recreational therapy

- Hydrotherapy
- Play therapy
- Hippo therapy
- Sports training
- Music and dance therapy

VIII.Psychopedogical interventions

- Perception and cognitive disorders
- Mental retardation
- Associated problems

IX.Theratogs

- Overview
- Principles
- Pediatric applications
- Wearable therapy

X.Recent Advances

- Mentamove therapy
- Stemcell therapy and physiotherapy
- Mirror therapy

Suggested Readings

1. Wilhelm: Physical therapy Assessment in Early Infancy, Churchill Livingstone, New York, 1993.
2. Campbell Suzann K: Physical therapy for children, W.B Saunders, Philadelphia 3rd ed., 2003.
3. Shepherd R: Physiotherapy in pediatrics, Heinmann, London, 3rd ed., 1995.
4. Tecklin Jans : Pediatric Physical therapy ,Lippincott USA, 4th ed., 2008.
5. Makezie : Chest physiotherapy in Intensive Care Unit , Willams & Wilkins, Baltimore.
6. Cohen M: Cardio pulmonary symptoms in physiotherapy, Churchil, Livingstone, London-1988.
7. Kerb D: Bio-feed back – A practitioners guide, Guiford press.
8. Knot M. and Voss: Proprioception, Neuro Muscular Facilitation Techniques, Harper and Row, New York, 2nd Ed, 1972.
9. Pamela M.ekersley:Elements of pediatric physiotherapy,churchillivingstone,1993.
- 10.Garry L landreth :Play therapy– The art of the relationship, Routledge; 2nd ed, August 9, 2002.

Journals

1. Archives in pediatrics
2. Pediatrics today
3. Indian pediatrics

4. Australian journal of physiotherapy
5. Indian journal of physiotherapy

1. Bonder Bette R.: Functional performance in older adults: 3rd edition: 2009.
2. Banks, John E: Occupational lung diseases an international perspective: 1998.
3. Fast, Becky: Strength based care management for older adults: 2000.
4. Worth David: Moving in an occupational injury: 2000.
5. Johnson Caryn: Occupational therapy examination review guide: 2nd edition: 2001.
6. Pellerito J M: Driver rehabilitation and community mobility principles and practice: 2006.
7. Dorey Grace: Pelvic floor exercises for erectile dysfunction: 2004.

1. Physical therapy for children - Suzann K. Campbell.
2. Paediatric Physical therapy - Tecklin.
3. Treatment of Cerebral palsy and motor delay – Sofia Levit.
4. Neurological Rehabilitation – Umphred.
5. Text book of Paediatrics – Guptha.
6. Cardio Pulmonary Rehabilitation – Elizabeth Dean
7. Motor relearning Program – Carr & Shepered.