REGULATIONS AND SYLLABUS
FOR

MASTER OF PHYSIOTHERAPY [M.P.T.] IN PAEDIATRIC PHYSIOTHERAPY

[FOR THE YEAR **2020-21** ONWARDS]

PONDICHERRY UNIVERSITY
PUDUCHERRY - 605 014

INDEX

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AIMS & OBJECTIVES OF THE COURSE

Master of Physiotherapy [M.P.T.] in Paediatric Physiotherapy

Aims:

The course aims to prepare the candidate towards professional excellence in specialised skills in the respective field of Physiotherapy. The course is conducted with the prime intention to acquaint the candidate with research methods, concept of quality care, to promote the standards of Physiotherapy education and to induce appropriate professional relationships in multidisciplinary hospitals & rehabilitation practice. It also aims to inculcate competent standards in clinical practice and research.

Objectives:

The candidate undergoing this course shall:

1. acquire a sound knowledge of the specialised skills of the physiotherapeutic interventions with special emphasis on the respective areas of specialisation.
2. have an updated evidence based practice, which includes evaluation, clinical reasoning, diagnosis and treatment methods.
3. practice within the professional code of ethics and conduct, and the standards of practice within legal boundaries.
4. gain experience in clinical teaching methods and undergraduate tutorials.
5. conduct research activities and utilise findings for professional development.

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REGULATIONS

ELIGIBILITY FOR ADMISSION

1. Every candidate for admission to the course for the degree of Master of Physiotherapy [M.P.T.] must have been qualified with the degree of Bachelor of Physiotherapy [B.P.T.] of Pondicherry University or the degree of any other University recognised as equivalent thereto by the Pondicherry University; such candidates should submit a migration certificate to the Pondicherry University.

2. ELIGIBILITY FOR ADMISSION

   Candidates should have completed the bachelor degree course with a minimum of 55% of aggregate marks. The minimum duration of the course shall be three years of full time study and six months of compulsory rotatory internship

   The maximum age of the candidate shall be limited to 40 years on the date of admission to the course.

3. Every candidate before admission to this course shall submit to the Head of the Institution a Medical Fitness Certificate, from the Government Headquarters Hospital that the candidate is physically fit to undergo M.P.T. course and does not suffer from any contagious disease. Differently abled (disabled) students should submit a certificate for the same.
4. Selection of the candidates should be based on the merit list drawn by the competent authority.

REGISTRATION

A candidate admitted in the Master of Physiotherapy course shall register with the University by duly filling the application, which will be forwarded to the University through the Head of the Institution within the prescribed date.

DURATION OF THE COURSE

The course of study and training for the degree of Master of Physiotherapy (M.P.T.) course shall be full-time and its duration shall be of two academic years; an academic year shall consist of not less than 240 working days.

MEDIUM OF INSTRUCTION

The medium of instruction for all the subjects of study and for the examinations of the course shall be English.

CURRICULUM

The curriculum and the syllabi for the course are as presented and are subject to modifications based upon the recommendations of the Postgraduate Board of Studies in Physiotherapy duly approved by the Academic Council of the Pondicherry University.

REQUIREMENTS FOR ADMISSION TO EXAMINATIONS

A candidate is required to put up a minimum of 80% of total attendance in each subject separately and in clinical before admission to the University examinations for the degree of Master of Physiotherapy. There shall be no condonation of attendance for this course.

INTERNAL ASSESSMENT

The following procedure shall be used for the assessment of Internal Marks.

INTERNAL ASSESSMENT MARKS DISTRIBUTION:

(a) Students' log book (containing specific skills, procedures acquired)	- 15 marks
(b) Internal Examination (Theory) (Average of 2 best marks acquired out of 3 exams)	- 10 marks
(c) Clinical case presentation	- 10 marks
(d) Seminars, symposia,conferences	- 5 marks
(e) Journal articles review	- 10 marks
Total	**-50 marks**

MAINTENANCE OF LOG BOOK

Every candidate shall maintain a log book, consisting of the details of skills acquired during the clinical training period, participation in seminars, workshops & conferences, undergraduate teaching practice, journal article reviews, group discussions, assignments and such other academic activities which will be evaluated periodically. At the end of the course the candidate should submit the log book, duly certified by the concerned Head of the Department, and countersigned by the Principal.

DISSERTATION

Every candidate appearing for the examination in the first instance shall submit four copies of a dissertation, consisting of the candidates' study carried out under the guidance of a recognised post graduate teacher and duly certified by the guide & Principal of the College, three months before the end of the course/beginning of the examination.

A post graduate teacher in the respective speciality not exceeding 62 years of age, with 8 years of teaching experience after acquiring Post-graduate degree in Physiotherapy working on full time position in a recognized physiotherapy institution shall be the recognized guide for the dissertation and examiner.

In order to qualify for the degree, the dissertation has to be approved by the external evaluator. No marks will be allotted for dissertation and it shall be mentioned either as "Approved", or "Not Approved" with written valid reasons, by the concerned dissertation evaluator. A candidate whose dissertation is not approved will have to resubmit it after effecting the modifications suggested by the evaluator. This has to be done at least three months before the subsequent examination. A candidate whose dissertation has been accepted by the examiners will not be required to submit a fresh dissertation if he/she has to reappear for the examination in the same branch.

EXAMINATIONS

The University examinations for the degree of Master of Physiotherapy shall be held as detailed in the scheme of examinations. The practical examinations will be conducted by one external examiner and one internal examiner.

NUMBER OF APPEARANCES

The candidate will not be permitted to appear for more than five attempts in the examinations and shall be discharged from the course if he/she fails to pass the examinations in the said number of attempts, or four years (double the duration of the course) from the date of admission to the course, whichever is earlier.

PROCEDURE FOR PASSING

A candidate must obtain minimum 50% of the maximum marks in internal assessment and in theory separately and in practical & viva-voce together. The dissertation has to be "Approved" by the internal and external evaluators. No grace marks shall be awarded for the post graduate course. The dissertation has to be "Approved" by the external evaluator.

COURSE OF STUDY

FIRST YEAR		
Sl. No.	**Subjects**	**Total hours**
1.	Applied Anatomy & Kinesiology	80
2.	Exercise Physiology	80
3.	Research Methodology & Biostatistics	100
4.	Education Technology	60
5.	Management	30
6.	Physiotherapeutics	160
7.	Yoga	30
8.	Physiotherapy Ethics	20
9.	Clinical training	500
10.	Community Physiotherapy Training	200
11.	Co-curricular activities*	180
Total		**1440 hours**

SECOND YEAR		
Sl. No.	**Subjects**	**Total hours**
1.	Specialty part - I: # Physical Assessment	180
2.	Specialty part - II: # Physiotherapy Interventions	180
3.	Clinical training & Dissertation work	900
4.	Co-curricular activities* (Participation in Seminars, Workshops & Conferences, inclusive of observational visits.)	180
Total		**1440 hours**

CLINICAL AREA OF TRAINING	HOURS
Physiotherapy OPD	75
Physical Medicine and Rehabilitation	75
NICU	75
PICU	75
Early Intervention ward / Department	75
Pediatric Wards	75
Neonatal ward	75
Special schools posting	75
Community Posting	75
Dissertation	225
TOTAL	**900**

EXAMINATIONS

Year	Paper	Title of the paper	THEORY		PRACTICAL		INTERNAL ASSESSMENT		TOTAL	
			Max. marks	Passing Min.	Max. marks	Passing Min.	Max. marks	Passing Min.	Max. marks	Passing Min.
I	I	Basic Sciences	100	50	***	***	50	25	150	75
	II	Allied Sciences	100	50	***	***	50	25	150	75
	III	Physiotherapeutics	100	50	200	100	50	25	350	175
II	IV	Specialty (Part- I): Physical Assessment	100	50	200	100	50	25	350	175
	V	Specialty (Part- II): Physiotherapy Interventions	100	50	200	100	50	25	350	175
	Dissertation		[Approved / Not Approved]							

SCHEME OF EXAMINATIONS

THEORY EXAMINATIONS: [Marks distribution for subjects]

Year	Paper	Title of the paper	Contents	Marks	Total Marks
I	I	Basic Sciences	Applied Anatomy& Kinesiology	50	100
			Exercise Physiology	50	
	II	Allied Sciences	Research Methodology & Biostatistics	50	100
			Education Technology & Management	50	
	III	Physiothera-peutics	Exercise Therapy	50	100
			Electrotherapy	50	
II	IV	Specialty (Part- I): Physical Assessment			100
	V	Specialty (Part- II): Physiotherapy Interventions			100

PRACTICAL EXAMINATIONS:

1. Long Case - 100 marks
2. Short Case/Task - 50 marks
3. Viva-voce - 50 marks

Total marks: 200 marks

PATTERN OF QUESTION PAPER

Maximum Marks: 100 Duration: 3 hours

1. Brief Answers (10 x 2marks) = 20 marks
2. Short Answers (10 x 5marks) = 50 marks
3. Long Answers (3 x 10marks) = 30 marks

MODEL QUESTION PAPERS

SPECIALITY Part – I (PHYSICAL ASSESSMENT)

BRIEF ANSWERS (10 x 2 = 20)

1. Cerebro Spinal Fluid circulation
2. Physiology of tone
3. Cardiac cycle
4. Foetal circulation
5. Complication of preterm birth
6. Screening tools for high risk infants
7. Motor milestone tools
8. Pediatric gait parameters
9. International Classification and Function components
10. Cognitive scales for age between 1 to 3 years

SHORT ANSWERS (10 x 5 = 50)

1. Physiological basis of motor learning and recovery of functional motor control.
2. Theories of Neural Control of Reach and Grasp
3. Principles of Normal Growth and Development
4. Hypothesis – oriented clinical practice
5. Examination of high risk infant
6. Psychometric properties of various balance tools in a child
7. Cardiovascular Exercise Testing in Pediatric population
8. Assessment of burns in Pediatric population
9. Gait evaluation in pediatric population
10. Principles of disability evaluation in child with below knee amputation

LONG ANSWERS (3 x 10marks) = 30 marks

1. Describe the pathomechanics of club foot (3 marks). Biomechanical evaluation in the assessment of clubfoot. (7 marks)
2. Mention the various theories of motor control (2 marks). Explain 4 theories of motor control (3 marks) and rationale for the development of any one neurological treatment approach based on motor control theory (5 marks).
3. Describe Stage of cognitive development in a typically developing child (3 marks). Clinical and genetic assessments in a child with Down's syndrome (5 marks). Family centric tools for evaluation of participation and enjoyment (2 marks)

SPECIALITY Part – II (PHYSIOTHERAPY INTERVENTIONS)

BRIEF ANSWERS (10 x 2 = 20)

1. Theories of Motor learning
2. Assistive device for Juvenile Rheumatoid Arthritis
3. Principles of Hypothesis Oriented Clinical Practice
4. Stages of Motor development
5. Balance reactions in infant
6. Principles of Neuro Developmental Therapy
7. Principle of Aquatic Therapy
8. Types of Neural tube defects
9. Legislation for child abuse and neglect
10. Principles of School based intervention

SHORT ANSWERS (10 x 5 = 50)

1. Motor Learning – Strategies for motor development
2. Discuss Evidenced Based Pediatric Physiotherapy
3. Discuss the principle and practice of sensory integration therapy
4. Discuss the recent evidence based practice and principles of Body Weight Support Treadmill Training
5. Discuss the therapeutic strategies for a child on a ventilator
6. Discuss the recent evidence for Physical Modalities in Pediatric Rehabilitation
7. Discuss the management for Erb's palsy
8. Discuss the classification of fractures in pediatrics and management
9. Management of pain due to abdominal surgery in a 10 year old boy
10. Discuss the Community Based Rehabilitation management matrix for a disabled girl in the community.

LONG ANSWERS (3 x 10marks) = 30 marks

1. Define Cerebral Palsy (1 mark). Discuss the International Classification and Function formatting of Cerebral Palsy (3 marks). Enumerate the tools and Classification system for Cerebral Palsy based on motor capability and intervention for a 3 year old child with poor sitting control.(6 marks)
2. Enumerate the etiology for bronchiectasis (2 marks). Clinical investigations and outcome scales for bronchiectasis (3 marks). Evidence based physiotherapy management. (5 marks)
3. Discuss the causes of idiopathic scoliosis (2 marks). Evaluation of idiopathic scoliosis (4 marks). Management of Scoliosis. (4 marks)

SYLLABUS

A detailed syllabus of the subjects to be covered during the M.P.T. programme is given below. However, this is not exhaustive and a candidate is advised to use this as a guideline to further update his/her knowledge and skills in the field of Physiotherapy.

The instructional courses are intended as a revision and updating of the topics essential for physical therapy practice. A brief outline of the topics to be covered in these subjects is as follows.

APPLIED ANATOMY & KINESIOLOGY 80 Hours

1. Arthrokinematics and Osteokinematics of musculoskeletal system.
2. Biomechanics of articular cartilages, tendons and ligaments.
3. Biomechanics & Kinesiology of shoulder girdle, shoulder joint, elbow joint, forearm, wrist and hand.
4. Biomechanics & Kinesiology of Temporomandibular joint.
5. Biomechanics & Kinesiology of neck and trunk.
6. Biomechanics & Kinesiology of pelvic girdle, hip, knee complex, ankle & foot.
7. Functional Anatomy of Upper Extremity, Lower Extremity & Trunk.
8. Biomechanics & Kinesiology of posture and gait.
9. Ergonomics & application in work environment.

Suggested references:

- Lippert LS; Clinical Kinesiology and Anatomy; Jaypee brothers, New Delhi.
- Levangie PK, Norkin CC; Joint Structure & Function- A Comprehensive Analysis; Jaypee brothers, New Delhi.
- Kapandji IA; The Physiology of Joints; Churchill Livingstone, Edinburgh.
- Smith LK *et al;* Brunnstrom's Clinical Kinesiology; Jaypee brothers,New Delhi.

EXERCISE PHYSIOLOGY 80 Hours

1. *Nutrition-The Base for Human Performance*: Carbohydrates, Lipids, Proteins, Vitamins, Minerals and Water; Optimal Nutrition for exercise.
2. *Energy for Physical Activity:* Energy value of food; Energy transfer in the body and in exercise; Measurement of Human Energy Expenditure at rest, physical activities like Walking, Jogging, Running and Swimming.
3. *Systems of Energy Delivery and Utilisation:* Pulmonary, Cardiovascular, Muscular, Neural and Endocrine systems.
4. *Enhancement of Energy Capacity:* Training for anaerobic and aerobic power; Muscular strength training; Special aids to exercise training and performance.
5. *Exercise Performance and Environmental Stress:* Exercise at Altitudes; Exercise and Thermal stress.
6. *Body composition, Energy balance and Weight Control:* Body composition assessment; Physique, performance and physical activity; Obesity and weight control.
7. *Exercise, Aging and Disease Prevention:* Physical activity, health and aging; Clinical exercise physiology for cancer, cardiovascular and pulmonary rehabilitation.

Suggested reference:

- McArdle DW, Katch FI & Katch VL; Exercise Physiology, Energy, Nutrition & Human Performance; Lippincott W&W, Philadelphia, 2007.

RESEARCH METHODOLOGY & BIOSTATISTICS 100 Hours

RESEARCH METHODOLOGY: (60 hours)

1. Research Methodology: An Introduction
2. Defining the Research Problem
3. Literature: Search & Review
4. Research Design
5. Sampling Design
6. Measurement and Scaling Techniques
7. Methods of Data Collection
8. Processing and Analysis of Data
9. Sampling Fundamentals
10. Testing of Hypotheses-I (Parametric or Standard Tests of Hypotheses)
11. Analysis of Variance and Covariance
12. Testing of Hypotheses-II (Nonparametric or Distribution-free Tests)
13. Multivariate Analysis Techniques
14. Interpretation and Report Writing
15. The Computer: Its Role in Research

BIOSTATISTICS: (40 hours)

1. Definition and meaning of statistics & biostatistics.
2. Population, Samples, Sampling Procedures, Sampling techniques
3. Classification of data – Construction of frequency distribution table.
4. Presentation of data - diagrammatic and graphical presentations.
5. Measure of central tendency
6. Measures of dispersion
7. Correlation
8. Regression
9. Laws of statistical regularity, errors in sampling. Sampling distribution – parameters and tests.
10. Probability - applied, conditional; Probability distribution.

Suggested references:

- Hicks CM; Research Methods for Clinical Therapists; Churchill Livingstone, Edinburgh; 2002.
- Raveendran R, Gitanjali B; A Practical Approach to PG Dissertation; Jaypee brothers, New Delhi;1997.
- Rao KV; Biostatistics; Jaypee brothers, New Delhi; 2007.
- Norman GR, Streiner DL; Biostatistics The Bare Essentials; BC Decker Inc., Hamilton; 2000.
- Kothari CR, Grag G; Research Methodology, Methods & Terchniques; New Age International Publishers, New Delhi, 2004.

EDUCATION TECHNOLOGY 60 Hours

1. Education and Philosophies of education.
2. Concepts of teaching and learning – principles, maxims of teaching and techniques of teaching – simulated patient management demonstration
3. Instructional Media – Communication concept, display boards, overhead projector, slide projector, handouts, pamphlets, charts, photographs, models, specimens, tape recorder, video, computers, multimedia and selection of media principles.
4. Curriculum – types of curriculum, course objectives, course placement, time allotment, selection and organization of learning experience, Master plans and individual rotational plan, correlation of theory and practice, Hospital and community areas for clinical instruction, curriculum planning in Physiotherapy.
5. Guidance and Counselling – need for guidance, types of counseling, services for students and faculty.
6. Training to prepare lesson plans and conduct classes, prepare plan for assessment of students of physiotherapy (Proficiency test), practice selected skills through micro teaching, low cost teaching aids, hospital and community areas for instruction.
7. Continuing Education: Faculty development and development of personnel for Physiotherapy services.

Suggested references:

- Educational Technology – Kumar.K.L.
- Philosophy of Education – Krishnamoorthi J
- Textbook of Educational Technology – PanneeerSelvam A; Sterling Publishers.

MANAGEMENT 30 Hours

1. Management: Definition, Principles & Functions of management; Classical theory – systems approach, contingency or situational approach.
2. Management process: Planning, Organising, Directing, Controlling, Decision making.
3. Personnel Management: Staffing, recruitment & selection, performance appraisal, collective bargaining, discipline, job satisfaction.
4. Total Quality Management: Basis of quality management – aids for quality control, quality assurance programme in hospitals, medical audit, and international quality systems.
5. Hospital as an organization: Types of hospitals, functions and special roles of hospital, hospital staffing, general, special & technical medical services, non-medical services of hospital.
6. Management in Physiotherapy: Organisational structure & Personnel management for physiotherapy practice.

Suggested references:

- Prasad LM; Principles & Practice of Management; Sultan Chand & Sons, New Delhi; 1989.
- Davies RL, Macaulay HMC; Hospital Planning and Administration; WHO, Geneva/ Jaypee Brothers, New Delhi; 1995.
- Nosse LJ, Friberg DG; Management Principles for Physical Therapists; Williams & Wilkins, Baltimore; 1992.

PHYSIOTHERAPEUTICS 160 hours

EXERCISE THERAPY: (80 hours)

- Applied Science of Exercise and Techniques:
  Range of motion, Stretching, Resisted exercise, Principles of aerobic exercise, Exercise for balance & posture, Aquatic exercises, Training with functional devices.
- Joint Mobilisation Techniques
- Soft Tissue Mobilisation Techniques
- Current concepts in therapeutic modalities.

ELECTROTHERAPY: (80 hours)

- Biophysics of therapeutic electrical currents & therapeutic thermal modalities.
- Physiological effects & response to electrical & thermal stimuli.
- Electrophysiological tests.
- Therapeutic effects of electrical and thermal modalities
- Current concepts in therapeutic modalities

Suggested references

- Physical agents in rehabilitation by Cameroon
- Therapeutic Exercise: Foundations and Techniques by Carolyn Kisner and Lynn Allen Colby (W.B. Saunders Company, 2007)
- Therapeutic Exercise, Moving Towards Function by Carrie M. Hall and Lori Thein Brody (Lippincott Williams & Wilkins, 2004
- Electrotherapy Explained Principles and Practice; John Low and Ann Reed; Butterworth Heinemann.

YOGA 30 hours

1. Introduction to Yoga - explanation of yoga, yoga as an art and science.
2. Branches of Yoga – Jnana yoga, hatha yoga, bhakthi yoga, mantra yoga, karma yoga.
3. The Yogic view of the human body - our five bodies, the nadis and the chakras
4. Stress Management through Yoga Therapy – concepts of stress and anxiety.
5. Ashtanga Yoga – also known as Raja Yoga, the eight limbs of Ashtanga- Yama, Niyama, Asana, Pranayama, Pratyahara, Dharana, Dhyana and Samadhi.
6. Yoga & Therapy – Yogic exercises for common ailments of muscles, joints, nervous and respiratory systems.

Suggested references:

- Ray D; Yogic Exercises; Jaypee Brothers, New Delhi; 1998.
- Patel; Yoga & Rehabilitation; Jaypee Brothers, New Delhi; 2008.

PHYSIOTHERAPY ETHICS **20 Hours**

1. Moral and Ethics: Code of ethics, ethical analysis of moral problems, beliefs and orientation of people and community towards health and healthcare.
2. Basis of ethical practice:. Relationship between professions and professional groups, physiotherapist – patient relationship, Types of consent, referrals, over utilization and under utilization of physiotherapy services, Obligation and Responsibilities to patient.

3. Rights of patients, fee for service, confidentiality, information to patients.
4. Quality of professional service, peer review, continuing education, research, community work, social audit, record maintenance, other forms of quality assurance.
5. Practice - Hospital as an organization. Different services of a hospital, clinical and supportive services, community based practice, visits, and strategies of community work.

Suggested references:

- www.wcpt.org
- www.apta.org

SPECIALITY (Part- I): PHYSICAL ASSESSMENT 180 hours

S.No	CONTENT	HOURS	TEACHING METHOD
1	OVER VIEW OF ANATOMY AND PHYSIOLOGY • Neuroanatomy • Neurophysiology • Cardiopulmonary anatomy & physiology	 15 20 15	**Didactic Lecture** **Seminars** **Self Learning**
2	FOETAL DEVELOPMENT Basic Embryology – Development of organ systems Normal Growth and Development • Nervous system • Musculoskeletal System • Cardio Pulmonary system	15	**Didactic Lecture** **Seminars** **Self Learning**
3	ASSESSMENT MODELS - Conceptual Frame Work For Clinical Practice Components of a conceptual framework: Models of practice 1. Models of disablement- Nagi model, National Center for Medical Rehabilitation Research disablement model, 1993 (NCMRR) model, World Health Organisation model, 2. International Classification of Function and disability (ICF) format. International Classification of Function and disability (ICF) Coding • History and development of the ICF • The ICF and the WHO family of international classifications • Components of the ICF • ICF coding • Benefits of Using ICF 3. Hypothesis – oriented clinical practice	10	**Didactic Lecture** **Symposium**
4	EXAMINATION AND EVALUATION i. Motor Control ii. Neonate iii. High risk infant iv. Low birth weight & very low birth weight child v. Preterm infant.	20	**Didactic Lecture** **Observation** **Practical demonstration**

5	OUTCOMES AND SCALES Theoretical foundation of Newborn / developmental surveillance and screening - Basis of test development target population psychometric properties of the commonly used developmental scales: Tests and Scales of milestones, motor, behavioural, activities of daily living (ADL), mobility, functional capabilities, neuro-behavioural, Intelligence, and other screening tools for Infant and child, Neuropsychological and cognitive	30	**Didactic Lecture** **Seminars** **Symposiums** **Workshops** **Clinical Demo**
6	ANTHROPOMETRIC ASSESSMENT	4	**Didactic Lecture** **Practicals**
7	ASSESSMENT AND EVALUATION OF BALANCE AND FITNESS	4	**Didactic Lecture** **Practicals**
8	PEDIATRIC PHYSICAL EXAMINATION Principles of Laboratory investigations Computerized Tomography Scan, Magnetic Resonance Imaging, Electromyography, Nerve Conduction Study, Evoked Potentials, Muscle Biopsy, Thoracic Imaging, Pulmonary Function Tests, and Exercise Testing. Cardiovascular Exercise Testing- Endurance, strength, flexibility and body composition) through various methods in children Sports performance evaluation Rationale for exercise prescription in children	10	**Didactic Lecture** **Clinical Demo** **Practicals** **Seminars** **Supervised Clinical based Practice**
9	Pediatric orthopaedic, neurological and cardiorespiratory assessment	10	**Didactic Lecture** **Practicals**
10	Pediatric scale specific assessment of various neurological, orthopaedic, cardio respiratory conditions.	10	**Didactic Lecture** **Practicals**
11	ASSESSMENT OF Dyslexia and autistic child Cultural, family and environment of the child Child abuse and child neglect Pediatric burns Sports injuries in children Pediatric gait	10	**Didactic Lecture** **Practicals** **Symposium** **Workshops** **Supervised Clinical based Practice**
12	Disability evaluation of the child	2	**Didactic Lecture** **Practicals**
13	Recent advances in the assessment and scales in pediatric	5	**Didactic Lecture** **Seminars**

SUGGESTED REFERENCES

1. Physical Rehabilitation, Susan B.O Sullivan, 4th & 5th editions, 2007, Jaypee Brothers.,
2. Pediatric Physical Therapy, Jan Stephen Tecklin, 3rd (1999) and 4th (2008) editions, Lippincott Williams & Wilkins.
3. Physiotherapy in Pediatrics, Roberta B. Shepherd, 3rd edition, 1995, Butterworth Heinemann
4. Guyton and Hall, Textbook of Medical Physiology, Saunders.
5. Neurological Rehabilitation, Darcy A. Umphred, 4th & 5th edition, 2007, 2001, Mosby.
6. Physical Therapy for Children, Suzann K.Campbell, 3rd edition, 2006, Saunders Elsevier.

JOURNALS

1. Indian Journal of Pediatrics
2. Pediatric Physical Therapy
3. Physical Therapy
4. Developmental Child Medicine and Neurology

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SPECIALITY (Part- II): PHYSIOTHERAPY INTERVENTIONS 180 hours

S.NO	CONTENT	HOURS	TEACHING METHOD
1	General Principle of Treatment	2	**Didactic Lecture**
2	Theoretical Basis of Treatment Concept Motor Learning –Theories & Stages of Learning	5	**Didactic Lecture Seminars**
3	Hypothesis Oriented Clinical Practice	1	**Didactic Lecture**
4	Evidenced Based Pediatric Physiotherapy	1	**Didactic Lecture**
5	The child's development of functional movement i. Motor development theories ii. Developmental processes and principles iii. Stages of motor development	3	**Didactic Lecture Seminars**
6	Reflexes and Reactions i. Survival and vestigial reflexes ii. Attitudinal postural reflexes iii. Righting reactions iv. Balance reactions	3	**Seminars**
7	Ethical and Legal Framework of pediatric Physical therapy practice	2	**Didactic Lecture Symposium**
8	Models of team interaction and service delivery in Pediatric Physical Therapy practice	1	**Didactic Lecture**
9	Theoretical framework and clinical practice of Pediatric Physiotherapy approaches: i. Roods approach ii. Bobath and Neuro Developmental Therapy (NDT) iii. Proprioceptive Neuromuscular Facilitation (PNF) iv. Vojta concept v. Sensory Integration Therapy (SI) vi. Myofascial Release (MFR) vii. Pediatric manual therapy viii. Conductive education ix. Adjunctive therapy x. Systems/based task/oriented approach xi. Functional Electrical Stimulation xii. Body Weight Support Treadmill Training xiii. Constraint Induced Movement Therapy xiv. Mirror therapy, and Virtual reality xv. Biofeedback, Robotics xvi. Aquatic therapy xvii. Lung expansion therapy and ventilator xviii. Bronchial hygiene therapy/postural drainage xix. Humidification, Oxygen therapy, Nebulization	35	**Didactic Lecture Workshops Practical Demonstration Skill Based Learning Clinical Demo Supervised Clinical based Practice**

10	Physical Modalities in Pediatric Rehabilitation	5	**Didactic Lecture** **Practical**
11	Physiotherapy for high risk neonates in intensive care - Early intervention strategies	5	**Practical** **Supervised** **Clinical based** **Practice**
12	Physiotherapy for Pediatric Neuro-muscular and Neuro surgical conditions i. Acute bacterial meningitis ii. Tuberculous meningitis iii. Encephalitis and encephalopathies iv. Guillain-Barré syndrome (GBS) v. lntracranial space occupying lesions vi. Hydrocephalus vii. Neural tube defects viii. Acute hemiplegia of childhood ix. Paraplegia and quadriplegia x. Ataxia xi. Cerebral palsy xii. Developmental coordination Disorder xiii. Brachial Plexus lesion xiv. Poliomyelits xv. Traumatic brain injury	30	**Didactic Lecture** **Workshops** **Practical** **Demonstration** **Skill Based** **Learning** **Supervised** **Clinical based** **Practice** **Self Learning**
13	Physiotherapy for Pediatric Musculoskeletal conditions i. Flat foot ii. Clubfoot iii. Perthes Disease iv. Juvenile Rheumatoid Arthritis v. Infantile idiopathic scoliosis vi. Torticollis vii. Fractures in Pediatrics	20	**Didactic Lecture** **Workshops** **Practical** **Demonstration** **Skill Based** **Learning** **Supervised** **Clinical based** **Practice** **Self-learning**
14	Physiotherapy for Pediatric Cardio Respiratory medical and surgical Conditions i. Acute lower respiratory tract infections ii. Tuberculosis iii. Bronchial asthma iv. Lung abscess v. Bronchiectasis vi. Acute respiratory distress syndrome (ARDS) vii. Acyanotic congenital heart defects viii. Cyanotic heart disease ix. Rheumatic fever and rheumatic heart disease	20	**Didactic Lecture** **Workshops** **Practical** **Demonstration** **Skill Based** **Learning** **Supervised** **Clinical based** **Practice** **Self-learning**

15	Physiotherapy for i. Pediatric language, communication, behavioural problems ii. Pediatric oncology iii. Pediatric surgeries iv. Poly trauma (Road Traffic Accident) v. Burns vi. Childhood obesity vii. Pediatric Pain viii. Developmental Disorders (Arthrogryposis Osteogenesis Imperfecta Developmental Dysplasia of the Hip) ix. Muscular Dystrophy x. Autism spectrum disorders xi. Child abuse and neglect	20	**Didactic Lecture** **Workshops** **Practical Demonstration** **Skill Based Learning** **Supervised Clinical based Practice** **Self-learning**
16	Physiotherapy in assistive and adaptive technology in children	2	**Self Learning**
17	Exercise training for children	2	**Self Learning**
18	School based interventions	2	**Didactic Lecture**
19	Physiotherapy in promoting activity and participation in children	2	**Didactic Lecture**
20	Family and Community based intervention in pediatrics	5	**Didactic Lecture** **Community field visit**
21	Advanced Approaches in Pediatric Physical Therapy	5	**Seminars**
22	Physiotherapy after pediatric sports injuries	4	**Didactic Lecture** **Seminars**
23	Documentation	2	**Seminars**
24	Recent advances Pediatric physiotherapy Intervention	3	**Seminars**

SUGGESTED REFERENCES:

1. Pediatric Physical Therapy, Jan Stephen Tecklin, 4th edition, Lippincott Williams & Wilkins.
2. Physiotherapy in Pediatrics, Roberta B. Shepherd, 3rd edn, 1995, Butterworth Heinemann.
3. Physiotherapy for Children, Teresa Pountney, 2007, Butterworth Heinemann Elsevier.
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