



ರಾಜೀವ್ ಗಾಂಧಿ ಆರೋಗ್ಯ ವಿಜ್ಞಾನಗಳ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಕರ್ನಾಟಕ, ಬೆಂಗಳೂರು
Rajiv Gandhi University of Health Sciences, Karnataka, Bangalore

4th T Block, Jayanagar, Bangalore – 560 041

AUTH/REV-MPT/ 024/2015-16

27/08/2015

NOTIFICATION

Sub: Ordinance relating to revised syllabus of **Master of Physiotherapy (MPT)**.

- Ref:1) Recommendations of Board of Studies in Physiotherapy, through its meeting dated 08.05.2015.
2) Approval of Academic Council through its meeting dated 28.05.2015
3) Approval of Syndicate in its 113th Meeting held on 26.06.2015

In exercise of the powers conferred by Section 35(2) of RGUHS Act 1994, the Syndicate in its 113th meeting held on 26/06/2015, is pleased to notify the Approval of ordinance relating to revised Syllabus of **Master of Physiotherapy (MPT)** as shown in Annexure appended herewith.

The Ordinance shall come into force from the academic year 2015-16.

By Order,


REGISTRAR

To:

The Principals of colleges affiliated to RGUHS conducting MPT course.

Copy to:

1. The Principal Secretary to Governor, Governor's Secretariat, Raj Bhavan, Bangalore – 560 001.
2. Principal Secretary to Government, Health & Family Welfare Department, (Medical Education), Vikasa Soudha, Bangalore –560 001.
3. The Director, Department of Medical Education, Anand Rao Circle, Bangalore – 560 009.
4. PA to Vice-Chancellor / Registrar / Registrar (Eva.) / Finance Officer.
5. Director, Curriculum Development Cell.
6. The System Analyst, RGUHS to host it on RGUHS Website.
7. Guard File / Office Copy.

Master of Physiotherapy - MPT

REGULATION & CURRICULUM

2015



Rajiv Gandhi University of Health Sciences, Karnataka
4th 'T' Block, Jayanagar, Bangalore 560 041.

**ORDINANCE GOVERNING MASTER OF PHYSIOTHERAPY (MPT)
COURSE - 2015**

Rs.

Copies may be obtained from :

The Director,
Prasaranga,
Rajiv Gandhi University of Health Sciences,
4th T Block, Jayanagar,
Bangalore 560 041

Rajiv Gandhi University of Health Sciences, Karnataka, Bangalore

The Emblem



The Emblem of the Rajiv Gandhi University of Health Sciences is a symbolic expression of the confluence of both Eastern and Western Health Sciences. A central wand with entwined snakes symbolises Greek and Roman Gods of Health called Hermis and Mercury is adapted as symbol of modern medical science. The pot above depicts Amrutha Kalasham of Dhanvanthri the father of all Health Sciences. The wings above it depicts Human Soul called Hamsa (Swan) in Indian philosophy. The rising Sun at the top symbolises knowledge and enlightenment. The two twigs of leaves in western philosophy symbolises Olive branches, which is an expression of Peace, Love and Harmony. In Hindu Philosophy it depicts the Vanaspathi (also called as Oushadi) held in the hands of Dhanvanthri, which are the source of all Medicines. The lamp at the bottom depicts human energy (kundalini). The script “Devahitham Yadayahu” inside the lamp is taken from Upanishath Shanthi Manthram (Bhadram Karnebhi Shrunuyanadev...), which says “**May we live the full span of our lives allotted by God in perfect health**” which is the motto of the Rajiv Gandhi University of Health Sciences.

Rajiv Gandhi University of Health Sciences, Karnataka, Bangalore

Vision Statement

The Rajiv Gandhi University of Health Sciences, Karnataka, aims at bringing about a confluence of both Eastern and Western Health Sciences to enable the humankind “Live the full span of our lives allotted by God in Perfect Health.”

It would strive for achievement of academic excellence by Educating and Training Health Professionals who

Shall recognize health needs of community,

Carry out professional obligations Ethically and Equitably and in keeping with National Health Policy,

It would promote development of scientific temper and Health Sciences Research.

It would Encourage inculcation of Social Accountability amongst students, teachers and institutions.

It would Support Quality Assurance for all its educational programmes

Motto

“Right for Rightful Health Sciences Education”

(Schedule annexed to University Notification No.

)

**Revised Ordinance Governing Regulations and Curriculum of
Master of Physiotherapy Course (2 Year)**

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PROGRAM TITLE

Master of Physiotherapy (MPT)

COURSE OUTLINE

The Masters Degree in Physiotherapy is a two year program consisting of classroom teaching, self academic activities and clinical posting. In the first year theoretical basis of physiotherapy is refreshed along with research methodology and biostatistics. The students are rotated in all areas of clinical expertise during this period. They are required to choose their study for dissertation and submit a synopsis. During the second year the students will be posted in their area of specialty. They are required to complete and submit their dissertation. The learning program includes seminars, journal reviews, case presentations, case discussions and classroom teaching. Some of the clinical postings are provided at other reputed centers in the country in order to offer a wider spectrum of experience. The students are encouraged to attend conference, workshop to enhance their knowledge during the course of study. University examinations are held at the end of second year.

ELECTIVES OFFERED AND DEGREE AWARDED

1. Master of Physiotherapy in Musculoskeletal Disorders and Sports (MPT-MSS)
2. Master of Physiotherapy in Neurological and Psychosomatic Disorders (MPT-NPD)
3. Master of Physiotherapy in Cardio-Respiratory Disorders (MPT-CRD)
4. Master of Physiotherapy in Community Physiotherapy (MPT-CP.)
5. Master of Physiotherapy in Pediatrics (MPT-Ped.)

GOALS OF COURSE

1. Preparation of a postgraduate student towards his/her professional autonomy with self regulating discipline at par with global standards
2. Formation of base of the professional practice by referral as well as first contact mode using evidence based practice.
3. Impartation of research basis in order to validate techniques & technology in practice to physiotherapy.

4. Acquainting a student with concept of quality care at the institutional as well as the community levels.
5. Inculcation of appropriate professional relationship in multidisciplinary set up, patient management and co partnership basis.
6. Preparation of students to address problems related to health education and community physiotherapy.
7. Practicing the concept of protection of rights of the community during referral as well as first contact practice.
8. Incorporation of concept of management in physiotherapy.
9. Experience in clinical training and undergraduate teaching partly.
10. Providing the honest, competent and accountable physiotherapy services to the community.

ELIGIBILITY FOR ADMISSION

Candidates who have passed B.Sc. (PT) or BPT degree from institutions where the mode of study is a full time program, with minimum 3½ years / 4 ½ years duration from this university or any other university in India or abroad as equivalent with not less than 50% of marks in aggregate and have completed 6 months of compulsory rotating internship in Physiotherapy Colleges recognized by RGUHS - Karnataka are eligible. Candidates who have passed BPT through correspondence or Distance Education program are not eligible.

OR

Candidates who have passed BPT through Bridge Course or through Lateral Entry after completing their Diploma in Physiotherapy from institutions where the mode of study is a full time program from this university or any other university in India or abroad as equivalent with not less than 50% of marks in aggregate and have completed 6 months of compulsory rotating internship in Physiotherapy Colleges recognized by RGUHS - Karnataka are eligible. Candidates who have passed BPT through correspondence or Distance Education program are not eligible.

OBTAINING ELIGIBILITY CERTIFICATE

No candidate shall be admitted for the postgraduate degree course unless the candidate has obtained and produced the eligibility certificate issued by Rajiv Gandhi University of Health Sciences, Karnataka. The candidate has to make the application to the university with the following documents along with the prescribed fee.

1. B.P.T. or B.Sc. (PT) provisional / degree certificate issued by the respective university.
2. Marks cards of all the university examinations passed.

3. Completion of internship certificate.
4. Proof of SC/ST or category-I as the case may be.

Candidate should obtain the eligibility certificate before the last date for admission as notified by the university.

A candidate who has been admitted to postgraduate course should register his/her name in the University within a month of admission after paying the registration fee.

INTAKE OF STUDENTS

The intake of students to the course shall be in accordance with the ordinance in this behalf. The guide student ration should be **1:3**

DURATION OF THE COURSE

The duration of master of physiotherapy course shall be extended over a period of two continuous Year's on a full time basis. Any break in the career, power of extension of the course and the fixation of the term shall be vested with the University.

MEDIUM OF INSTRUCTION

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

COURSE CONTENT & STRUCTURE

The course subjects will be outlined under two major headings – Core Subjects or Subjects Mandatory for all students and Electives or Subjects of Specialty

Subjects	Teaching & Learning Methods	Weekly Class hours	Total Hours
CORE SUBJECTS 1. Principles of Physiotherapy Practice 2. Research Methodology and Biostatistics 3. Exercise Physiology 4. Electrophysiology 5. Physical and Functional Diagnosis 6. Physiotherapeutics 7. ELECTIVE a. Musculoskeletal Disorders and Sports b. Neurological and Psychosomatic Disorders c. Cardio-Respiratory Disorders d. Community Physiotherapy e. Pediatrics	Lectures	2	180
	Seminars	2	180
	Practicals and Demonstrations	4	360
	Clinical Discussions	2	180
	Clinical Case presentations	2	180
	Journal Club	2	180
	Classroom Teaching	1	90
	Library	3	270
	Clinical Training	15	1350
	Synopsis & Dissertation work		3
Community Camps, Field Visits, Participation in Workshops & Conferences		60	
TOTAL HOURS		36	3240

METHODS OF TRAINING

The training of postgraduate for MPT degree shall be on a full time pattern with graded responsibilities in the management and treatment of patients entrusted to his / her care. The participation of all the students in all facets of educational process is essential. Every candidate should take part in seminars, group discussions, clinical rounds, care demonstrations, clinics, journal review meetings & CME. Every candidate should be required to participate in the teaching and training programs of undergraduate students. Training should include involvement in laboratory experimental work and research studies.

MONITORING PROCESS OF STUDIES (INTERNAL MONITORING)

It is essential to monitor the learning progress of each candidate through continuous appraisal and regular assessment. It not only helps teachers to evaluate students, but also students to evaluate themselves. The monitoring is done by the staff of the department based on participation of students in various teaching / learning activities. It may be structured and assessment be done using checklists that assess various aspects.

Model checklist are given in the table 1 to 7 which may be copied and used

Work diary: Every candidate shall maintain a work diary and record his/her participation in the training programmes conducted by the department such as journal reviews, seminars etc.

Special mention may be made of the presentations by the candidate as well as details of clinical or laboratory procedures, if any conducted by the candidate. The work diary shall be scrutinized and certified by the Head of the Department and Head of the Institution and presented in the university examination.

Periodic tests: The College may conduct periodic tests. The test may include written theory papers, practical, viva voce and clinical in the pattern of university examination. Records and marks obtained in such tests will be maintained by the Head of Department and sent to the University, when called for.

ATTENDANCE

A candidate is required to attend a minimum of 80% of training and of the total classes conducted during each academic year of the MPT course. Provided further, leave of any kind shall not be counted as part of academic term without prejudice to minimum 80% of training period every year. Any student who fails to complete the course in this manner shall not be permitted to appear the University Examinations. A candidate who does not satisfy the requirement of attendance even in one subject or more will not be permitted to appear for University Examination. He / She will be required to make up the deficit in attendance to become eligible to take subsequent examination.

DISSERTATION

Every candidate pursuing MPT degree course is required to carry out work on a selected research

Project under the guidance of a recognized postgraduate teacher. The results of such a work shall be submitted in the form of dissertation.

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

Every candidate shall submit to the Registrar of university in the prescribed proforma a synopsis containing particulars of proposed dissertation work within 6 months from the date of commencement of the course on or before the dates notified by the university. The synopsis shall be sent through the proper channel. 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. Guide will be only a facilitator, advisor of the concept and hold responsible in correctly directing the candidate in the methodology and not responsible for the outcome and results.

1. Introduction
2. Aims or objectives of study
3. Review of literature
4. Material and methods
5. Results
6. Discussion
7. Conclusion
8. References

9. Appendices

The written text of dissertation shall not be less than 50 pages and shall not exceed 100 pages excluding references, tables, questionnaires and other annexure. It should be neatly typed in double line spacing on one side of paper (A4 size, 8.27" x 11.69" and bound properly. Spiral binding should be avoided. The guide, head of the department and head of the institution shall certify the dissertation.

Four copies of dissertation thus prepared shall be submitted to the Registrar (Evaluation), 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 other college of the same university. Any one- evaluator acceptance other than the guide will be considered as a precondition for eligibility to take

GUIDE

The academic qualification and teaching experience required for recognition by this university is as per the criteria for recognition of MPT teachers for guides.

Criteria for recognition of MPT teacher / guide

1. M.Sc. (PT) /MPT with five years teaching experience working on a full time position at a Recognized institution.
2. The age of guide / teacher shall not exceed 63 years.
3. The guide student ratio should be 1:3

Change of Guide

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

SCHEDULE OF EXAMINATION

The University shall conduct examination for MPT course at the end of 2nd year. The Examinations shall be known as MPT Final Examination. A student shall register for all the papers when he/she appears for the first time.

If a student fails in theory and/or practical of MPT Final Examination, he/she has to reappear for all the papers of examination in both theory and practical respectively.

SCHEME OF EXAMINATION

Component	Subject	Written	Practical	Viva	Total
Theory	Paper I	100	100	50	450
	Paper II	100			
	Paper III	100			
	Paper IV	100	100	50	250
Practical					
GRAND TOTAL					700

PARTICULARS OF THEORY QUESTION PAPERS AND DISTRIBUTION OF MARKS

A written examination consisting of 4 question papers each of three hours duration & each paper carrying 100 marks. The Paper-IV will be Elective subject & a separate paper for each elective subject chosen by the candidate will be given. Particulars of Theory question paper & distribution of marks are shown below

PAPER	SUBJECTS	MARKS
Paper I	Principles of Physiotherapy Practice. Research Methodology and Biostatistics Exercise Physiology Electrophysiology	100
Paper II	Physical and Functional Diagnosis	100
Paper III	Physiotherapeutics	100
Paper IV	Elective a. Musculoskeletal Disorders and Sports b. Neurological and Psychosomatic Disorders c. Cardio-Respiratory Disorders. d. Community Physiotherapy e. Pediatrics	100

Practical Marks and schedule:

Clinical Examination will be aimed at examination of clinical skills and competence of the candidates for undertaking independent work as a specialist.

PRACTICAL	SUBJECT	AREA	MARKS
Practical 1	Short case from area other than Elective to assess investigative and diagnostic skills	Non Elective	50
Practical 2	Short case from area other than Elective to assess patient management skills	Non Elective	50
VIVA VOCE	5 Spotters in non elective area and viva on non elective subject	Non Elective	50
Practical 3	Major Elective long case aimed at examining clinical skills and competency of the candidate for undertaking independent work as specialist	Elective	100
VIVA VOCE	Viva on dissertation/elective.	Elective	50

PARTICULARS OF VIVA VOCE

Viva- Voce examination shall aim at assessing depth of knowledge, logical reasoning, confidence & oral communication skills and spotters. Special emphasis shall be given to dissertation work during the MPT Part examination. The marks of Viva-Voce examination shall be included in the clinical examination to calculate the percentage and declaration of results.

PATTERN OF MODEL QUESTION PAPER FOR MPT EXAMINATION

MPT – Theory: Maximum Marks: 100 (No choice)

Duration: 3 Hours

1. Long Essay (2 Questions) – $2 \times 20 = 40$ Marks
2. Short Essay (6 Questions) – $6 \times 10 = 60$ Marks

MPT Practical / Clinical – 150 Marks

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

Non Elective: Practical-I + Practical-II + Viva-voce = 150 Marks

Short case (1) – $1 \times 50 = 50$ Marks

Short case (2) – $1 \times 50 = 50$ Marks

Viva Voce = 50 Marks

Elective: Practical II+ Viva Voce

Long Case (1) - $1 \times 100 = 100$ Marks

Viva Voce = 50 Marks

[Marks Entry: Practical/Clinical = 100 Marks

Viva-voce = 50 Marks]

EXAMINERS

Non Elective Practical-There shall be 2 examiners. One of them shall be external outside the zone and the other shall be internal preferable from the same college.

Elective Practical- There shall be 2 examiners. One of them shall be external outside the University and the other will be internal preferable from the same college.

CRITERIA FOR DECLARING AS PASS IN UNIVERSITY EXAMINATION

A candidate shall be declared pass if he / she secures a 50% of marks in theory aggregate and secures a 50% of marks in Practical / Clinical and Viva-Voce aggregate.

DECLARATION OF CLASS

First class with distinction – 75% & above in aggregate provided the candidate passes the examination in 1st attempt. First class – 60% & above in aggregate provided the candidate pass the examination in 1st attempt.

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

DESCRIPTIVE COURSE CONTENT

PAPER 1

PRINCIPLES OF PHYSIOTHERAPY PRACTICE

1. History taking, assessment tests, Patient Communication, documentation of findings, treatment planning and organization. Ethical issues in practice of physiotherapy.
2. Documentation of rehabilitation assessment and management using International Classification of Functioning Disability and Health (ICF)
3. Use of Standardized scales and tests in various assessments. Pyschometric properties. Interpretation in Physiotherapy practice.

RESEARCH METHODOLOGY AND BIOSTATISTICS

A. GENERATING RESEARCH

1. Introduction to research
2. Types of research
3. Defining a research question
4. Qualitative study designs
Grounded theory and Phenomenological methods.
5. Use of Delphi process
6. Quantitative study
7. Type I and type II bias
8. Study design: types
Case study, Case series, longitudinal cohort, Pre post design, Time series design, Repeated measures design, Randomized control design.
9. Sampling design, calculating minimum sample size based on design
10. Measurement: Properties of measurement: reliability, validity, responsiveness, MCID.
11. Outcome measures: Use of outcome measures in rehabilitation research
12. Research Methods: Designing methodology, Reporting results, Type I and Type II bias.

B. CONSUMING RESEARCH

13. Communicating research.
14. Evaluating published research: looking at the evidence
15. Introduction to evidence based practice, evaluating evidence,
16. Asking clinical questions

C. TRANSLATING RESEARCH

17. Translating of evidence into practice: strategies
18. Use of clinical practice guidelines, clinical pathways, prediction rules to inform practice.

BIOSTATISTICS

19. Introduction to biostatistics
20. Probability and sampling distributions

DATA ANALYSIS

DESCRIPTIVE STATISTICS

21. Measures of central tendency, Tests of normality

INFERENTIAL STATISTICS

22. Tests of comparison\tests of correlation, Goodness of fit, Chi square test.
23. Repeated measures ANOVA
24. Epidemiological analysis – odds ratio, risk ratio
25. Regression analysis

Understanding Systematic review and Meta analysis.

EXERCISE PHYSIOLOGY

1. Sources of Energy, Energy Transfer and Energy Expenditure at rest and various physical activities.
2. Responses and Adaptations of various systems to different types of Exercise and training.
3. Environmental influence on Performance.
4. Body consumption, nutrition and caloric balance.
5. Considerations of age and sex in exercise and training.
6. Fatigue assessment and scientific organization of work-rest regimes to control fatigue.
7. Energy consumption MET value of various exercises and activity

ELECTROPHYSIOLOGY

1. Anatomy and physiology of peripheral nerve, muscle and neuromuscular junction.
2. Electrical properties of muscle and nerve.
3. Instrumentation for neuromuscular electrical stimulation.
4. Muscles plasticity in response to electrical stimulation.
5. Electrical stimulation and its effects on various systems.

PAPER 2

PHYSICAL & FUNCTIONAL DIAGNOSIS

1. Principles of pathological investigations and imaging techniques related to neuromuscular, skeletal and cardiopulmonary disorders with interpretation.
2. Developmental screening, motor learning –motor control assessment.
3. Anthropometric measurements.
4. . Physical fitness assessment.
5. Evaluation Methods, Special tests used in Musculoskeletal, Neurological and Cardiopulmonary disorders.
6. Clinical Electro Physiological testing.
7. Evaluation of aging.
9. Aids and appliances, adaptive functional devices – assessment.
10. Exercise ECG testing and monitoring.
11. Pulmonary function tests.
12. Physical disability evaluation and disability diagnosis.
13. Gait analysis and diagnosis.
14. Methods of Kinetic and kinematic investigation for joints and gait.

PAPER 3

PHYSIOTHERAPEUTICS

1. Pain (modulation and management of pain)
2. Women's Health and physiotherapy.
3. Geriatric Rehabilitation to include theories of aging.
4. Exercise planning and prescription for health and fitness with special emphasis to cardiovascular disease, Obesity and Diabetes.
5. Neurological approaches used in Rehabilitation to include theories of motor control and motor learning.
6. Biofeedback methods and usage
- 7.
8. Manual therapy – different schools of thought – Principles and techniques.
9. General Guidelines in Cardiac Rehabilitation, Pulmonary Rehabilitation
10. Burns Rehabilitation and Cancer Rehabilitation Protocol.
management.

11. CPR, monitoring systems and defibrillators and artificial respirators.
12. Principles of Pediatric Physiotherapy, approaches and management.
13. Musculoskeletal Physiotherapy- guidelines in trauma care, soft tissue injury and . rheumatology care
15. Physiotherapy in Psychiatric conditions.
16. Yoga

Concept of Yogic Practices – Kinds of Yogic Practices; Asana, Pranayama.

Asana: Definition, Scope and Limitations of Asanas – Classification of Asanas –Safety Measures and Precautions while performing Asanas

Pranayama: Meaning – Different Phases in Pranayama Practice Safety Measures and Precautions.

PAPER 4
ELECTIVE SUBJECTS

MUSCULOSKELETAL DISORDERS AND SPORTS

1. Applied anatomy with emphasis on Biomechanics & Kinesiology of Human motion and Work Physiology
2. Clinical assessment and rationale of Laboratory investigations along with differential diagnoses.
3. Clinical Symptomatology, Pathophysiology and Patho-mechanics of musculoskeletal conditions Physiotherapy management following fractures, dislocations and their complications, Amputations, cumulative trauma disorders and Burns.
4. Physiotherapy management in degenerative disorders and allied conditions.
5. Physiotherapy in post operative management of metabolic, hormonal, neoplastic and infective conditions of bones and joints.
6. Physiotherapy following arthroplasty, implants and soft tissue repairs.
7. Pre & post operative physiotherapy in tendon transfer. Electrical stimulation and biofeedback procedures.
8. Kinetic and kinematics analysis for various functional activities.
9. Functional assessment (Hand function, Gait, Posture A.D.L; occupational work).
10. Hand Rehabilitation.
11. Assessment of locomotor impairments, disabilities and disability evaluation.
12. Physiotherapy management of locomotor disorder, principles of medical and surgical aspects, sports psychology and retraining.
13. Analysis and classification of sports and sports specific injuries and its management.
14. Management of sport injuries, sports fitness
15. Principles of Injury Prevention
16. Medico legal issues in sports, Sports Psychology, Sports Nutrition and Sports pharmacology.
17. Orthopaedic implants-designs, materials, indications, post-operative assessment and training
18. External aids, appliances, adaptive self-help devices; prescription, biomechanical compatibility, check-out and training.
19. Manual therapy: soft tissue manipulations and mobilization, neural mobilization, acupuncture.(Cyriax, Maitland, Butler, McKenzie, Kaltenborn, Mulligan)

20. Pilates-school of thought, Chiropractic school of thought, Osteopathic school of thought
21. Myofascial Release technique and Muscle Energy technique.
22. Joint manipulation – peripheral joints and vertebral joints.
23. Taping Techniques
24. Recent Advances in Musculoskeletal Disorders and Sports Physiotherapy

NEUROLOGICAL AND PSYCHOSOMATIC DISORDERS

1. Anatomy and Physiology of Nervous System.
2. Normal sequential behavioral and Physiological changes throughout the developmental arc.
3. Neurophysiology of balance, coordination and locomotion.
4. Clinical symptomatology and Pathophysiology of the neurological disorders
5. Principles of clinical neuro diagnosis and investigation.
6. Various Evaluation Scales and Assessment methods used in neurological rehabilitation.
7. Electrodiagnosis:
 - a. Neurophysiology of Nerve conduction studies and Electromyography.
 - b. Instrumentation of Electrical stimulator, EMG, SFEMG, NCS (Nerve Conduction Studies).
 - c. Electrical study of reflexes (H- reflex, Axon reflex, F- response, Blink reflex, Jaw jerk, Tonic Vibration Reflex).
 - d. Repetitive nerve stimulation.
 - e. Evoked potentials (SSEP, MEP, BAERA, and VER).
 - f. Interpretation of neurophysiologic responses in Neuropathy, myopathy and neuromuscular disorders.
8. Evaluation of A.N.S dysfunction with reference to psycho-physiological testing, Neuro-psychological functions.
9. Biofeedback Training and Perception testing and training.

10. Theories of motor control and theories of motor learning, its application in physiotherapy.
11. Treatment approaches in neurological rehabilitation: Bobath, NDT, SI, Brunnstrom, Roods, PNF, Vojta, MRP, MFR.
12. Pathophysiology and Management of tonal abnormalities (Spasticity, Rigidity, Hypotonia, and Dystonia)
13. Medical and Physiotherapy management following Cerebrovascular accidents.
14. Traumatic Brain Injury. (ICU management, Coma stimulation, Restoration of motor control, Rehabilitation and community integration)
15. Traumatic spinal cord injuries. (ICU management, Coma stimulation, Restoration of motor control, Rehabilitation and community integration)
16. Physical therapy management of demyelinating, inflammatory, infectious, degenerative and metabolic diseases of the nervous system.
17. Physical therapy management of Motor neuron diseases, neuromuscular junction disorders, Brain tumor, and Neuro cutaneous disorders
18. Diseases of spinal cord, peripheral nerves and cranial nerves
- 19.
20. Cognitive disorders and its rehabilitation.
21. Oromotor rehabilitation.
22. Vestibular disorders and its rehabilitation.
23. Bladder and Bowel dysfunction and its rehabilitation.
24. Assessment and management of various neurological gait disorders.
25. Recent Advances in Neurological Rehabilitation.

CARDIO-RESPIRATORY DISORDERS

1. Anatomy and physiology of cardio-vascular and respiratory systems.
2. Biomechanics of respiration.
3. Differences between the adult and pediatric cardiopulmonary system.
4. Clinical assessment, rationale of laboratory investigations and differential diagnosis,
5. Evaluation of respiratory dysfunctions, lung function tests – volumetric, analysis of blood gases, X-ray chest.
6. Evaluation of cardiac dysfunction. [ECG, exercise ECG testing, Holter monitoring etc., Echo- cardiogram, X-Ray, Imaging techniques etc.]
7. Evaluation of peripheral vascular disorders: clinical blood flow studies,
8. Risk factors and preventive measures in cardio respiratory conditions
9. Cardio-respiratory emergencies and management principles – medication, critical care, indications of surgical intervention, stabilization of vital functions defibrillation.
10. Intensive care unit – Concept and set-up, equipment for advanced methods of resuscitation, monitoring and patient management: artificial airways, ventilators, pulse – oxymetry etc
11. Oxygen therapy.
12. Cardio-pulmonary resuscitation.
13. Respiratory physiotherapy techniques – Techniques to improve lung volume; techniques reduce the work of breathing and techniques to clear secretions.
14. Physiotherapy management for common conditions in the ICU
15. Physiotherapy management following general Medical & Surgical conditions
16. Physiotherapy management of peripheral vascular disorders
17. Exercise testing, planning and prescription: aerobic and anaerobic exercise training.
18. Respiratory Pharmacology
19. Physiotherapy management in Obstructive and restrictive lung disorders
20. Pulmonary Rehabilitation
21. Physiotherapy management following congenital and acquired heart diseases
22. Cardiac rehabilitation – Conservative and post-operative management.
23. Physiotherapy modalities used for wound healing

24. Exercise Prescription for health promotion and fitness for special populations- DM, Obesity, IHD, COPD, HTN
25. Recent advances in Cardio respiratory physiotherapy.

COMMUNITY PHYSIOTHERAPY

1. Health and Illness; Levels of Healthcare & Fitness
2. Basic Concepts of rehabilitation and foundations of rehabilitation
3. Institute based rehabilitation services and multi-disciplinary approach.
4. Methodology of CBR with reference to National Health Delivery system.
5. Role of National Institutes, District Rehabilitation Centre and Primary Health Centre (with appropriate exposure).
6. Public awareness to the various disabilities. Communications. Message generation and dissipation.
7. Persons with disability; Act – 1995 and related Government infrastructure.
8. Role of Government in CBR, inter-sectoral programs and co-ordination. Implementation of the Act.
9. Role of Non-Government organizations in CBR.
10. Scope of community physiotherapy.
11. Disability detection and early intervention.
12. Physiotherapist as a Master Trainer in CBR.
13. Evaluation and theories of aging; Assessment of the elderly; Exercise prescription for the elderly; Psychosocial and safety issues in elderly
14. Geriatric Rehabilitation
15. Holistic physiotherapy for the aged.
16. Occupational Health, Occupational Hazards, Industrial Hygiene, Vulnerable workers group and labor law.
17. Ergonomics, Principles, Scope, Issues related to hand tools, posture, material handling and lifting, risk evaluation and work place evaluation
18. Prevention of work related Injuries and redesigning workspace, Designing auditory and visual displays for workers; Occupational stress; Environmental Pollution – noise, vibration etc.
19. Physiotherapy role in industry – preventive, intervention, ergonomic and rehabilitative. return to work evaluation” and “work conditioning programs”

20. Women's Health: Women's reproductive health and health care; Exercise prescription in pre and post natal stage;
21. Diagnosis and treatment of musculoskeletal pain and dysfunction during pregnancy and post menopause
22. Treatment of Incontinence Pelvic girdle pain and Pelvic floor dysfunction; Special problems related to women.
23. Recent Advances in Community Physiotherapy.

PAEDIATRICS

1. Normal motor development (development during Prenatal, Infancy, and child hood)
2. Reflex maturation.
3. Developmental assessment and diagnosis.
4. Developmental screening using various scales.
5. Genetic basis of paediatric disorders. Embryology & genetic counseling.
6. Cardio-respiratory assessment of neonate and infant and related paediatric disorder.
7. Principles of laboratory investigations for differential diagnosis.
8. Clinical symptomatology and patho-physiology of locomotor and cardiopulmonary disorders.
9. Growth and development of a child and its disorders
10. Maturation, Pathophysiological and recovery process in the CNS.
11. Assessment of progressive locomotor disorders – Neuropathic and Myopathic.
12. Early intervention- high risk babies, Neonatal care and management
13. Management of congenital locomotor disorders including the prosthetic and orthotic management.
14. Analysis of fitness and exercise prescription for special pediatric populations – cerebral palsy, downs syndrome, polio, muscular dystrophy, juvenile diabetes and obesity.
15. Management of neuro pediatric patients.
16. Motor learning process – Theory and Techniques.
17. Disorders of perception and sensory integration.
18. Integrated approach in management of pediatric disorders.
19. Pediatric surgeries and its post-operative management.
20. Adaptive equipment for physically challenged children.
21. Physical therapy in public schools.
22. Sports and fitness in paediatrics.
23. Modifications in rural setting for pediatric conditions.
24. Recent Advances in Pediatric Physiotherapy

RECOMMENDED BOOKS

1. Scientific basis of human movement – Gowitzke, Willams and Wilkins, Baltimore, 1988 3rd edition.
2. Clinical biomechanics of spine – White A,A and Panjabi-J.B Lippincot, Philadelphia 1978.
3. Kinesiology – Brunnstrom Singe, F.A. Davis- Philadelphia – 1966
4. Text book of work physiotherapy – Guyton, Prim Books Bangalore-1991 8th edition
5. Hand book of physiology in Aging- Masoro, C.R.C Press, 1981
6. Research for physiotherapists- Hicks C., Churchill Living stone, Edingburgh 1995 Ed.\$
7. Introduction to Research in Health Sciences-Polgar S, Churchill Livingstone, London, 1988.
8. Elements of Research in physical Therapy- Currier D.P, Willams & Wilkins, Baltimore, 1990 Ed.3
9. Hand book of Research Method – Sproull, Screcrow Press, 1998.
10. Physical therapy Research- Domholdt, W.B Saunders, Philadelphia. 1993
11. Foundations of Clinical Research-Applications to Praction, Leslie G. Porthey, Mary Watkins; Pearson Education,3rd Edition .
12. Public power & Administration – Wilenski, Hale & Iremonger, 1998.
13. Public Therapy administration & Management – Hickik Robert J.
14. Management Principles for physiotherapists – Nosse Lorry J.
15. Human neuroanatomy – Carpenter M.B, Williams & Wilkins, Baltimore, 1983
16. Physical therapy Assessment in Early Infancy –Wilhelm Churchill Liningstone, New York, 1993
17. Physical therapy for children – Campbell Suzann K, W.B Saunders, Philadelphia 1994
18. Physical management of Multiple Handicapped – Freser, William & Wilkins, Baltimore.
19. Elements of paediatric physiotherapy- Eckerley P, Churchill Liningstone, Edingburgh, 1993
20. Physiotherapy in pediatrics – Shepherd R. Heinmann, London, 1980 2nd edition
21. The Growth chart – WHO, Geneva, 1986
22. Orthotics in neurological rehabilitation – Aisen, Demos Publication, New York 1992
23. Manual of nerve condition velocity techniques – De Lisa, Raven press, New York, 1982
24. Electrodiagnosis in diseases of nerve and muscle – Kimura J, F.A Davis, Philadelphia.
25. Mobilization of the extremity joints – Kaltenbore, Harper and Row, Philadelphia.1980
26. Chest physiotherapy in Intensive care unit – Makezie, Willams & Wilkins, Baltimore.
27. Cardiopulmonary symptoms in physiotherapy –Cohen M, Churchil, Livingstone, London-1988.
28. Physical rehabilitation: assessment and treatment – O’Sullivan, F.A Davis, Philadelphia 1994.
29. Neuro-rehabilitation – Farber, W.B Saunders, Philadelphia 1982
30. Orthopaedic physical therapy- Donatteli, London Churchill Livingstone, 1994.

31. Gaits analysis – Perry J., Black Thorofare, New Jersey, 1992
32. Bio – feedback- A practitioners guide - Kerb D, Guiford press.
33. The neural basis of motor control – Black I, Churchill Livingstone, London-1987
34. Physical therapy management of Parkinson's disease – Turnbull Gerode , Churchill, Livingstone, London-1994
35. Abnormal postural reflex activity caused by Brain lesions – Bobath b. Aspen publications, Rockville, 1997.
36. Disorders of voluntary muscle- Eigel, Churchill, Livingstone, Edinburgh 1988.
37. A Clinician's view of neuro muscle disorder – Brook M.H Williams and Wilkins, Baltimore 1986.
38. Proprioception, neuro muscular facilitation techniques – Knot M. and Voss, Harper and Row, New York 1972 2nd edition.
39. Stroke rehabilitation – Laidler, Capman and Hall, London 1994.
40. Motor relearning programme for stroke – Carr, Aspen publication, Rock ville, 1987.
41. Adult hemiplegia: evaluation and treatment – Bobath B, Heinmann, London 1988.
42. Paraplegia and tetraplegia – Brombley, Churchill, Livingstone, Edinburgh 1991
43. Child with spina Bifida – Anderson E.M. and Spain B., Methun, London 1977.
44. A manual of neonatal intensive care – Robert N.R.C, Edward Arnold, London 1986
45. Measurement in physical therapy – Churchill, Livingstone, London 1988.
46. Soft tissue pain and disability – Cailliet Rene, Jaypee Brothers, New Delhi 1992
47. Myofascial pain and dysfunction – Travell, Willams & wilkins, Baltimore 1983
48. Physical therapy of the low back – Twomey, Churchill, Livingstone, London 1983
49. Sport injuries of the shoulder – Souza Thomas A., Churchill, Livingstone, London 1994
50. Vertebral manipulation – Matiland G.D, Boston, Butterworth & Co. Boston, 1997.
51. Peripheral manipulation - Matiland G.D, Boston, Butterworth & Co. Boston, 1997.
52. Sports and physical therapy – Bernhardt Donna, Churchill, Livingstone, London 1995
53. Hand rehabilitation – Christine- Churchill, Livingstone, London 1995
54. Cardiopulmonary symptoms in physiotherapy practice – Cohen M., Churchill, Livingstone, London 1988
55. Clinical application of ventilatory support – Kinby Churchill, Livingstone, New York 1990
56. Cardiopulmonary Physiotherapy – Irwin, C.V., Mosby, St. Louis 1990.
57. Pulmonary rehabilitation: guidelines to success – Hoidkins, Butterworth, Boston, 1984.
58. Cardiac rehabilitation – Amundsen I.R, Churchill, Livingstone, London 1988
59. Obstetrics and gynaecologic physical therapy – Wilder Elnine, Churchill, Livingstone, New York 1994

60. Physiotherapy in obstetrics and gynaecology – Polden & Mantle, Jaypee Brothers, New Delhi 1994
61. Physical therapy of the cancer patient – McGaryex charles Churchill, Livingstone, New York 1989.
62. Industrial therapy – Key G.L, Mosby, St. Louis 19887.

REFERENCE JOURNAL

1. Physical Therapy (APTA, America)
2. Physiotherapy (CSP London)
3. American Journal Of Physical Medicine And Rehabilitation.
4. Physiotherapy (Canada)
5. Physiotherapy Theory And Practice.
6. Australian Journal Of Physiotherapy
7. Journal Of Indian Association Of Physiotherapy
8. Clinical Kinesiology
9. Journal Of Biomechanics
10. American Journal Of Sports Exercises.
11. Pediatric Physical Therapy.
12. Journal Of Neurologic Physical Therapy.
13. Journal Of Rehabilitation Research And Development.
14. Journal of Cardio Pulmonary Rehabilitation.
14. Archives Of Physical Medicine And Rehabilitation.
15. Journal Of Pediatric Orthopedics.
16. Journal Of Neurological Sciences.
17. Clinical Rehabilitation.
18. Spine.
19. Manual Therapy.
20. Gait And Posture.

APPENDIX

GRADED RESPONSIBILITY IN CARE OF PATIENTS AND OPERATIVE WORK

(Structured Training Schedule of clinical & elective subjects only)

Category	I year MPT	II year MPT
O	20 Cases	20 Cases
A	20 Cases	30 Cases
PA	100 Cases	60 Cases
PI	20 Cases	50 Cases

Key: O – Observes

A – Assisted a more senior Physiotherapist

PA – Performed procedure under the direct supervision of a senior specialist.

PI – Performed Independently

- Teaching Activities – UG Teaching
- Learning Activities : Self Learning, Use of computers & library
- Participation in departmental activities;
 - a) Journal Review meetings -Minimum six in two years
 - b) Seminars -Minimum four in two years
 - c) Clinical presentation -Minimum 25 cases in two years
 - d) Special clinics -Minimum 20 cases in two years
 - e) Inter departmental meetings -Minimum 5 in two years
 - f) Community work, camps / field visits -Minimum four in two years
 - g) Clinical rounds -Minimum 250 in two years
 - h) Dissertation work -Minimum 200 hours in two years
 - i) Participation in conferences/ presentation of paper -Minimum 2 in two years
 - j) Any other – Specify (eg : CME)

Rotation and posting in other departments in any – minimum 2 months in 1 specialty

TABLE - 1

**MODEL CHECK-LIST FOR EVALUATION OF JOURNAL REVIEW
PRESENTATIONS**

Name of the Student :

Name of Faculty / Observer :

Date :

Sl.No	Items for observation during presentation	Poor (0)	Below Average (1)	Average (2)	Good (3)	Very Good (4)
1.	Article chosen was					
2.	Extent of understanding the scope & objectives of the paper by the candidate					
3.	Whether cross references have been consulted					
4.	Whether other relevant publications consulted					
5.	Ability to respond to questions on the paper / subject					
6.	Audio – Visual aids used					
7.	Ability to defend the paper					
8.	Clarity of presentation					
9.	Any other observation					
	Total Score					

TABLE - 2**MODEL CHECK-LIST FOR EVALUATION OF SEMINAR PRESENTATIONS**

Name of the Student :

Name of Faculty / Observer :

Date :

Sl.No	Items for observation during presentation	Poor (0)	Below Average (1)	Average (2)	Good (3)	Very Good (4)
1.	Whether other relevant publications consulted					
2.	Whether cross references have been consulted					
3.	Completeness of preparation					
4.	Clarity of presentation					
5.	Understanding of subject					
6.	Ability of answer questions					
7.	Time scheduling					
8.	Appropriate use of Audio – Visual aids					
9.	Overall performance					
10.	Any other observations					
	Total Score					

TABLE - 3

MODEL CHECK-LIST FOR EVALUATION OF CLINICAL WORK

Name of the Student :

Name of Faculty / Observer :

Date :

Sl.No	Points to be considered	Poor (0)	Below Average (1)	Average (2)	Good (3)	Very Good (4)
1.	Regularity of attendance					
2.	Punctuality					
3.	Interaction with colleagues and supportive staff					
4.	Maintenance of case records					
5.	Presentation of cases during rounds					
6.	Investigations of work up					
7.	Beside manners					
8.	Rapport with patients					
9.	Treatment approaches & techniques					
10.	Overall quality of ward work					
	Total Score					

TABLE - 4**EVALUATION FOR CLINICAL PRESENTATION**

Name of the Student :

Name of Faculty / Observer :

Date :

Sl.No	Points to be considered	Poor (0)	Below Average (1)	Average (2)	Good (3)	Very Good (4)
1.	Completeness of History					
2.	Whether all relevant points elicited					
3.	Clarity of presentation					
4.	Logical order					
5.	Mentioned all positive and negative points of importance					
6.	Accuracy of general physical examination					
7.	Whether all physical signs missed or misinterpreted					
8.	Whether any major signs missed or misinterpreted					
9.	Diagnosis – Whether it follows logically from history & findings					
10.	Investigations required Special investigation					
11.	AIMS					
12.	MEANS					
13.	Treatment Techniques					
14.	Others					
	Grand Total					

TABLE - 5

MODEL CHECK-LIST FOR EVALUATION OF TEACHING SKILL PRACTICE

Name of the Student :

Name of Faculty / Observer :

Date :

Sl.No.	Details	Strong Point	Weak Point
1.	Communication of the purpose of the talk		
2.	Evokes audience interest in the subject		
3.	The introduction		
4.	The sequence of ideas		
5.	The use of practical examples & / or illustrations		
6.	Speaking style (enjoyable, monotonous, etc., -Specify)		
7.	Attempts audience participation		
8.	Summary of the main points at the end		
9.	Asks questions		
10.	Answer questions asked by the audience		
11.	Rapport of speaker with his audience		
12.	Effectiveness of the talk		
13.	Uses Audio visual aids appropriately		

TABLE - 6**MODEL CHECK LIST FOR DISSERTATION PRESENTATION**

Name of the Student :

Name of Faculty / Observer :

Date :

Sl.No	Points to be considered	Poor (0)	Below Average (1)	Average (2)	Good (3)	Very Good (4)
1.	Interest shown in selecting a topic					
2.	Appropriate review of literature					
3.	Discussion with guide & other faculty					
4.	Quality of protocol					
5.	Preparation of proforma					
6.	Grand Total					

TABLE - 7**CONTINUOUS EVALUATION OF DISSERTATION WORK BY GUIDE**

Name of the Student :

Name of Faculty / Observer :

Date :

Sl.No	Items for observation during presentation	Poor (0)	Below Average (1)	Average (2)	Good (3)	Very Good (4)
1.	Periodic consultation with guide					
2.	Regular collection of case material					
3.	Depth of analysis / discussion					
4.	Departmental presentation of findings					
5.	Quality of final output					
6.	Others					
7.	Total Score					

Source: Regulations and Curricula for Postgraduate Degree and diploma courses in

Medical Sciences, RGUHS, Karnataka.