

Master of Physiotherapy - MPT

REGULATION & CURRICULUM

2009



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

**ORDINANCE GOVERNING MASTER OF PHYSIOTHERAPY (MPT)
COURSE - 2009**

Rs.

Copies may be obtained from :

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Prasaranga,
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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)**

CONTENTS

	<i>Particulars</i>	<i>Page No.</i>
1.	Emblem of RGUHS	
2.	Vision Statement of RGUHS	
3.	Notification	
4.	Content	
5.	Program title	
6.	Course outline	
7.	Electives offered and degree awarded	
8.	Goals of course	
9.	Eligibility for admission	
10.	Intake of students	
11.	Duration of the course	
12.	Medium of instruction	
13.	Course content & structure	
14.	Method of training	
15.	Monitoring process of studies (internal monitoring)	
16.	Attendance	
17.	Dissertation	
18.	Guide	
19.	Schedule of Examination	
20.	Scheme of Examination	
21.	Examiners	
22.	Criteria For Declaring As Pass In University Examination	
23.	Declaration of class	
24.	Descriptive course content	
	1. Principles of Physiotherapy Practice	
	2. Research Methodology and Biostatistics	

	3. Biomechanics	
	4. Exercise Physiology	
	5. Electrophysiology	
	6. Physical and Functional Diagnosis	
	7. Physiotherapeutics	
	ELECTIVE	
	1. Musculoskeletal Disorders and Sports	
	2. Neurological and Psychosomatic Disorders	
	3. Physiotherapy in Cardio-Respiratory Disorders	
	4. Community Rehabilitation	
	5. Pediatrics	
25.	Recommended Books	
26.	Reference Journals	
27.	Appendix	
28.	Graded Responsibility In Care Of Patients And Operative Work	
29.	Check Lists	

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 first year and 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 Rehabilitation (MPT-Com.)
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 1:5

DURATION OF THE COURSE

The duration of master of physiotherapy course shall be extended over a period of two continuous years 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.

I year:	MPT Part-I	0 – 12 months
II year:	MPT Part-II	13 – 24 months

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	Lectures	2	180
2. Research Methodology and Biostatistics	Seminars	2	180
3. Biomechanics			
4. Exercise Physiology	Practicals and Demonstrations	4	360
5. Electrophysiology			
6. Physical and Functional Diagnosis			
7. Physiotherapeutics	Clinical Discussions	2	180
ELECTIVE			
a. Musculoskeletal Disorders and Sports	Clinical Case presentations	2	180
b. Neurological and Psychosomatic Disorders	Journal Club	2	180
c. Cardio-Respiratory Disorders			
d. Community Rehabilitation	Classroom Teaching	1	90
e. Pediatrics			
	Library	3	270
	Clinical Training	15	1350
Synopsis & Dissertation work		3	210
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 programmers 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 of 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.

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. 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 up the examination.

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 62 years.
3. The guide student ratio should be 1:5
4. Relaxation for the criteria one and two no with standing above in view of acute shortage of teachers, the person having three years post MPT teaching experience working on a full time basis may be considered as P.G teachers. Similarly persons with maximum age of 63 years may be considered for being guide and examiner in cases of acute shortage of examiners until further amendments by the university in this regard.

Change of Guide

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 each year. The examinations shall be known as MPT Part-I Examination and MPT Part-II Examination.

A student shall register for all the papers of a year when he/she appears for the first time.

If a student fails in the first attempt of MPT Part-I Examination, the student may reappear for the supplementary examination which will be conducted within 4-6 months of declaration of results.

If a student fails in the first attempt of MPT Part-I Examination, or the supplementary examination for MPT Part-I thereof, he/she will continue the course with his/her batch. However he/she can register and appear for MPT Part-II Examination only after clearing the MPT Part-I Examination. If a student fails in the first attempt of MPT Part-II Examination, the student may reappear for the supplementary examination which will be conducted within 4-6 months of declaration of results.

If a student fails in theory and/or practical of MPT Part-I or MPT Part-II Examination, he/she has to appear for all the papers of each examination in both theory and practical respectively.

SCHEME OF EXAMINATION

MPT Part-I					
Component	Subject	Written	Practical	Viva	Total
Theory	Paper-I	100	-	-	300
	Paper-II	100	-	-	
	Paper-III	100	-	-	
Practical	Practical-I	-	30	40	100
	Practical-II	-	30		
TOTAL		300	60	40	400

MPT Part-II					
Component	Subject	Written	Practical	Viva	Total
Theory	Paper-IV	100	-	-	200
	Paper-V	100	-	-	
Practical & Viva-voce	Practical-III	-	100	50	200
	Practical-IV	-	50		
TOTAL		200	150	50	400

PARTICULARS OF THEORY QUESTION PAPERS AND DISTRIBUTION OF MARKS

A written examination consisting of 5 question papers each of three hours duration & each paper carrying 100 marks. The Paper-V 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	1. Principles of Physiotherapy Practice 2. Research Methodology and Biostatistics	100
Paper-II	3. Biomechanics 4. Exercise Physiology 5. Electrophysiology	100
Paper-III	6. Physical and Functional Diagnosis	100
Paper-IV	7. Physiotherapeutics	100
Paper-V	8. Elective a. Musculoskeletal Disorders and Sports b. Neurological and Psychosomatic Disorders c. Cardio-Respiratory Disorders d. Community Rehabilitation e. Pediatrics	100

PARTICULARS OF CLINICAL / PRACTICAL EXAMINATION AND DISTRIBUTION OF MARKS

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

PRACTICAL	SUBJECT	MARKS
Practical-I	Short case from area other than Elective to assess investigative and diagnostic skills	30
Practical –II	Short case from area other than Elective to assess patient management skills	30
Practical-III	Major Elective long case aimed at examining clinical skills and competency of the candidate for undertaking independent work as specialist	100
Practical-IV	Short case from area of Elective to assess patient management skills	50

EXAMINERS

There shall be 2 examiners. One of them shall be external outside the university and the other shall be internal preferable from the same college or as decided by the university.

CRITERIA FOR DECLARING AS PASS IN UNIVERSITY EXAMINATION

A candidate shall be declared pass if he / she secures a paper minimum 40% of maximum marks in each paper and 50% of maximum marks in theory aggregate and secures a minimum 40% of maximum marks in each practical and 50% of maximum 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

PRINCIPLES OF PHYSIOTHERAPY PRACTICE

1. Development of Physiotherapy Profession
2. Ethical issues in practice of physiotherapy-Clinical, Research and Academics. Administration, legislation, rules and regulations governing physiotherapy practice- National & International (WCPT and IAP). Scope of Physiotherapy in Hospital, Community & Industry.
3. History taking, assessment, tests, Patient communication, documentation of findings, treatment organization and planning/execution for intervention.
4. Documentation of rehabilitation assessment and management using International Classification of Functioning Disability and Health (ICF)
5. Standardized tests and scales used in various types of cases for assessment and interpretation in Physiotherapy practice.

RESEARCH METHODOLOGY AND BIOSTATISTICS

1. Introduction to biostatistics and research methodology.
2. Basic probability and sampling distributions.
3. Processing and analysis of data.
4. Tests of Analysis of variance & co-variance.
5. Significance based on parametric and non-parametric tests
6. Research process and criteria of good research
7. Sampling and Sample size determination.
8. Various epidemiological study designs.
9. Validity and reliability evaluation.
10. Format of scientific documents. (structure of protocols, formats reporting in scientific journals, systematic reviews and meta analysis)

BIOMECHANICS

1. Biomechanics of Tissues and structures of the musculoskeletal system.
2. Normal and applied Biomechanics of Spine, Upper extremity and Lower extremity.
3. Biomechanics of posture.
4. Biomechanics of respiration, circulation, hand function and gait.
5. Methods of kinetics and kinematics investigation

6. Patient Positioning, Body Mechanics and Transfer Techniques
7. Ergonomic Approach to lifting and handling, workspace and Environment

EXERCISE PHYSIOLOGY

1. Sources of Energy, Energy Transfer and Energy Expenditure at rest and various physical activities.
2. Physiology of Movement
3. Responses and Adaptations of various systems to Exercise and training.
4. Environmental influence on Performance.
5. Special aids to performance and conditioning.
6. Body consumption, nutrition and caloric balance.
7. Considerations of age and sex in exercise and training.
8. Exercise prescription for health and fitness with special emphasis to cardiovascular disease, Obesity and Diabetes.
9. Fatigue assessment and scientific organization of work-rest regimes to control fatigue.

ELECTROPHYSIOLOGY

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

PHYSICAL & FUNCTIONAL DIAGNOSIS

1. Clinical examination in general and detection of movement dysfunction.
2. Principles of pathological investigations and imaging techniques related to neuromuscular, skeletal and cardiopulmonary disorders with interpretation.
3. Developmental screening, motor learning –motor control assessment.
4. Anthropometric measurements.

5. Physical fitness assessment by Range of motion, Muscle strength, endurance and skills, Body consumption, Fitness test for sports.
6. Evaluation Methods, Special tests and Scales used in Musculoskeletal, Neurological and Cardiopulmonary disorders.
7. EMG and Biofeedback.
8. Biophysical measurements, physiotherapy modalities, techniques and approaches.
9. Evaluation of aging.
10. Aids and appliances, adaptive functional devices to improve movement dysfunction.
11. Exercise ECG testing and monitoring.
12. Pulmonary function tests and Spirometry.
13. Physical disability evaluation and disability diagnosis.
14. Gait analysis and diagnosis.

PHYSIOTHERAPEUTICS

1. Pain (neurobiology , various theories , modulation and management of pain)
2. Maternal and child care in general physiotherapy.
3. Theories of motor control and motor learning.
4. Theories of aging.
5. Cardiopulmonary medications and their effect on activity performance.
6. Exercise planning and prescription.
7. Use of Exercise therapy techniques and application on various types of cases.
8. Application of electrotherapy techniques on patients, monitoring of dosages and winding up procedure.
9. Ergonomic aspects of exercise on oxygen, energy consumption MET value of various exercises and activity.
10. Effect of aerobic, anaerobic as well as Isometric and Isokinetic exercises on cardiac function.
11. Physiotherapy in psychiatric conditions.
12. Massage, Mobilization and Manipulation
13. Manual therapy – different schools of thought
14. Principles of Neurological approaches.
15. Facilitation and inhibition techniques.
16. General Guidelines to be followed in Cardiac Rehabilitation, Pulmonary Rehabilitation, Burns Rehabilitation and Cancer Rehabilitation Protocol.
17. CPR, monitoring systems and defibrillators and artificial respirators.
18. Physiotherapy in common conditions of skin.

19. Physiotherapy following Plastic Surgery.
20. Physiotherapy Following Obstetric and Gynecological Disorders.
21. Yoga
 - a) Concept of Yogic Practices – Kinds of Yogic Practices; Asana, Pranayama, Kriya, Mudra, Bandha, Dhyana.
 - b) Asana: Definition, Scope and Limitations of Asanas – Classification of Asanas –Safety Measures and Precautions while performing Asanas
 - c) Pranayama: Meaning – Different Phases in Pranayama Practice Safety Measures and Precautions.
 - d) Meaning & benefits of Bandha – Different Bandhas. Meaning of Mudra – Types of Mudra
 - e) Practicing methods and benefits of Kriyas – Meaning – Types of Kriyas; Neti; Dhauthi.
 - f) Meaning & concept of Meditation – Yogic practices and physical exercise. Yoga Practices and Other Systems of Exercises – Asanas Vs. Muscular Exercises – Pranayama Vs Deep Breathing Exercises – Importance of Nerve Culture in Yoga - Yoga and Competition – Yoga and Modern Education

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
4. Physiotherapy management following fractures, dislocations and their complications, Amputations, cumulative trauma disorders and Burns.
5. Physiotherapy management in degenerative disorders and allied conditions.
6. Physiotherapy in post operative management of metabolic, hormonal, neoplastic and infective conditions of bones and joints.
7. Physiotherapy following arthroplasty, implants and soft tissue repairs.
8. Pre & post operative physiotherapy in tendon transfer. Electrical stimulation and biofeedback procedures.
9. Kinetic and kinematics analysis for various functional activities.
10. Functional assessment (Hand function, Gait, Posture A.D.L; occupational work).
11. Hand Rehabilitation.
12. Assessment of locomotor impairments, disabilities and disability evaluation.
13. Physiotherapy management of locomotor disorder, principles of medical and surgical aspects, sports psychology and retraining.
14. Neurological complications of locomotor disorders.
15. Analysis and classification of sports and sports specific injuries and its management.
16. Management of sport injuries, sports fitness
17. Principles of Injury Prevention
18. Medico legal issues in sports, Sports Psychology, Sports Nutrition and Sports pharmacology.
19. Rehabilitation of paediatric musculoskeletal disorders.
20. Orthopaedic implants-designs, materials, indications, post-operative assessment and training.
21. External aids, appliances, adaptive self-help devices; prescription, biomechanical compatibility, check-out and training.
22. Manual therapy: soft tissue manipulations and mobilization, neural mobilization, acupuncture.(Cyriax, Maitland, Butler, McKenzie, Kaltenborn, Mulligan)
23. Pilates-school of thought, Chiropractic school of thought, Osteopathic school of thought
24. Myofascial Release technique and Muscle Energy technique

25. Joint manipulation – peripheral joints and vertebral joints.
26. Neuromuscular Taping Techniques
27. Electro diagnosis: Electromyography and evoked potential studies.
28. Community based rehabilitation in musculoskeletal disorders.
29. Recent Advances in Musculoskeletal Disorders and Sports Physiotherapy.

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. Biofeedback training
9. Neuro-psychological functions. Perception testing and training.
10. Theories of motor control and theories of motor learning, its application in physiotherapy.
11. Common facilitatory and inhibitory techniques.
12. Treatment approaches in neurological rehabilitation: Bobath, NDT, SI, Brunnstrom, Roods, PNF, Vojta, MRP, MFR
13. Musculoskeletal treatment concept applied to neurology: Adverse neural tissue tension tests in upper limb and lower limb.
14. Pathophysiology and Management of tonal abnormalities (Spasticity, Rigidity, Hypotonia, and Dystonia)
15. Medical and Physiotherapy management following Cerebrovascular accidents.
16. Traumatic Brain Injury. (ICU management, Coma stimulation, Restoration of motor control, Rehabilitation and community integration)
17. Traumatic spinal cord injuries. (ICU management, Coma stimulation, Restoration of motor control, Rehabilitation and community integration)
18. Physical therapy management of demyelinating, inflammatory, infectious, degenerative and metabolic diseases of the nervous system.

19. Physical therapy management of Motor neuron diseases, neuromuscular junction disorders, Brain tumor, and Neuro cutaneous disorders
20. Diseases of spinal cord, peripheral nerves and cranial nerves
21. Physiotherapy management for neuromuscular disorders.
22. Paediatric neurology (Cerebral Palsy, Developmental disorders, Neuropsychiatric disorders, Cerebral & Craniovertebral anomalies & metabolic disorders of nervous system).
23. Cognitive disorders and its rehabilitation.
24. Oromotor rehabilitation.
25. Vestibular disorders and its rehabilitation.
26. Bladder and Bowel dysfunction and its rehabilitation.
27. Assessment and management of various neurological gaits.
28. Rehabilitation following disorders of Special Senses, Speech. Language and Perception.
29. Associated functional disturbances of higher functions and their testing and training.
30. Application of Functional electrical stimulation and Bio-feedback in neurological rehabilitation.
31. Learning skills, A.D.L and functional activities.
32. Aids and appliances in neurological disorders. Prescriptions, testing and training.
33. Basic knowledge of drugs used for neurological conditions.
34. Assessment of fitness and exercise prescription for special neurological population – Stroke, Paraplegia, TBI, Multiple Sclerosis, MND, Parkinsonism, & Ataxia.
35. Community based rehabilitation for neurological dysfunction. Disability evaluation and management.
36. Recent Advances in Neurological Rehabilitation.

CARDIO-RESPIRATORY DISORDERS

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

26. Exercise Prescription for health promotion and fitness for special populations- DM, Obesity, IHD, COPD, HTN
27. C.B.R in Cardio-vascular and respiratory conditions.
28. Recent advances in Cardio respiratory physiotherapy.

COMMUNITY REHABILITATION

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. Physical fitness, stress management through yoga and psychosomatic approaches.
13. Home exercise programs for various classifications of disabilities.
14. Physiotherapist as a Master Trainer in CBR.
15. Physiotherapy in maternal and child health care.
16. Evaluation and theories of aging; Assessment of the elderly; Exercise prescription for the elderly; Psychosocial and safety issues in elderly
17. Geriatric Rehabilitation
18. Holistic physiotherapy for the aged.
19. Occupational Health, Occupational Hazards, Industrial Hygiene, Vulnerable workers group and labor law;
20. Industrial therapy, Injury prevention and returning the worker to productivity
21. Ergonomics, Principles, Issues related to hand tools, posture, material handling and lifting
22. Prevention of work related Injuries and redesigning workspace, Designing auditory and visual displays for workers; Occupational stress; Environmental Pollution – noise, vibration etc.
23. Physiotherapy role in industry – preventive, intervention, ergonomic and rehabilitative.
24. Women's Health : Women's reproductive health and health care; Exercise prescription in pre and post natal stage;
25. Diagnosis and treatment of musculoskeletal pain and dysfunction during pregnancy and post menopause;

26. Treatment of Incontinence and Pelvic floor dysfunction; Special problems related to women.
27. 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. CBR in 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., Churchhill Living stone, Edingburgh 1995 Ed.\$
7. Introduction to Research in Health Sciences-Polgar S, Churchhill 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. Public power & Administration – Wilenski, Hale & Iremonger, 1998.
12. Public Therapy administration & Management – Hickik Robert J.
13. Management Principles for physiotherapists – Nosse Lorry J.
14. Human neuroanatomy – Carpenter M.B, Williams & Wilkins, Baltimore, 1983
15. Physical therapy Assessment in Early Infancy –Wilhelm Churchill Liningstone, New York, 1993
16. Physical therapy for children – Campbell Suzann K, W.B Saunders, Philadelphia 1994
17. Physical management of Multiple Handicapped – Freser, William & Wilkins, Baltimore.
18. Elements of paediatric physiotherapy- Eckerley P, Churchill Liningstone, Edingburgh, 1993
19. Physiotherapy in pediatrics – Shepherd R. Heinmann, London, 1980 2nd edition
20. The Growth chart – WHO, Geneva, 1986
21. Orthotics in neurological rehabilitation – Aisen, Demos Publication, New York 1992
22. Manual of nerve condition velocity techniques – De Lisa, Raven press, New York, 1982
23. Electrodiagnosis in diseases of nerve and muscle – Kimura J, F.A Davis, Philadelphia.
24. Mobilization of the extremity joints – Kaltenbore, Harper and Row, Philadelphia.1980
25. Chest physiotherapy in Intensive care unit – Makezie, Willams & Wilkins, Baltimore.
26. Cardiopulmonary symptoms in physiotherapy –Cohen M, Churchil, Livingstone, London-1988.
27. Physical rehabilitation: assessment and treatment – O’Sullivan, F.A Davis, Philadelphia 1994.
28. Neuro-rehabilitation – Farber, W.B Saunders, Philadelphia 1982
29. Orthopaedic physical therapy- Donatteli, London Churchill Livingstone, 1994.
30. Yoga Therapy – Kuvalayananda Swami and Vinekar, popular prakashan, Bombya, 1992

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, 1897.
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.