



MGM INSTITUTE OF HEALTH SCIENCES

(Deemed University u/s 3 of UGC Act, 1956)

Grade 'A' Accredited by NAAC

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Master of Physiotherapy Program

Specialty – Neuro Physiotherapy

Program Outcomes for Master of Physiotherapy Program

Students who complete 2 years postgraduate program in Physiotherapy would earn a Master of Physiotherapy (MPT) specialty degree. The learning outcomes that a student should be able to demonstrate on completion of a degree level program include academic, personal, behavioral, entrepreneurial and social competencies. It is expected that a student completing a particular course must have a level of understanding of the subject and its sub-areas in consonance with the learning outcomes mentioned at the end of that course. Program learning outcomes include Physiotherapy specific skills, generic skills, transferable global skills and competencies that prepare the student for employment, higher education, research and develop them as contributing members for overall development of the society.

The program learning outcomes relating to MPT degree program Specialty –Neuro Physiotherapy, are summarized below:

PO 1	Professional ethic towards client respect, dignity and confidential responsibility.
PO 2	To practice communication skills with patient, caregiver and interdisciplinary relations.
PO 3	To identify the biopsychosocial component of pain and dysfunction.
PO 4	To have knowledge of basic sciences pertaining to Neurological system with sound clinical reasoning
PO 5	To have detailed knowledge of adult and pediatric neurological rehabilitation
PO 6	To understand the pathomechanics of spine and Extremities in Neurological Disorders
PO 7	To know evidence based practice and advances in clinical reasoning
PO 8	To understand the mechanism of pain and dysfunction

PO 9	To formulate hypothesis and clinical decision-making skills to assess and manage all neurological conditions
PO10	To develop skills in cardiopulmonary resuscitation and physiotherapy care of neurological patient in critical care units

Program Specific Outcomes for Master of Physiotherapy Program- Neuro Physiotherapy

Graduates of the Master of Physiotherapy program will be proficient in skills imbibed in the undergraduate program and in addition demonstrate skills to:

PSO 1	Critically evaluate, prioritize and apply physiotherapy approaches, paradigms and techniques and utilize appropriate, evidence-based skills, techniques and practice in managing and treating people with injury, disability or illness in a range of health care and/or rehabilitation settings.
PSO 2	Identify, analyze and respond appropriately to ethical dilemmas and challenges, and ethical implications of patient/client presentations.
PSO 3	Develop a reasoned rationale for clinical evidence-based physiotherapy intervention and design appropriate treatment/management plans to meet the needs of patients/clients within legislative, policy, ethical, funding and other constraint.
PSO 4	Acquire and utilize new knowledge, research, technologies and other appropriate resources and methods to optimize, and to ensure cost-effectiveness, quality and continuous improvement of health care delivery and outcomes.
PSO 5	Prepare students for professional practice as Physiotherapists. Graduates will be able to practice across a range of settings, including rural and remote areas. Emphasis will be placed on preparing a contemporary health professional to be client-centered and to work effectively within an interdisciplinary team.
PSO 6	Work creatively and effectively whilst upholding professional standards and relationships with a range of stakeholders (including clients, colleagues, careers, families, employers, insurers and others whose presence impacts on the patient/client, and other treatment providers and team members) with different understandings, perspectives and priorities influencing physiotherapy practice.
PSO 7	Adapt communication styles recognizing cultural safety, cultural and linguistic diversity

Course learning outcomes: are defined within the course content that makes up the program. The courses are structured such that learning is vertically and horizontally integrated into the curriculum. The CBCS curriculum offers a certain degree of flexibility in taking courses. Course learning is aligned to the program learning outcomes and graduate attributes. The MPT program is inclusive of 4 semesters inclusive of 12 core courses, (35 Credits), 6 ability enhancement compulsory courses (AECC- 14 credits), 6 ability enhancement elective courses (AEEC – 6 credits) and 3 discipline specific skill electives (SEC – 4 credits) and 2 generic electives (GEC – 2 credits). Clinical training (CLT) is included in each semester (22 credits). Research project will be submitted as a mandatory requirement for award of Master’s degree (7 credits).Evaluation of the courses vary as appropriate to the subject area, inclusive of

formative and summative assessment, ongoing comprehensive assessment in the form of closed and open book tests, objectively structured practical examination OSPE, objectively structured clinical examination OSCE, problem based assignments, practical assignments, observation of practical skills, project reports, case reports, viva, seminars, essays, and others.

Name of the Programme	Master of Physiotherapy
Name of the Course	Neuroanatomy, Physiology and Pathomechanics in Neurological conditions
Course Code	MPT025
Credit per Semester	3 credits
Hours per Semester	80 hours

Course Outcomes	
Student will be able to	
CO 1	identify & describe anatomical aspects of Nervous system.
CO 2	understand the physiological basis of Nervous system.
CO 3	identify & describe various structures of the Nervous system, mechanism of central and peripheral nervous system
CO 4	Apply knowledge of biomechanics and pathomechanics of joints in gait and posture in neurological condition

Name of the Programme	Master of Physiotherapy
Name of the Course	Functional Diagnosis and Principles of management in Neurorehabilitation
Course Code	MPT026
Credit per Semester	4 credits
Hours per Semester	100 hours

Course Outcomes	
Student will be able to	
CO 1	Describe theories and application of Motor Control and Motor Learning in Neurorehabilitation.
CO 2	Understand the basis and principles of Neuroplasticity and Recovery in Neurological conditions.
CO 3	Apply knowledge of Neurological system on functional impairment based on ICF model
CO 4	Formulate session, short term and long term goals based on principles of goal setting.

Name of the Programme	Master of Physiotherapy
Name of the Course	Electrotherapeutics in Neurorehabilitation
Course Code	MPT027
Credit per Semester	2 credits
Hours per Semester	40 hours

Course Outcomes	
Student will be able to	
CO 1	Apply knowledge of basics of electrotherapy principles in relation to neurological disorders
CO 2	Apply knowledge of physiology of pain in neurological conditions
CO 3	Evaluate and manage pain in neurological conditions

Name of the Programme	Master Of Physiotherapy (MPT) Specialty - Neuro Physiotherapy
Name of the Course	Cardiopulmonary Resuscitation
Course Code	MPTAECC001
Credit per Semester	2 credits
Hours per Semester	60 hours

Course Outcomes	
Student should be able to	
CO 1	To describe the importance of high quality CPR and its impact on survival
CO 2	To Describe all steps of chain of survival
CO 3	To apply BLS concepts of chain of survival
CO 4	To Recognize signs of someone needing CPR
CO 5	To Perform high quality CPR for an adult/ child/ infant
CO6	To Describe the importance of early use of Automated external defibrillator (AED)
CO7	To demonstrate appropriate use of an AED
CO8	To Provide effective ventilations by using a barrier device
CO9	To describe the importance of teams in multi- rescuer resuscitation
CO10	Describe techniques of relief of foreign-body airway obstruction for an adult/child/infant

Name of the Programme	Master Of Physiotherapy (MPT) Specialty - Neuro Physiotherapy
Name of the Course	Research methods
Course Code	MPTAECC002
Credit per Semester	2 credits
Hours per Semester	40 hours

Course Outcomes	
Student will be able to	
CO 1	understand basic concept of research, design, problems & sampling techniques of research.
CO 2	gain knowledge of various types of study designs and planning for the same.
CO 3	plan for a research study
CO 4	understand various methods of quantitative and qualitative data analyses
CO 5	describe the terminology in research, ethical issues and research process.
CO 6	describe important sources, and steps in reviewing of literature.
CO 7	understand sampling technique, research process, data collection, biostatics, correlation and statistical significance tests.
CO 8	identify and to be able to participate in or conduct descriptive, explorative, survey studies in physical therapy practice with statistics.

Name of the Programme	Master Of Physiotherapy (MPT) Specialty - Neuro Physiotherapy
Name of the Course	Bioethics, Health Management and Administration
Course Code	MPTAECC003
Credit per Semester	3 credits
Hours per Semester	60 hours

Course Outcomes	
CO 1	To describe the nature, meaning and principals of bioethics.
CO 2	To describe human dignity and human rights.
CO 3	To describe the benefit and harm of patient's right & dignity in Health care settings.
CO 4	To understand the role of constitutions and functions of W.H.O. and W.C.P.T and IAP.
CO 5	To be able to understand regarding management and administration, budget planning, leadership and teamwork.

Name of the Programme	Master Of Physiotherapy (MPT) Specialty - Neuro Physiotherapy
Name of the Course	Teaching Technology
Course Code	MPTAECC004
Credit per Semester	3 credits
Hours per Semester	80 hours

Course Outcomes	
Student will be able to	
CO 1	describe the philosophies of education.
CO 2	describe the role of education philosophies.
CO 3	describe recent new trends and issues regarding education.
CO 4	understand the concepts of teaching and learning with curriculum formation.
CO 5	describe methods of teaching, and conduct educational seminars and microteachings using new trends in education.

Semester II

Name of the Programme	Master of Physiotherapy (MPT)
Name of the Course	Adult Neurological Assessment Skills and Management
Course Code	MPT028
Credit per Semester	3
Hours per Semester	80

Course Outcomes	
Student will be able to	
CO 1	Evaluate a client with Neurological condition with detailed knowledge regarding approaches for various adult neurological assessment and management.
CO 2	Plan and deliver management strategies to a client with Neurological condition
CO 3	correlate clinical observations with investigations and be able to follow ICF pattern for identification of structural and functional impairments, identify difference in capacity and performance and factors affecting performance, and identify positive contributors and influence of negative barriers to treatment.
CO 4	Perform evaluation of disability, legislation & social care applicable to various neurological conditions as a mean of prevention and management.

Name of the Programme	Master of Physiotherapy (MPT)
Name of the Course	Movement Analysis & Assistive Technology in Adult Neurorehabilitation
Course Code	MPT029
Credit per Semester	4
Hours per Semester	100

Course Outcomes	
Student will be able to	
CO 1	Identify the essential components of task and perform a task analysis in neurological conditions
CO 2	Apply knowledge of assistive technology applicable to various neurological conditions as a mean of prevention and management.
Expected Competencies : Student will be able to	
EC 1	Perform task analysis of movement dysfunction in adult neurological conditions
EC2	Prescribe appropriate assistive technology applicable to various neurological conditions as a mean of prevention and management.

Name of the Programme	Master of Physiotherapy
Name of the Course	Electrodiagnosis
Course Code	MPT030
Credit per Semester	2 credits
Hours per Semester	40 hours

Course Outcomes	
Student will be able to	
CO 1	Have detailed knowledge regarding various neuro physiology of muscle and effect of various current on muscle applicable for neurological condition.
CO 2	Knowledge regarding various advanced electro diagnosis and its applicability to various pediatric and adult neurological conditions
Expected Competencies : Student will be able to	
EC 1	Perform basic electrodiagnostic testing
EC2	Apply the knowledge of advanced electro diagnosis for clinical decision making.

Name of the Programme	Master Of Physiotherapy (MPT)Specialty - Neuro Physiotherapy
Name of the Course	Legal issues and Professional ethics
Course Code	MPTAECC005
Credit per Semester	2 credits
Hours per Semester	40 hours

Course Outcomes	
CO 1	To provide the basis for participation in clinical risk management, risk management and patient safety committees and for further training as a risk / patient safety
CO 2	To ensure improvement of patient safety and care, to the prevention and management of legal claims and to healthcare delivery in general
CO 3	To understand the professional ethics and responsibility as a therapist.

Name of the Programme	Master Of Physiotherapy (MPT) Specialty - Neuro Physiotherapy
Name of the Course	Medical Device Innovation
Course Code	MPTGEC-001
Credit per Semester	2 credits
Hours per Semester	40 hours

Course Outcomes Students will be able to	
CO 1	Understand phases of device innovation
CO 2	Understand unmet health needs, inventing and evaluating a new technology
CO 3	Understand risks and challenges that are unique to medical device innovation

Name of the Programme	Master Of Physiotherapy (MPT) Specialty - Neuro Physiotherapy
Name of the Course	Scientific Writing
Course Code	MPTGEC-002
Credits per semester	2 credits
Hours per semester	40 hours

Course Outcomes Students will be able to	
CO 1	Understand scientific writing process, components of a research paper, formulation of research problem
CO 2	Methods of literature search
CO 3	Attain skills of organizing and composing a scientific paper
CO4	Analyze and review scientific papers
CO5	comprehend ethics of scientific writing
CO6	understand the editorial process for publication

Name of the Programme	Master Of Physiotherapy (MPT) Specialty - Neuro Physiotherapy
Name of the Course	Manual Mobilisation Techniques in Neurorehabilitation
Course Code	MPTSEC009
Credits per semester	2 credits
Hours per semester	60 Hours

Course Outcomes Students will be able to	
CO 1	Apply manual techniques of mobilisation in patient with neurological dysfunction
CO 2	Study objective improvement in mobility following mobilisation
CO 3	Demonstrate efficacy of mobilisation in adult and paediatric neurological conditions
Expected Competencies	
EC1	Apply techniques in patient with Neurological dysfunction
EC2	Study objective improvement in mobility following intervention

Name of the Programme	Master Of Physiotherapy (MPT) Specialty - Neuro Physiotherapy
Name of the Course	Vestibular Rehabilitation
Course Code	MPTSEC010
Credits per semester	2 credits
Hours per semester	60 Hours

Course Outcomes Students will be able to	
CO 1	Explain the anatomy and physiology of the vestibular system , recognize and state the clinical significance of diagnostic studies and lab data.
CO 2	Identify the signs, symptoms and co-existing problems of the client.
CO 3	Based on evaluation findings and medical records, formulate and give rationale for plan of care.

Semester III

Name of the Programme	Master of Physiotherapy (MPT)
Name of the Course	Pediatric Neurological Assessment Skills and Management
Course Code	MPT031
Credit per Semester	3
Hours per Semester	80

Course Outcomes Students will be able to	
CO 1	To introduce the students to the concepts related to Paediatric Neuro Assessment, task analysis and advances in treatment techniques and approaches for various disorders, outcome measures, disability evaluation and evaluation

Name of the Programme	Master of Physiotherapy (MPT)
Name of the Course	Movement Analysis & Assistive Technology in Pediatric Neurorehabilitation
Course Code	MPT032
Credit per Semester	4
Hours per Semester	100

Course Outcomes Students will be able to	
CO 1	Focus on understanding of movement analysis and application of assistive technology

Name of the Programme	Master of Physiotherapy
Name of the Course	Early Intervention in neonates & infants
Course Code	MPT033
Credit per Semester	3 credits
Hours per Semester	80 hours

Course Outcomes Students will be able to	
CO 1	Focus on understanding of assessment and management of high risk infants

Name of the Programme	Master Of Physiotherapy (MPT) Specialty – Neuro Physiotherapy
Name of the Course	Application of Yoga in Physiotherapy
Course Code	MPTSEC003
Credit per Semester	2 credits
Hours per Semester	60 hours

Course Learning Outcomes Student should be able to	
CO 1	describe origin of Yoga & its brief development and apply principles of Yoga for patient care in musculoskeletal, neurological and cardio-respiratory disorders
CO 2	demonstrate effective communication skills for understanding effect of yoga on health condition
CO 3	describe types of Yoga- Hatha Yoga , Raja Yoga, Laya Yoga, Bhakti Yoga, Gyan Yoga, Karma Yoga, compare and contrast differences in philosophies, plan appropriate program for patient care
CO 4	demonstrate and apply pranayama, techniques for patients (Anulom-vilom, Bhastrika, Bhramri, Nadishuddhi, Kapalbharti, Omkar, Suryabhedana) , analyze difference between Pranayama and deep breathing and its implications, explain meaning of meditation and its types and principles.
CO 5	demonstrate different types of asana, principles, effects . limitations to performing asanas, biomechanical implications of asanas and recommend modifications that can be used by patients
CO 6	conduct basic yoga session for patients with musculoskeletal, neurological and cardio-respiratory disorders

Name of the Programme	Master Of Physiotherapy (MPT) Specialty – Neuro Physiotherapy
Name of the Course	Exercise Psychology
Course Code	MPTAEEC-002
Credit per Semester	2 credits
Hours per Semester	40 hours

Course Outcomes At the end of the course , the candidate will be able to	
CO 1	discuss psychological aspects concerned with promotion of physical activity and exercise; psychological and emotional benefits linked with physical activity, exercise and sport and consequences of lack of exercise on behavior, inter personal skills and mental well being, discuss how psychological factors that influence exercise behavior.
CO 2	discribe factors influencing and serving as barriers to sustaining positive health behavior - self-esteem, depression, body image, anxiety, motivation, social support, and perceived control influence exercise behavior.
CO 3	apply methods to encourage positive health behavior, importance of understanding psychology of a person in designing sustainable programs to initiate and maintain positive health behavior
CO 4	discuss benefits of physical activity and exercise on mental health and well being
CO 5	discuss psychological factors influencing high skill performance and sports engagement

CO6	apply methods that can be used for psychological skills training
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Name of the Programme	Master Of Physiotherapy (MPT) Specialty – Neuro Physiotherapy
Name of the Course	Palliative Care in Neurological Conditions
Course Code	MPTAEEC-007
Credit per Semester	2 credits
Hours per Semester	40 hours

Course Outcomes	
At the end of the course , the candidate will be able to	
CO 1	Describe the philosophy and principles of hospice and palliative care that can be integrated across settings to affect quality care at the end of life.
CO 2	Apply the Palliative Care approach to all patients with Neurological terminal illnesses
CO 3	Accurately and clearly convey needed information and explanations to patients, families, and colleagues
CO 4	Demonstrate a team-based approach, by involving and working together with other members of the palliative care team, other related disciplines, and community agencies, depending on patient needs
CO5	Demonstrates ability to develop rapport and trust with patients and families

Semester IV

Name of the Programme	Master Of Physiotherapy (MPT) Specialty - Neuro Physiotherapy
Name of the Course	Recent Advances in management of adult Neurological conditions
Course Code	MPT034
Credit per Semester	4 credits
Hours per Semester	120 hours

Course Learning Outcomes	
Student will be able to	
CO 1	Review literature for recent advances in assessment and management of adult neurological disorders
CO 2	demonstrate clinical skills relevant to recent advances in Physiotherapy treatment techniques pertinent to adult neurological disorders
CO 3	correlate clinical observations with investigations and be able to follow the ICF pattern for identification of structural and functional impairments, identify difference in capacity and performance and factors affecting performance ,identify positive contributors and influence of negative barriers to treatment.
CO 4	institute relevant techniques for management adult neurological disorders to improve functional impairments

CO 5	Plan short and long term goals for Physiotherapy treatment and institute Physiotherapy based on the recent advances to enhance functional abilities, improve mobility, posture ,strengthen muscles, enhance wound/operative scar healing , relieve pain, musculoskeletal facilitation, re-education and training of muscle strength, endurance & motor control, posture and gait through skillful use of various therapeutic exercise techniques
CO 6	correlate clinical observations with investigations and be able to follow the ICF pattern for identification of structural and functional impairments, analyze difference in capacity and performance and factors affecting performance, analyze positive contributors and influence of negative barriers to treatment.

Name of the Programme	Master Of Physiotherapy (MPT) Specialty – Neuro Physiotherapy
Name of the Course	Recent advances in management of Paediatric Neurological Conditions
Course Code	MPT-035
Credit per Semester	4 credits
Hours per Semester	100 hours

Course Learning Outcomes	
Student will be able to	
CO 1	Review literature for recent advances in assessment and management of Pediatric neurological disorders
CO 2	demonstrate clinical skills relevant to recent advances in Physiotherapy treatment techniques pertinent to pediatric neurological disorders
CO 3	correlate clinical observations with investigations and be able to follow the ICF pattern for identification of structural and functional impairments, identify difference in capacity and performance and factors affecting performance ,identify positive contributors and influence of negative barriers to treatment.
CO 4	institute relevant techniques for management pediatric neurological disorders to improve functional impairments
CO 5	Plan short and long term goals for Physiotherapy treatment and institute Physiotherapy based on the recent advances to enhance functional abilities, improve mobility, posture ,strengthen muscles, enhance wound/operative scar healing , relieve pain, musculoskeletal facilitation, re-education and training of muscle strength, endurance & motor control, posture and gait through skillful use of various therapeutic exercise techniques
CO 6	correlate clinical observations with investigations and be able to follow the ICF pattern for identification of structural and functional impairments, analyze difference in capacity and performance and factors affecting performance, analyze positive contributors and influence of negative barriers to treatment.

Name of the Programme	Master Of Physiotherapy (MPT) Specialty - Neuro Physiotherapy
Name of the Course	ICU Management in Neurorehabilitation
Course Code	MPTAECC007
Credit per Semester	2
Hours per Semester	40

Course Outcomes	
Student will be able to	
CO 1	understand structural, functional impairment, evaluation of physical and neurological function of patients in the Intensive care unit
CO 2	describe the subjective and objective assessment of neurological function in ICU patients
CO 3	describe the different outcome measures and apply knowledge of basic investigative approaches in the medical system & surgical intervention regimes related to neurological impairment.
CO 4	form goals for management, prevent deleterious effects of immobilization /prolonged bed rest, select strategies for cure, care and prevention; adopt restorative & rehabilitative measures for maximum possible functional independence of a patient in the ICU following conservative or surgical management of neurological disease.

Ability Enhancement Elective Course	
Name of the Programme	Master Of Physiotherapy (MPT) Specialty – Neuro Physiotherapy
Name of the Course	Radiological Diagnosis
Course Code	MPTAEEC003
Credits per semester	2 credit
Hours per semester	60 hours

Course Outcomes	
Student will be able to	
CO 1	describe significance of radiology in the field of Physiotherapy and importance of radiology as an adjunct to the confirmation of clinical diagnosis of the patient.

CO 2	describe various modalities in the field of radiology and applications in the management of patients.
CO 3	identify abnormalities in radiographs
CO 4	Outline findings of MRI, CT scans and correlate the findings to functional impairments

Ability Enhance Elective Course

Name of the Programme	Master Of Physiotherapy (MPT) Specialty - Neuro Physiotherapy
Name of the Course	Clinical Nutrition
Course Code	MPTAEEC004
Credits per semester	2 credit
Hours per semester	40 hours (Theory – 10 hours; Practicals – 30 hours)

Course Outcomes

Student will be able to

CO 1	describe importance of clinical nutrition in enhancing capability of patients with special nutritional requirements in pathological conditions.
CO 2	describe the importance of nutrition, healthy diet and malnutrition.
CO 3	describe role and importance of different types of diets and malnutrition

Ability Enhancement Compulsory Course

Name of the Programme	Master Of Physiotherapy (MPT) Specialty – Neuro Physiotherapy
Name of the Course	Intellectual property rights and publication ethics
Course Code	MPTAEEC005
Credits per semester	2 credit
Hours per semester	40 hours

Course Outcomes

Student will be able to

CO 1	describe types of intellectual property, copyrights, patent, laws and rights based on intellectual property,
CO 2	Apply ethics of publication in journals, different methods of misconduct carried out during



Dr. Rajesh B. Goel

Registrar

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