VEER MARMAD SOUTH GUJARAT UNIVERSITY

(MPT) MASTER OF PHYSICAL THERAPY

FIRST YEAR MPT

Sl.No	SUBJECT	THEORY MARKS
Paper I	Physiotherapeutics-Part-I **(CLINICAL, APPLIED AND ALLIED)**	100
Paper II	Physical & Functional Diagnosis Part-I	100
Paper III	Basic Sciences	100
Paper IV	Research Methodology & Biostatistics	100

TABLE - 1 : First year MPT (1-12 Months)

Sr. No.	SUBJECTS		TEACHING HOURS		
			Theory	**Practicals/ Clinicals**	**Total**
PAPER-I	Physiotherapeutics Part –I (Clinical applied and Allied Therapeutics)		**50**	**100**	**150**
PAPER-II	Physical and Functional Diagnosis Part - I		**50**	**100**	**150**
PAPER-III	Basic Science				
	(a)	Work physiology and Electro Physiology	**50**	**50**	**100**
	(b)	Bio Mechanics	**50**	**50**	**100**
	(c)	History of Physiotherapy Education and Practice	**10**	**-**	**10**
		Principles of physical therapy education	**20**	**-**	**20**
PAPER-IV	Research Methodology and Biostatistics		**70**	**-**	**70**
5.	Clinical Training		**-**	**650**	**650**
6.	Seminars, Journal clubs, Case – Presentations, Teaching Skills, Field Works etc.		**-**	**150**	**150**
	Total Teaching Hours			**Total**	**1400 hours**

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Paper - I

PHYSIOTHERAPEUTICS – PART I

(CLINICAL, APPLIED AND ALLIED THERAPEUTICS)

1. Physiotherapy in pain management such as electromagnetic radiations, ultrasound, laser electro acupuncture etc.
2. Maternal and child care in general physiotherapy.
3. Applied Neuro-anatomy and Neuro-physiotherapy
4. Theories of motor learning
5. Therapeutic bio feedback and psychosomatic training
6. Combination therapy.
7. Functional training – Respiratory exercises, Training for feeding bladder and bowel training coughing and compression, artificial respiration, inhalation therapy and intensive care unit procedures.
8. Yogasanas and Pranayama
    a) Physiological and therapeutic principles of yoga
    b) Yogasanas for physical culture, relaxation and meditation.
    c) Applications of yogasanas in physical fitness, flexibility, cardiac rehabilitation and neuromotor learning
    d) Pranayama and respiratory physiology
    e) Kriyas and their physiological significance. Therapeutic application of yoga.
    f) Yoga a holistic approach
9. Acupuncture: definition, principles, techniques, physiological effects, indications, contra indications, dangers and integration of acupuncture with physiotherapy.
10. Magneto therapy

19. COURSE CONTENTS

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Paper - II

PHYSICAL AND FUNCTIONAL DIAGNOSIS – PART –I

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. Development screening, development diagnosis, neurodevelopment assessment and motor learning voluntary control assessment.
4. Anthropometric measurements.
5. Physical fitness assessment by 1. Range of motion
   2. Muscle strength endurance and skills
   3. Body composition
   4. Cardiac efficiency tests and spirometry
   5. Fitness test for sports
6. Psycho physiological and Neuro-psychological tests.
7. Electro diagnosis, clinical and kinesiological electromyography and evoked potential studies. Biophysical measurements, physiotherapy modalities, techniques and approaches. Electro diagnosis, conventional methods, electromyography, sensory and motor nerve conduction velocity studies, spinal and somato-sensory evoked potentials.

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Paper - III

BASIC SCIENCES

WORK PHYSIOLOGY

1. Physiological and physical work
2. Ergonomic aspects of work, energy transfer, oxygen intake and oxygen debt, cardio respiratory and thermo regulatory changes during muscular work
3. Body consumption, nutrition and caloric balance obesity and weight control.
4. Individual and environmental factors influencing muscle work and environmental control.
5. Fatigue assessment and scientific organization of work rest regimes to control fatigue

ELECTRO PHYSIOLOGY

1. Characteristics and components of Electro therapeutic stimulation systems characteristic and components of Electro physiological assessment devices.
2. Electrical excitability of muscle and nerve and composition of peripheral nerves.
3. A. Muscle plasticity in response to electrical stimulation.
   B. Instrumentation for Neuromuscular electrical stimulation (NMES)
4. Neurobiology of afferent pain transmission and central nervous system mechanisms of pain modulation
5. Electrical stimulation and circulation,.
6. Clinical electro physiological testing.

BIO MECHANICS

1. Material properties of bones and soft tissues
2. Internal and external forces during posture and activities
3. Biomechanics of respiration, circulation, hand function and gait.
4. Methods of kinetics and kinematics investigation, Anthropometrics measurements.
5. Neural control of loco motor functions.

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Paper - IV

RESEARCH METHODOLOGY AND BIOSTATISTICS

1. Meaning of research, Objectives, motivation and types of research
2. Research process and criteria of good research
3. Problems encountered by researchers in India and defining the research problems.
4. Research design sampling design
5. Measurement and scaling techniques, Method of data collection
6. Processing and analysis of data. Sampling fundamentals
7. Testing of hypothesis and Chi square test.
8. Analysis of variance and co variance.
9. Role of computer in research and ethical concepts.

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1. Scientific basis of human movement – Gowitzke, Williams and Wilkins, Baltimore 1988, 3rd ed
2. Clinical biomechanics of spine – White A. A. and Punjabi – J. B. Lippincot, Philadelphia 1978
3. Kinesiology- Brumnstrom Singe, F. A. Davis – Philadelphia 1966
4. Textbook of work physiology –Guyton, Prim Books Bangalore-1991 8th ed.
5. Handbook of physiology in Aging – Masore, C. R. C. Press 1981
6. Research for physiotherapists – Hicks C., Churchill Living stone, Edinburgh 1995
7. Introduction to Research in Health Science –Polgar S., Churchill Livingston, London, 1988
8. Elements of Research in physical therapy –Currier D. P. Williams and Wilkins, Baltimore 1999, 3rd ed.
9. Handbook of Research method – Sproull, Scarecrow Press,1998
10. Physical therapy Research – Domholdt, W. B> Saunders, Philadelphia,1993
11. Public power and administration – Wilenski, Hale and Ironmonger, 1986
12. Physical Therapy administration and management – Hick Robert J.
13. Management Principles for physiotherapists – Nosse Lorry J.
14. Human neuroanatomy – Carpenter M. B. Williams and Wilkins, Baltimore, 1983
15. Physical therapy assessment in Early infancy – Wilhelm Churchill Livingston, New York, 1993
16. Physical therapy for children – Campbell Suzann, K. W. B. Saunders, Philadelphia 1994
17. Physical management of Multiple Handicapped – Fraser, William and Wilkins, Baltimore
18. Elements of pediatric physiotherapy – Eckersley P. Churchill Livingston, Edinburgh, 1993
19. Physiotherapy in pediatrics – Shepherd R. Heinemann, London 1980, 2nd ed.
20. The growth chart – WHO Geneva 1986
21. Orthotics in neurological rehabilitation – Aisen, Demos Publications, New York 1992