

KRISHNA VISHWA VIDYAPEETH, (DEEMED TO BE UNIVERSITY),

KRISHNA COLLEGE OF PHYSIOTHERAPY

KARAD, MAHARASHTRA.



MASTER OF PHYSIOTHERAPY (M. P. Th)

CBCS PATTERN SYLLABUS

M.P.Th - (GERIATRIC PHYSIOTHERAPY)

PROGRAMME CODE: 3208

RULES FOR EXAMINATION SCHEME LEADING TO

POST GRADUATE PHYSIOTHERAPY PROGRAMME IN THE FACULTY OF PHYSIOTHERAPY (Approved by the Board of Management)

MASTER OF PHYSIOTHERAPY (M. P. Th.)

PREAMBLE:-

The Department of Human Resource Development, Government of India, on the recommendation of the University Grants Commission (UGC) has accorded the status of a Deemed University to Krishna Vishwa Vidyapeeth, (Deemed To Be University), Karad for Faculty of Medicine, Dentistry, Physiotherapy Nursing, Allied Sciences and Pharmacy respectively.

The Degrees, Diploma and the Fellowship programmes of Krishna Vishwa Vidyapeeth, (Deemed To Be University), Karad shall have the same status as of those given by any Statutory University duly recognized by the University Grants Commission. (UGC).

The Master of Physiotherapy Programme is directed towards rendering training in Specialty discipline so as to enhance professional competence in order to fulfill requirement for Physiotherapy Education and Practice.

1. This shall apply to all the examinations leading to Post Graduate Physiotherapy namely Programmes offered: - Total Programmes offered: 10 Programmes.

Sr No	Programme Code	Programme Name
1.	3201	M.P.Th in Musculoskeletal Sciences
2.	3202	M.P.Th in Neuro Sciences
3.	3203	M.P.Th in Cardio Pulmonary Sciences
4.	3204	M.P.Th in Pediatric Neurology
5.	3205	M.P.Th in Community Health Sciences
6.	3206	M.P.Th in Oncology Physiotherapy
7.	3207	M.P.Th in Sports Physiotherapy
8.	3208	M.P.Th in Orthopedic Manual Therapy
9.	3209	M.P.Th in Obstetrics and Gynecology
10.	3210	M.P.Th in Geriatric Physiotherapy

SEMESTER WISE SUBJECTS:

Sr No	Course Code	Year	Semester	SUBJECT
1	3208-11	M.P.Th - I Year	I	1. Basic Sciences
2	3208-12			2. Basic Therapeutics
3	3208-21	M.P.Th - I Year	II	1. Advanced therapeutics in Specialty Subject
4	3208-22			2. Biostatistics and Research Methodology
5	3208-31	M.P.Th - II Year	III	1. General Physiotherapy in Specialty Subject – Paper 1
6	3208-32			2. Advances in Specialty Subject – Paper 1
7	3208-41	M.P.Th - II Year	IV	1. General Physiotherapy in Specialty Subject- Paper 2
8	3208-42			2. Advances in Specialty Subject – Paper 2

Duration: Master of Physiotherapy shall be a full time programme with duration of TWO academic years divided into FOUR semesters.

2. Eligibility for admission:

Applicant for admission to the programme, Master of Physiotherapy should have the Bachelor degree from I.A.P recognized institution or from the recognized university. Selection of candidate is strictly through Krishna PGAIET, which is conducted by Krishna Vishwa Vidyapeeth, (Deemed To Be University), Karad.

3. ELIGIBILITY FOR APPEARING FOR THE EXAM:

- The examination for the degree, Master of Physiotherapy shall be conducted twice in a academic year (i.e. Semester Pattern).
- Every student should present his / her dissertation at least three months prior to the fourth semester university examination. The acceptance of the dissertation by the examiners is important for the student's admission for the Written & Clinical (Practical) examination.
- Dissertation should be based on the Specialty Subject. A student who has submitted his / her dissertation once will not be required to submit a fresh dissertation if he / she re- appears for the examination in the same branch on a subsequent occasion, provided that the dissertation has been accepted by the examiners.

- The Degree of Master of Physiotherapy shall not be conferred upon a student unless he / she have passed in the Written, Practical and the Dissertation prescribed for the examination in accordance with the provision.
- The dissertation has been evaluated and approved AND
- Has passed both the headings i.e.
(With minimum of 50%) in Theory and Practical including Internal Assessment for both.

4. GOALS OF THE M.P.TH PROGRAMME:

- The goal of training post- graduate candidate in the respective specialty is to enable him / her to function as a consultant in the respective Physiotherapy specialty. This requires a thorough knowledge of the fundamental and recent advances.
- He/she should be able to make logical decisions regarding patient management & adapt interventions independently.
- During this period he/she will be expected to acquire skills in teaching technology & gain experience in research methodology.
- He/she should practice Physiotherapy in respective specialty and maintain the highest regards for ethical aspect.
- The programme shall focus on clinical reasoning, problem solving and measurement of treatment outcome, emphasizing on the recent diagnostic & therapeutic trends and skill specific Physiotherapy.

5. OBJECTIVES OF THE PROGRAMME: -

At the end of the programme the candidate shall be able to:

- Acquire the in-depth knowledge of structure and function of human body related to the respective branch of specialty.
- Acquire the in-depth knowledge of movement dysfunction of human body & principles underlying the use of physiotherapeutic interventions for restoring movement dysfunction towards normalcy.
- Ability to demonstrate critically appraises recent physiotherapeutic and related medical literature from journals & adapts diagnostic & therapeutic procedures based on it.
- Ability to perform skill in Physical & functional diagnosis pertaining to patient under care.
- Ability to make clinical decision & select appropriate outcome measures based on the comprehensive knowledge of theoretical aspects of specialty.
- Expertise in evidence-based skill in the management of movement dysfunction.
- Expertise in health promotion & quality restoration of functional movement pertaining to specialty.
- Planning and implementation of treatment programme adequately and appropriately for all clinical

conditions related to respective specialty in acute and chronic stage, in intensive care, indoor and outdoor institutional care, independent practice, on fields of sports and community and during disaster or natural calamities.

- Proficiency in planning and executing Physiotherapy services and teaching technology skills.
- Develop managerial and administrative skills.
- Develop the knowledge of legislation applicable to compensation for functional disability & appropriate certification

POSTGRADUATE PROGRAMME OUTCOMES

M.P.TH (Master of Physiotherapy)

The course is of two years duration (Divided into 4 Semesters) advanced learning programme in Physiotherapy with CBCS Pattern.

Total Specialties offered: 10 Specialties

1. M.P.Th In Musculoskeletal Sciences
2. M.P.Th In Neuro Sciences
3. M.P.Th In Cardio Pulmonary Sciences
4. M.P.Th In Pediatric Neurology
5. M.P.Th In Community Health Sciences
6. M.P.Th In Oncology Physiotherapy
7. M.P.Th In Sports Physiotherapy
8. M.P.Th In Orthopedic Manual Therapy
9. M.P.Th In Obstetrics And Gynecology
10. M.P.Th In Geriatric Physiotherapy

M.P.Th - IST YEAR INCLUDES TWO SEMESTERS NAMELY,

- **I - Semester:** It is common for all the specialties which include the two subjects Basic Sciences & Basic Therapeutics.
- **II - Semester:** Biostatistics and Research Methodology is a common subject for all specialties & Advanced Therapeutics in Specialty Subject is the second one.

M.P.Th – IIND YEAR INCLUDES TWO SEMESTERS NAMELY,

- **III - Semester:** It includes two subjects which are specialty specific namely, General Physiotherapy in Specialty Subject - Part I & Advances in Specialty Subject - Part I
- **IV - Semester:** It includes two subjects which are specialty specific namely, General Physiotherapy in Specialty Subject- Part II & Advances in Specialty Subject - Part II
- ***Dissertation:** An individual research project preferentially interventional study is mandatory to be completed before appearing for the IV - Semester examination.

M.P.Th (FIRST YEAR): I - SEMESTER

1. BASIC SCIENCES (3208-11)

COURSE OBJECTIVES:

- The student should be able to know the background of Physiotherapy profession, basic ethics and its principles.
- To understand and apply the principles of exercise physiology and nutrition
- To master various assessment tools, test.
- To obtain knowledge of Orthotics & Prosthetics.

COURSE OUTCOMES:

At the end of the course the student should be able to apply the basic principles and ethics of Physiotherapy profession, Biomechanics, Patho-mechanics and in depth Kinesiology of human body, all the assessments and clinical tests, diagnosis of various conditions, in depth knowledge of the Orthotics and Bio-engineering.

2. BASIC THERAPEUTICS (3208-12)

COURSE OBJECTIVES:

The student should be able to obtain detail knowledge with evidence base of all the Electrotherapeutic modalities, Electro-Diagnostic tests with its application for diagnosis and treatment of Physiotherapy conditions

COURSE OUTCOMES:

At the end of the course the student should have in depth knowledge of the Basic Electrotherapeutics, Physical And Functional Diagnosis, EMG / NCV and Radiological investigations.

M.P.Th (FIRST YEAR): II - SEMESTER

1. ADVANCED THERAPEUTICS SPECIALITY SPECIFIC (3208-21)

COURSE OBJECTIVES:

- To interpret various therapeutics used in the treatment of speciality specific conditions.
- To evaluate and generate a diagnosis and differential diagnosis of all related conditions related to speciality and its complications.
- Demonstrate condition specific various skills in the treatment.

COURSE OUTCOMES:

At end of the session the student will be able to learn the conditions pertaining to the speciality, the diagnostic test for the same. The students shall learn to make a correct diagnosis and also a differential diagnosis and learn the advanced techniques to treat the same.

2. BIOSTATISTICS AND RESEARCH METHODOLOGY (3208-22)

COURSE OBJECTIVES:

- To understand the statistical measures used for analysis and interpretation of research data.
- Enhanced training to apply the information on research design and their implementation
- To identify, read, critique research articles and understand and apply the principles of research to perform a guided research.

COURSE OUTCOMES:

- At the end of the course the student should have a sound knowledge regarding the basic concept of research, research designs, types of data, sampling methods, interpretation of result and various statistical tests.
- The student will be able to identify appropriate statistical technique reference, use of various software packages for analysis and data management. Interpretation of the results and its application in Physiotherapy.
- The student will be able to learn fundamental of reading and understanding research methods, design and statistics.
- Special emphasis is given to Biostatistics and Research methodology and for completing a scientific research project in the second year as per their elective subject.

M.P.Th (SECOND YEAR): III - SEMESTER

1. GENERAL PHYSIOTHERAPY IN SPECIALTY SUBJECT – PAPER 1 (3208-31)

COURSE OBJECTIVES:

- Evoke and interpret clinical signs and symptoms of speciality specific disorders & interpret various diagnostic tests, clinical and special investigations used in the diagnosis of the conditions.
- Management of patient, consultation, identifying the problem, derive a provisional diagnosis with differential diagnosis and to chalk out a treatment plan.
- Maintain a precise patient documentation.
- Discuss and develop a specific exercise prescriptions plan with their clinical use, and the sequence of treatment.

COURSE OUTCOMES:

- Be able to apply the knowledge for planning and evaluation of teaching methods in Physiotherapy.
- Be able to apply the knowledge on clinical education to spread awareness and guidance to common people about health and disease.
- Understand the pathophysiology of common conditions, their management and its effects on body systems.
- Assess patients' physical function, considering disease and treatment-related impairments.
- Design and implement evidence-based Physiotherapy interventions as per the health issues.

2. ADVANCES IN SPECIALTY SUBJECT – PAPER 1 (3208-32)

COURSE OBJECTIVES:

- Understand the application of the information regarding recent advances in Physiotherapy for patient care.
- Application and proper implementation of specific evidences available for assessment and management appropriate to the health conditions.

COURSE OUTCOMES:

- The students learn and excel in various aspects of Physiotherapy as per their speciality in theoretical and practical knowledge with a solid platform and tend to train them to be the best in the field.
- To analyse and undertake data for research purpose and its documentation for long life learning in Physiotherapy.
- To develop educational experience for proficiency in profession and promote Preventive and Rehabilitative aspect on the society.

M.P.Th (SECOND YEAR): IV - SEMESTER

1. GENERAL PHYSIOTHERAPY IN SPECIALTY SUBJECT- PAPER 2 (3208-41)

COURSE OBJECTIVES:

To equip Physiotherapy students with the knowledge and skills necessary to provide problem specific effective rehabilitation and supportive care for patients.

COURSE OUTCOMES:

- Recognize and manage potential complications specific to the condition.
- Demonstrate knowledge of protocol specific principles and their application in Physiotherapy practice.
- Communicate effectively with patients, their families, and the multidisciplinary team.
- Critically evaluate current research in the area of rehabilitation to inform clinical decision-making.

2. ADVANCES IN SPECIALTY SUBJECT – PAPER 2 (3208-42)

COURSE OBJECTIVES:

To provide students with an in-depth understanding of recent developments and emerging trends in the specialty subject, focusing on innovative diagnostic techniques, treatment modalities, and research breakthroughs.

COURSE OUTCOMES:

- Analyze cutting-edge research and its potential clinical applications.
- Evaluate novel diagnostic technologies and their impact on early detection and personalized treatment.
- Critically assess emerging advanced and targeted therapies.
- Explain advancements in Prevention strategies and Risk assessment.
- Interpret complex clinical trial data and their implications for patient care.
- Describe innovations and apply knowledge of recent advances to case studies and clinical scenarios.

END OF PROGRAMME:

After completion of PG (M.P.Th) Programme, with the above mentioned Programme features the Post-Graduates will be equipped with advanced knowledge in respective specialty related to Technical, Problem Solving and Scientific skills to practice with Evidence Based Physiotherapy Practice through firm decision making process in assessment and treatment, establish advance research hypotheses and undertake research works effectively within the healthcare sectors and community safely and efficiently inculcating effective communication skills.

TOTAL HOURS: MPTTh

Semester	Subject	Theory	Theory Credit point	Practical	Practical Credit point	Total Credit point
I - MPTTh						
I - Semester	Basic Sciences	100	7	100	7	14
	Basic Therapeutics	100	7	100	7	14
II - Semester	Advanced Therapeutics in Speciality	100	7	150	5	12
	Biostat & Research	100	7			7
II - MPTTh						
III - Semester	General PT in Speciality Paper - 1	200	13	225	8	21
	Advances in Speciality Paper - 1	200	13	250	8	21
IV - Semester	General PT in Speciality	200	13	225	8	21

	Paper - 2					
	Advances in Speciality Paper - 2	200	13	250	8	21
		1200	80	1300	51	131
Total Hrs: 2500			Total Credit point: 131			

EXAMINATION SCHEME:

	Theory		Practical	IA	
				Theory	Practical
Sem. I	Basic Sciences (100 Marks)	Basic Therapeutics (100 Marks)	-	50 marks x 2 Subjects	-
Sem. II	Advanced Therapeutics in Speciality (100 Marks)	Biostatistics & Research Methodology (100 Marks)	Advanced Therapeutics in Speciality (250 Marks)	50 marks x 2 Subjects	50 Marks
Sem. III	General Physiotherapy in Speciality Paper – 1 (100 Marks)	Advances in Speciality Paper – 1 (100 Marks)	-	50 marks x 2 Subjects	
Sem. IV	General Physiotherapy in Speciality Paper – 2 (100 Marks)	Advances in Speciality Paper – 2 (100 Marks)	Specialty Practical (300 Marks)	50 marks x 2 Subjects	50 Marks
Total: 1850 marks					

EXAMINATION PATTERN:

THEORY: (ALL SEMESTERS)

Q1. 10 BAQ (All compulsory)

10 x 5 = 50 marks

Q2. 2 LAQ (All compulsory)

2 x 25 = 50 marks

Total: 100 marks

***** INTERNAL ASSESSMENT: Out of 50 MARKS for each Subject**

PRACTICAL: (II & IV SEMESTER)

SEMESTER II PATTERN

- | | |
|--|-----------|
| 1. Long Case (Specialty) | 100 marks |
| 2. Short Case 1. (Assessment) | 50 marks |
| 3. Short Case 2. (Management) | 50 marks |
| 4. Spots | 50 marks |
| Total: 250 marks + IA: 50 marks | |
| = 300 Marks | |

SEMESTER IV PATTERN

- | | |
|--|-----------|
| 1. Long Case (Specialty) | 100 marks |
| 2. Short Case (Assessment) | 50 marks |
| 3. Short Case (Management) | 50 marks |
| 4. Dissertation Presentation | 50 marks |
| 5. Microteaching | 50 marks |
| Total: 300 marks + IA: 50 marks | |
| = 350 Marks | |

MPT h - I: SEMESTER: I

COURSE: MPT H IN GERIATRIC PHYSIOTHERAPY

SUBJECT: BASIC SCIENCES

Subject	Theory	Credit	Practical	Credit	Total Credits
Basic Sciences	100	7	100	7	14

Sr. No	Content	Teaching Hours (200 Hrs.)		MK	DK	NK
		Didactic (100 Hrs.)	Practical (100 Hrs.)			
1.	PRINCIPLES AND ETHICS: a. Theoretical background of Physiotherapy profession.	5 hrs	-	MK		
	b. Professional sources in the community.					
	c. Principles and practice of physiotherapy in India.					
	d. Ethical background of physiotherapy.					
	e. Ethics of IAP & WCPT. Professional ethics.					
	f. Modified Referral ethics in the practice of Physiotherapy					
	g. Governing body of Physiotherapy Profession state & central level.					
2	EXERCISE PHYSIOLOGY AND NUTRITION: a. Nutrition and physical performance.	15 hrs	15 hrs	MK		
	b. Energy transfer.					
	c. Systemic adaptation during exercise.					
	d. Physical performance.					
	e. Factors affecting physical					

	performance.					
	f. Fatigue and lactate.					
	g. Training.					
	h. Fitness and testing.					
	i. Obesity.					
	j. Diabetes.					
	k. Applied exercise physiology.					
3.	PATHOMECHANICS AND CLINICAL KINESIOLOGY: Review of mechanical principles and applied biomechanics of human body.	10 hrs	5 hrs	MK		
4.	Review of various types of exercises, principles and its applications for joint mobility, muscle re-education, Strengthening and endurance training.	15 Hrs	5 Hrs	MK		
5.	Posture, analysis of normal and abnormal posture, posture training.	5 hrs	10 hrs		DK	
6.	Gait, analysis of normal and abnormal gait, gait training.	5 hrs	15 hrs			NK
7.	ADL, assessment and training of ADL.	5 hrs	10 hrs		DK	
8.	Clinical assessment, clinical tests and diagnosis of: <ul style="list-style-type: none"> • Musculoskeletal conditions • Manual Therapy clinical reasoning • Sports conditions • Neurological conditions • Cardio-pulmonary conditions • Obstetrics and Gynecology conditions • Pediatric conditions • Geriatric conditions • Oncology conditions • Community Health conditions 	10 hrs	15 hrs	MK		
9.	Measuring tools in therapeutics: Goniometry, accelerometer, pressure transducers, force plates,	5 hrs	10 hrs	MK		

	spondylometer, Body composition, anthropometric measurements, etc.					
10.	ORTHOTICS, PROSTHETICS & BIOENGINEERING:	25 hrs	15 hrs	MK		
	a. Orthosis of spine.					
	b. Orthosis of upper limb.					
	c. Orthosis of lower limb.					
	d. AK and BK Prosthesis.					
	e. Prosthetic fitting and training.					
	f. Biomechanical principles governing them.					

BASIC SCIENCES - RECOMMENDED BOOKS:

1. Ross and Wilson Anatomy and Physiology in Health and Fitness – Kathleen. J, Churchill Livingstone.
2. Samson Wright's Applied Physiology – Neil and Joel, Oxford press.
3. Principles of Anatomy – Harper Collins College Publications
4. Anatomy and Physiology for Physiotherapists – Mottram, Moffat, Blackwell Scientific
5. Atlas of Anatomy – Tank Patrick, Lippincot Williams
6. Surface and Radiological Anatomy – Halim A, CBS

REFERENCE BOOKS:

1. Clinical Kinesiology for the Physical therapist Assistants – Lippert L, Jaypee.
2. Brunnstrom's Clinical Kinesiology – Letimkuni W, Jaypee.
3. Clinical Kinesiology – Laura Weiss, Jaypee.
4. Joint Structure & Function – Levangie P, Norkin C, Jaypee.
5. Basic Biomechanics of the musculoskeletal system – Nordin M, Lippincot Williams.
6. Biomechanical Basis of Movement – Hamill J & Krutzen K M, Lippincot Williams.
7. Measurements of Joint Motion – Norkin C, F. A. Davis.
8. Principles of Mechanics & Biomechanics – Bell, Frank, Stanley Thornes Pvt. Ltd.
9. Basic Biomechanics – Hall, Susan J, McGraw hill.
10. Kinesiology – Oatis, Carol A, Lippincot Williams.
11. Applied Kinesiology – Robert Frost, North Atlantic Books.
12. Biomechanics of Spine – White and Punjabi, Lippincot Williams

MPT h - I: SEMESTER: I

COURSE: MPT H IN GERIATRIC PHYSIOTHERAPY

SUBJECT: BASIC THERAPEUTICS

Subject	Theory	Credit	Practical	Credit	Total Credits
Basic Therapeutics	100	7	100	7	14

Sr. No	Content	Teaching Hours (200 Hrs.)		MK	DK	NK
		Didactic (100Hrs)	Practical (100Hrs)			
1.	Basic Electrotherapeutics: Review the principles and applications of the following electrotherapy modalities and justify the effects and uses of it with evidence	25 hrs	25 hrs	MK		
	1. Short wave diathermy.					
	2. Microwave diathermy.					
	3. Ultrasonic therapy.					
	4. Ultraviolet radiation.					
	5. Infrared radiation.					
	6. Iontophoresis.					
	7. Electric stimulation.					
	8. D i - Dynamic currents.					
	9. Interferential therapy.					
	10. Cryotherapy.					
	11. TENS.					
	12. LASER Therapy.					
	13. Paraffin wax bath.					
	14. Hydrotherapy.					
	15. Hydro collator packs.					
	16. Contrast bath.					
	17. Traction.					
	18. Mechanical external Compression therapy.					
	19. Fluidotherapy.					
	20. Phonophoresis.					
	21. Shock Wave Therapy					
3.	Pain and pain modulation.	5 hrs	5 hrs		DK	
4.	Conventional electro diagnosis.	5 hrs	5 hrs	MK		
	1) FG Test.					
	2) SD Curve.					

5.	Electrocardiogram.	10 hrs	10 hrs		DK	
6.	Echocardiography.	10 hrs	10 hrs			NK
7.	Physical & functional diagnosis.	25 hrs	25 hrs	MK		
	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. Physical fitness assessment: <ul style="list-style-type: none"> • Cardiac efficiency tests and spirometry • Fitness test for sport 					
	5. Electro diagnostics-EMG/NCV A. Electromyography (EMG) Electro-diagnosis, clinical and kinesiological electromyography and evoked potential studies. 1. Instrumentation. 2. Types of electrodes. 3. Cathode ray oscilloscope digital processing. 4. Electrical safety. 5. Artifacts. 6. Normal and abnormal motor action potential. 7. EMG Examination. a. Muscle at rest. b. Insertional activity. c. Minimum effort. d. Maximum effort. 8. Motor unit's potential in disease. <ul style="list-style-type: none"> • Motor neuron disease. • Hereditary motor neuron disease. • Poliomyelitis. • Muscular dystrophy. • Inflammatory myopathies. • Congenital myopathies • Myotonia. • Metabolic myopathies. 					

	9) Quantitative methods in EMG.					
	B. Nerve conduction studies (NCV): I. Motor and sensory conduction. II. Physiology of nerve conduction. III. General factors affecting nerve conduction. IV. Nerve stimulation. V. H wave. VI. F wave. VII. Entrapment syndromes. a) Carpel tunnel syndrome. b) EMG studies in Myasthenia gravis. c) EMG studies in Decremental studies Lambert myasthenia syndrome. d) Electro diagnosis in Radiculopathy. e) Peripheral neuropathies. - Nerve conduction changes in peripheral neuropathy. - EMG changes in peripheral neuropathy.					
8	Radiological investigation. 1) X – ray. 2) CT / MRI Scan. 3) Blood investigation (routine)	20 hrs	20 hrs	MK		

BASIC THERAPEUTICS - RECOMMENDED BOOKS:

1. Exercise Physiology, energy, nutrition and human performance – McArdle, Katch & Katch, Lippincot Williams.
2. Illustrated principles of exercise physiology – Axen. K, Kathleen. V, Prentice Hall.
3. Essentials of Exercise Physiology – Shaver Larry. G, Surjeet Publications.
4. Physiology of Sports and Exercise – Majumdar. P, New Central Book.
5. Exercise and the Heart – Frolicher, Victor. F, Elsevier.
6. Textbook of Work Physiology – Astrand and Rodahl, McGraw Hill.
7. Kinanthropometry and Exercise Physiology Laboratory manual tests, procedures and data-Erston, Reilly, F & FN Spon.

REFERENCE BOOKS:

1. Communication Skills in Clinical Practice – Sethuraman K. R.
2. Handbook of Educational Technology – Elington Henry, Kogan Page.
3. Physical Therapy Administration & Management – Hickok, Robert J, Williams & Wilkins.
4. Clinical Decision making in Rehabilitation – Basmajian, John V, Churchill Livingstone.
5. Handbook of Clinical Teaching – Watts Nancy, Churchill Livingstone.
6. Physical Therapy Ethics by Gabard and Martin (Sep 2, 2010)
7. Management in Physical Therapy Practices by Catherine G. Page (Sep 23, 2009)
8. Physical Rehabilitation: Evidence-Based Examination, Evaluation, and Intervention by Michelle H. Cameron and Linda Monroe (Apr 5, 2007)
9. Physical Therapy Management by Ronald W. Scott and Christopher L Petrosino (Sep 1, 2007)



MPT_h – I: SEMESTER: II

COURSE: MPT_H IN GERIATRIC PHYSIOTHERAPY

SUBJECT: BIOSTATISTICS AND RESEARCH METHODOLOGY

Sr No.	Contents	TEACHING HOURS Theory (100 Hrs)	Must Know	Desirable to Know	Nice to Know
1	Research methodology: I. How to read critique research. II. Introduction to research: frame work: levels of measurement: variables III. Basic research concepts: validity and reliability. IV. Design, instrumentation and analysis for qualitative research. V. Design, instrumentation and analysis for quantitative research VI. Design, instrumentation and analysis for quasi-experimental research VII. How to write research proposal VIII. Ethics in research IX. Importance of software in research X. Importance of SPSS, PowerPoint, etc in research.	60 hrs	MK		

2	Biostatistics: Descriptive and inferential statistics II. Types of data qualitative and quantitative III. Frequency distributions IV. Describing data with graphs V. Describing data with averages mode median mean VI. Describing variability variance standard deviation etc VII. Normal distributions VIII. Interpretations of result IX. Hypothesis testing X. T tests XI. ANOVA XII. Probability XIII. Type I and type II errors XIV. Parametric and non-parametric tests XV. Simple statistical analysis using available software.	40 hrs	MK		
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TEXT BOOKS FOR RESEARCH METHODOLOGY AND BIOSTATISTICS:

1. Research Methodology .Methods and Techniques C.R. Kothari New Age International Publishers.2nd edition 2008
2. Rehabilitation Research: Principles And Applications By Elizabeth Domholdt(Elsevier Science Health Science Div, 2004)
3. Research Methods for clinical therapists by Hicks Carolyne, Churchill
4. Foundations of clinical Research by Portney & Watkins,Davis
5. Research methodology by Kothari New Age international
6. Research Methodology for health professionals by Goyal,Jaypee
7. Methods in Biostatistics By Mahajan,B.K Jaypee
8. Principles & practice of Biostatistics By Dixit ,J.V Bhanot

TEACHING TECHNOLOGY:

1. Public Power And Administration – Wilenski, Hale And Iremonger, 1986
2. Physical Therapy Administration And Management – Hickik Robert J

3. A Practical Guide for Medical Teachers : John A Dent& Ronald M Harden: ElsevierHealth Sciences: 2009
4. International Handbook of Medical Education : Abdul W Sajid, Christie H McGuire et al: Greenwood Press 1994
5. Principles Of Medical Education by. Tejinder Singh, Piyush Gupta, DaljitSingh.year: 2009. Edition: 3rd edition Publisher: Jaypee brothers.

IMPTh

SPECIALITY: GERIATRIC PHYSIOTHERAPY

SUBJECT: ADVANCED THERAPEUTICS IN GERIATRIC PHYSIOTHERAPY

Subject	Theory	Credit	Practical	Credit	Total Credit
ADVANCED THERAPEUTICS IN GERIATRIC PHYSIOTHERAPY	100	7	150	5	12

COURSE OBJECTIVES:

1. In this subject, the student will learn in detail about advanced therapeutics and its application besides exercise therapy and electrotherapy procedures used in Geriatric Physiotherapy.
2. Update the knowledge of advance and implement in clinical practice in Geriatric Physiotherapy.
3. To learn the applied aspect of Geriatric disorders for physiotherapy practice.

Sr no	Topic	Teaching hours		Must know	Desire to know	Nice To know
		250 Hrs				
		Didactic(100 Hrs)	Practical's (150Hrs)			
1	Detailed Assessment Procedures Related to the Geriatric Conditions: 1.Principles and concepts of assessment <ol style="list-style-type: none">i. A conceptual framework for examination, evaluation and diagnosis of Elderlyii. Functional assessment of the elderlyiii. Environmental design: accommodating sensory changes in the elderlyiv. Cognitive impairment	25 hrs	25 hrs	MK		

	<ul style="list-style-type: none"> v. Depression and function in the elderly <p>2. Examination procedures</p> <ul style="list-style-type: none"> i. Vascular examination ii. Musculoskeletal examination iii. Neurological examination iv. Physical assessment v. Cognitive assessment vi. Psychosocial assessment vii. Activities of daily living <p>3. Geriatric screening</p> <p>4. Assessment of falls</p>					
2.	<p>Advanced therapeutics for Special Population of Geriatrics:</p> <ul style="list-style-type: none"> i. The frail and institutionalized elder ii. The well elderly iii. The older athlete iv. Older persons with developmental disabilities <ul style="list-style-type: none"> 1. Breathing Maneuvers in elderly 2. Relaxation training 3. Endurance training of the older adults 4. Postural correction in the older adults 5. Massage 6. Functional task training 7. Dual task training 8. Group therapy 9. Movement and Exercise 10. Cognitive rehabilitation 	25 hrs	25 hrs	MK		

	<ul style="list-style-type: none"> 11. Posture and Balance training 12. Hydrotherapy 13. Aerobics training for elderly e.g. Chair aerobics 14. Correct rehabilitative programmes in functional limitation and residual abilities training 15. Wheel chair mobility training for elderly. 					
3	Electrotherapeutics in Geriatrics.	5 hrs	10 hrs	MK		
3	Physiotherapy Mobility Skills used in Geriatric population: <ul style="list-style-type: none"> i. Functional training ii. Ambulation: A framework of practice applied to a functional outcome 	5 hrs	25 hrs	MK		
4	Prosthetics & Orthotics in Geriatric Rehabilitation: <ul style="list-style-type: none"> i. Lower extremity ii. Upper extremity iii. Spine 	6 hrs	5 hrs	MK		
5	Physiotherapeutic skills to treat Common Systemic ailments / Diseases of elderly: <ul style="list-style-type: none"> i. General ailments ii. Respiratory related diseases in elderly iii. Cardiovascular diseases in elderly iv. Renal disorders in elderly v. Metabolic disorders in elderly vi. Musculoskeletal disorders in elderly 	12 hrs	35hrs	MK		

	<p>vii. Ophthalmic disorders in elderly</p> <p>viii. ENT related disorders in elderly</p> <p>ix. Gynac related disorders in elderly</p> <p>x. CNS related disorders in elderly</p> <p>xi. Integumentary related disorders in elderly</p> <p>xii. GIT related disorders in elderly</p> <p>xiii. Cancer related disorders in elderly</p> <p>xiv. Endocrine related disorders in elderly</p> <p>xv. Hereditary related disorders in elderly</p>					
6	Principles of Geriatric Rehabilitation	4 hr	1 hr	MK		
7	Exercise testing & prescription for geriatric population.	4 hr	1 hr	MK		
8	Physiotherapeutic management for Arthritis in the elderly, Aging of the musculoskeletal system, Rheumatoid Arthritis in the elderly.	4 hr	3 hrs	MK		
9	<p>Application of Physiotherapeutic skills for vulnerable elderly:</p> <ul style="list-style-type: none"> • Spinal loading exercises, Balance training, Co-ordination & PRE for: <ul style="list-style-type: none"> i. Pathological fractures, fractures in elderly, osteoporosis, vertebral fractures, stress fractures & PT management. ii. Stroke, Parkinson's disease - PT management. iii. Falls & its prevention in elderly. 	10 hr	15 hrs		DK	

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1. Greenman, P. E. (2003). Principles of manual medicine (3rd ed.). Philadelphia: Lippincott Williams & Wilkins.

2. Wilson, A. (2002). Effective management of musculoskeletal injury: A clinical ergonomics approach to prevention. Churchill Livingstone.
3. O'Sullivan, F.A. Davis, Philadelphia 1994. Physical rehabilitation: assessment and treatment.
4. Geriatric physical therapy by Andrew A. Guccione, 2nd edition (Mosby 2000)
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25. Naturopathy for the elderly; Dr. H.K. Bakhru-1999

SPECIALITY: GERIATRIC PHYSIOTHERAPY

GENERAL PHYSIOTHERAPY IN GERIATRICS - PAPER 1

Subject	Theory	Credit	Practical	Credit	Total Credit
GENERAL PHYSIOTHERAPY IN GERIATRICS - PAPER 1	200	13	225	8	21

COURSE OBJECTIVES:

The aims for the second year elective subject in General Physiotherapy learner in geriatrics is to understand, apply, and teach/educate (students / patients / caregivers) kinetics and Kinematics of an older adult population. Monitor various rehabilitation aspects, monitor outcomes appropriately, and recommend appropriate treatment for older adults.

Sr.no	Content	Teaching hours.		Must know	Desirable to know	Nice To know
		425 Hrs				
		Didactic (200Hrs)	Practical (225Hrs)			
1.	Introduction To Geriatrics Care: i. Definition, Concepts Philosophy, Scope and Principles of Geriatric Physiotherapy. ii. Approach to an elderly patient iii. Levels of Geriatric Care and role of Physiotherapist iv. Myths and stereotypes about aging v. Geriatrics Medicine and Gerontology vi. Future of Geron-technologists and Geriatrics specialists.	10 hrs	5 hrs	MK		

2.	<ul style="list-style-type: none"> • Biology of aging: Longevity, Cellular and Molecular aging • Theories of aging: <ol style="list-style-type: none"> 1. Biological Theories 2. Psychological theories: <ol style="list-style-type: none"> i. Psychosocial changes in ageing ii. Depression, iii. Coping with psychosocial changes of aging 3. Sociological theories <ul style="list-style-type: none"> • Cultural aspects of aging 	10 hrs	10 hrs	MK		
3.	<p>Physiological changes in various systems:</p> <ol style="list-style-type: none"> i. Aging musculoskeletal system ii. Aging and the nervous system iii. Aging cardiac vascular system iv. Aging respiratory system v. Effects of aging on vascular function. vi. Aging digestive system. vii. Aging immune system. viii. Thermoregulation considerations for aging patients. 	40 hrs	50 hrs	MK		
4.	<p>Geriatrics Care, Modern Medicine and other branches of Medicine (Homeopathy, Ayurveda & Alternate Medicine): Interrelations in Anatomy – Infectious diseases – Falls and Fractures – Hypertension – Metabolic factors – Mind over body – Depression, Dementia – Palliative Care.</p>	10 hrs	5 hrs	MK		

5.	Patho-Physiology: <ol style="list-style-type: none"> i. Recognize the atypical clinical presentation and progression of common diseases found in older adults. ii. Identify symptoms of drug induced diseases and geriatric syndromes. 	45 hrs	50 hrs	MK		
6.	Risk and Prevention: <ol style="list-style-type: none"> i. Assisted living facilities (Old age Homes, NCD Clinic, NGO, hospices, nursing home for elderly) ii. Health risk in old age (Elder abuse and violence, smoking, neglect, social issues, fall accident, deafness, low vision) iii. Health promotion: (Nutrition Exercise, Screening, Prevention of accidents, Prevention of substance use alcohol, drugs etc , Smoking Cessation) iv. Legislations ,Ethics and government policies in relation to geriatrics 	20 hrs	50 hrs	MK		
7.	Foundations of Geriatric Physiotherapy: <ol style="list-style-type: none"> i. Communication values and quality of life ii. Arthro-kinesiologic consideration in the aged adult iii. Sensory motor changes and adaptations in the older adult iv. Patient education as intervention 	25 hrs	40 hrs	MK		
8.	Specific emphasis on Geriatric Physiotherapy: <ol style="list-style-type: none"> i. Rehabilitation of the Elderly (Retirement Plans, Physical fitness, holidays and travel, grand parenting, computer and seniors, WILL - To age with grace and dignity) ii. Agencies for the welfare of the 	40 hrs	40 hrs	MK		

	Elderly					
iii.	mortality and morbidity in the elderly					
iv.	Principles and concepts of assessment: functional and environmental assessment					
v.	Geriatric pharmacology and its impact on dysfunction					
vi.	Geriatric Counseling and Guidance					

RECOMMENDED BOOKS:

1. Greenman, P. E. (2003). Principles of manual medicine (3rd ed.). Philadelphia: Lippincott Williams & Wilkins.
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SPECIALITY: GERIATRIC PHYSIOTHERAPY

ADVANCES IN GERIATRICS PHYSIOTHERAPY - PAPER 1

Subject	Theory	Credit	Practical	Credit	Total Credit
ADVANCES IN GERIATRICS PHYSIOTHERAPY PAPER 1	200	13	250	8	21

COURSE OBJECTIVES:

The aims for the second year elective subject in Advances in Geriatric Physiotherapy learner is to understand, apply, and teach / educate (students / patients / caregivers) on geriatric principles or concepts core to their specialty.

Sr no	Contents	Teaching hours 450 Hrs		Must Know	Desirable to know	Nice To know
		Didactic (200hrs)	Practical (250hrs)			
1.	Impact of aging changes on: i. Activities of daily living and IADL ii. Socialization iii. Communication iv. Cognition and learning v. Falls and restraints vi. Posture and gait vii. Sexuality viii. Nutrition ix. Use of Physiotherapy modalities	95 hrs	100 hrs	MK		

2.	Common Pathological Conditions and treatment approaches: i. Arthritis and total joint replacements ii. Arrhythmias and Congestive Heart Failure iii. Stroke iv. Diabetes v. Cancer vi. Multiplicity of disease	95 hrs	125 hrs	MK		
3.	Drugs and function in elderly: i. Absorption, transformation and excretion ii. Prescribed drugs iii. Adverse side effects	10 hrs	25 hrs	MK		

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1. Greenman, P. E. (2003). Principles of manual medicine (3rd ed.). Philadelphia: Lippincott Williams & Wilkins.
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24. Principles of geriatric physiotherapy, Narinderkaur Multani, Satish kumar Varma; 2007.
25. Naturopathy for the elderly; Dr. H.K. Bakhru-1999

SPECIALITY: GERIATRIC PHYSIOTHERAPY
GENERAL PHYSIOTHERAPY IN GERIATRICS - PAPER 2

Subject	Theory	Credit	Practical	Credit	Total Credit
GENERAL PHYSIOTHERAPY IN GERIATRICS - PAPER 2	200	13	225	8	21

COURSE OBJECTIVES:

The aims for the second year elective subject in General Physiotherapy learner in geriatrics is to understand, apply, and teach/educate (students / patients / caregivers) kinetics and Kinematics of an older adult population various rehabilitation aspects, monitor outcomes appropriately, and recommend appropriate treatment for old adults.

Sr.no	Content	Teaching hours. 450 Hrs		Must know	Desirable to know	Nice To know
		Didactic (200Hrs)	Practical (225Hrs)			
1.	Specific Problems in Geriatrics: i. Movement dysfunction: Strength, Endurance, Impaired Respiration and Ventilation, Fatigue, Balance, Gait and Orthotic Considerations. ii. Urinary incontinence and impairment of pelvic floor. iii. Perception and cognitive impairment iv. Disability evaluations, facilities and	40 hrs	40 hrs	MK		

	concession v. Frail and institutionalized elderly					
2.	Nutrition in elderly: i. Diet and energy needs of old. ii. Diet related degenerative changes iii. Need for dietary alteration and formulation of diet for elderly iv. Physical activity	25 hrs	10 hrs	MK		
3.	Long term consequences of chronic disorders on various systems: a. Muscle weakness b. Movement dysfunction c. Impaired functional disability d. Changes in the Neuro-physiological functions & Cardio respiratory status. e. Women's specific issues.	25hrs	50hrs	MK		
4.	Physiotherapy assessment & Management of Miscellaneous conditions a. Wound healing in diabetes mellitus, leprosy, pressure sores b. Obesity c. Burns d. HIV e. Skin conditions f. Diabetes mellitus g. Malignancy	50hrs	75hrs	MK		
5.	National & International health programs for Geriatric Physiotherapy interventions.	20hrs	-	MK		

6.	Professional marketing strategies – i. Entrepreneurship ii. Specialty clinics iii. Independent Practice iv. Joining organizations v. Groups vi. NGO vii. Specialty references	15hrs	-		DK	
7.	Management strategies of various Geriatric disorders	25hrs	50hrs	MK		

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SPECIALITY: GERIATRIC PHYSIOTHERAPY

ADVANCES IN GERIATRIC PHYSIOTHERAPY - PAPER 2

Subject	Theory	Credit	Practical	Credit	Total Credit
ADVANCES IN GERIATRIC PHYSIOTHERAPY - PAPER 2	200	13	250	8	21

COURSE OBJECTIVES:

The aims for the second year elective subject in Advances in Geriatric Physiotherapy learner is to understand, apply, and teach / educate (students / patients / caregivers) on geriatric principles or concepts core to their specialty.

Sr no	Contents	Teaching hours 450 Hrs		Must Know	Desirable to know	Nice To know
		Didactic (200hrs)	Practical (250hrs)			
1.	Organic Brain syndrome and Intervention strategies: i. Alzheimer's Disease ii. Dementia iii. Wandering and agitation iv. Family education	50 hrs	50 hrs	MK		
2.	Oncology in the older adult population and Physiotherapy interventions: i. Palliative care/hospice ii. Advanced directives iii. Suicidal tendency iv. Continuum of Care v. Wellness & Health Promotion	30 hrs	50 hrs	MK		

3.	<p>Critical Care:</p> <ul style="list-style-type: none"> i. Non-verbal pain assessment ii. Delirium iii. Out of hospital directives iv. Transition to/from a nursing home or rehab facility v. Altered disease presentation in older adults 	30 hrs	50 hrs	MK		
4.	<p>Evidence Based Practice in Geriatric Physiotherapy:</p> <p>Importance and need of Evidence based practice, Principles of Evidencebased practice and Research in the field of physiotherapy, Application of Evidence based practice in professional day to day practice, Sources to search for evidence, Legal issues in practice.</p>	25 hrs	50 hrs	MK		
5.	<p>Clinical Reasoning & Diagnosis:</p> <p>Definition of clinical reasoning, Steps in clinical reasoning process, need for clinical reasoning in physiotherapy, Special tests & their sensitivity & reliability, Principles of physiotherapy diagnosis, Correlating clinical findings with investigations & Differential diagnosis.</p>	25 hrs	20 hrs	MK		
6.	<p>Advanced Geriatrics Evaluation Skills:</p> <ul style="list-style-type: none"> i. Advances in Investigations ii. Advance care planning iii. Rapid functional screen iv. Palliative and hospice care v. Assessment of fall risk, gait, osteoporosis risk 	40 hrs	30 hrs	MK		

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