BHARATH INSTITUTE OF HIGHER EDUCATION AND RESEARCH (BIHER)

Accredited 'A' Grade by NAAC

(Declared as Deemed -to -be University under section 3 of UGC Act, 1956)

SREE BALAJI COLLEGE OF PHYSIOTHERAPY

Constituent College of BIHER

MASTER OF PHYSIOTHERAPY IN ADVANCED NEUROLOGICAL CONDITION

Postgraduate Degree Course

MPT in Advanced Neurological Condition CBCS Syllabus 2019

1 Semester = 20 Weeks Teaching/ 1 Week= 36 Hours

MC Main Core, GE General Elective, CT Clinical Training, CD Dissertation, AE Allied Elective

Sem.	Course Code	Courses	Theory		Practical		Total Hours	Total Credits
			H	C	H	C		
I	19MPT1MC01	Basic Sciences	90	6	75	2	165	8
	19MPT1MC02	Research Methodology, Biostatistics and EBP	75	5	90	3	165	8
	19MPT1GE01	Molecular Biology	60	4	75	2	135	6
	19MPT1GE02	Kinesiotaping						
	19MPT1CT01	Clinical Training I					255	3
							720	25
II	19MPT2MC01	Movement Science	90	6	75	2	165	8
	19MPT2MC02	Advanced Therapeutics	75	5	90	3	165	8
	19MPT2GE01	Health Economics	60	4	75	2	135	6
	19MPT2GE02	Yoga for Physiotherapist						
	19MPT2CT02	Clinical Training II					255	3
							720	25
III	19MPT3AE01	Allied Elective in Neuro	160	10	200	8	360	18
	19MPT3CD01	Dissertation	30	2	75	2	105	4
	19MPT3CT03	Clinical Training III					255	3
							720	25
IV	19MPT4AE01	Elective in Advanced Neurology	160	10	200	8	360	18
	19MPT4CD02	Dissertation	30	2	75	2	105	4
	19MPT4CT04	Clinical Training IV					255	3
							720	25

SEMESTER I - COURSE OUTCOME, CO PO MAPPING

Course Code 19MPT1MC01	Course Name: Basic Science	Theory	Practical	Total Credit
	Total Contact Hours -165	6	2	8
	Prerequisite Course - BPT			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Demonstrate comprehensive understanding of electrophysiology.			
CO2	Acquire the knowledge in nutrition that is required to be practiced in health care system.			
CO3	Understand the basis of exercise and sports and its application in practice of physiotherapy.			
CO4	Learn and understand the skills of assessment for fitness evaluation and its application in practice of physiotherapy.			
CO5	Understand the concepts of applications of molecular biology and genetics.			

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	3	3	2	3	3	2	3	3
CO2	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	2	3
CO3	3	3	3	3	3	3	3	3	3	2	3	3	3	2	3	3	3
CO4	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	2
CO5	3	3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	3

BASIC SCIENCE

Syllabus

UNIT I : Cell- nerve – muscle – physiology – Electrophysiology- nerve conduction studies – electromyography – ENMS – kinesiological EMG – bioelectricity – evoked potentials

Molecular Biology & Genetics.

UNIT II : Nutrition – carbohydrates – minerals – protein – fat – metabolism – nature – malnutrition – source – role of exercises – supplement – obesity – evaluation – management

UNIT III : Exercise and sports physiology – energy transfer – source – utilisation – response of musculoskeletal – nervous – endocrine – cardiorespiratory system

UNIT IV : Aerobic – resisted – high intensity exercises – factors influencing – techniques – exercise physiology

UNIT V : Fatigue – fitness evaluation – training – various by techniques – gender – altitude

Reference

1 Exercise Physiology - Mc Ardle Katch, Katch.

2. Clinical Electromyography (Part I basic section only) Nerve Conduction Studies - Shin J.OH - Publisher Williams & Wilkins.

3. Clinical Neurophysiology - Nerve conduction, Electromyography and Evoked Potentials - UK Misra, Publisher B.I. Churchill Livingstone.

4. Manual of Nerve conduction velocity techniques - DE HSA, Raven Press, New York.

5. Electrodiagnosis in Diseases of Nerve & Muscle - Kimura FA Davis, Philadelphia

Journal

1. Journal of biomedical sciences
2. Bosnian journal of basic medical sciences
3. International journal of medical sciences
4. Clinical science
5. Internal journal of sciences: basic and applied research

Course Code 19MPT1MC02	Course Name: Research Methodology, Biostatistics and EBP	Theory	Practical	Total Credit
	Total Contact Hours -165	5	3	8
	Prerequisite Course - BPT			
	Course Coordinator:			

Course Outcomes (CO)	
CO1	Describe how research is undertaken, and its benefits.
CO2	Differentiate between quantitative research and qualitative research.
CO3	Select an appropriate study design based on research question.
CO4	Identify ethical issues in research.
CO5	Design a research proposal

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	2	3
CO2	3	3	3	3	3	2	3	3	3	3	3	3	3	2	3	3	3
CO3	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2
CO4	3	3	3	3	3	3	3	3	3	2	3	3	3	2	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3	2	3

RESEARCH METHODOLOGY, BIOSTATISTICS AND EBP

Syllabus

UNIT I : Ethics in physiotherapy research – phases of research – conceptual phase – concepts – variables – hypothesis – literature review

UNIT II : Emperical phase – design – survey – validity – data collection – observationsl method- data collection – observational method- biophysiologic measures – data analysis – descriptive statistics – inferential statistics

UNIT III : Interpretative phase – critiquing research – guidelines Guidelines for research publication – APA style – plagarism – copy right laws

UNIT IV : Concepts of teaching and learning – curriculum – development – methods of teaching – evaluation – guidance and counselling – faculty professional and personal development in PT – Online learning & Evaluation.

UNIT V : PT education – Indian health care – physiotherapy practice growth – demand – India – abroad – department management – finance management – legal concepts – values – ethics .Marketing strategies,Finance in education , Medicolegal aspects.

Reference

Textbook

1. Research methodology- C. R. Kothari
2. Research Methods for Clinical therapist- Carolym M. Hicks
3. Research design- John W. Creswell
4. Rehabilitation Research: Principles and Applications by Elizabeth Domholdt
5. Nursing Research- Polit & Hungler
6. Introduction to Biostatistics and Research Methods Rao P.S.S. Sundar & j. Richard
7. Research Methodology and Biostatistics - A Comprehensive Guide for Health Care Professionals, Suresh Sharma
8. Principles, Methods And Techniques Of Teaching Paperback – 1 January 2010 by J.C. Aggarwal (Author)

Websites

1. https://www.researchgate.net/search
2. https://www.ncbi.nlm.nih.gov/pmc/

Journals

1. Journal of Clinical Physiotherapy Research
2. Physiotherapy research International
3. International Journal Of Physiotherapy Research

Course Code 19MPT1GE01	Course Name: Molecular Biology	Theory	Practical	Total Credit
	Total Contact Hours -135	4	2	6
	Prerequisite Course - BPT			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Learning structural levels of nucleic acids- DNA and RNA and genome organization in prokaryotes and eukaryote and the concept of Gene and the gene architecture.			
CO2	Learning molecular events in the DNA replication and role of different enzymes and overview of the central dogma of life and various molecular events.			
CO3	Understanding the principles and applications of polymerase chain reaction(PCR) and molecular events of transcription and processing of transcripts, RNA editing.			
CO4	Molecular events of translation leading to protein synthesis and post translational modification and understanding the regulation of gene expression in prokaryotes using operon concept and eukaryotes.			
CO5	Learn the methods of DNA sequencing and various tools and techniques of molecular biology and learn about the molecular markers and its classification and applications.			

Mapping of Course Outcomes with Program Outcomes (1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)																	
CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	3	2	3	3	2	3	3	3
CO2	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	2	3
CO3	3	3	2	3	3	3	3	3	3	3	2	3	3	2	3	3	3
CO4	3	3	3	3	3	3	2	3	3	3	3	3	3	3	2	3	3
CO5	3	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	2

MOLECULAR BIOLOGY FOR PHYSIOTHERAPIST

Syllabus

Unit I: Describe the chemical nature of, and major chemical processes within, the human body and key features of the metabolic processes by which cells generate energy.

Unit II : Evaluate how the body responds to changes in nutritional input and energy output, genetic information is used in the human body and explain how this impacts the health of an individual.

Unit III : Explain the similarities & differences between eukaryotic cells, prokaryotic cells and viruses.

Unit IV : Describe how the human body defends against infectious disease.

Unit V: Explore how pathogenic microbes cause disease, methods of infection control and evaluate their relative merits.

References

Text Book

1. Molecular and Cellular Biology, Sanghera Paul Dr
2. Cell and Molecular Biology, P. K. Gupta (Author)

Website:

1. https://academic.oup.com/mbe
2. https://www.springer.com/

Journal

1. https://journals.asm.org/journal/mcb
2. https://bmcmolbiol.biomedcentral.com/
3. https://www.journals.elsevier.com/journal-of-molecular-biology

Course Code 19MPT1GE02	Course Name: Kinesiotaping	Theory	Practical	Total Credit
	Total Contact Hours -135	4	2	6
	Prerequisite Course - BPT			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Describe the concepts of Kinesio Taping.			
CO2	Describe the unique qualities of the Kinesio Tex Tape.			
CO3	Utilize and demonstrate application skills in guided laboratory sessions.			
CO4	Demonstrate application skills during lab sessions.			
CO5	Practice the various cutting techniques and their clinical application.			

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	2	3
CO2	3	3	3	3	3	3	3	3	2	3	3	3	3	3	2	3	3
CO3	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	2
CO4	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	2	3	3	3	3	3	3	2	3	3	3	3

KINESIOTAPING

Syllabus

Unit I: Introduction- Theory- Basics of Application-Contra indications- Precautions

Unit II: K-Tape Material- Physiological & Therapeutic effects- Clinical Applications

Unit III: Types of Application- Stretch

Unit IV : Various fields- Sports- Pregnancy- orthopedics, etc.

Unit V : K-Taping research- Evidences-Future

References:

1. Kinesiology Taping For Rehab And Injury Prevention - Kim Aliana
2. Practical Guide to Kinesiology Taping for Injury Prevention and Common Medical Conditions, Gibbons John
3. NeuroMuscular taping -Edi Ermes Usa, David Blow
4. Kinesiology Taping: The Essential Step-by-step Guide - Langendoen, John And Sertel, Karin
Website :
1. https://kinesiotaping.com/
2. https://www.k-taping.com/en/

Course Code 19MPT1CT01	Course Name: Clinical Training I	Total Credit
	Total Contact Hours - 255	3
	Prerequisite Course - BPT	
	Course Coordinator:	
Course Outcomes (CO)		
CO1	Explain the components of basic assessment for a patient.	
CO2	List the impairments resulting in functional limitation and participation restriction.	
CO3	Demonstrate clinical observatory skill and the bedside manners.	
CO4	Understanding of policy of the inpatient service and outpatient services.	
CO5	Understand the role of physiotherapy in various clinical conditions and the documentation of patient service.	

Mapping of Course Outcomes with Program Outcomes (1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)																	
CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	2	3	3	3	3	3	3	3	3	3	2	3	3	3	3
CO2	3	3	3	3	3	3	2	3	3	3	3	3	3	3	2	3	3
CO3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	2
CO4	3	3	3	3	3	3	3	3	2	3	3	3	3	2	3	3	3
CO5	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	2	3

CLINICAL TRAINING I

Syllabus

Unit I : Postings for Observation , evaluation and assessment of cases in Physio care for Musculoskeletal, Sports injuries, Hand injury-patients

Unit II : Aurogreen postings for Aquatic therapy

Unit III : FitnessOne and EXRX postings for Fitness

Unit IV : Pain and stroke posting for clinical evaluation,gait analysis

Unit V : NIEPMD Postings for Physically challenged.

SEMESTER II - COURSE OUTCOME, CO PO MAPPING

Course Code 19MPT2MC01	Course Name: Movement Science	Theory	Practical	Total Credit
	Total Contact Hours -165	6	2	8
	Prerequisite Course -BPT			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Apply fundamental human movement principles, from both natural and social science perspectives.			
CO2	Understanding of the form and function of the human body.			
CO3	Critically evaluate human movement research in order to design and generate disciplinary knowledge.			
CO4	Use qualitative and quantitative reasoning and evidence, synthesizing information from a variety of origins.			
CO5	Evaluate methodically and systematically problems and develop interventions in the human movement domain.			

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3	2	3
CO2	3	3	3	3	3	3	2	3	3	3	3	3	2	3	3	3	3
CO3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3	2
CO4	3	3	3	2	3	3	3	3	3	3	3	3	3	2	3	3	3
CO5	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3	2	3

MOVEMENT SCIENCE

Syllabus

UNIT I : APPLIED ANATOMY: Voluntary movement- neural control – tone- pathways

UNIT Ii : APPLIED ANATOMY: Kinetics- kinematics – application in spasticity – flaccid paralysis

UNIT III : PATHOMECHANICS : Biomechanics – pathomechanics of extremities – spine – functional analysis

UNIT IV : PATHOMECHANICS : Gait - Kinematic Analysis of Gait – Force Platform - Robotics– Posture -Significance of functional MRI.

UNIT V : Mobility Aids – ergonomics at industry – workplace – Job analysis – rehabilitation

Reference

1. Basic biomechanics of the musculoskeletal system by Margareta Nordin and Victor H. Frankle, 2nd edition (Lea and Febiger)

2. Kinesiology of the Human Body: Under Normal and pathological condition by Arthur Steindler, 5th edition (Charles C Thomas, 1977)

3. Joint Structure & Function :A comprehensive analysis by Cynthia C Norkin, Pamela K Levangie (Jaypee Brothers, 2006)

4. Brunnstrom's Clinical Kinesiology by Laura K. Smith & Don Lehmkuh, 5th edition (F A Davis, 1996)

5. The Physiology of the Joints by Kapandji & Matthew J Kendel (Churchill Livingstone, 2008)

6. Clinical Biomechanics of the Spine by Augustus A White & Manohar M Panjabi, 2nd Edition (Lippincott Williams & Wilkins; 1990)

7. Kinesiology :The mechanics and Pathomechanics of Human Movement by Carol Oatis (Lippincott Williams & Wilkins; 2008)

8. Kinesiology: Application to pathological motion by Soderberg, 2nd Edition (Wiliams & Wilkins, 1997)

Course Code 19MPT2MC02	Course Name: Advanced Therapeutics	Theory	Practical	Total Credit
	Total Contact Hours -165	5	3	8
	Prerequisite Course -BPT			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Implement a standardised approach to patient care in complex acute care settings.			
CO2	Describe the pathophysiology of selected disease states and explain the rationale and expected outcomes for drug therapy.			
CO3	Use current best evidence to determine and justify a valid/optimal therapeutic approach to management of these disease states.			
CO4	Develop, with an evidence based rationale, customised management and monitoring plans considering patient specific parameters, clinical test results and pharmacokinetic parameters.			
CO5	Critically reflect on and consolidate their individual learning process and progress in clinical competence.			

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	2
CO2	3	3	3	3	3	3	3	2	3	3	3	3	3	3	2	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	2	3	3	3	3	2
CO4	3	3	3	2	3	3	3	3	3	3	3	3	3	2	3	3	3
CO5	3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	2	3

ADVANCED THERAPEUTICS

Syllabus

UNIT I EXERCISE THERAPY : Evaluation – prescription – concepts – physiological effects – limitation – clinical indications – care points – progression

- Documentation – types of exercises – strength endurance – role of biomedical engineering

UNIT II ELECTROTHERAPY : Electrotherapy low frequency, medium and high frequency equipments – limitations , effects , uses , indications , contraindications , safety precautions – electrotherapeutic – EMG Biofeedback

UNIT III MANUAL THERAPY : History – concepts indications – contraindication – safety precautions – evaluation – joint mobilization techniques

UNIT IV : Soft tissue techniques – muscle energy techniques – myofacialrelease , TP release – PR technique – neural tissue mobilisation

UNIT V : Clinical examination – disability evaluation – differential diagnosis – prescription of modalities – evaluation prognosis – documentation – evidence based practise

Reference

Books

1 Text Book of work Physiology - Guyton, Prim Books Bangalore - 1991, 8th Edition.

2 Physicals agents in rehabilitation: from research to practical by Michell H. Cameron, 2nd edition (Saunders and Elsevier, 2003)

3 Therapeutic Modalities for Allied Health Professionals by William E. Prentice and Frank Underwood (McGraw-Hill, 1998)

Journal

1. European journal of physiotherapy (advances in physiotherapy)
2. Archives of physical medicine and rehabilitation
3. Indian journal of physical therapy
4. International journal of therapy and rehabilitation
5. Journal of rehabilitation medicine

Course Code 19MPT2GE01	Course Name: Health Economics	Theory	Practical	Total Credit
	Total Contact Hours -135	4	2	6
	Prerequisite Course - BPT			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Community physiotherapist in natural and man-made disasters and disaster management.			
CO2	Need of health economics and methods of economic analysis in health.			
CO3	Definition and types of medical records, importance of medical record.			
CO4	Quality control and management- principles and methods.			
CO5	Inventory control and purchase management.			

Mapping of Course Outcomes with Program Outcomes (1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)																	
CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	3	3	2	3	3	3	2	3
CO2	3	3	3	3	3	3	3	3	3	2	3	3	3	3	2	3	3
CO3	3	3	3	3	3	3	2	3	3	3	3	3	2	3	3	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	2
CO5	3	3	3	3	3	3	3	3	3	2	3	3	3	2	3	3	3

HEALTH ECONOMICS

Syllabus

Unit I: Ethical principles in health economic analysis

Unit II: Measuring status of health and cost of illness

Unit III : Different health economic evaluations

Unit IV: Decision-analytic modelling

Unit V: Sensitivity analyses Insight in the use of health economic evaluations in real world

Reference

Text Books

1.Drummond, Michael F. Methods for the economic evaluation of health care programmes [updated and rev.] ed.: Oxford: Oxford University Press, 2005.
2.Brazier, John. Measuring and Valuing Health Benefits for Economic Evaluation
Oxford University Press, 2007.

Course Code 19MPT2GE02	Course Name: Yoga for Physiotherapist	Theory	Practical	Total Credit
	Total Contact Hours -135	4	2	6
	Prerequisite Course - BPT			
	Course Coordinator:			

Course Outcomes (CO)	
CO1	Demonstrate the introduction and principles of yoga.
CO2	Knowledge of history of yoga and yoga in modern India.
CO3	Outline of yoga background and importance of yoga in modern world.
CO4	Learning the types and forms of asanas and description of physiological effect of yoga.
CO5	Understanding the role of yoga in physiotherapy.

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	2
CO2	3	3	3	3	3	3	3	3	3	3	2	3	3	3	2	3	3
CO3	3	3	3	3	3	3	2	3	3	3	3	3	2	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	2	3
CO5	3	3	3	3	3	3	3	3	3	3	3	2	3	2	3	3	3

YOGA FOR PHYSIOTHERAPIST

Syllabus

Unit I: Scienctific Study of yoga- types- Basics- Philosophy- Evolution -Physiologic & Therapeutic effects, Dangers- Precautions.

Unit II: Principle & Practice of Pranayama Hatha Yoga, clinical Applications

Unit III: Yoga & Human Systems, Yoga in Physical and Mental Health, Yoga for Personality Development- Yoga & Stress Management, Yoga & Pregnancy

Unit IV : Advanced Yoga Techniques -Research in Yoga

Unit V : Physiotherapy and Yoga, Clinical Applications of Yoga

Reference

1.Application in Yoga, Gharote, manmath M. ,Lonavla, 2008

2.The Complete book of Yoga, Sri Ananda, Orient Paper Backs, Delhi, 2003

Course. Code 19MPT2CT02	Course Name: Clinical Training II	Total Credit
	Total Contact Hours - 255	3
	Prerequisite Course - BPT	
	Course Coordinator:	
Course Outcomes (CO)		
CO1	Explain the components of basic assessment for a patient.	
CO2	List the impairments resulting in functional limitation and participation restriction.	
CO3	Demonstrate clinical observatory skill and the bed side manners.	
CO4	Understanding of policy of the inpatient service and outpatient services.	
CO5	Understand the role of physiotherapy in various clinical conditions and the documentation of patient service.	

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2
CO2	3	3	3	3	3	3	3	2	3	3	3	3	3	3	2	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	3	3	3
CO4	3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	2
CO5	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3	2

CLINICAL TRAINING II

Syllabus

Unit I : Postings for Observation , evaluation and assessment of cases in Physio care for Musculoskeletal, Sports injuries, Hand injury-patients

Unit II : Aurogreen postings for Aquatic therapy

Unit III : FitnessOne and EXRX postings for Fitness

Unit IV : Pain and stroke posting for clinical evaluation,gait analysis

Unit V : NIEPMD Postings for Physically challenged.

SEMESTER III - COURSE OUTCOME, CO PO MAPPING

Course Code 19MPT3AE01	Course Name: Allied Elective in Neuro	Theory	Practical	Total Credit
	Total Contact Hours -180	5	4	9
	Prerequisite Course -BPT			
	Course Coordinator:-			
Course Outcomes (CO)				
CO1	Understanding the importance of pediatric neurological conditions.			
CO2	Understand about assessment and management of degenerative conditions.			
CO3	Understand the importance and management of neurological conditions.			
CO4	Understand about complication impairment and disability and their management.			
CO5	Understand the geriatric conditions under the theories of ageing and physiological changes due to ageing.			

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	2
CO2	3	3	3	3	3	3	3	3	2	3	3	3	3	3	2	3	3
CO3	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	2
CO4	3	3	3	3	3	3	2	3	3	3	3	3	2	3	3	3	3
CO5	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	2	3

ALLIED ELECTIVE IN NEURO

Syllabus

UNIT I : Paediatric neurology – hydrocephalus – growth development – syringiomyelia – cerebral palsy

UNIT II : Reflexes – nutrition – genetic disorders – surgery – physiotherapy assessment – differential diagnosis – rehabilitation

UNIT III : Geriatrics – falls – balance – systemic illness- depression – cognitive disorders – parkinson's diseases – AD – neurological changes – musculosketal – incontinence – disability – social security

UNIT IV : Conditions – degenerative , infective , connective tissue – Autoimmune – genetic , conservative – surgical – evaluation – differential diagnosis – treatment

UNIT V : Evidence based practice – disability evaluation – compensation – benefits

Reference

1. Clinical Neuroanatomy for Medical Students by Richard S Snell, 5th Edition (Lippincott Williams & Wilkins, 2001) Neurophysiology

2. Neurophysiology by RHS Carpenter, 4th edition (Arnold 2003) Clinical neurology 1. Pathophysiology of the motor systems: Principles and Clinical presentations by Christopher M. Fredericks and Lisa K. Saladin (F.A. Davis Company 1996)

3. Brain's diseases of the nervous system by John Walton, 12th edition (Oxford University press)

4. Illustrated neurology and neuro surgery by Kenneth Lindsay and Ian Bone (Churchill Livingston, 2004)

5. Bickerstaff's neurological examination in clinical practice by John Spillane, 6th edition (Blackwell science limited 1996)

6. Physical rehabilitation laboratory manual: Focus on functional training by Susan B O Sullivan and Thomas J Schmitz. (F.A. Davis Company

Journal

1. Journal of Neurologic Physical Therapy
2. Journal of Rehabilitation Research and Development.
3. Journal of Neurological Sciences.
4. European Journal of Neurological Sciences
5. Internal Journal of Neurorehabilitation

CLINICAL TRAINING III

Syllabus

Unit I : Clinical evaluation patient care in pain and stroke
Unit II : Gait rehabilitation in pain and stroke
Unit III : EMG and biofeedback in Jogo
Unit IV : Neurological rehabilitation in VHS
Unit V : Postoperative Neuro care inVHS

SEMESTER IV - COURSE OUTCOME, CO PO MAPPING

Course Code 19MPT4AE01	Course Name: Elective in Advance Neurology	Theory	Practical	Total Credit
	Total Contact Hours -	10	8	18
	Prerequisite Course - BPT			
	Course Coordinator:			

Course Outcomes (CO)	
CO1	Understand the importance of growth and development of nervous system.
CO2	Understand about basic concept of neurodiagnostics in physiotherapy assessment and management.
CO3	Understand about the different types of manual therapy concepts used in physiotherapy for treating different neurological physiotherapy conditions.
CO4	Able to plan and prescribe short and long term physiotherapy treatment by selecting appropriate mode of evaluation and interventions.
CO5	Understand the concepts of rehabilitation and delivery of health care with medical team work.

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	2	3	3	3	3	3	3	3	3	2	3	3
CO2	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	2
CO3	3	3	3	3	3	3	3	3	3	2	3	3	3	2	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	2	3	3	3	2	3
CO5	3	3	3	3	3	3	3	2	3	3	3	3	2	3	3	3	3

ELECTIVE IN ADVANCE NEUROLOGY

Syllabus

UNIT I : Growth and development of nervous system – neuroanatomy – neurophysiology – pathophysiology of nerve – muscle – motor system – motor control – coordination – voluntary movement

UNIT II : Neurodiagnostic tests - indications, limitations. – Uses – clinical manifestation of various congenital – acquired neuro disease disorders

UNIT III : Physiotherapy assessment – scales – score – index – neuro aliments – movement disorders – degenerative conditions – post operative cranial – spinal – nerve – surgeries – ICU management

UNIT IV : PT techniques – concepts – indications – safety – physiological effects – evidence based applications – rehabilitation

UNIT V: Disability evaluation – management – mobility AIDS – orthotics – neuro drugs – surgery – post operative care.

Reference

1. Clinical Neuroanatomy for Medical Students by Richard S Snell, 5th Edition (Lippincott Williams & Wilkins, 2001) Neurophysiology

2. Neurophysiology by RHS Carpenter, 4th edition (Arnold 2003) Clinical neurology 1. Pathophysiology of the motor systems: Principles and Clinical presentations by Christopher M. Fredericks and Lisa K. Saladin (F.A. Davis Company 1996)

3. Brain's diseases of the nervous system by John Walton, 12th edition (Oxford University press)

4. Illustrated neurology and neuro surgery by Kenneth Lindsay and Ian Bone (Churchill Livingston, 2004)

5. Bickerstaff's neurological examination in clinical practice by John Spillane, 6th edition (Blackwell science limited 1996)

6. Physical rehabilitation laboratory manual: Focus on functional training by Susan B O Sullivan and Thomas J Schmitz. (F.A. Davis Company

Journal

1. Journal of Neurologic Physical Therapy
2. Journal of Rehabilitation Research and Development.
3. Journal of Neurological Sciences.
4. European journal of neurological sciences
5. Internal journal of neurorehabilitation

Course Code 19MPT4CT04	Course Name: Clinical Training IV	Total Credit
	Total Contact Hours -255	3
	Prerequisite Course - BPT	
	Course Coordinator:	
Course Outcomes (CO)		
CO1	Explain the components of basic assessment for a patient.	
CO2	List the impairments resulting in functional limitation and participation restriction.	
CO3	Demonstrate clinical observatory skill and the bedside manners.	
CO4	Understanding of policy of the inpatient service and outpatient services.	
CO5	Understand the role of physiotherapy in various clinical conditions and the documentation of patient service.	

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	2	3
CO2	3	3	3	3	3	3	3	3	3	3	2	3	3	2	3	3	3
CO3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	2
CO4	3	3	3	3	3	2	3	3	3	3	3	3	3	3	2	3	3
CO5	3	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	2

CLINICAL TRAINING IV

Syllabus

Unit I : Clinical evaluation patient care in pain and stroke
Unit II : Gait rehabilitation in pain and stroke
Unit III : EMG and biofeedback in Jogo
Unit IV : Neurological rehabilitation in VHS
Unit V : Postoperative Neuro care inVHS

BHARATH INSTITUTE OF HIGHER EDUCATION AND RESEARCH (BIHER)

Accredited 'A' Grade by NAAC

(Declared as Deemed -to -be University under section 3 of UGC Act, 1956)

SREE BALAJI COLLEGE OF PHYSIOTHERAPY

Constituent College of BIHER

MASTER OF PHYSIOTHERAPY IN ADVANCED ORTHOPEDIC CONDITIONS

Postgraduate Degree Course

MPT in Advanced Orthopedic Conditions CBCS Syllabus 2019

1 Semester = 20 Weeks Teaching/ 1 Week= 36 Hours

MC Main Core, GE General Elective, CT Clinical Training, CD Dissertation, AE Allied Elective

Sem.	Course Code	Courses	Theory		Practical		Total Hours	Total Credits
			H	C	H	C		
I	19MPT1MC01	Basic Sciences	90	6	75	2	165	8
	19MPT1MC02	Research Methodology, Biostatistics and EBP	75	5	90	3	165	8
	19MPT1GE01	Molecular Biology	60	4	75	2	135	6
	19MPT1GE02	Kinesiotaping						
	19MPT1CT01	Clinical Training I					255	3
							720	25
II	19MPT2MC01	Movement Science	90	6	75	2	165	8
	19MPT2MC02	Advanced Therapeutics	75	5	90	3	165	8
	19MPT2GE01	Health Economics	60	4	75	2	135	6
	19MPT2GE02	Yoga for Physiotherapist						
	19MPT2CT02	Clinical Training II					255	3
							720	25
III	19MPT3AE01	Allied Elective in Ortho	160	10	200	8	360	18
	19MPT3CD01	Dissertation	30	2	75	2	105	4
	19MPT3CT03	Clinical Training III					255	3
							720	25
IV	19MPT4AE01	Elective in Advance Orthopedic	160	10	200	8	360	18
	19MPT4CD01	Dissertation	30	2	75	2	105	4
	19MPT4CT04	Clinical Training IV					255	3
							720	25

SEMESTER I - COURSE OUTCOME, CO PO MAPPING

Course Code 19MPT1MC01	Course Name: Basic Science	Theory	Practical	Total Credit
	Total Contact Hours -165	6	2	8
	Prerequisite Course - BPT			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Demonstrate comprehensive understanding of electrophysiology.			
CO2	Acquire the knowledge in nutrition that is required to be practiced in health care system.			
CO3	Understand the basis of exercise and sports and its application in practice of physiotherapy.			
CO4	Learn and understand the skills of assessment for fitness evaluation and its application in practice of physiotherapy.			
CO5	Understand the concepts of applications of molecular biology and genetics.			

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	3	3	2	3	3	2	3	3
CO2	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	2	3
CO3	3	3	3	3	3	3	3	3	3	2	3	3	3	2	3	3	3
CO4	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	2
CO5	3	3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	3

BASIC SCIENCE

Syllabus

UNIT I : Cell- nerve – muscle – physiology – Electrophysiology- nerve conduction studies – electromyography – ENMS – kinesiological EMG – bioelectricity – evoked potentials

Molecular Biology & Genetics.

UNIT II : Nutrition – carbohydrates – minerals – protein – fat – metabolism – nature – malnutrition – source – role of exercises – supplement – obesity – evaluation – management

UNIT III : Exercise and sports physiology – energy transfer – source – utilisation – response of musculoskeletal – nervous – endocrine – cardiorespiratory system

UNIT IV : Aerobic – resisted – high intensity exercises – factors influencing – techniques – exercise physiology

UNIT V : Fatigue – fitness evaluation – training – various by techniques – gender – altitude

Reference

1 Exercise Physiology - Mc Ardle Katch, Katch.

2. Clinical Electromyography (Part I basic section only) Nerve Conduction Studies - Shin J.OH - Publisher Williams & Wilkins.

3. Clinical Neurophysiology - Nerve conduction, Electromyography and Evoked Potentials - UK Misra, Publisher B.I. Churchill Livingstone.

4. Manual of Nerve conduction velocity techniques - DE HSA, Raven Press, New York.

5. Electrodiagnosis in Diseases of Nerve & Muscle - Kimura FA Davis, Philadelphia

Journal

1. Journal of biomedical sciences
2. Bosnian journal of basic medical sciences
3. International journal of medical sciences
4. Clinical science
5. Internal journal of sciences: basic and applied research

Course Code 19MPT1MC02	Course Name: Research Methodology, Biostatistics and EBP	Theory	Practical	Total Credit
	Total Contact Hours -165	5	3	8
	Prerequisite Course - BPT			
	Course Coordinator:			

Course Outcomes (CO)	
CO1	Describe how research is undertaken, and its benefits.
CO2	Differentiate between quantitative research and qualitative research.
CO3	Select an appropriate study design based on research question.
CO4	Identify ethical issues in research.
CO5	Design a research proposal

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	2	3
CO2	3	3	3	3	3	2	3	3	3	3	3	3	3	2	3	3	3
CO3	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2
CO4	3	3	3	3	3	3	3	3	3	2	3	3	3	2	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3	2	3

RESEARCH METHODOLOGY, BIOSTATISTICS AND EBP

Syllabus

UNIT I : Ethics in physiotherapy research – phases of research – conceptual phase – concepts – variables – hypothesis – literature review

UNIT II : Emperical phase – design – survey – validity – data collection – observationsl method- data collection – observational method- biophysiologic measures – data analysis – descriptive statistics – inferential statistics

UNIT III : Interpretative phase – critiquing research – guidelines Guidelines for research publication – APA style – plagarism – copy right laws

UNIT IV : Concepts of teaching and learning – curriculum – development – methods of teaching – evaluation – guidance and counselling – faculty professional and personal development in PT – Online learning & Evaluation.

UNIT V : PT education – Indian health care – physiotherapy practice growth – demand – India – abroad – department management – finance management – legal concepts – values – ethics .Marketing strategies,Finance in education , Medicolegal aspects.

Reference

Textbook

1. Research methodology- C. R. Kothari
2. Research Methods for Clinical therapist- Carolym M. Hicks
3. Research design- John W. Creswell
4. Rehabilitation Research: Principles and Applications by Elizabeth Domholdt
5. Nursing Research- Polit & Hungler
6. Introduction to Biostatistics and Research Methods Rao P.S.S. Sundar & j. Richard
7. Research Methodology and Biostatistics - A Comprehensive Guide for Health Care Professionals, Suresh Sharma
8. Principles, Methods And Techniques Of Teaching Paperback – 1 January 2010 by J.C. Aggarwal (Author)

Websites

1. https://www.researchgate.net/search
2. https://www.ncbi.nlm.nih.gov/pmc/

Journals

1. Journal of Clinical Physiotherapy Research
2. Physiotherapy research International
3. International Journal Of Physiotherapy Research

Course Code 19MPT1GE01	Course Name: Molecular Biology	Theory	Practical	Total Credit
	Total Contact Hours -135	4	2	6
	Prerequisite Course - BPT			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Learning structural levels of nucleic acids- DNA and RNA and genome organization in prokaryotes and eukaryote and the concept of Gene and the gene architecture.			
CO2	Learning molecular events in the DNA replication and role of different enzymes and overview of the central dogma of life and various molecular events.			
CO3	Understanding the principles and applications of polymerase chain reaction(PCR) and molecular events of transcription and processing of transcripts, RNA editing.			
CO4	Molecular events of translation leading to protein synthesis and post translational modification and understanding the regulation of gene expression in prokaryotes using operon concept and eukaryotes.			
CO5	Learn the methods of DNA sequencing and various tools and techniques of molecular biology and learn about the molecular markers and its classification and applications.			

Mapping of Course Outcomes with Program Outcomes (1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)																	
CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	3	2	3	3	2	3	3	3
CO2	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	2	3
CO3	3	3	2	3	3	3	3	3	3	3	2	3	3	2	3	3	3
CO4	3	3	3	3	3	3	2	3	3	3	3	3	3	3	2	3	3
CO5	3	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	2

MOLECULAR BIOLOGY FOR PHYSIOTHERAPIST

Syllabus

Unit I: Describe the chemical nature of, and major chemical processes within, the human body and key features of the metabolic processes by which cells generate energy.

Unit II : Evaluate how the body responds to changes in nutritional input and energy output, genetic information is used in the human body and explain how this impacts the health of an individual.

Unit III : Explain the similarities & differences between eukaryotic cells, prokaryotic cells and viruses.

Unit IV : Describe how the human body defends against infectious disease.

Unit V: Explore how pathogenic microbes cause disease, methods of infection control and evaluate their relative merits.

References

Text Book

1. Molecular and Cellular Biology, Sanghera Paul Dr
2. Cell and Molecular Biology, P. K. Gupta (Author)

Website:

1. https://academic.oup.com/mbe
2. https://www.springer.com/

Journal

1. https://journals.asm.org/journal/mcb
2. https://bmcmolbiol.biomedcentral.com/
3. https://www.journals.elsevier.com/journal-of-molecular-biology

Course Code 19MPT1GE02	Course Name: Kinesiotaping	Theory	Practical	Total Credit
	Total Contact Hours -135	4	2	6
	Prerequisite Course - BPT			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Describe the concepts of Kinesio Taping.			
CO2	Describe the unique qualities of the Kinesio Tex Tape.			
CO3	Utilize and demonstrate application skills in guided laboratory sessions.			
CO4	Demonstrate application skills during lab sessions.			
CO5	Practice the various cutting techniques and their clinical application.			

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	2	3
CO2	3	3	3	3	3	3	3	3	2	3	3	3	3	3	2	3	3
CO3	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	2
CO4	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	2	3	3	3	3	3	3	2	3	3	3	3

KINESIOTAPING

Syllabus

Unit I: Introduction- Theory- Basics of Application-Contra indications- Precautions

Unit II: K-Tape Material- Physiological & Therapeutic effects- Clinical Applications

Unit III: Types of Application- Stretch

Unit IV : Various fields- Sports- Pregnancy- orthopedics, etc.

Unit V : K-Taping research- Evidences-Future

References:

1. Kinesiology Taping For Rehab And Injury Prevention - Kim Aliana
2. Practical Guide to Kinesiology Taping for Injury Prevention and Common Medical Conditions, Gibbons John
3. NeuroMuscular taping -Edi Ermes Usa, David Blow
4. Kinesiology Taping: The Essential Step-by-step Guide - Langendoen, John And Sertel, Karin
Website :
1. https://kinesiotaping.com/
2. https://www.k-taping.com/en/

Course Code 19MPT1CT01	Course Name: Clinical Training I	Total Credit
	Total Contact Hours - 255	3
	Prerequisite Course - BPT	
	Course Coordinator:	
Course Outcomes (CO)		
CO1	Explain the components of basic assessment for a patient.	
CO2	List the impairments resulting in functional limitation and participation restriction.	
CO3	Demonstrate clinical observatory skill and the bedside manners.	
CO4	Understanding of policy of the inpatient service and outpatient services.	
CO5	Understand the role of physiotherapy in various clinical conditions and the documentation of patient service.	

Mapping of Course Outcomes with Program Outcomes (1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)																	
CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	2	3	3	3	3	3	3	3	3	3	2	3	3	3	3
CO2	3	3	3	3	3	3	2	3	3	3	3	3	3	3	2	3	3
CO3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	2
CO4	3	3	3	3	3	3	3	3	2	3	3	3	3	2	3	3	3
CO5	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	2	3

CLINICAL TRAINING I

Syllabus

Unit I : Postings for Observation , evaluation and assessment of cases in Physio care for Musculoskeletal, Sports injuries, Hand injury-patients

Unit II : Aurogreen postings for Aquatic therapy

Unit III : FitnessOne and EXRX postings for Fitness

Unit IV : Pain and stroke posting for clinical evaluation,gait analysis

Unit V : NIEPMD Postings for Physically challenged.

SEMESTER II - COURSE OUTCOME, CO PO MAPPING

Course Code 19MPT2MC01	Course Name: Movement Science	Theory	Practical	Total Credit
	Total Contact Hours -165	6	2	8
	Prerequisite Course -BPT			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Apply fundamental human movement principles, from both natural and social science perspectives.			
CO2	Understanding of the form and function of the human body.			
CO3	Critically evaluate human movement research in order to design and generate disciplinary knowledge.			
CO4	Use qualitative and quantitative reasoning and evidence, synthesizing information from a variety of origins.			
CO5	Evaluate methodically and systematically problems and develop interventions in the human movement domain.			

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3	2	3
CO2	3	3	3	3	3	3	2	3	3	3	3	3	2	3	3	3	3
CO3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3	2
CO4	3	3	3	2	3	3	3	3	3	3	3	3	3	2	3	3	3
CO5	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3	2	3

MOVEMENT SCIENCE

Syllabus

UNIT I : APPLIED ANATOMY: Voluntary movement- neural control – tone- pathways

UNIT Ii : APPLIED ANATOMY: Kinetics- kinematics – application in spasticity – flaccid paralysis

UNIT III : PATHOMECHANICS : Biomechanics – pathomechanics of extremities – spine – functional analysis

UNIT IV : PATHOMECHANICS : Gait - Kinematic Analysis of Gait – Force Platform - Robotics– Posture -Significance of functional MRI.

UNIT V : Mobility Aids – ergonomics at industry – workplace – Job analysis – rehabilitation

Reference

1. Basic biomechanics of the musculoskeletal system by Margareta Nordin and Victor H. Frankle, 2nd edition (Lea and Febiger)

2. Kinesiology of the Human Body: Under Normal and pathological condition by Arthur Steindler, 5th edition (Charles C Thomas, 1977)

3. Joint Structure & Function :A comprehensive analysis by Cynthia C Norkin, Pamela K Levangie (Jaypee Brothers, 2006)

4. Brunnstrom's Clinical Kinesiology by Laura K. Smith & Don Lehmkuh, 5th edition (F A Davis, 1996)

5. The Physiology of the Joints by Kapandji & Matthew J Kendel (Churchill Livingstone, 2008)

6. Clinical Biomechanics of the Spine by Augustus A White & Manohar M Panjabi, 2nd Edition (Lippincott Williams & Wilkins; 1990)

7. Kinesiology :The mechanics and Pathomechanics of Human Movement by Carol Oatis (Lippincott Williams & Wilkins; 2008)

8. Kinesiology: Application to pathological motion by Soderberg, 2nd Edition (Wiliams & Wilkins, 1997)

Course Code 19MPT2MC02	Course Name: Advanced Therapeutics	Theory	Practical	Total Credit
	Total Contact Hours -165	5	3	8
	Prerequisite Course -BPT			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Implement a standardised approach to patient care in complex acute care settings.			
CO2	Describe the pathophysiology of selected disease states and explain the rationale and expected outcomes for drug therapy.			
CO3	Use current best evidence to determine and justify a valid/optimal therapeutic approach to management of these disease states.			
CO4	Develop, with an evidence based rationale, customised management and monitoring plans considering patient specific parameters, clinical test results and pharmacokinetic parameters.			
CO5	Critically reflect on and consolidate their individual learning process and progress in clinical competence.			

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	2
CO2	3	3	3	3	3	3	3	2	3	3	3	3	3	3	2	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	2	3	3	3	3	2
CO4	3	3	3	2	3	3	3	3	3	3	3	3	3	2	3	3	3
CO5	3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	2	3

ADVANCED THERAPEUTICS

Syllabus

UNIT I EXERCISE THERAPY : Evaluation – prescription – concepts – physiological effects – limitation – clinical indications – care points – progression

- Documentation – types of exercises – strength endurance – role of biomedical engineering

UNIT II ELECTROTHERAPY : Electrotherapy low frequency, medium and high frequency equipments – limitations , effects , uses , indications , contraindications , safety precautions – electrotherapeutic – EMG Biofeedback

UNIT III MANUAL THERAPY : History – concepts indications – contraindication – safety precautions – evaluation – joint mobilization techniques

UNIT IV : Soft tissue techniques – muscle energy techniques – myofacialrelease , TP release – PR technique – neural tissue mobilisation

UNIT V : Clinical examination – disability evaluation – differential diagnosis – prescription of modalities – evaluation prognosis – documentation – evidence based practise

Reference

Books

1 Text Book of work Physiology - Guyton, Prim Books Bangalore - 1991, 8th Edition.

2 Physicals agents in rehabilitation: from research to practical by Michell H. Cameron, 2nd edition (Saunders and Elsevier, 2003)

3 Therapeutic Modalities for Allied Health Professionals by William E. Prentice and Frank Underwood (McGraw-Hill, 1998)

Journal

1. European journal of physiotherapy (advances in physiotherapy)
2. Archives of physical medicine and rehabilitation
3. Indian journal of physical therapy
4. International journal of therapy and rehabilitation
5. Journal of rehabilitation medicine

Course Code 19MPT2GE01	Course Name: Health Economics	Theory	Practical	Total Credit
	Total Contact Hours -135	4	2	6
	Prerequisite Course - BPT			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Community physiotherapist in natural and man-made disasters and disaster management.			
CO2	Need of health economics and methods of economic analysis in health.			
CO3	Definition and types of medical records, importance of medical record.			
CO4	Quality control and management- principles and methods.			
CO5	Inventory control and purchase management.			

Mapping of Course Outcomes with Program Outcomes (1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)																	
CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	3	3	2	3	3	3	2	3
CO2	3	3	3	3	3	3	3	3	3	2	3	3	3	3	2	3	3
CO3	3	3	3	3	3	3	2	3	3	3	3	3	2	3	3	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	2
CO5	3	3	3	3	3	3	3	3	3	2	3	3	3	2	3	3	3

HEALTH ECONOMICS

Syllabus

Unit I: Ethical principles in health economic analysis

Unit II: Measuring status of health and cost of illness

Unit III : Different health economic evaluations

Unit IV: Decision-analytic modelling

Unit V: Sensitivity analyses Insight in the use of health economic evaluations in real world

Reference

Text Books

1.Drummond, Michael F. Methods for the economic evaluation of health care programmes [updated and rev.] ed.: Oxford: Oxford University Press, 2005.
2.Brazier, John. Measuring and Valuing Health Benefits for Economic Evaluation
Oxford University Press, 2007.

Course Code 19MPT2GE02	Course Name: Yoga for Physiotherapist	Theory	Practical	Total Credit
	Total Contact Hours -135	4	2	6
	Prerequisite Course - BPT			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Demonstrate the introduction and principles of yoga.			
CO2	Knowledge of history of yoga and yoga in modern India.			
CO3	Outline of yoga background and importance of yoga in modern world.			
CO4	Learning the types and forms of asanas and description of physiological effect of yoga.			
CO5	Understanding the role of yoga in physiotherapy.			

Mapping of Course Outcomes with Program Outcomes (1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)																	
CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	2
CO2	3	3	3	3	3	3	3	3	3	3	2	3	3	3	2	3	3
CO3	3	3	3	3	3	3	2	3	3	3	3	3	2	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	2	3
CO5	3	3	3	3	3	3	3	3	3	3	3	2	3	2	3	3	3

YOGA FOR PHYSIOTHERAPIST

Syllabus

Unit I: Scientific Study of yoga- types- Basics- Philosophy- Evolution -Physiologic & Therapeutic effects, Dangers- Precautions.

Unit II: Principle & Practice of Pranayama Hatha Yoga, clinical Applications

Unit III: Yoga & Human Systems, Yoga in Physical and Mental Health, Yoga for Personality Development- Yoga & Stress Management, Yoga & Pregnancy

Unit IV : Advanced Yoga Techniques -Research in Yoga

Unit V : Physiotherapy and Yoga, Clinical Applications of Yoga

Reference

1.Application in Yoga, Gharote, manmath M. ,Lonavla, 2008

2.The Complete book of Yoga, Sri Ananda, Orient Paper Backs, Delhi, 2003

Course. Code 19MPT2CT02	Course Name: Clinical Training II	Total Credit
	Total Contact Hours - 255	3
	Prerequisite Course - BPT	
	Course Coordinator:	
Course Outcomes (CO)		
CO1	Explain the components of basic assessment for a patient.	
CO2	List the impairments resulting in functional limitation and participation restriction.	
CO3	Demonstrate clinical observatory skill and the bed side manners.	
CO4	Understanding of policy of the inpatient service and outpatient services.	
CO5	Understand the role of physiotherapy in various clinical conditions and the documentation of patient service.	

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2
CO2	3	3	3	3	3	3	3	2	3	3	3	3	3	3	2	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	3	3	3
CO4	3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	2
CO5	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3	2

CLINICAL TRAINING II

Syllabus

Unit I : Postings for Observation , evaluation and assessment of cases in Physio care for Musculoskeletal, Sports injuries, Hand injury-patients

Unit II : Aurogreen postings for Aquatic therapy

Unit III : FitnessOne and EXRX postings for Fitness

Unit IV : Pain and stroke posting for clinical evaluation,gait analysis

Unit V : NIEPMD Postings for Physically challenged.

SEMESTER III - COURSE OUTCOME, CO PO MAPPING

Course Code 19MPT3AE01	Course Name: Allied Elective in Ortho	Theory	Practical	Total Credit
	Total Contact Hours -360	10	8	18
	Prerequisite Course -BPT			
	Course Coordinator:-			
Course Outcomes (CO)				
CO1	Understanding the importance of pediatric orthopaedics conditions.			
CO2	Understand about assessment and management of degenerative conditions.			
CO3	Understand the importance and management of orthopaedics conditions.			
CO4	Understand about complication impairment and disability and their management.			
CO5	Understand the geriatric conditions under the theories of ageing and physiological changes due to ageing.			

Mapping of Course Outcomes with Program Outcomes (1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)																	
CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	2
CO2	3	3	3	3	3	3	3	3	2	3	3	3	3	3	2	3	3
CO3	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	2
CO4	3	3	3	3	3	3	2	3	3	3	3	3	2	3	3	3	3
CO5	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	2	3

ALLIED ELECTIVE IN ORTHO

Syllabus

UNIT I : Physiotherapy for paediatric orthopaedic conditions – congenital – musculoskeletal impairments – conservative – surgical management.

UNIT II : Nutrition – electrolytes – fitness – evaluation – field – contact – non contact games – sports injuries

UNIT II : Spine – extremities – prevention – safety – soft tissue mobilisation – conservative – surgical – rehabilitation –various sports injuries

UNIT III : Hand injuries – plastic surgeries – tendon soft tissue repair – amputation – evaluation –

UNIT IV : Fractures – burns – clinical conditions – disorders – orthotics – prosthetics – joint replacement

UNIT IV : Disability evaluation – compensation – benefits – Paralympics

Reference:

1. Netter-Orthopedic Clinical Examination
2. Mohan Iyer - Clinical Examination in Orthopedics
3. Kevin E.Wilk and David Jayner - The Use of Aquatics in Orthopedics and Sports Medicine Rehab
4. Stanley Hoppenfeld - Treatment and Rehabilitation of Fractures
5. John Ebnezar - Essentials of Orthopedics for Physiotherapists - 2nd Ed.
6. David J Magee-Orthopedic Physical Assessment 4th ed
7. Louis Solomon-Apley's system of Orthopedics & Fractures 9th ed
8. Stanley Hoppenfeld - Orthopedic Neurology
9. Fernim Valera Garrido-Advanced Techniques In Musculoskeletal Medicine & Physiotherapy
10. Grieves - Manual of Modern Musculoskeletal Physiotherapy 4th Ed
11. Brian Mackenzie-101 Evaluation Tests
12. James-low back pain
13. Susan Edmund - Joint Mobilization/Manipulation 2nd Ed
14. Leon Chaitow - Soft Tissue Manipulation

Course Code 19MPT3CT03	Course Name: Clinical Training III	Total Credit
	Total Contact Hours - 255	3
	Prerequisite Course - BPT	
	Course Coordinator:	
Course Outcomes (CO)		
CO1	Explain the components of basic assessment for a patient.	
CO2	List the impairments resulting in functional limitation and participation restriction.	
CO3	Demonstrate clinical observatory skill and the bedside manners.	
CO4	Understanding of policy of the inpatient service and outpatient services.	
CO5	Understand the role of physiotherapy in various clinical conditions and the documentation of patient service.	

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	2
CO2	3	3	3	3	3	3	3	3	2	3	3	3	3	2	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	2	3	3	3	3	2
CO4	3	3	3	3	3	3	3	3	3	3	2	3	3	3	2	3	3
CO5	3	3	3	3	3	3	3	3	3	3	3	3	2	3	3	2	3

CLINICAL TRAINING III

Syllabus

Unit I : Patient evaluation in Indian red cross

Unit II : Patient evaluation treatment in physio care

Unit III : Advanced technology and rehab in K.K.Hand rehab center

Unit IV : Oncology Physiotherapy care in cancer hospital

Unit V : Orthosis and prosthesis in NIEPMD

SEMESTER IV - COURSE OUTCOME, CO PO MAPPING

Course Code 19MPT4AE01	Course Name: Elective in Advance Orthopedic	Theory	Practical	Total Credit
	Total Contact Hours -360	10	8	18
	Prerequisite Course - BPT			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Understand the importance of growth and development of musculoskeletal system.			
CO2	Understand about basic concept of orthodiagnostics in physiotherapy assessment and management.			
CO3	Understand about the different types of manual therapy concepts used in physiotherapy for treating different musculoskeletal physiotherapy conditions.			
CO4	Able to plan and prescribe short and long term physiotherapy treatment by selecting appropriate mode of evaluation and interventions.			
CO5	Understand the concepts of rehabilitation and delivery of health care with medical team work.			

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	2	3	3	3	3	3	3	3	3	2	3	3
CO2	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	2
CO3	3	3	3	3	3	3	3	3	3	2	3	3	3	2	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	2	3	3	3	2	3
CO5	3	3	3	3	3	3	3	2	3	3	3	3	2	3	3	3	3

ELECTIVE IN ADVANCE ORTHOPEDIC

Syllabus

UNIT I : Embryological growth and development of musculoskeletal system – congenital disorders – deformities – musculoskeletal disorders

UNIT II : Amputation – tumors – infections – fractures – and dislocation – conservative – surgical management .

UNIT III : Arthroplasty – internal – external fixation – tendon transfer – arthroscopic surgeries

UNIT IV : Physiotherapy assessment – scale – score – index – degenerative ,, infective – paediatric , musculoskeletal conditions – post operative care- amputation – posture – gait – disability evaluation

UNIT V : Physiotherapy intervention – exercise – electro- rehab protocols – various techniques – orthotics – prosthetics – rehab team – disability management.

Reference:

1. Netter-Orthopedic Clinical Examination
2. Mohan Iyer - Clinical Examination in Orthopedics
3. Kevin E.Wilk and David Jayner - The Use of Aquatics in Orthopedics and Sports Medicine Rehab
4. Stanley Hoppenfeld - Treatment and Rehabilitation of Fractures
5. John Ebnezar - Essentials of Orthopedics for Physiotherapists - 2nd Ed.
6. David J Magee-Orthopedic Physical Assessment 4th ed
7. Louis Solomon-Apley's system of Orthopedics & Fractures 9th ed
8. Stanley Hoppenfeld - Orthopedic Neurology
9. Fernim Valera Garrido-Advanced Techniques In Musculoskeletal Medicine & Physiotherapy
10. Grieves - Manual of Modern Musculoskeletal Physiotherapy 4th Ed
11. Brian Mackenzie-101 Evaluation Tests
12. James-low back pain
13. Susan Edmund - Joint Mobilization/Manipulation 2nd Ed
14. Leon Chaitow - Soft Tissue Manipulation

Course Code 19MPT4CT04	Course Name: Clinical Training IV	Total Credit
	Total Contact Hours -255	3
	Prerequisite Course - BPT	
	Course Coordinator:	
Course Outcomes (CO)		
CO1	Explain the components of basic assessment for a patient.	
CO2	List the impairments resulting in functional limitation and participation restriction.	
CO3	Demonstrate clinical observatory skill and the bedside manners.	
CO4	Understand the policy of inpatient service and outpatient services.	
CO5	Understand the role of physiotherapy in various clinical conditions and the documentation of patient service.	

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	2	3
CO2	3	3	3	3	3	3	3	3	3	3	2	3	3	2	3	3	3
CO3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	2
CO4	3	3	3	3	3	2	3	3	3	3	3	3	3	3	2	3	3
CO5	3	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	2

CLINICAL TRAINING

Syllabus

Unit I : Patient evaluation in Indian red cross

Unit II : Patient evaluation treatment in physio care

Unit III : Advanced technology and rehab in K.K.Hand rehab center

Unit IV : Oncology Physiotherapy care in cancer hospital

Unit V : Orthosis and prosthesis in NIEPMD

BHARATH INSTITUTE OF HIGHER EDUCATION AND RESEARCH (BIHER)

Accredited 'A' Grade by NAAC

(Declared as Deemed -to -be University under section 3 of UGC Act, 1956)

SREE BALAJI COLLEGE OF PHYSIOTHERAPY

Constituent College of BIHER

MASTER OF PHYSIOTHERAPY IN ADVANCED CARDIORESPIRATORY CONDITION

Postgraduate Degree Course

MPT in Advanced Cardiorespiratory Condition CBCS Syllabus 2019

1 Semester = 20 Weeks Teaching/ 1 Week= 36 Hours

MC Main Core, GE General Elective, CT Clinical Training, CD Dissertation, AE Allied Elective

Sem.	Course Code	Courses	Theory		Practical		Total Hours	Total Credits
			H	C	H	C		
I	19MPT1MC01	Basic Sciences	90	6	75	2	165	8
	19MPT1MC02	Research Methodology, Biostatistics and EBP	75	5	90	3	165	8
	19MPT1GE01	Molecular Biology	60	4	75	2	135	6
	19MPT1GE02	Kinesiotaping						
	19MPT1CT01	Clinical Training I					255	3
							720	25
II	19MPT2MC01	Movement Science	90	6	75	2	165	8
	19MPT2MC02	Advanced Therapeutics	75	5	90	3	165	8
	19MPT2GE01	Health Economics	60	4	75	2	135	6
	19MPT2GE02	Yoga for Physiotherapist						
	19MPT2CT02	Clinical Training II					255	3
							720	25
III	19MPT3AE01	Allied Elective in Cardiorespiratory Conditions	160	10	200	8	360	18
	19MPT3CD01	Dissertation	30	2	75	2	105	4
	19MPT3CT03	Clinical Training III					255	3
							720	25
IV	19MPT4AE01	Elective in Advanced Cardiorespiratory Conditions	160	10	200	8	360	18
	19MPT4CD02	Dissertation	30	2	75	2	105	4
	19MPT4CT04	Clinical Training IV					255	3
							720	25

SEMESTER I - COURSE OUTCOME, CO PO MAPPING

Course Code 19MPT1MC01	Course Name: Basic Science	Theory	Practical	Total Credit
	Total Contact Hours -165	6	2	8
	Prerequisite Course - BPT			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Demonstrate comprehensive understanding of electrophysiology.			
CO2	Acquire the knowledge in nutrition that is required to be practiced in health care system.			
CO3	Understand the basis of exercise and sports and its application in practice of physiotherapy.			
CO4	Learn and understand the skills of assessment for fitness evaluation and its application in practice of physiotherapy.			
CO5	Understand the concepts of applications of molecular biology and genetics.			

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	3	3	2	3	3	2	3	3
CO2	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	2	3
CO3	3	3	3	3	3	3	3	3	3	2	3	3	3	2	3	3	3
CO4	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	2
CO5	3	3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	3

BASIC SCIENCE

Syllabus

UNIT I : Cell- nerve – muscle – physiology – Electrophysiology- nerve conduction studies – electromyography – ENMS – kinesiological EMG – bioelectricity – evoked potentials

Molecular Biology & Genetics.

UNIT II : Nutrition – carbohydrates – minerals – protein – fat – metabolism – nature – malnutrition – source – role of exercises – supplement – obesity – evaluation – management

UNIT III : Exercise and sports physiology – energy transfer – source – utilisation – response of musculoskeletal – nervous – endocrine – cardiorespiratory system

UNIT IV : Aerobic – resisted – high intensity exercises – factors influencing – techniques – exercise physiology

UNIT V : Fatigue – fitness evaluation – training – various by techniques – gender – altitude

Reference

1 Exercise Physiology - Mc Ardle Katch, Katch.

2. Clinical Electromyography (Part I basic section only) Nerve Conduction Studies - Shin J.OH - Publisher Williams & Wilkins.

3. Clinical Neurophysiology - Nerve conduction, Electromyography and Evoked Potentials - UK Misra, Publisher B.I. Churchill Livingstone.

4. Manual of Nerve conduction velocity techniques - DE HSA, Raven Press, New York.

5. Electrodiagnosis in Diseases of Nerve & Muscle - Kimura FA Davis, Philadelphia

Journal

1. Journal of biomedical sciences
2. Bosnian journal of basic medical sciences
3. International journal of medical sciences
4. Clinical science
5. Internal journal of sciences: basic and applied research

Course Code 19MPT1MC02	Course Name: Research Methodology, Biostatistics and EBP	Theory	Practical	Total Credit
	Total Contact Hours -165	5	3	8
	Prerequisite Course - BPT			
	Course Coordinator:			

Course Outcomes (CO)	
CO1	Describe how research is undertaken, and its benefits.
CO2	Differentiate between quantitative research and qualitative research.
CO3	Select an appropriate study design based on research question.
CO4	Identify ethical issues in research.
CO5	Design a research proposal

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	2	3
CO2	3	3	3	3	3	2	3	3	3	3	3	3	3	2	3	3	3
CO3	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2
CO4	3	3	3	3	3	3	3	3	3	2	3	3	3	2	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3	2	3

RESEARCH METHODOLOGY, BIOSTATISTICS AND EBP

Syllabus

UNIT I : Ethics in physiotherapy research – phases of research – conceptual phase – concepts – variables – hypothesis – literature review

UNIT II : Emperical phase – design – survey – validity – data collection – observationsl method- data collection – observational method- biophysiologic measures – data analysis – descriptive statistics – inferential statistics

UNIT III : Interpretative phase – critiquing research – guidelines Guidelines for research publication – APA style – plagarism – copy right laws

UNIT IV : Concepts of teaching and learning – curriculum – development – methods of teaching – evaluation – guidance and counselling – faculty professional and personal development in PT – Online learning & Evaluation.

UNIT V : PT education – Indian health care – physiotherapy practice growth – demand – India – abroad – department management – finance management – legal concepts – values – ethics .Marketing strategies,Finance in education , Medicolegal aspects.

Reference

Textbook

1. Research methodology- C. R. Kothari
2. Research Methods for Clinical therapist- Carolym M. Hicks
3. Research design- John W. Creswell
4. Rehabilitation Research: Principles and Applications by Elizabeth Domholdt
5. Nursing Research- Polit & Hungler
6. Introduction to Biostatistics and Research Methods Rao P.S.S. Sundar & j. Richard
7. Research Methodology and Biostatistics - A Comprehensive Guide for Health Care Professionals, Suresh Sharma
8. Principles, Methods And Techniques Of Teaching Paperback – 1 January 2010 by J.C. Aggarwal (Author)

Websites

1. https://www.researchgate.net/search
2. https://www.ncbi.nlm.nih.gov/pmc/

Journals

1. Journal of Clinical Physiotherapy Research
2. Physiotherapy research International
3. International Journal Of Physiotherapy Research

Course Code 19MPT1GE01	Course Name: Molecular Biology	Theory	Practical	Total Credit
	Total Contact Hours -135	4	2	6
	Prerequisite Course - BPT			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Learning structural levels of nucleic acids- DNA and RNA and genome organization in prokaryotes and eukaryote and the concept of Gene and the gene architecture.			
CO2	Learning molecular events in the DNA replication and role of different enzymes and overview of the central dogma of life and various molecular events.			
CO3	Understanding the principles and applications of polymerase chain reaction(PCR) and molecular events of transcription and processing of transcripts, RNA editing.			
CO4	Molecular events of translation leading to protein synthesis and post translational modification and understanding the regulation of gene expression in prokaryotes using operon concept and eukaryotes.			
CO5	Learn the methods of DNA sequencing and various tools and techniques of molecular biology and learn about the molecular markers and its classification and applications.			

Mapping of Course Outcomes with Program Outcomes (1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)																	
CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	3	2	3	3	2	3	3	3
CO2	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	2	3
CO3	3	3	2	3	3	3	3	3	3	3	2	3	3	2	3	3	3
CO4	3	3	3	3	3	3	2	3	3	3	3	3	3	3	2	3	3
CO5	3	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	2

MOLECULAR BIOLOGY FOR PHYSIOTHERAPIST

Syllabus

Unit I: Describe the chemical nature of, and major chemical processes within, the human body and key features of the metabolic processes by which cells generate energy.

Unit II : Evaluate how the body responds to changes in nutritional input and energy output, genetic information is used in the human body and explain how this impacts the health of an individual.

Unit III : Explain the similarities & differences between eukaryotic cells, prokaryotic cells and viruses.

Unit IV : Describe how the human body defends against infectious disease.

Unit V: Explore how pathogenic microbes cause disease, methods of infection control and evaluate their relative merits.

References

Text Book

1. Molecular and Cellular Biology, Sanghera Paul Dr
2. Cell and Molecular Biology, P. K. Gupta (Author)

Website:

1. https://academic.oup.com/mbe
2. https://www.springer.com/

Journal

1. https://journals.asm.org/journal/mcb
2. https://bmcmolbiol.biomedcentral.com/
3. https://www.journals.elsevier.com/journal-of-molecular-biology

Course Code 19MPT1GE02	Course Name: Kinesiotaping	Theory	Practical	Total Credit
	Total Contact Hours -135	4	2	6
	Prerequisite Course - BPT			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Describe the concepts of Kinesio Taping.			
CO2	Describe the unique qualities of the Kinesio Tex Tape.			
CO3	Utilize and demonstrate application skills in guided laboratory sessions.			
CO4	Demonstrate application skills during lab sessions.			
CO5	Practice the various cutting techniques and their clinical application.			

Mapping of Course Outcomes with Program outcomes (POs)
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	2	3
CO2	3	3	3	3	3	3	3	3	2	3	3	3	3	3	2	3	3
CO3	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	2
CO4	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	2	3	3	3	3	3	3	2	3	3	3	3

KINESIOTAPING

Syllabus

Unit I: Introduction- Theory- Basics of Application-Contra indications- Precautions

Unit II: K-Tape Material- Physiological & Therapeutic effects- Clinical Applications

Unit III: Types of Application- Stretch

Unit IV : Various fields- Sports- Pregnancy- orthopedics, etc.

Unit V : K-Taping research- Evidences-Future

References:

1. Kinesiology Taping For Rehab And Injury Prevention - Kim Aliana
2. Practical Guide to Kinesiology Taping for Injury Prevention and Common Medical Conditions, Gibbons John
3. NeuroMuscular taping -Edi Ermes Usa, David Blow
4. Kinesiology Taping: The Essential Step-by-step Guide - Langendoen, John And Sertel, Karin

Website :

1. https://kinesiotaping.com/
2. https://www.k-taping.com/en/

Course Code 19MPT1CT01	Course Name: Clinical Training I	Total Credit
	Total Contact Hours - 255	3
	Prerequisite Course - BPT	
	Course Coordinator:	
Course Outcomes (CO)		
CO1	Explain the components of basic assessment for a patient.	
CO2	List the impairments resulting in functional limitation and participation restriction.	
CO3	Demonstrate clinical observatory skill and the bedside manners.	
CO4	Understanding of policy of the inpatient service and outpatient services.	
CO5	Understand the role of physiotherapy in various clinical conditions and the documentation of patient service.	

Mapping of Course Outcomes with Program Outcomes (1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)																	
CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	2	3	3	3	3	3	3	3	3	3	2	3	3	3	3
CO2	3	3	3	3	3	3	2	3	3	3	3	3	3	3	2	3	3
CO3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	2
CO4	3	3	3	3	3	3	3	3	2	3	3	3	3	2	3	3	3
CO5	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	2	3

CLINICAL TRAINING I

Syllabus

Unit I : Postings for Observation , evaluation and assessment of cases in Physio care for Musculoskeletal, Sports injuries, Hand injury-patients

Unit II : Aurogreen postings for Aquatic therapy

Unit III : FitnessOne and EXRX postings for Fitness

Unit IV : Pain and stroke posting for clinical evaluation,gait analysis

Unit V : NIEPMD Postings for Physically challenged.

SEMESTER II - COURSE OUTCOME, CO PO MAPPING

Course Code 19MPT2MC01	Course Name: Movement Science	Theory	Practical	Total Credit
	Total Contact Hours -165	6	2	8
	Prerequisite Course -BPT			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Apply fundamental human movement principles, from both natural and social science perspectives.			
CO2	Understanding of the form and function of the human body.			
CO3	Critically evaluate human movement research in order to design and generate disciplinary knowledge.			
CO4	Use qualitative and quantitative reasoning and evidence, synthesizing information from a variety of origins.			
CO5	Evaluate methodically and systematically problems and develop interventions in the human movement domain.			

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3	2	3
CO2	3	3	3	3	3	3	2	3	3	3	3	3	2	3	3	3	3
CO3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3	2
CO4	3	3	3	2	3	3	3	3	3	3	3	3	3	2	3	3	3
CO5	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3	2	3

MOVEMENT SCIENCE

Syllabus

UNIT I : APPLIED ANATOMY: Voluntary movement- neural control – tone- pathways

UNIT Ii : APPLIED ANATOMY: Kinetics- kinematics – application in spasticity – flaccid paralysis

UNIT III : PATHOMECHANICS : Biomechanics – pathomechanics of extremities – spine – functional analysis

UNIT IV : PATHOMECHANICS : Gait - Kinematic Analysis of Gait – Force Platform - Robotics– Posture -Significance of functional MRI.

UNIT V : Mobility Aids – ergonomics at industry – workplace – Job analysis – rehabilitation

Reference

1. Basic biomechanics of the musculoskeletal system by Margareta Nordin and Victor H. Frankle, 2nd edition (Lea and Febiger)

2. Kinesiology of the Human Body: Under Normal and pathological condition by Arthur Steindler, 5th edition (Charles C Thomas, 1977)

3. Joint Structure & Function :A comprehensive analysis by Cynthia C Norkin, Pamela K Levangie (Jaypee Brothers, 2006)

4. Brunnstrom's Clinical Kinesiology by Laura K. Smith & Don Lehmkuh, 5th edition (F A Davis, 1996)

5. The Physiology of the Joints by Kapandji & Matthew J Kendel (Churchill Livingstone, 2008)

6. Clinical Biomechanics of the Spine by Augustus A White & Manohar M Panjabi, 2nd Edition (Lippincott Williams & Wilkins; 1990)

7. Kinesiology :The mechanics and Pathomechanics of Human Movement by Carol Oatis (Lippincott Williams & Wilkins; 2008)

8. Kinesiology: Application to pathological motion by Soderberg, 2nd Edition (Wiliams & Wilkins, 1997)

Course Code 19MPT2MC02	Course Name: Advanced Therapeutics	Theory	Practical	Total Credit
	Total Contact Hours -165	5	3	8
	Prerequisite Course -BPT			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Implement a standardised approach to patient care in complex acute care settings.			
CO2	Describe the pathophysiology of selected disease states and explain the rationale and expected outcomes for drug therapy.			
CO3	Use current best evidence to determine and justify a valid/optimal therapeutic approach to management of these disease states.			
CO4	Develop, with an evidence based rationale, customised management and monitoring plans considering patient specific parameters, clinical test results and pharmacokinetic parameters.			
CO5	Critically reflect on and consolidate their individual learning process and progress in clinical competence.			

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	2
CO2	3	3	3	3	3	3	3	2	3	3	3	3	3	3	2	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	2	3	3	3	3	2
CO4	3	3	3	2	3	3	3	3	3	3	3	3	3	2	3	3	3
CO5	3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	2	3

ADVANCED THERAPEUTICS

Syllabus

UNIT I EXERCISE THERAPY : Evaluation – prescription – concepts – physiological effects – limitation – clinical indications – care points – progression

- Documentation – types of exercises – strength endurance – role of biomedical engineering

UNIT II ELECTROTHERAPY : Electrotherapy low frequency, medium and high frequency equipments – limitations , effects , uses , indications , contraindications , safety precautions – electrotherapeutic – EMG Biofeedback

UNIT III MANUAL THERAPY : History – concepts indications – contraindication – safety precautions – evaluation – joint mobilization techniques

UNIT IV : Soft tissue techniques – muscle energy techniques – myofacial release , TP release – PR technique – neural tissue mobilisation

UNIT V : Clinical examination – disability evaluation – differential diagnosis – prescription of modalities – evaluation prognosis – documentation – evidence based practise

Reference

Books

1 Text Book of work Physiology - Guyton, Prim Books Bangalore - 1991, 8th Edition.

2 Physicals agents in rehabilitation: from research to practical by Michell H. Cameron, 2nd edition (Saunders and Elsevier, 2003)

3 Therapeutic Modalities for Allied Health Professionals by William E. Prentice and Frank Underwood (McGraw-Hill, 1998)

Journal

1. European journal of physiotherapy (advances in physiotherapy)
2. Archives of physical medicine and rehabilitation
3. Indian journal of physical therapy
4. International journal of therapy and rehabilitation
5. Journal of rehabilitation medicine

Course Code 19MPT2GE01	Course Name: Health Economics	Theory	Practical	Total Credit
	Total Contact Hours -135	4	2	6
	Prerequisite Course - BPT			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Community physiotherapist in natural and man-made disasters and disaster management.			
CO2	Need of health economics and methods of economic analysis in health.			
CO3	Definition and types of medical records, importance of medical record.			
CO4	Quality control and management- principles and methods.			
CO5	Inventory control and purchase management.			

Mapping of Course Outcomes with Program Outcomes (1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)																	
CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	3	3	2	3	3	3	2	3
CO2	3	3	3	3	3	3	3	3	3	2	3	3	3	3	2	3	3
CO3	3	3	3	3	3	3	2	3	3	3	3	3	2	3	3	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	2
CO5	3	3	3	3	3	3	3	3	3	2	3	3	3	2	3	3	3

HEALTH ECONOMICS

Syllabus

Unit I: Ethical principles in health economic analysis

Unit II: Measuring status of health and cost of illness

Unit III : Different health economic evaluations

Unit IV: Decision-analytic modelling

Unit V: Sensitivity analyses Insight in the use of health economic evaluations in real world

Reference

Text Books

1.Drummond, Michael F. Methods for the economic evaluation of health care programmes [updated and rev.] ed.: Oxford: Oxford University Press, 2005.
2.Brazier, John. Measuring and Valuing Health Benefits for Economic Evaluation
Oxford University Press, 2007.

Course Code 19MPT2GE02	Course Name: Yoga for Physiotherapist	Theory	Practical	Total Credit
	Total Contact Hours -135	4	2	6
	Prerequisite Course - BPT			
	Course Coordinator:			

Course Outcomes (CO)	
CO1	Demonstrate the introduction and principles of yoga.
CO2	Knowledge of history of yoga and yoga in modern India.
CO3	Outline of yoga background and importance of yoga in modern world.
CO4	Learning the types and forms of asanas and description of physiological effect of yoga.
CO5	Understanding the role of yoga in physiotherapy.

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	2
CO2	3	3	3	3	3	3	3	3	3	3	2	3	3	3	2	3	3
CO3	3	3	3	3	3	3	2	3	3	3	3	3	2	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	2	3
CO5	3	3	3	3	3	3	3	3	3	3	3	2	3	2	3	3	3

YOGA FOR PHYSIOTHERAPIST

Syllabus

Unit I: Scienctific Study of yoga- types- Basics- Philosophy- Evolution -Physiologic & Therapeutic effects, Dangers- Precautions.

Unit II: Principle & Practice of Pranayama Hatha Yoga, clinical Applications

Unit III: Yoga & Human Systems, Yoga in Physical and Mental Health, Yoga for Personality Development- Yoga & Stress Management, Yoga & Pregnancy

Unit IV : Advanced Yoga Techniques -Research in Yoga

Unit V : Physiotherapy and Yoga, Clinical Applications of Yoga

Reference

1.Application in Yoga, Gharote, manmath M. ,Lonavla, 2008

2.The Complete book of Yoga, Sri Ananda, Orient Paper Backs, Delhi, 2003

Course. Code 19MPT2CT02	Course Name: Clinical Training II	Total Credit
	Total Contact Hours - 255	3
	Prerequisite Course - BPT	
	Course Coordinator:	
Course Outcomes (CO)		
CO1	Explain the components of basic assessment for a patient.	
CO2	List the impairments resulting in functional limitation and participation restriction.	
CO3	Demonstrate clinical observatory skill and the bed side manners.	
CO4	Understanding of policy of the inpatient service and outpatient services.	
CO5	Understand the role of physiotherapy in various clinical conditions and the documentation of patient service.	

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2
CO2	3	3	3	3	3	3	3	2	3	3	3	3	3	3	2	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	3	3	3
CO4	3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	2
CO5	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3	2

CLINICAL TRAINING II

Syllabus

Unit I : Postings for Observation , evaluation and assessment of cases in Physio care for Musculoskeletal, Sports injuries, Hand injury-patients

Unit II : Aurogreen postings for Aquatic therapy

Unit III : FitnessOne and EXRX postings for Fitness

Unit IV : Pain and stroke posting for clinical evaluation,gait analysis

Unit V : NIEPMD Postings for Physically challenged.

SEMESTER III - COURSE OUTCOME, CO PO MAPPING

Course Code 19MPT3AE01	Course Name: Allied Elective in Cardiorespiratory Conditions	Theory	Practical	Total Credit
	Total Contact Hours -360	10	8	18
	Prerequisite Course –BPT			
	Course Coordinator:-			
Course Outcomes (CO)				
CO1	Understanding the importance of pediatric cardiorespiratory conditions.			
CO2	Understand about assessment and management of degenerative conditions.			
CO3	Understand the importance and management of cardiorespiratory conditions.			
CO4	Understand about complication impairment and disability and their management.			
CO5	Understand the geriatric conditions under the theories of ageing and physiological changes due to ageing.			

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	2
CO2	3	3	3	3	3	3	3	3	2	3	3	3	3	3	2	3	3
CO3	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	2
CO4	3	3	3	3	3	3	2	3	3	3	3	3	2	3	3	3	3
CO5	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	2	3

ALLIED ELECTIVE IN CARDIORESPIRATORY CONDITIONS

Syllabus

Unit I : Anatomy applied anatomy - physiology - pathomechanics - related to cardio vascular and pulmonary system

Unit II :development of CV - pulmonary systems - age related changes of CV and pulmonary systems.

Unit III : Respiratory Conditions - Cardio vascular conditions - peripheral vascular diseases - investigations - medical treatment - surgical techniques - key hole surgeries - congenital conditions.

Unit IV : Mechanical ventilation - ICU - post operative care - suction - tracheostomy - Neonatal ICU - Non - invasive cardio - respiratory procedures.

Unit V : Cardio pulmonary fitness training - importance of team work - Life style modifications.

References

1. Crofton & doogles, Respiratory diseases Vol - 1 & II,SEATON,1Ed, 2003.
2. Berne,Cardio - vascular physiology, Mosby, 4 Ed, 2012
3. Downie, Cash textbook of chest, heart & vascular disorders, ELBS, 1Ed, 2005.

Course Code 19MPT3CT03	Course Name: Clinical Training III	Total Credit
	Total Contact Hours - 255	3
	Prerequisite Course - BPT	
	Course Coordinator:	
Course Outcomes (CO)		
CO1	Explain the components of basic assessment for a patient.	
CO2	List the impairments resulting in functional limitation and participation restriction.	
CO3	Demonstrate clinical observatory skill and the bedside manners.	
CO4	Understanding of policy of the inpatient service and outpatient services.	
CO5	Understand the role of physiotherapy in various clinical conditions and the documentation of patient service.	

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	2
CO2	3	3	3	3	3	3	3	3	2	3	3	3	3	2	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	2	3	3	3	3	2
CO4	3	3	3	3	3	3	3	3	3	3	2	3	3	3	2	3	3
CO5	3	3	3	3	3	3	3	3	3	3	3	3	2	3	3	2	3

CLINICAL TRAINING III

Syllabus

Unit I :ICU care in VHS

Unit II : Ventilator assisted patients care in VHS

Unit III : Patient fitness evaluation in physio care

Unit IV : Endurance training in Aaro green

unit V : EMG biofeedback in JOGO

SEMESTER IV - COURSE OUTCOME, CO PO MAPPING

Course Code 19MPT4AE01	Course Name: Elective in Advance Cardiorespiratory Conditions	Theory	Practical	Total Credit
	Total Contact Hours -360	10	8	18
	Prerequisite Course - BPT			
	Course Coordinator:			

Course Outcomes (CO)	
CO1	Understand the importance of growth and development of cardiorespiratory conditions.
CO2	Understand about basic concept of cardiorespiratory diagnostics in physiotherapy assessment and management.
CO3	Understand about the different types of manual therapy concepts used in physiotherapy for treating different cardiorespiratory physiotherapy conditions.
CO4	Able to plan and prescribe short and long term physiotherapy treatment by selecting appropriate mode of evaluation and interventions.
CO5	Understand the concepts of rehabilitation and delivery of health care with medical team work.

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	2	3	3	3	3	3	3	3	3	2	3	3
CO2	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	2
CO3	3	3	3	3	3	3	3	3	3	2	3	3	3	2	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	2	3	3	3	2	3
CO5	3	3	3	3	3	3	3	2	3	3	3	3	2	3	3	3	3

ELECTIVE IN ADVANCE CARDIORESPIRATORY CONDITIONS

Unit I : Anatomy applied anatomy - physiology - pathomechanics - related to cardio vascular and pulmonary system

Unit II :development of CV - pulmonary systems - age related changes of CV and pulmonary systems.

Unit III : Respiratory Conditions - Cardio vascular conditions - peripheral vascular diseases - investigations - medical treatment - surgical techniques - key hole surgeries - congenital conditions.

Unit IV : Mechanical ventilation - ICU - post operative care - suction - tracheostomy - Neonatal ICU - Non - invasive cardio - respiratory procedures.

Unit V : Cardio pulmonary fitness training - importance of team work - Life style modifications.

References

1. Crofton & doogles, Respiratory diseases Vol - 1 & II,SEATON,1Ed, 2003.
2. Berne,Cardio - vascular physiology, Mosby, 4 Ed, 2012
3. Downie, Cash textbook of chest, heart & vascular disorders, ELBS, 1Ed, 2005.
4. Charles V Pollack-Differential Diagnosis of Cardio Pulmonary Disease
5. Alexander Hough - Phyiotherapy in Respiratory Care
6. Ellen Hillegass-Essentials of Cardio Pulmonary PT
7. Darlene Reid-Cardiopulmonary Physical Therapy
8. Robert M.Kacmarek - EGAN'S Fundamentals of Respiratory care
9. Donna Frownfelter-Cardio Pulmonary Physical Therapy 3rd ed
10. Pryor & Webber-Physiotherapy for Respiratory & Cardiac problems 2nd ed
11. Cash-Text book of Chest Heart and Vascular Disorders
12. Fishman-Pulmonary Diseases & Disorders vol 1 & 2 4th ed
13. Goldberger's-Clinical Electrocardiography
14. Kaplan - Clinical Hypertension - 11th Ed
15. Kulkarni - Pediatric Cardiology
16. Scot Irwin - Cardiopulmonary Physical Therapy

Course Code 19MPT4CT04	Course Name: Clinical Training IV	Total Credit
	Total Contact Hours -255	3
	Prerequisite Course - BPT	
	Course Coordinator:	
Course Outcomes (CO)		
CO1	Explain the components of basic assessment for a patient.	
CO2	List the impairments resulting in functional limitation and participation restriction.	
CO3	Demonstrate clinical observatory skill and the bedside manners.	
CO4	Understanding of policy of the inpatient service and outpatient services.	
CO5	Understand the role of physiotherapy in various clinical conditions and the documentation of patient service.	

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	2	3
CO2	3	3	3	3	3	3	3	3	3	3	2	3	3	2	3	3	3
CO3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	2
CO4	3	3	3	3	3	2	3	3	3	3	3	3	3	3	2	3	3
CO5	3	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	2

CLINICAL TRAINING IV

Syllabus

Unit I :ICU care in VHS

Unit II : Ventilator assisted patients care in VHS

Unit III : Patient fitness evaluation in physio care

Unit IV : Endurance training in Aaro green

unit V : EMG biofeedback in JOGO