SHRI GURU RAM RAI UNIVERSITY

[Estd. by Govt. of Uttarakhand, vide Shri Guru Ram Rai University Act no. 03 of 2017 & recognized by UGC u/s (2f) of UGC Act 1956]

Syllabus for
Masters of Physiotherapy
With CO, PSO and PO Mapping
School of Paramedical & Allied Health Sciences

(W.E.F 2023-2024)

ALL SEMESTER

Programme name	MPT
Programme Code	M9410

Students will be able to

(Description according to NBA - National Board of Accreditation, kindly read and made accordingly)

Programme name	MPT 1st year
Programme Code	M101

Students will be able to

1	PO1	Knowledge:Better understanding of the structures & physiological studies of mechanical, physical& biochemical functions of human body along with their functions of major body systems and its pathology.
2	PO2	The programme support to understand about the basic concepts of exercise physiology and nutrition, energy, work and power.
3	PO3	Development of knowledge regarding responses to exercise in various systems of the body like respiratory, cardiovascular, acid base balance, hormonal systems.
4	PO4	Practical application: to describe the concept of posture and function of joints and muscles. Prescribed to correct impairments, restore muscular and skeletal functions, improvement in gait and balance, prevention and promotion of health, wellness & fitness.
5	PO5	Skills: Facilitate muscle relaxation, prevention of atrophy, muscle rehabilitation and re-education by electrical muscle stimulations
6	PO6	Design: Evaluate skilled movement patterns which can be employed for many different purposes including pain reduction & functional improvement using various force systems and different types of exercise trainings.
7.	PO7	Basics: reacquire the knowledge of mobilization, strengthening, conditioning and fitness enhancement for neuromuscular control. Gained knowledge through pharmacological studies which provides significant positive impact on human health.
8.	PO8	Clinical enhancement: Understand the mechanism of injuries and learn how to implant exercise prescription. Focused on assessing and treating patient with neurological disorders. Understand patient's conditions related to shoulder, elbow, hand injuries etc.
9.	PO9	Recognize various pathomechanics of different complexes of joints and its management and prevention.
10	PO10	Skill Practice: Treatment and rehabilitate of musculoskeletal systems that has been subject to injury and trauma, Gain maximum potential, independence and optimize the quality of life in patient with neurological conditions by introducing importance of gait and its analysis.
11	PO11	Develop awareness of bioengineering concepts in rehabilitation. Introducing various concepts of manual therapy techniques and advanced electrotherapy in treating patients.
12	PO12	Skill enhancing through research methodology, biostatics, educational technology and computers.

PROGRAMME SPECIFIC OUTCOME(PSO)

Programme name	MPT Orthopedics rehabilitation
Programme Code	M9501

Students will be able to

1	PSO1	The ability to perform an appropriate subjective and physical examination with development of suitable analytical skills to evaluate data obtained. A sound theoretical knowledge & understanding of neuro-musculoskeletal conditions affecting. management needed (medical or surgical) and to apply appropriate techniques rehabilitation based on etiology of disease and to progress with rehabilitation .
2	PSO2	Evaluate various level of spinal cord, rationalize the treatment approach according to the management needed (medical or surgical) and to apply appropriate techniques.
3	PSO3	Evaluate various level of hand injuries, rationalize various approaches for hand rehabilitation based on etiology of disease and to progress with rehabilitation .
4	PSO4	Enhance student's research ability through dissertation that will help in the course of degree pursuance.

PROGRAMME SPECIFIC OUTCOME(PSO)

Programme name	MPT Neurological Rehabilitation
Programme Code	M9601

Students will be able to

1	PSO1	Analyze, Interprete and Evaluate various levels of spinal cord injuries & peripheral nerve injuries,the treatment approach according to the management(medical/surgical) and to apply appropriate techniques.
2	PSO2	Patient assessment and treatment planning including integration and interpretation of patient problems and effective goal setting for neurological patients.
3	PSO3	Evaluate primitive reflexes, analyse developmental milestones and apply various neo-natal therapeutic approaches and neurodevelopmental techniques
4	PSO4	Enhance student's research ability through dissertation that will help in the course of degree pursuance.

PROGRAMME SPECIFIC OUTCOME(PSO)

Programme name	MPT Sports Rehabilitation
Programme Code	M9401

Students will be able to

PSO1	Analyse and interprete various sports injuries,pathomechanics and apply appropriate therapeutic techniques on and off field.
PSO2	Modify and devise various exercises for sports personnel and prevent injuries by applying proper dynamics during play.
PSO3	Analyse the effect of therapeutic modalities,indications& contraindications to ensure safety and carry out proper management in both acute and long standing injury condition.
PSO4	Enhance student's research ability through dissertation that will help in the course of degree pursuance

PROGRAMME SPECIFIC OUTCOME(PSO)

Programme name	MPT Cardio-Pulmonary Rehabilitation
Programme Code	M9701

Students will be able to

1	PSO1	Better understanding of applied anatomy and physiology of cardiorespiratory system and pre and post-operative medical and surgical management related to the system.
2	PSO2	Prescribe the various physiotherapy technique in ICU and cardiopulmonary patients
3.	PSO3	Develop the skill to formulate the fitness training programme in disease condition related to cardiopulmonary system.
4.	PSO4	Enhance student's research ability through dissertation that will help in the course of degree pursuance

PROGRAMME SPECIFIC OUTCOME(PSO)

Programme name	MPT Pediatric Rehabilitation
Programme Code	M9410

Students will be able to

1	PSO1	Assessment and treatment planning including integration and interpretation of patient problems and effective goal setting.
2	PSO2	Demonstrate a well-developed problem solving ability and evidence based practice of paediatric physiotherapy
3	PSO3	Evaluate primitive reflexes, analyse developmental milestones and apply various neo-natal therapeutic approaches and neurodevelopmental techniques
4	PSO4	Enhance student's research ability through dissertation that will help in the course of degree pursuance

PROGRAMME SPECIFIC OUTCOME(PSO)

Programme name	MPT Obstetrics and Gynaecology
Programme Code	M9690

Students will be able to

1	PSO1	The ability to perform an appropriate subjective and physical examination of pelvic organs, reproductive tract and abdominal with development of suitable analytical skills to evaluate data obtained. A sound theoretical knowledge & understanding of gynaecological problem and surgeries in gynaecologicalcondition..
2	PSO2	Evaluate common complication and discomforts during pregnancy after delivery, rationalize the treatment approach according to the management needed (medical or surgical) and to apply appropriate techniques & understand the impact of exercise programs for specific women's physiology, pathophysiology and psychology of pregnancy, menopause, aging and osteopania/ osteoporosis.
3	PSO3	Evaluate various level of PFM weakness due to menopause, peri-menopause and after delivery, rationalize various approaches for PFM rehabilitation based on etiology of disease and to progress with rehabilitation .Understand the safety issues associated with leading exercise classes for women with specific physical needs.

4	PSO4	Enhance student's research ability through dissertation that will help in the course of degree pursuance.

ELIGIBILITY

Applicants must possess one of the following minimum sets of qualifications:

- A Bachelor of Physiotherapy degree with not less than 4½ years duration (including 6 month of internship) from any University within India or equivalent degree from any other recognized university.
- A Bachelor of Physiotherapy degree under Transitory Regulations (one-year duration) for the Diploma holders in Physiotherapy offered by any university within India.
- Candidates holding qualification regarded as equivalent in standard to the above, may be considered subject to the approval of the Academic Senate on recommendations of Board of Studies, SGRR UNIVERSITY.

Masters in PhysiotherapyPART-I (SemesterI& II)

SchemeofExaminationand CoursesofStudies

Masters in Physiotherapy- Part I Semester– I									
Paper	Specialization	CC/DSC/SEC/AECC/DSEC	Title of the paper	Teaching Hrs./Week	Total Credits	Max. Marks Allowed			Minimum passing marks in aggregate
						External Assessment	Internal Assessment	Total	
MPT-S-101	Common to all Specializations	CC	Review of Basic Medical Sciences-I	4	4 7	60	40	100	50%
MPT-S-102	Common to all Specializations	CC	Review of Basic Therapeutics-I	4	4	60	40	100	50%
MPT-S-103	Common to all Specializations	CC	Advance Therapeutics and Diagnosis I	4	4	60	40	100	50%
MPT-S-104	Common to all Specializations	CC	Research methodology and Biostatistics I	4	4	60	40	100	50%
MPT P-105	Common to all Specializations	SEC	Skills acquisition and refinement	24	12	60	40	100	50%
MPT P-106	Common to all Specializations	SEC	Clinical Issues/Seminar	24	12	-	-	-	-

				64	40	300	200	500	50%

Mastersin Physiotherapy-PartI Semester–II									
Paper	Specialization	CC/ DSC/SEC/ AECC/ DSEC	Title ofthe paper	Teaching Hrs./ Week	Total Credits	Max.MarksAllowed			Minimum passing marks in aggregate
						External Assessment	Internal Assessment	Total	
MPT-S-201	Common to all Specializations	CC	Review of Basic Medical Sciences II	4	4	60	40	100	50%
MPT-S-202	Common to all Specializations	CC	Review of Basic Therapeutics-II	4	4	60	40	100	50%
MPT-S-203	Common to all Specializations	CC	Advance Therapeutics and Diagnosis- II	4	4	60	40	100	50%
MPT-S-204	Common to all Specializations	CC	Research methodology and Biostatistics -II	4	4	60	40	100	50%
MPTP-205	Common to all Specializations	SEC	Skills acquisition and refinement	24	12	60	40	100	50%
MPT-P-206	Common to all Specializations	SEC	Clinical Issues/Seminar	24	12	-	-	-	-
				64	40	300	200	500	50%

Masters in Physiotherapy PART-II

Scheme of Examination and Courses of Studies

Masters in Orthopedics Rehabilitation –Part II Semester– III									
Paper	*Specialization*	*CC/DSC/SEC/AECC/DSEC*	*Title of the paper*	*Teaching Hrs./ Week*	*Total Credits*	*Max. Marks Allowed*			*Minimum passing marks in aggregate*
						External Assessment	*Internal Assessment*	*Total*	
MPO-S 301	Orthopedics Rehabilitation	CC	Orthopedics in Physical Therapy-I	4	4	60	40	100	50%
MPO-S-302	Orthopedics Rehabilitation	CC	Vertebral Disorder and Rehabilitation-I	4	4	60	40	100	50%
MPO-S-303	Orthopedics Rehabilitation	CC	Hand Rehabilitation-I	4	4	60	40	100	50%
MPO-P-304	Orthopedics Rehabilitation	SEC	Practical	24	12	60	40	100	50%
MPO-P-305	Orthopedics Rehabilitation	SEC	Dissertation	4	4	-	-	-	-
				40	28	240	160	400	50%

Mastersin Orthopedics Rehabilitation-PartII Semester– IV									
Paper	Specialization	CC/ DS C/S EC/ AE CC/ DS EC	Title of the paper	Teaching Hrs./ Week	Total Credits	Max.Marks Allowed			Minimum passing marks in aggregate
						External Assessment	Internal Assessment	Total	
MPO-S-401	Orthopedis Rehabilitation	CC	Orthopedics in Physical Therapy-II	4	4	60	40	100	50%
MPO-S-402	Orthopedis Rehabilitation	CC	Vertebral Disorder and Rehabilitation-II	4	4	60	40	100	50%
MPO-S-403	Orthopedics Rehabilitation	CC	Hand Rehabilitation-II	4	4	60	40	100	50%
MPO-P-404	Orthopedis Rehabilitation	SEC	Practical	24	12	60	40	100	50%
MPO-P-405	Orthopedis Rehabilitation	SEC	Dissertation	4	4	200	-	-	-
				40	28	440	160	400	50%

Mastersin Neurological Rehabilitation-PartII Semester– III									
Paper	Specialization	CC/ DSC/SEC/ AE CC/ DSEC	Title ofthe paper	TeachingHrs./ Week	Total Credits	Max.MarksAllowed			Minimum passing marks in aggregate
						External Assessment	Internal Assessment	Total	
MPN-S-301	Neurological Rehabilitation	CC	Physical Therapy in Neurological Disorder-I	4	4	60	40	100	50%
MPN-S-302	Neurological Rehabilitation	CC	Neurological Rehabilitation-I	4	4	60	40	100	50%
MPN-S-303	Neurological Rehabilitation	CC	Physical Therapy in Paediatric Neurology -I	4	4	60	40	100	50%
MPN-P-304	Neurological Rehabilitation	SEC	Practical	24	12	60	40	100	50%
MPN-P-305	Neurological Rehabilitation	SEC	Dissertation	4	4	-	-	-	-
				40	28	240	160	400	50%

Mastersin Neurology Physiotherapy-PartII Semester– IV									
Paper	*Specialization*	*CC/ DSC/SEC/ AECC /DSEC*	*Title ofthe paper*	*TeachingHrs./Week*	*Total Credits*	*Max.MarksAllowed*			*Minimum passing marks in aggregate*
						External Assessment	*Internal Assessment*	*Total*	
MPN-S-401	Neurological Rehabilitation	CC	Physical Therapy in Neurological Disorder-II	4	4	60	40	100	50%
MPN-S-402	Neurological Rehabilitation	CC	Neurological Rehabilitatin-II	4	4	60	40	100	50%
MPN-S-403	Neurological Rehabilitation	CC	Physical Therapy in Paediatric Neurology -II	4	4	60	40	100	50%
MPN-P-404	Neurological Rehabilitation	SEC	Practical	24	12	60	40	100	50%
MPN-P-405	Neurological Rehabilitation	SEC	Dissertation	4	4	200	-	-	-
				40	28	440	160	400	50%

Mastersin Sports Rehabilitation -PartII Semester– III									
Paper	Specialization	CC/ DSC/SEC/ AECC/ DSEC	Title of the paper	TeachingHrs./ Week	Total Credits	Max.MarksAllowed			Minimum passing marks in aggregate
						External Assessment	Internal Assessment	Total	
MPS- S-301	Sports Rehabilitation	CC	Traumatology (Orthopedics and Community Medicine, Physical Therapy)-I	4	4	60	40	100	50%
MPS- S-302	Sports Rehabilitation	CC	Fundamentals in Sports-I	4	4	60	40	100	50%
MPS- S-303	Sports Rehabilitation	CC	Rehabilitation in Sports-I	4	4	60	40	100	50%
MPS- P-304	Sports Rehabilitation	SEC	Practical	24	12	60	40	100	50%
MPS-P-305	Sports Rehabilitation	SEC	Dissertation	4	4	-	-	-	-
				40	28	240	160	400	50%

Masters in Sports Rehabilitation -PartII Semester– IV									
Paper	Specialization	CC/DSC/SEC/AECC/DSEC	Title ofthe paper	TeachingHrs./Week	TotalCredits	Max.MarksAllowed			Minimum passing marks in aggregate
						External Assessment	Internal Assessment	Total	
MPS-S-401	Sports Rehabilitation	CC	Traumatology (Orthopedics and Community Medicine, Physical Therapy)-II	4	4	60	40	100	50%
MPS-S-402	Sports Rehabilitation	CC	Fundamentals in Sports-II	4	4	60	40	100	50%
MPS-S-403	Sports Rehabilitation	CC	Rehabilitation in Sports-II	4	4	60	40	100	50%
MPS-P-404	Sports Rehabilitation	SEC	Practical	24	12	60	40	100	50%
MPS-P-405	Sports Rehabilitation	SEC	Dissertation	4	4	200	-	-	-
				40	28	440	160	400	50%

Mastersin Cardiopulmonary Rehabilitation -PartII Semester– III									
Paper	*Specialization*	*CC/ DSC/SEC/ AECC/ DSEC*	*Title ofthe paper*	*TeachingHrs./Week*	*TotalCredits*	*Max.MarksAllowed*			*Minimum passing marks in aggregate*
						ExternalAssessment	*InternalAssessment*	*Total*	
MPC-S-301	Cardiopulmonary Rehabilitation	CC	Medical and Surgical Management of Disorders of the Cardiopulmonary system-I	4	4	60	40	100	50%
MPC-S-302	Cardiopulmonary Rehabilitation	CC	PT management and Principle of Cardiopulmonary system -I	4	4	60	40	100	50%
MPC-S-303	Cardiopulmonary Rehabilitation	CC	Cardio-Pulmonary Rehabilitation and Acute Cardio Respiratory Practice-I	4	4	60	40	100	50%
MPC-P-304	Cardiopulmonary Rehabilitation	SEC	Practical	24	12	60	40	100	50%
MPC-P-305	Cardiopulmonary Rehabilitation	SEC	Dissertation	4	4	-	-	-	-
				40	28	240	160	400	50%

Masters in Cardiopulmonary Rehabilitation -PartII

Semester– IV

Paper	*Specialization*	*CC/DSC/SEC/AECC/DSEC*	*Title ofthe paper*	*TeachingHrs./Week*	*Total Credits*	*Max.MarksAllowed*			*Minimum passing marks in aggregate*
						External Assessment	*Internal Assessment*	*Total*	
MPC-S-401	Cardiopulmonary Rehabilitation	CC	Medical and Surgical Management of Disorders of the Cardiopulmonary system-I	4	4	60	40	100	50%
MPC-S-402	Cardiopulmonary Rehabilitation	CC	PT management and Principle of Cardiopulmonary system - I	4	4	60	40	100	50%
MPC-S-403	Cardiopulmonary Rehabilitation	CC	Cardio-Pulmonary Rehabilitation and Acute Cardio Respiratory Practice-I	4	4	60	40	100	50%
MPC-P-404	Cardiopulmonary Rehabilitation	SEC	Practical	24	12	60	40	100	50%
MPC-P-405	Cardiopulmonary Rehabilitation	SEC	Dissertation	4	4	200	-	-	-
				40	28	440	160	400	50%

Mastersin Paediatric Rehabilitation -PartII Semester– III									
Paper	*Specialization*	*CC/ DSC/SEC/ AECC/ DSEC*	*Title ofthe paper*	*Teaching Hrs./Week*	*TotalCredits*	*Max.MarksAllowed*			*Minimum passing marks in aggregate*
						ExternalAssessment	*InternalAssessment*	*Total*	
MPP-S-301	Paediatric Rehabilitation	CC	PT for Pediatric Neurological Conditions-I	4	4	60	40	100	50%
MPP-S-302	Paediatric Rehabilitation	CC	PT for Orthopedic Conditions -I	4	4	60	40	100	50%
MPP-S-303	Paediatric Rehabilitation	CC	PT for Cardio Respiratory Condition-I	4	4	60	40	100	50%
MPP-P-304	Paediatric Rehabilitation	SEC	Practical	24	12	60	40	100	50%
MPP-P-305	Paediatric Rehabilitation	SEC	Dissertation	4	4	-	-	-	-
				40	28	240	160	400	50%

Masters in Paediatric Rehabilitation –Part II

Semester– IV

Paper	*Specialization*	*CC/ DSC/SEC/ AECC/ DSEC*	*Title ofthe paper*	*TeachingHrs./ Week*	*Total Credits*	*Max.MarksAllowed*			*Minimum passing marks in aggregate*
						ExternalAssessment	*InternalAssessment*	*Total*	
MPC-S-401	Paediatric Rehabilitation	CC	PT for Pediatric Neurological Conditions-I	4	4	60	40	100	50%
MPC-S-402	Paediatric Rehabilitation	CC	PT for Orthopedic Conditions-I	4	4	60	40	100	50%
MPC-S-403	Paediatric Rehabilitation	CC	PT for Cardio Respiratory Condition-I	4	4	60	40	100	50%
MPC-P-404	Paediatric Rehabilitation	SEC	Practical	24	12	60	40	100	50%
MPC-P-405	Paediatric Rehabilitation	SEC	Dissertation	4	4	200	-	-	-
				40	28	440	160	400	50%

Mastersin Obstetric and Gynecology Rehabilitation -PartII Semester– III									
Paper	*Specialization*	*CC/DSC/SEC/AECC/DSEC*	*Title ofthe paper*	*TeachingHrs./Week*	*Total Credits*	*Max.MarksAllowed*			*Minimum passing marks in aggregate*
						ExternalAssessment	*Internal Assessment*	*Total*	
MPG- S-301	Obstetric and Gynecology Rehabilitation	CC	Medical and Surgical Gynaecology-I	4	4	60	40	100	50%
MPG- S-302	Obstetric and Gynecology Rehabilitation	CC	Clinical Obstetrics-I	4	4	60	40	100	50%
MPG- S-303	Obstetric and Gynecology Rehabilitation	CC	Physiotherapy Management in Gynaecology and Obstetrics-I	4	4	60	40	100	50%
MPG- P-304	Obstetric and Gynecology Rehabilitation	SEC	Practical	24	12	60	40	100	50%
MPG-P-305	Obstetric and Gynecology Rehabilitation	SEC	Dissertation	4	4	-	-	-	-
				40	28	240	160	400	50%

Obstetrics and Gynecology Rehabilitation -PartII

Semester– IV

Paper	Specialization	CC/DSC/SEC/AECC/DSEC	Title ofthe paper	Teaching Hrs./ Week	Total Credits	Max.Marks Allowed			Minimum passing marks in aggregate
						External Assessment	Internal Assessment	Total	
MPG-S-401	Obstetrics and Gynecology Rehabilitation	CC	Medical and Surgical Gynaecology-I	4	4	60	40	100	50%
MPG-S-402	Obstetric and Gynecology Rehabilitation	CC	Clinical Obstetrics-I	4	4	60	40	100	50%
MPG-S-403	Obstetric and Gynecology Rehabilitation	CC	Physiotherapy Management in Gynaecology and Obstetrics-I	4	4	60	40	100	50%
MPG-P-404	Obstetric and Gynecology Rehabilitation	SEC	Practical	24	12	60	40	100	50%
MPG-P-405	Obstetric and Gynecology Rehabilitation	SEC	Dissertation	4	4	200	-	-	-
				40	28	440	160	400	50%

Course code	:MPT-S-101			
Course Name	:Review of Basic Medical Sciences 1			
Semester	:I			
	L	T	P	C
	3	1	0	4

Course Objectives: The objectives of this course are

CO 1: To describe Anatomy and applied anatomy for supportive specification like upper limb, lower limb and vertebral column.
CO 2: To summarize various system of human body like cardiovascular system and muscular system.
CO3: To prepare application of drugs in pain, local anesthetics and of steroids.
CO4: To explain general pathology and pathology of bones and joints.
CO5: To summarize the history of Exercise physiology and application of energy, work and power.
CO 6: To write about responses of exercise in respiratory system and others.

COURSE CONTENTS

Unit I: Human Anatomy

Outline of General Anatomy

1. Introduction to upper limb & lower limb

    i. Bones & Joints
    ii. Muscles
    iii. Nerves, Roots, Plexus.
    iv. Pectoral region, axilla, scapula, arm, forearm, cubital fossa & hand.
    e.Vascular structure.
    v. Thigh, gluteal region, popliteal fossa.
    vi. Leg, ankle and foot

2. Introduction of lungs, heart & thorax anatomy.
3. Introduction of vertebral column.
    a. Cervical, thoracic, lumber, sacral spine.
    b. Anatomy of spinal cord

Unit II: Human Physiology

(1) Cardiovascular System.

- Structure & Properties of heart Cardiac Cycle.
- The regulation of heart's performance.
- Cardiac output.
- The arterial blood pressure.
- The physiology of vascular system.
- Lymphatic circulation.

(2) Muscular System:

Types of muscles, types of muscle contractions, muscle work, motor units, group action of muscles, muscle spindle.

- Neuromuscular junction.
- Muscle architecture.
- Muscle action.
- Spasm, spasticity, twitch, muscle fatigue, tetani rigor motis Nerve & blood supply of muscles etc…

Unit III : Pharmacology

Discussion in details of the following groups of drug. Their effects, uses, side effects and dosage.

a) Drugs used in pain.
b) Local anesthetics
c) Steroids

Unit IV: Pathology

1. General Pathology (Cell Injury, Inflammation, repair, immune system)
2. Musculoskeletal system.

a) Bones:
Hereditary & Metabolic diseases. (Osteoporosis, Rickets, Osteomalacia, Osteitis fibrosa cystica, Renal Osteodystrophy) Infections:(Osteomyelitis, tuberculosis)

b) Joints:
Degenerative joint disease.
Bursitis.

Unit V: Exercise Physiology & Nutrition

Introduction: History of Exercise physiology-Early Exercise Physiologists, the Harvard Fatigue Laboratory, The Scandinavian Influence, Contemporary Exercise Physiologists.

- Bioenergetics
- Endurance Training
- Energy Expenditure at rest and during physical activity-

Energy, Work & Power

- Measurement of Energy CCSI of Exercise.

- Direct Calorimetry, Indirect Calorimetry, Net O_2 cost of Aerobic and Anaerobic exercise, the concept of the MET, Ancillary considerations in Measuring Energy Expenditure, Body size and energy cost. Measuring efficiencies on a bicycle, ergometer and treadmill.
- Measurement of energy cost for 100M, 400M dash.
- Measurement of energy cost using telemetry.
- Muscle Physiology: Overview, Mechanism of Muscular Contraction.

Unit: VI

Respiratory response to Exercise:
Ventilation at rest and during exercise. Ventilation and the anaerobic Threshold, Alveolar Ventilation and Dead Space, Other Lung volumes and capacities, Oxygen Cost of breathing, second wind, Stitch in side.

Recommended Textbooks

1. Anatomy by B.D. Chaurasia
2. Gray's Anatomy
3. Pharmacology by K.D. Tripathi
4. Pathology by Harsh Mohan
5. Exercise Physiology by Katch&Katch
6. Pharmacology and Pharmacotherapeutics, R.S. Satoskar -

MAPPING-

PO / **CO**	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	L		M		H	L	M		L	H		H
CO2		H	L	M		L		H		M	L	
CO3	H		L		M		M		L	M		L
CO4	L			L		M			L		M	
CO5		H				L		L	M			L
CO6	M	L	M		L		H		L		L	
Average	7	7	6	3	6	5	7	4	6	7	4	5

Course code	:MPT-S-102			
Course Name	:Review of Basic Therapeutics- 1			
Semester	:I			
	L	T	P	C
	3	1	0	4

Course Outcomes

CO1:To memorize definition of physiotherapy and various rehabilitation and modern concepts in sports physiotherapy like dynamic exercises,plyometricexercises,manipulative techniques etc
CO2: To discuss various physiotherapy techniques for enhancing Biomechanics and Neuromuscular control,various methods like- Re-education, Co-ordination, balance.
CO3: To apply varioustype of Strengthening exercise and its application.
CO4: To prioritize the principles for enhancing neuromuscular control and protective techniques.
CO5:To evaluate the methods of conditioning and fitness enhancement
CO6: To write about the Regional Exercise prescription for various joints.

Unit –I

Definition of physiotherapy, Goals & objectives of Physiotherapy in Clinical Evaluation Phase of management of injured person. (Multidisciplinary Approach)
Rehabilitations and modern concepts in sports Physiotherapy.
Definition, details of effects and uses of therapeutic Exercises.

a) Dynamic Exercises
b) Plyometric Exercises
c) Isokinetic Exercises
d) Manipulative Techniques
e) Kinetic Chain Exercise

UNIT-2

Review of the following techniques.

a) Assessment techniques like MMT & Goniometry
b) Re-education and strengthening.
c) Balance and Co-ordination exercise
d) Gait analysis and training (both normal & pathological gait) 8
e) Posture
f) PNF
g) Traction
h) Introduction of Biomechanics
i) Biomechanics of shoulder and shoulder girdle motion
j) Biomechanics of elbow motion, wrist and hand motion & their pathomechanics.

UNIT-3

Strengthening
Types of Muscle Contractions and Muscle work, Strength of Muscle Contraction in terms of Motor units, group action of Muscles and its implication in designing an exercise program.

a. Cause of Muscle weakness. Prevention of disuse atrophy, Principles of treatment to increase muscle strength and function.
b. Techniques of strengthening with respect to regional consideration.

c. Various methods of progressive resisted exercise.

UNIT-4

Physiotherapy for Enhancing Neuromuscular Control

1. Neuromuscular control, methods for improving neuromuscular control, proprioception and kinesthetic sensation following different injuries.
2. Principles and application of neuromuscular facilitation techniques including PNF.
3. Protective equipment.

UNIT-5

Methods of conditioning and fitness enhancement

UNIT-6

Regional Exercise prescription

(a) Therapeutic Exercise for Shoulder, elbow, wrist and Hand injuries.
(b) Therapeutic Exercise for hip and thigh, Knee, foot and ankle injuries.
(c) Therapeutic Exercise for Spinal Problem

RECOMMENDED TEXTBOOKS:

1. Mulligan Concept by Bashir Ahmed & Wayne Hing
2. MFR by Ruth Diencan
3. MET by Leon Chaitow
4. 2. Electrotherapy Explained by Low & Reed
5. Physical agents by Michile Cameroon
6. Principles of Electrotherapy by Michile Cameron
7. MFR by Travell, Simon & Simon

MAPPING-

PO / **CO**	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	L		M		H	L	M		L	H		H
CO2		H	L	M		L		H 9		M	L	
CO3	H		L		M		M		L	M		L
CO4	L			L		M			L		M	
CO5		H				L		L	M			L
CO6	M	L	M		L		H		L		L	
Average	7	7	6	3	6	5	7	4	6	7	4	5

Coursecode	:MPT-S-103			
CourseName	: Advanced Therapeutics & Diagnosis 1			
Semester	:I			
	L	T	P	C
	3	0	2	4

Course Objectives: The objectives of this course are:

CO1: To describe the basic Manual Therapy Techniques- history, classification for Cyriax and Maitland.
CO2: To interpret Muscle Energy Technique - its concept and application.
CO3: To illustrate the importance of LASER in various conditions.
CO4: To analyze the importance of Nerve Conduction Studies along with the importance of normal & abnormal action potentials in diagnosing conditions.
CO5: To evaluate Radiology & Diagnostic Studies.
CO6: To write the analysis of various laboratory Examination reports and their clinical Co- relation with various disorders.

COURSE CONTENTS

UNIT 1:

Manual Therapy: Introduction, History, Basic Classification, Assessment for manipulation, discussion in brief about the concepts of mobilization like Cyriax&
Maitland. Methodology in general with examples, Joints/ nerves (Manipulation studies & work according to their specialization).

UNIT 2:

Muscle Energy techniques: The basic concept and application of these techniques.

UNIT 3:

LASERS: Production, types, effects, application, indications & contraindications.

UNIT 4:

Nerve conduction studies: Normal & abnormal action potentials, its recording protocols, analysis & apparatus

UNIT 5:

Radiology & Diagnostic Studies: Reading and analysis of.

1. X-Ray.
2. Myelography.
3. Cerebral angiography.
4. computer tomography.(CT SCAN)
5. 5.Magnetic resonance imaging (MRI).
6. Angiography.
7. Radionuclide imaging, PET scan.

UNIT 6:

Analysis of various laboratory Examination reports and their clinical Co- relation with various muscular skeletal disorders and neurological, cardiothoracic, pediatrics & gynecological disorders.

1. Blood Serum
2. Urine and Stool
3. CSF

RECOMMENDED TEXTBOOKS:

1. Mulligan Concept by Bashir Ahmed & Wayne Hing
2. MFR by Ruth Diencan
3. MET by Leon Chaitow
4. Electrotherapy Explained by Low & Reed
5. Physical agents by Michile Cameroon
6. Principles of Electrotherapy by Michile Cameron
7. MFR by Travell, Simon & Simon

MAPPING-

PO / **CO**	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	L		M		H	L	M		L	H		H
CO2		H	L	M		L		H		M	L	
CO3	H		L		M		M		L	M		L
CO4	L			L		M			L		M	
CO5		H				L		L	M			L
CO6	M	L	M		L		H		L		L	
Average	7	7	6	3	6	5	7	4	6	7	4	5

Coursecode	:MPT-S-104			
CourseName	: Research design and Methodology- 1			
Semester	: I			
	L	T	P	C
	4	0	0	4

Course Outcome:

C01: To describe the research methodology's formulas and methods like standard deviation, mean, mode and median.

CO: To understand data collection methods, central tendency, correlation, regression, sampling testing, hypothesis, data collection and test etc.

C03: To demonstrate the moral and ethics in physiotherapy profession and rules and regulations of the association/council.

C04: To classify the laws related to physiotherapy practice like medico legal aspect, practice, negligence, licensure workmen compensation and maintaining the medical register.

C05: To evaluate the policis and procedure related to management of physiotherapy department like recruitment, interview, salary, working hours, leaves, referred policy, maintaining statistics, planning and design.

C06: To design the concept of physiotherapy education technology, its aims, philosophy, treands and issues; concepts of teaching and learning,

Unit I:

Research Methodology 1

Introduction-

Uses of statistical methods & standard deviation.

Methods of collection, classification, tabulation & presentation of data.

Central tendency-

Mean, Median, Mode & standard deviation

UNIT-2

Correlation &Regression:-

Karl Pearson's correlation method

Rank correlation method

Regression & correlation.

Sampling & hypothesis testing

Data collection

Types of sampling

Random Sampling

T. Test, Z. Test, Chi square testing.

UNIT-3

Physiotherapy Ethics

1. Morals and ethics
2. Ethical issue in physical therapy
3. Rules and regulation of association/ council

UNIT- 4

Physical Therapy & Law: Medicolegal aspect of physical therapy, liability, negligence and practice, licensure workmen compensation & maintaining the medical register.

UNIT-5

Physiotherapy Department Management.

1. Policies and procedures.
2. Recruitment, interview, probation, salary, hours of working, leaves facilities, retirement, referred policy.
3. Maintenance of records equipments, statistics.
4. Planning, design construction, expansion plan.

UNIT-6

Physiotherapy Education Technology

i) Aims, philosophy and trends and issues:-

a) Educational aims.
b) Agencies of education.
c) Formal and informal education
d) Major philosophies of education.
(naturalism, idealism, pragmatism & realism)

e) Modern and contemporary philosophies of educations.

Book reference-

1. Research Methodology.-C.R.KOTHAR - New age international publisher

2. Research Methodology. - Ranjit kumar. - PUBLISHER - pearsonindia

MAPPING-

PO / **CO**	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	L		M		H	L	M		L	H		H
CO2		H	L	M		L		H		M	L	
CO3	H		L		M		M		L	M		L
CO4	L			L		M			L		M	
CO5		H				L		L	M			L
CO6	M	L	M		L		H		L		L	
Average	7	7	6	3	6	5	7	4	6	7	4	5

Masters in Physiotherapy-Part I

Semester–II

Coursecode	:MPT-S-201				
CourseName	: Review of Basic Medical Sciences-II				
Semester	:II				
		L	T	P	C
		3	1	0	4

L - Lecture T – Tutorial P – Practical C – Credit

CO 1: To describe Anatomy and applied anatomy for supportive specification like head and neck, brain, reproductive system and neonatal development.
CO 2: To summarize various system of human body like respiratory system, nervous system and reproductive system.
CO3: To prepare application of muscle relaxants, drug acting upon CNS and ANS & of topically acting drugs.
CO4: To explain pathological conditions of skeletal muscles and nervous system.
CO 5: To evaluate cardiovascular and hormonal response to exercise.
CO 6: To overview the nutritional overview of human body

COURSE CONTENTS

UNIT 1: Human Anatomy

1. Introduction of head & neck
    a. Neck : Side of neck
    b. Triangle of Neck
    c. Temporomandibular joint
2. Introduction to brain.
    a. Meanings, CSF
    b. Blood supply of brain & Spinal cord.
    c. Outline of ventricles
    d. Outline of brain stem.
3. Introduction to anatomy of reproductive system.
4. Neonatal development, millstones, neonatal reflexes etc.

UNIT 2: Human Physiology

(3) Respiratory System:

a. Functional anatomy
b. Ventilation & control of ventilation
c. Alveolar air
d. Regulation of the breathing
e. Pulmonary function test.

(4) Nervous System:

a) Elementary neuroanatomy
b) Neurons & Neuralgia
c) Properties of nerve fibers synapse.
d) Spinal cord.
e) Cerebral cortex.
f) Pyramidal & extra pyramidal system.
g) The cerebellum.
h) Autonomic nervous system.
i) Cerebrospinal fluid.
j) Cranial nerves.

(5) Reproductive System:

i. Male reproductive system.
ii. Female reproductive system.
iii. Menstrual cycle.
iv. Menopause.
v. Fertilization & intra-uterine development.
vi. Birth.
vii. Post natal growth & development

UNIT 3: Pharmacology

Discussion in details of the following groups of drug. Their effects, uses, side effects and dosage.

a) Muscle relaxants.
b) Drug acting upon central nervous systems & autonomic nervous system. f)Tropically acting drugs.

UNIT 4: Pathology

Discuss the pathology of the following conditions:
Skeletal muscles (Muscle atrophy, Myositis, Muscular dystrophy, Myasthenia gravis)

Nervous system

a) Infection (meningitis, encephalitis)
b) Vascular diseases (Ischemic encephalopathy, Cerebral infarction, Intracranial hemorrhage)
c) Degenerative disease (Alzheimer's disease, Huntinton's disease, Parkinsonism, Motor neuron disease)
d) Demyelinating disease (Multiple sclerosis)
e) The peripheral nervous system (Peripheral neuropathy, acute Idiopathic polyneuropathy, Diabetic neuropathy)

UNIT 5: Exercise Physiology

Cardiovascular responses to Exercise:
Summary of the cardiovascular systemic physiology covered during previous year.
Cardiovascular aspects of exercise: Control and regulation of heart and circulation at rest and during exercise.

Exercise and Acid Base Balance:

Acid and Bases, Buffers, pH, Respiratory Regulation of pH, Alkali Reserve, The Kidneys and acid base balance, Alkalosis and Acidosis, Acid base balance following heavy exercise.
Hormonal response to exercise:
Growth Hormone (GM), thyroid and Parathyroid hormones. Ant diuretic Hormone (ADM) and Aldosterone, Insulin and Glucagon's, the careholamine; epinephrine and norepinephrine. The sex hormones. The glucocorticoids (ciortisol) and Adreno Corticotrophin Hormone (ACTH), Prostaglandins and Endorphin:

UNIT 6: Nutrition overview

Fat, Proteins, Carbohydrates, Vitamins, Minerals, Water
Recommended daily allowances (RDAs) of a healthy diet for athletes and other involved in physical activity, Nutritional food pyramid and its use, Primary organizations responsible for nutritional information, nutritional considerations in rehabilitation including nutrients involved in healing and nutritional risk factors, Common illnesses and Injuries attributed to poor nutrition.
Energy and nutritional demands of specific activities and the nutritional demands placed on athletes and other involved in physical activity.

Recommended Textbooks

1. Anatomy by B.D. Chaurasia
2. Gray's Anatomy
3. Pharmacology by K.D. Tripathi
4. Pathology by Harsh Mohan
5. Exercise Physiology by Katch&Katch
6. Pharmacology and Pharmacotherapeutics, R.S. Satoskar

MAPPING-

PO / **CO**	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	L		M		H	L	M		L	H		H
CO2		H	L	M		L		H		M	L	
CO3	H		L		M		M		L	M		L
CO4	L			L		M			L 1		M	
CO5		H				L		L	M			L
CO6	M	L	M		L		H		L		L	
Average	7	7	6	3	6	5	7	4	6	7	4	5

Coursecode	:MPT-S-202

CourseName :Review of Basic Therapeutics- II				
Semester :II				
	L	T	P	C
	3	1	0	4

Course Outcomes

CO1:To memorize definition of massage, classification of massage techniques and its physiological effects.

CO2: To discuss various physiotherapy techniques like Hydrotherapy, its application, significations and its physiological effects.

CO3: To apply various type of Mobilization techniques and its application.

CO4: To prioritize the principles of Electrotherapy equipment and its importance in advance therapeutics.

CO5:To evaluate the applications of Biomechanics in the field of therapeutics.

CO6: To design about the various types of orthosis and prosthesis in the scope of Bio-engineering.

UNIT- 1

Massage

Historical development, definition and classification of massage techniques, Physiological effects of massage, description of the techniques of classical massage. Physiological basis of massage, therapeutic applications and contraindication of massage.

UNIT- 2

Hydrotherapy:

History & introduction, effects of simple baths, raising temperature baths, baths with additives, Aromatic baths, Mineral baths, Physical baths, Hydroelectric baths, stammer baths, whirl pool bath, showers and steam showers, aquatic exercises, Aquatic therapy

UNIT-3

Mobilization

Factors affecting the joint range of motion prevention of stiffness, methods of joint mobilization.

a) Testing for tightness and contracture of soft-tissue structure.
b) Techniques of mobilizing the various joints of the body
c) Introduction to manual therapy techniques, manual joint therapy, traction, basic principles of manipulation for various disorders of the spine and extremities.

UNIT-4

Electro Therapy

1. Principles underlying the application of following modalities with reference to their production, biophysical and therapeutic effects, indications and contraindications and the specific uses in sports physiotherapy.

   a) Infrared rays, paraffin wax, bath steam bath, moist heat pack fluid therapy, Mud bath and pelloids.

b) High frequency current: SWD, MWD, Ultrasound, pulsed electromagnetic energy. Physiological effects, use of Cold therapy in acute phase, rehabilitative phase, preventive phase of athletic injury, Methods of application, indications and contraindications.

2. Principles underlying the application of following modalities with reference to their production, biophysical and therapeutic effects, indications and contraindications and the specific uses in Physiotherapy.
   a) Low frequency current: Direct current, modified Direct Current, Alternative current, Diadynamic Current, Ionotophoresis TENS, High Voltage, Pulsed Galvanic Stimulation.
   b) Medium Frequency Current: IFT, Russian Currents, Radiations: LASER Recent Advancement in Electrotherapy (electro therapy in wound management), Electro-diagnosis and its implications to Physiotherapy.

UNIT-5

Biomechanics &Pathomechanics

Section A

1. Introduction to kinesiology and Biomechanics.
2. Principle of Biomechanics, Nature and importance of Biomechanics in Physiotherapy.

Section B

3. Introduction to biomechanical analysis of human motion. Analytical tools and techniques-Isokinetic dynamometer, Kinesiological EMG, Electronic goniometer, force platform, video therapy.

Section C

4. Biomechanics of pelvic motion, hip motion, Knee motion, Ankle & Foot motion &pathomechanics.
5. Biomechanics of Spinal motion &Pathomechanics.

Section D

6. Gait analysis, posture & Abnormal Posture & Gait.

UNIT-6

Bio Engineering

1. Principles of orthotics type, indications, contra indications, Assessment (Check Out), uses and fitting –region wise.
2. Fabrication of simple Splints and self help devices for upper, lower extremity and spine-indications and applications.
3. Principles of prosthetic –type, indications, contraindications, assessment (Check Out), use and fitting –region wise.
4. Preparation, Application & training.

RECOMMENDED TEXTBOOKS:

- Mulligan Concept by Bashir Ahmed & Wayne Hing
- MFR by Ruth Diencan
- MET by Leon Chaitow
- 2. Electrotherapy Explained by Low & Reed
- Physical agents by Michile Cameroon
- Principles of Electrotherapy by Michile Cameron
- MFR by Travell, Simon & Simon

MAPPING-

PO / **CO**	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	L		M		H	L	M		L	H		H
CO2		H	L	M		L		H		M	L	
CO3	H		L		M		M		L	M		L
CO4	L			L		M			L		M	
CO5		H				L		L	M			L
CO6	M	L	M		L		H		L		L	
Average	7	7	6	3	6	5	7	4	6	7	4	5

Course code	:MPT-S-203			
Course Name	: Advanced Therapeutics & Diagnosis II			
Semester	:II			
L	T	P	C	
3	0	2	4	

Course Objectives: The objectives of this course are

CO1: To describe the basic Manual Therapy Techniques- history, classification for Mulligan and Butler
CO2: To interpret Positional stretch- its concept and application.
CO3: To illustrate the importance of Biofeedback and Micro currents.
CO4: To analyze the importance of EMG Studies along with the importance of normal & abnormal action potentials in diagnosing conditions.
CO5: To evaluate Radiology & Diagnostic Studies.
CO6: To write the analysis of various laboratory Examination reports and their clinical Co- relation with various disorders.

COURSE CONTENTS

UNIT 1:

Manual Therapy: Introduction, History, Basic Classification, Assessment for manipulation, discussion in brief about the concepts of mobilization like Mulligan and Butler in mobilization of joints & nerves. Methodology in general with examples, Joints/ nerves (Manipulation studies & work according to their specialization).

Unit II :

Positional stretch: The basic concept and application of these techniques.

UNIT III

Biofeed back: Principles, effects, uses and contraindications.
(FOLLOWING ARE ONLY FOR PRACTICAL KNOWLEDGE; NOT FOR THEORY EXAM)
Micro currents: Concept, Indications, Contraindications & Application

Unit IV

EMG: Normal & abnormal action potentials, its recording protocols, analysis & apparatus.

Unit V

Radiology & Diagnostic Studies: Reading and analysis of.

a. Computer tomography (CT SCAN) 5.Magnetic resonance imaging (MRI).
b. Angiography.
c. Radionuclide imaging, PET scan.
d. neurophysiology- electro ECG, EMG, NCS (nerve conduction studies)
e. Examination of CSF.
f. Late responses- F response, H-reflex, axon- reflex.

g. Artifacts & technical factors.
h. Evoked potentials- visual, auditory, somatosensory, motor spinal potentials, biofeedback, EEG.
i. Thermal & vibration threshold monitor.
j. EEG.

Their clinical relation with various muscular skeletal disorder and nervous disorders

UNIT VI

Analysis of various laboratory Examination reports and their clinical Co- relation with various muscular skeletal disorders and neurological, cardiothoracic, pediatrics & gynecological disorders.

1. CSF.
2. Biopsy.
3. Other test related to specific conditions.

RECOMMENDED TEXTBOOKS:

1. Mulligan Concept by Bashir Ahmed & Wayne Hing
2. MFR by Ruth Diencan
3. MET by Leon Chaitow
4. 2. Electrotherapy Explained by Low & Reed
5. Physical agents by Michile Cameroon
6. Principles of Electrotherapy by Michile Cameron
7. MFR by Travell, Simon & Simon

MAPPING-

PO / **CO**	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	L		M		H	L	M		L	H		H
CO2		H	L	M		L		H		M	L	
CO3	H		L		M		M	2	L	M		L
CO4	L			L		M			L		M	
CO5		H				L		L	M			L
CO6	M	L	M		L		H		L		L	
Average	7	7	6	3	6	5	7	4	6	7	4	5

Coursecode :MPT-S-204				
CourseName : Research design and Methodology- II				
Semester :II				
	L	T	P	C
	4	0	0	4

Course Outcome:

C01: To describe the physiotherapy education in India, theories of teaching, relationship between teaching and learning.

CO: To understand about the curriculum committee, course placement, time allotment, etc.

C03: To demonstrate the principles, methods and planning of teaching.

C04: To classify the measurement and evaluation of teaching.

C05: To evaluate the policies and procedure for guidance and counseling for physiotherapy procedures.

C06: To design the concept of computer application in medical sciences.

UNIT-1

Physiotherapy of education in India (past, present and future) current issues and trends in educations.

Concepts of teaching and learning.

i) Theories of teaching.
ii) Relationship between teaching and learning.
iii) Psychology of education.
iv) Dynamics of behavior, motivational process of learning perception, individual differences, intelligence personality.

UNIT-2

Curriculum

i) Curriculum committee.
ii) Development of a curriculum for physiotherapy.
iii) Types of Curriculum
iv) Placing, courses placement, time allotment
v) Correlation of therapy and practice.
vi) Hospital and community areas for clinical instructions.
vii) Clinical assignments.

UNIT-3

Principles and methods of teaching.

i) Strategies of teaching.
ii) Planning of teaching.
iii) Organization, writing lesson plan.

iv) A.V. aids.
v) Teaching methods – socialized methods

UNIT-4

Measurement and evaluation

i) Nature of measurement of Educations, meaning, process, personnel, Standardized, none standardized.
ii) Standardized tools, important tests of intelligence, aptitude, instrument,
iii) Personality, achievements and status scale.
iv) Programmeevaluation.
v) Cumulative evaluation.

UNIT-5

Guidance and counseling

i) Philosophy, principles, concepts, guidance & counseling services.
ii) Faculty development and development of personnel for physiotherapy services.

UNIT -6

Computer (Non University Examination)

1. Introduction of software and hardware.
2. M.S. Office, Dos.
3. Application computer in medical sciences.

Book reference-

1. Research Methodology.-C.R.KOTHAR - New age international publisher

2. Research Methodology. - Ranjit kumar. - PUBLISHER - pearsonindia

MAPPING-

PO / **CO**	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	L		M		H	L	M		L	H		H
CO2		H	L	M		L		H		M	L	
CO3	H		L		M		M		L	M		L
CO4	L			L		M			L		M	
CO5		H				L		L	M			L
CO6	M	L	M		L		H		L		L	
Average	7	7	6	3	6	5	7	4	6	7	4	5

Mastersin Orthopedics Rehabilitation -PartII

Semester– III

Programme Name	MPT				
Programme Code	M9601				
Course Name	Orthopaedics in Physical Therapy-I				
Course Code	MPO-S- 301				
Year	III				
		L	T	P	C
		2	0	2	3

Course Outcomes:

CO1: To describe Embryology and Anatomy of the musculoskeletal system, Podiometry , Arthro-kinematics and Osteo-kinematics.

CO2: Define PaediatricOrthopaedics conditions & their management and describe physiotherapy management of lumbo-sacral disorders , assessment of locomotor impairments and disability evaluation.

CO3: To describe traumatic orthopaedics ,UL, LL and spinal fractures with their medical, surgical and PT management.

CO4 :To discuss assessment of posture , role of physiotherapy in scoliosis unit, Injuries of brachial plexus , peripheral nerve with their PT management.

CO5 :To discuss principles of amputation surgery and their prosthetic management , check-out and training UL & LL.

CO6: To explain about PT management of UL & LL fractures, after replacement of arthroplasties of shoulder, elbow, hip, knee and ankle , and PT management of cervical & Thoracic spine disorders.

Course Outcomes

UNIT 1: Describe Embryology and Anatomy of the musculoskeletal system, Podiometry , Arthro-kinematics and Osteo-kinematics.

UNIT 2: PaediatricOrthopaedics conditions & their management and describe physiotherapy management of lumbo-sacral disorders , assessment of locomotor impairments and disability evaluation.

UNIT 3: Traumatic orthopaedics ,UL, LL and spinal fractures with their medical, surgical and PT management.

UNIT 4 : To discuss assessment of posture , role of physiotherapy in scoliosis unit, Injuries of brachial plexus , peripheral nerve with their PT management.

UNIT 5 : To discuss principles of amputation surgery and their prosthetic management , check-out and training UL & LL.

UNIT 6: To explain about PT management of UL & LL fractures, after replacement of arthroplasties of shoulder, elbow, hip, knee and ankle , and PT management of cervical & Thoracic spine disorders.

BOOK REFERANCES-

1. Clinical orthopaedic rehabilitation - A team approach
Author - CHARLES .E.GIANGARRA, ROBERT .C. MANSKE, S.BRENT BROTZMAN
Publisher - Elsevier

2. Orthopaedic physical Assesment
Author - DAVID .J. MAGEE, ROBERT .C. MANSKEE
Publisher - Elsevier

3. Netter' orthopaedic clinical examination 2nd edition
Author - Joshua cleland,Shane koppenhaver

Publisher - saunders

4.Fundamentals of Musculoskeletal Assesment techniques

Author - M. LYNN PALMAR, MARCIA .E. EPLER

Publisher - LIPPINCOTT WILLIAMS AND WILKINS

CO-PO Mapping

Course	PSO1	PSO2	PSO3	PSO4
CO1	H	L	H	M
CO2	H	L	H	M
CO3	H	L	H	M
CO4	H	L	H	M
CO5	H	L	H	M
CO6	H	L	H	M

3: Highest Correlated, 2: Medium Correlated, 1: Lowest Correlat

Programme Name	MPT
Programme Code	M9501
Course Name	Vertebral disorders & Rehabilitation I
Course Code	MPO-S-302
Year/Semester	III semister

Course Outcomes

CO1: To describe Anatomy and Biomechanics of vertebral column. Also to define

CO2 :To explain Congenital

disorders of vertebral column and vertebral deformities.

CO3: To demonstrate inflammatory disorders of vertebrae, vertebral joints & soft tissues etc.

low back pain, pain in vertebral column and stiffness disorders. Also to

illustrate cervical, thoracic, lumbar and sacral region.

CO4: To explain Disease of vertebral joints,segmental instability.

CO5: To assess Disorders of structural changes, changes of alignment of bone,joint of vertebraL column.

CO6:To write about Low back pain,pain in vertebral column & stiffness disorders. Regional:- Cervical,Lumbar,Thoracic,Sacral.

UNIT 1: Review of anatomy and biomechanics of vertebral column.

UNIT II-Congenital disorders of vertebral column & vertebral deformities.

UNIT III: Inflammatory disorders of vertebrae,vertebral joints & soft tissues etc.

UNIT IV;Disease of vertebral joints,segmental instability.

UNIT V:Disorders of structural changes, changes of alignment of bone,joint of vertebraL column.

UNIT VI: Low back pain,pain in vertebral column & stiffness disorders. Regional:- Cervical,Lumbar,Thoracic,Sacral.

BOOK REFERANCES-

1. Clinical orthopaedic rehabilitation - A team approach
Author - CHARLES .E.GIANGARRA, ROBERT .C. MANSKE, S.BRENT BROTZMAN
Publisher - Elsevier

2. Orthopaedic physical Assesment
Author - DAVID .J. MAGEE, ROBERT .C. MANSKEE
Publisher - Elsevier

3. Netter' orthopaedic clinical examination 2nd edition
Author - Joshua cleland,Shane koppenhaver

Publisher - saunders

4.Fundamentals of Musculoskeletal Assesment techniques

Author - M. LYNN PALMAR, MARCIA .E. EPLER

Publisher - LIPPINCOTT WILLIAMS AND WILKINS

CO-PO Mapping

Course	**PSO1**	**PSO2**	**PSO3**	**PSO4**
CO1	H	L	H	M
CO2	H	L	H	M
CO3	H	L	H	M
CO4	H	L	H	M
CO5	H	L	H	M
CO6	H	L	H	M

3: Highest Correlated, 2: Medium Correlated, 1: Lowest Correlated

Course Code: MPO-S-303
Course Name: MPT in Musculoskeletal -1

Semester: III	L	T	P	C
	3	1	2	5

L- LECTURE **T**- TUTORIAL **P**- PRACTICAL **C**- CREDIT

Course Objectives:

CO1 To Memorize basic anatomy of hand and various functions of hand , recall and select all the tests and scales in assessment and analyse injuries and identify based on their location and patho mechanics and evaluate their treatment.

CO2 To Classify hand injuries, tendon and nerve injuries. Recognize the type of injuries and determine their rehabilitation plan, detailed aspects of various conditions, traumatic injuries etc.

CO3 To Illustrate various hand conditions like Hand fractures, joint and ligaments injuries and Phantom hand pain. Sketch a well planned rehab on the basis of assessment.

CO4 To Explain all the conditions like burns & edema in detail and implement rehabilitation program on the basis of understanding.

CO5 To evaluate stiffness & spasticity in hand & its rehabilitation.

CO6 To Explain physiotherapy rehabilitation for auto immune disorders and take a detail assessment and understanding the cause behind.

UNIT 1:-
BASICS OF HAND

1. Anatomy of hand with biomechanics and pathomechanics of hand.
2. Assessment of hand using various scales and tests
3. Functions of Hand: motor and sensory organs

UNIT 2 –
VARIOUS HAND INJURIES

1. Tendon injuries and Tendinopathies: Clinical & Rehabilitation
2. Nerve injuries and Neuropathies: Clinical & rehabilitation
3. Crush Injuries: Clinical & rehabilitation

UNIT-3-
VARIOUS HAND CONDITIONS

1. Hand fractures, joint and ligaments injuries: clinical rehabilitation
2. Phantom hand pain: clinical &rehabilitation

UNIT 4-
REHABILITATION

1. Burns in hand: clinical &rehabilitation.
2. Hand Edema: clinical &rehabilitation

UNIT 5
REHABILITATION

1. Spastic hand: clinical & rehabilitation
2. Stiff hand: clinical & rehabilitation

UNIT 6
REHABILITATION FOR AUTO IMMUNE DISEASE AND LEPROSY

1. Rheumatoid arthritis of hand: clinical &rehabilitation

2. Hand in Hansen's diseases: clinical &rehabilitation

Practicals: The syllabus of practical will be relevant portions of the theory including assessment and management.

Reference Books:

- Rehabilitation of the Hand and Upper Limb 1st edition/ Process Conolly
- Rehabilitation of hand and upper extremity 5th editionMackin
- Rehabilitation of hand and upper extremity 6th editionSkirven

CO-PO Mapping

Course	PSO1	PSO2	PSO3	PSO4
CO1	H	L	H	M
CO2	H	L	H	M
CO3	H	L	H	M
CO4	H	L	H	M
CO5	H	L	H	M
CO6	H	L	H	M

3: Highest Correlated, 2: Medium Correlated, 1: Lowest Correlated

Course Outcomes

CO1: To illustrate PT management of conditions affecting shoulder, elbow, hip, knee, ankle & foot and spinal , pelvic fractures and spinal cord injuries.

CO2: Also to illustrate Autoimmune disorders affecting musculoskeletal system their PT management and PT management of vascular disorders.

CO3: To Explain advanced investigative procedures like CT, MRI scanning,

CO4: Principles of illizarov fixation & their PT management. Also to explain physiological effects of electrotherapeutic agents.

CO5: To evaluate principles of geriatric rehabilitation and some common conditions of geriatric Patients. Also to evaluate Leprosy , cerebral palsy and poliomyelitis.

CO6: To write about Orthosis and splints, their types , applications , care and uses.

Programme Name	MPT				
Programme Code	M9601				
Course Name	Orthopaedics in Physical Therapy-II				
Course Code	MPO-S- 401				
Semester	IV				
		L	T	P	C
		2	0	2	3

Course Outcomes

UNIT 1: To illustrate PT management of conditions affecting shoulder, elbow, hip, knee, ankle & foot and spinal , pelvic fractures and spinal cord injuries.

UNIT 2: Also to illustrate Autoimmune disorders affecting musculoskeletal system their PT management and PT management of vascular disorders.

UNIT 3: To Explain advanced investigative procedures like CT, MRI scanning,

UNIT 4: Principles of illizarov fixation & their PT management. Also to explain physiological effects of electrotherapeutic agents.

UNIT 5: To evaluate principles of geriatric rehabilitation and some common conditions of geriatric Patients. Also to evaluate Leprosy , cerebral palsy and poliomyelitis.

UNIT 6: To write about Orthosis and splints, their types , applications , care and uses.

Practical : The Syllabus for Practical Examination shall be relevant portion of the Theory.

Reference of Books :

1. Turek's Orthopaedics – Principles And Their Applications (7th Edition) 3 Essentials Of Orthopedics For Physiotherapists By John Ebenezer – Jaypee Publications
2. Practical Fracture Treatment By Ronald Mcrae, Max Esser –Churchill Livingston
3. Oxford Textbook Of Orthopaedic & Trauma By Christopher Bulstrode, Joseph Buckwalter – Oxford University Press.
4. Campbell's Operative Orthopedics. - By S. Terry Can Ale, James H. Beaty – Mosby

CO-PO Mapping

Course	PSO1	PSO2	PSO3	PSO4
CO1	H	L	H	M
CO2	H	L	H	M
CO3	H	L	H	M
CO4	H	L	H	M

CO5	H	L	H	M
CO6	H	L	H	M

3: Highest Correlated, 2: Medium Correlated, 1: Lowest Correlated

Programme Name	MPT
Programme Code	M9501
Course Name	Vertebral disorders & Rehabilitation II
Course Code	MPO-S-402
Semester	IV

Course Outcomes

CO1: To describe Traumatic injuries of vertebral column:
CO2 :To explain General& regional injuries.Soft tissue injuries,tightness,structural changes.
CO3: To demonstrate Bone injuries(fracture & dislocation of spine) Pelvic injuries. Pelvic injuries.
CO4: To explain : Spinal cord injuries Types,classification ,Pathology level, examination, Management & rehabilitation.
CO5: To assess Orthopedic surgeries,
CO6:To write about Bio engineering appliances & support devices.Pre& post operative rehabilitation.

Syllabus

Unit I: Traumatic injuries of vertebral column:
UNIT II:General& regional injuries.Soft tissue injuries,tightness,structural changes.
UNIT III: Bone injuries(fracture & dislocation of spine) Pelvic injuries. Pelvic injuries.
Unit IV: Spinal cord injuries Types,classification ,Pathology level, examination, Management & rehabilitation.
Unit V: Orthopedic surgeries,
UNIT VI:Bio engineering appliances & support devices.Pre& post operative rehabilitation.

BOOK REFERANCES-

1. Clinical orthopaedic rehabilitation - A team approach
Author - CHARLES .E.GIANGARRA, ROBERT .C. MANSKE, S.BRENT BROTZMAN
Publisher - Elsevier

2. Orthopaedic physical Assesment
Author - DAVID .J. MAGEE, ROBERT .C. MANSKEE - Publisher - Elsevier

3. Netter' orthopaedic clinical examination 2nd edition
Author - Joshua cleland,Shane koppenhaver- Publisher - saunders

4. Fundamentals of Musculoskeletal Assesment techniques

Author - M. LYNN PALMAR, MARCIA .E. EPLER- Publisher - LIPPINCOTT WILLIAMS AND WILKINS

CO-PO Mapping

Course	PSO1	PSO2	PSO3	PSO4
CO1	H	L	H	M
CO2	H	L	H	M
CO3	H	L	H	M
CO4	H	L	H	M
CO5	H	L	H	M
CO6	H	L		M

3: Highest Correlated, 2: Medium Correlated, 1: Lowest Correlated

Course Code: MPO-S-403				
Course Name: MPT IN MUSCULOSKELETAL-II				
Semester: IV	**L**	**T**	**P**	**C**
	3	**1**	**2**	**5**

L- LECTURE **T-** TUTORIAL **P-** PRACTICAL **C-** CREDIT

Course Objectives:

CO1 To Illustrate various hand conditions and sketch a well planned rehab on the basis of assessment.
CO2 To Explain injuries which require surgeries and describe rehabilitation methods and protocol.
CO3 To Apply and use fuctional and sensory re education following surgeries and memorize facts and basic concepts.
CO4 To Classify deformities in hand and explain the disability and select their compensation methods.
CO5 To decide orthotic device & use it in patients with disability.
CO6 To decide prosthetic device & use it in patients with loss of limb.

UNIT 1

Various Hand Conditions

1. Dupuytren's contracture: : clinical &rehabilitation
2. Reynaud's phenomena: clinical &rehabilitation
3. RSD (Reflex sympathetic dystrophy): clinical &rehabilitation
4. Compartment syndrome: clinical &rehabilitation

UNIT 2

Rehabilitation of following injuries:

1. Tendon transfer and reconstruction, replantation surgery
2. Nerve graft, suture, and neurotization surgeries
3. Flaps, and skin grafts management following burn

UNIT 3:-

Re-education of hand

1. Sensory re- education
2. functional re- education

UNIT 4:-

Review and management of Hand Deformities

1. Correction of Deformities of hand
2. Disability evaluation and compensation in hand injuries

UNIT 5:-

Various Orthoses of Hand

1. Orthoses of hand- types , uses, indication

UNIT 5:-

Various Prostheses of Hand

1. Prostheses of hand - types , uses, indications

Practicals: The syllabus of practical will be relevant portions of the theory including assessment and management.

Reference Books:

- Rehabilitation of the Hand and Upper Limb 1st edition/ Process Conolly
- Rehabilitation of hand and upper extremity 5th editionMackin
- Rehabilitation of hand and upper extremity 6th editionSkirven

CO-PO Mapping

Course	PSO1	PSO2	PSO3	PSO4

CO1	H	L	H	M
CO2	H	L	H	M
CO3	H	L	H	M
CO4	H	L	H	M
CO5	L	L	M	M
CO6	L	L	M	M

3: Highest Correlated, 2: Medium Correlated, 1: Lowest Correlation

Masters in Neurological Rehabilitation-Part II

Semester–III

Programme Name
(Made for theory as well as practical course)

Course code : M9601	**Paper Code- MPN-S-301**
Course Name : Physical therapy in Neurological Disorders-I	

Semester : III				
	L	**T**	**P**	**C**
	4	0	4	6

L - Lecture T – Tutorial P – Practical C – Credit

Course Objectives: The objectives of this course are

1.To illustrate about various investigatory procedures used in neurological procedures.

2.To explain about detailed assessment and management of cranial nerves and their disorders.
3.To Describe about the neurological basis of consciousness and to assess and manage the patients of coma.
4.To describe and incorporate analytic skills with hands on to perform appropriate subjective and physical examination and provide suitable treatment for the disorders of cerebral circulation.
5.To evaluate the patients with CNS infections and expertise in it.
6.To describe about various degenerative conditions with clinical reasoning

Course Contents

All topics shall be learned and discussed with recent clinical menifestations,pathology and pathophysiology,assesement and investigations,management procedures and recent advances.

Unit 1. Investigations

Orientation and introduction ,physicalbasis,normal result and common abnormal responses in brief
a)Skull x ray
b)Computerized tomography
c)Magnetic resonance imaging
d)Intracranial pressure monitoring
e)Evoked potentials
f)EMG/NCV
g)Lumbar puncture
h)Common laboratory tests in neurological disorders.

Unit -2 Cranial nerves 3

a)Testing of cranial nerves
b)Disorders of cranial nerves ,cranial neuropathy
c)Rehabilitation protocol.

Unit-3 Stupor and coma

a)The neural basis of consciousness
b)Lesions responsible for stupor and coms
c)Assesement and investigation of the unconscious patents.
d)The diagnosis of brain death
e)The management of the unconscious patients.
f)Total rehabilitation protocol.

Unit-4 Disorders of the cerebral circulation

Stroke-focal,multiplefocal,lacunarinfarcts,grossinfect,degradation of brain.

Unit -5 Infection conditions of the brain

a)Pyogenic infections of CNS((bacterial and tubercular meningitis,brain abscess)
b)Viral infections of the CNS(poliomyelitis,encephalitis,HIV rabies)

Unit-6 Degenerative diseases of the nervous system
Parkinsonsdisease,motor neuron disease,ataxia,disorders of cerebellum

Practicals

1.Lab sessions consisting of assesement of the neurological disorders ,draw up a problem list and make treatment plan with short and long term goals on patients with neurological disorders.
2.Demonstration of neurotherapeutic techniques on patients and their effects.
3.Practical demonstration of the rehabilitation of the patiets with neurological disorders on student models and patients.

LIST OF BOOKS
1.The neural basis of motor control-Brooks V.B
2,Proprioceptive neuromuscular fascilitation-knott M and Voss D.E
3.Motor learning-concepts and applications.
4.The neural basis of motor contro-Black I.ChurchillLinigstone
5.Stroke rehabilitation-Laidler,Capman and Hakk
6.Motor relearning programme for stroke –carr Aspen Publication
7.Adult hemiplegia:evaluation and treatment –Bobath B. Heinmann
8.Human Neuroanatomy-Carpenter M.B Williams and wilkins
9.Neuro Rehabilitations-farber ,W.B Saunders
10.strokes M(Ed)-neurological Physiotherapy.Mosby

MAPPING

COURSE	PSO1	PSO2	PSO3	PSO4
CO1	L			
CO2		M		
CO3			L	
CO4				L
CO5	M			
CO6			L	

3

3: Highest Correlated, 2: Medium Correlated, 1: Lowest Correlated

Programme Name
(Made for theory as well as practical course)

Course code : M9601	**Paper Code-MPN-S-302**			
Course Name :Neurological Rehabilitation-I				
Semester :III				
	L	**T**	**P**	**C**
	4	0	4	6

L - Lecture T – Tutorial P – Practical C – Credit

Course Objectives: The objectives of this course are

1.To describe and plan patient assesement and treatment planning of various brain and spine surgeries with effective goal setting.
2.To illustrate the and describe about the understanding , behavior and councel the patients in I.C.U,following Neurological deficit and behaviuoral problems.
3. To explain various types of brain tumors with their post operative management.
4.To demonstrate basic knowledge ,assesement and handling of patients and equipments in ICU.
5.To evaluate the concepts of various neurotherapeutic techniques for rehabilitation of brain and spine surgeries.
6.To desighn the practical demonstration of all the topics discussed in theory .

Course Contents

All topics shall be learned and discussed with recent clinical menifestations,pathology and pathophysiology,assesement and investigations,management procedures and recent advances.

Unit 1. Brain and spine surgeries

a)Techniques,types of skull,brain and spine surgeries and their complications
b)Pre and post operative assesement and rehabilitation of brain and spine surgeries.

Unit -2.Head and brain injury

Epidemiology,pathophysiologies,sighns and symptoms,investigations re and post operative physiotherapy complications with rehabilitation protocol of the following conditions
a)Closed skull fractures
b)Haematomas,epidural,subdural band intracerebral
c)Open cranio cerebral injuries
d)Reconstruction operation in head injuries

Unit -3.Tumors

Pathophysiology,classification,effects of mass lesion,sighns and symptoms,examinations ,management ,pre and post operative rehabilitation protocol of the following

a)Tumors of the crainal bones
b)Meningiomas
c)Tumors in spinal cord
d)Intracranial tumors

Unit -4.Conditions related to increased ICP

a)Hydrocephalus
b)Central oedema

Unit -5.Vascular diseases of the brain

a)Aneurysms
b)Thrombosis

Practicals

1.Lab sessions consisting of assesement of the neurological disorders ,draw up a problem list and make treatment plan with short and long term goals on patients with surgical conditions.

2.Demonstration of neurotherapeutic techniques on patients and their effects.

3.Practical demonstration of the rehabilitation of the patiets with neurological disorders on student models and patients.

LIST OF BOOKS

1.The neural basis of motor control-Brooks V.B
2,Proprioceptive neuromuscular fascilitation-knott M and Voss D.E
3.Motor learning-concepts and applications.
4.The neural basis of motor contro-Black I.ChurchillLinigstone
5.Stroke rehabilitation-Laidler,Capman and Hakk
6.Motor relearning programme for stroke –carr Aspen Publication
7.Adult hemiplegia:evaluation and treatment –Bobath B. Heinmann
8.Human neuroanatomy-Carpenter M.B Williams and wilkins
9.Neuro rehabilitations-farber ,W.B Saunders
10.Strokes -Neurological Physiotherapy.Mosby

MAPPING

COURSE	PSO1	PSO2	PSO3	PSO4
CO1	H			
CO2		M		
CO3	M			
CO4				L
CO5		L		
CO6			L	

3: Highest Correlated, 2: Medium Correlated, 1: Lowest Correlated

CourseName : Physical therapy in Paediatric Neurology-I				
Course code : MPN -S-303				
Semester :III				
	L	T	P	C
	3	1	2	5

L - Lecture T – Tutorial P – Practical C – Credit

Course Objectives: The objectives of this course are

Course Outcomes-

CO1: To Describe about the-

(a)Weight, height & circumference measurements related to age in normal child development milestones,

(b) Growth pattern, types of body build, physical examination of a child.

CO2: To Identify the Neonatal reflexes, Typical motor developmental milestones.

CO3: To Explain the-

(a) Normal nutritional requirement of a child.

(b) Infant feeding and required position.

CO4: To Discuss aboutPrevention of some nutritional disorders.

CO5**:** ToDefine about the Nutritional deficiency diseases and Immunization,

CO 6: Cerebral Palsy: Types, aetiology, clinical features ,management rehabilitation of Various types of Cerebral palsies.

SYLLABUS:

Unit-1:

- ❖ Weight, height & circumference measurements related to age in normal child development milestones
- ❖ Growth pattern, types of body build, physical examination of a child.

UNIT II

- ❖ Neonatal reflexes
- ❖ Typical motor developmental milestones

UNIT III

- ❖ Normal nutritional requirement of a child,
- ❖ Infant feeding and required position
- ❖ Prevention of some nutritional disorders,
- ❖ Nutritional deficiency diseases

UNIT IV

- ❖ immunization

UNIT V

Cerebral Palsy:

- ❖ Types, aetiology, clinical features, management rehabilitation of various types of cerebral palsies.

Recommended books;

1.Physical therapy assessment in early infancy-Wilhelm Churchill Liningstone, New York 1993

2.Physical Therapy for children-Campbell Suzann k,W.B.Saunders, Philadelphia 1994

3.Physical Management of multiple handicapped-Freser, William & Wilkins, Baltimore.

4.Elements of paediatric physiotherapy-Eckerly P, Churchill Liningstone, New York, 1993

5.Physiotherapy in paediatrics-Shepherd R., Heinmann, London 1980 2nd edition.

6.The Growth chart-WHO,Geneva, 1986.

7.Orthotics in neurological rehabilitation-Aisen, Demos Publication, New York, 1992.

8. The neural basis of control-Black I,Churchill Livingstone, London-1987

9.Child with spina bifida- Anderson E.M. and Spain B., Methun, London 1997

10.A manual of neonatal intensive care-Robert N.R.C., Edward Arnold, London 1986

MAPPING

COURSE	PSO1	PSO2	PSO3	PSO4
CO1		M		
CO2	H			
CO3				L
CO4	H			
CO5	M			
CO6			H	

3: Highest Correlated, 2: Medium Correlated, 1: Lowest Correlated

Masters in Neurological Rehabilitation-PartII

Semester–
IV

Programme Name

(Made for theory as well as practical course)

Course code	**: M9601**	**Paper Code- MPN-S-401**		
Course Name	**: Physical therapy in Neurological Disorders-II**			
Semester: IV				
	L			**C**
	4			6

L - Lecture T – Tutorial P – Practical C – Credit

Course Objectives: The objectives of this course are

1.To illustrate about various demyelinating diseases of the nervous system
2.To describe about the degenerative diseases of spinal cord with their assesement ,management with various therapeutic approaches
3.To evaluate the patients with nutritional disorders.
4.To describe about peripheral nerve disorders with clinical reasoning.
5.To explain about various disorders of the muscles with their management.
6.. To illustrate the Use of neuro physiotherapy techniques to treat and train patients with neurological disorders through all age groups.(paediatrics,adult and gaeriatrics) and execute professional practice through ethical code.

Course Contents
All topics shall be learned and discussed with recent clinical menifestations,pathology and pathophysiology,assesement and investigations,management procedures and recent advances.

Unit 1.Demyelinating diseases of the nervous system
a)Multiple sclerosis
b)Diffuse sclerosis.

Unit -2 .Degenerative diseases of the spinal cord and cauda equine
a)Acute traumatic injuries of the spinal cord
b)haematomyelia and acute central cervical cord injuries
c)slow progressive compression of the spinal cord
d)Syringomyelia
e)ischaemia and infarction of the spinal cord and cauda equine
f)Spina bifida

Unit-3 .Defiency and nutritional disorders
a)deficiency of vitamins and related disorders
b)other nutritional neuropathies

Unit-4. Disorders of peripheral nerves
a)Clinical diagnosis of peripheral neuropathy
b)All types of level of peripheral neuropathy and brachial plexus
c)Causalgia
d)Reflex sympathetic dystrophy
e)Peripheral nerve tumors and irradiation neuropathy
f)Traumatic,compressive and ischameic neuropathy
g)Spinalrediculitis and radiculopathy

h)Hereditary motor and sensory neuropathy(HMSN type 1,2,3,4)
i)Acute idiopathic polyneuritis
j)Neuropathy due to infections
h)Drug induced neuropathy

Unit –5.Disorders of the muscles
a)Muscular dystrophies of adulthood
b)The myotonic disorders
c)Inflammatory disorders of muscles
d)Myasthenia gravis
e)Endocrine and metabolic disorders.

Unit-6 .Disorders of heigher cerebral cortical function and Seizures
Disorders of different lobes
a)Frontal lobe
b)Temporal lobe
c)Parietal lobe
d)Occipital lobe
e)Epidemiology,classification,causes,factors,diagnosis of seizures
f)Myoclonus

Practicals

1.Lab sessions consisting of assesement of the neurological disorders ,draw up a problem list and make treatment plan with short and long term goals on patients with neurological disorders.
2.Demonstration of neurotherapeutic techniques on patients and their effects.
3.Practical demonstration of the rehabilitation of the patiets with neurological disorders on student models and patients.

2,Proprioceptive neuromuscular fascilitation-knott M and Voss D.E
3.Motor learning-concepts and applications.
4.The neural basis of motor contro-Black I.ChurchillLinigstone
5.Stroke rehabilitation-Laidler,Capman and Hakk
6.Motor relearning programme for stroke –carr Aspen Publication
7.Adult hemiplegia:evaluation and treatment –Bobath B. Heinmann
8.Human neuroanatomy-Carpenter M.B Williams and wilkins
9.Neuro rehabilitations-farber ,W.B Saunders
10.Strokes -neurological Physiotherapy.Mosby

MAPPING

COURSE	PSO1	PSO2	PSO3	PSO4
CO1		M		
CO2	H			
CO3				L
CO4	H			
CO5	M			
CO6			H	

3: Highest Correlated, 2: Medium Correlated, 1: Lowest Correlated

.

Programme Name
(Made for theory as well as practical course) 4

Course code : M9601	**Paper Code- MPN-S-402**			
Course Name :Neurological Rehabilitation-II				
Semester :IV				
L	**T**	**P**	**C**	
4	0	4	6	

L - Lecture T – Tutorial P – Practical C – Credit

Course Objectives: The objectives of this course are

1.To illustrate the management programme for critical care patients in I.C.U.
2.To evaluate the management programme with response to drop and its complications ,monitoring lines.
3. To demonstrate basic knowledge ,assesement and handling of patients with nerve suturing.
4.To illustrate the concepts of neuroplasticity.
5.To evaluate the concepts of various neurotherapeutic techniques for rehabilitation of brain and spine surgeries.

6.To explain the concept of various techniques used for rehabiloitation in ICU.

Course Contents

All topics shall be learned and discussed with recent clinical menifestations,pathology and pathophysiology,assesement and investigations,management procedures and recent advances.

Unit 1. Adult I.C.U

Evaluation and management with complete rehabilitation protocol

Unit -2.Decompression surgeries of spinal cord

a)Cervical and lumbar disc operation
b)Stenosis
c)Oedema and abscess
d)Lumbar puncture

Unit -3.Peripheral nerves

a)Decompression
b)Nerve suturing
c)Nerve grafting

Unit -4.Neuroplasticity

Concepts and principles of neuroplasticity in neurological conditions.

Unit -5. Coma stimulation therapy

a)Assesement of the unconscious patient
b)Techniques of coma stimulation programme

Practicals

1.Lab sessions consisting of assesement of the neurological disorders ,draw up a problem list and make treatment plan with short and long term goals on patients with surgical conditions..

2.Demonstration of neurotherapeutic techniques on patients and their effects.

3.Practical demonstration of the rehabilitation of the patiets with neurological disorders on student models and patients.

LIST OF BOOKS

1.The neural basis of motor control-Brooks V.B
2,Proprioceptive neuromuscular fascilitation-knott M and Voss D.E
3.Motor learning-concepts and applications.
4.the neural basis of motor contro-Black I.ChurchillLinigstone
5.Stroke rehabilitation-Laidler,Capman and Hakk
6.Motor relearning programme for stroke –carr Aspen Publication
7.Adult hemiplegia:evaluation and treatment –Bobath B. Heinmann
8.human neuroanatomy-Carpenter M.B Williams and wilkins
9.Neuro rehabilitations-farber ,W.B Saunders
10.Strokes -neurological Physiotherapy.Mosby

MAPPING

COURSE	PSO1	PSO2	PSO3	PSO4
CO1	H			
CO2		M		
CO3	M			
CO4				L
CO5			L	
CO6		M		

3: Highest Correlated, 2: Medium Correlated, 1: Lowest Correlated

Programme name : MPT				
Programme code : M9410				
Course Name :Physical therapy in Paediatric Neurology-II 4				
Course code : MPN-S-403				
Semester : IV				
	L	T	P	C
	3	1	2	5

L - Lecture T – Tutorial P – Practical C – Credit

Course Objectives: The objectives of this course are

Course Outcomes

CO1: Describe about the, aetiology, clinical features and rehabilitation of –

(a) Poliomyelitis

(b) Spinal bifida

(c) Hydrocephalus

(d) Encephaliti

CO2 Explain about,Peripheral nerve injuries in early childhood.

CO3: Analyze the types of muscular dystrophies, etiology, clinical features and management

CO4: Discuss about the Neuropathies and myopathies of childhood

CO 5: To explain about the Floppy infant syndrome

CO6: Explain seizures epilepsy of childhood

Syallbus

UNIT- I

aetiology, clinical features and rehabilitation of -

- Poliomyelitis
- Spinal bifida
- Hydrocephalus,
- Encephalitis,

UNIT- II

- Peripheral nerve injuries in early childhood.

UNIT- III

- Types of muscular dystrophies, etiology, clinical features and management.

UNIT- IV

- Neuropathies and myopathies of childhood.

UNIT - V

- The Floppy infant syndrome

UNIT- VI

- Seizures epilepsy of childhood.

Practical Examination

1. Total hours of Practical Examination will be 6 hrs.

2. Practical examination will be divided into two parts.

a)Two large cases-30 marks each(30x2=60)

b)One small cases-10 marks (10x1=10)

large cases for example:

Small cases for example:

3.Following procedures will be included in the practical examination.

1.Assessment

a. physical

b.clinical

c.pathological

d.other investigations.

2.differential diagnosis &; its reason.

3.Physiotherapy management &; application of advanced techniques.

4. home programme.

Recommended books;

1.Physical therapy assessment in early infancy-Wilhelm Churchill Liningstone, New York 1993

2.Physical Therapy for children-Campbell Suzann k,W.B.Saunders, Philadelphia 1994

3.Physical Management of multiple handicapped-Freser, William & Wilkins, Baltimore.

4.Elements of paediatric physiotherapy-Eckerly P, Churchill Liningstone, New York, 1993

5.Physiotherapy in paediatrics-Shepherd R., Heinmann, London 1980 2nd edition.

6.The Growth chart-WHO,Geneva, 1986.

7.Orthotics in neurological rehabilitation-Aisen, Demos Publication, New York, 1992.

8. The neural basis of control-Black I,Churchill Livingstone, London-1987

9.Child with spina bifida- Anderson E.M. and Spain B., Methun, London 1997

10.A manual of neonatal intensive care-Robert N.R.C., Edward Arnold, London 1986

MAPPING

COURSE	PSO1	PSO2	PSO3	PSO4
CO1	H			
CO2		M		
CO3	M			
CO4				L
CO5			L	
CO6		M		

3: Highest Correlated, 2: Medium Correlated, 1: Lowest Correlated

Masters in Sports Rehabilitation –Part II Semester– III

Programme name : MPT				
Programmecode :M9410				
CourseName: Traumatology:Orthopedic& community medicine—Physical Therapy I				
Course code : MPS-S-301				
Semester :III				
	L	T	P	C
	3	1	2	5

L - Lecture T – Tutorial P – Practical C – Credit

Course Objectives: The objectives of this course are

Course Outcomes-

CO1: Describe about the-detailed physical assessment of spine , hip and thigh , knee and leg, foot and ankle ,shoulder, arm , elbow, and forearm, wrist and hand.

CO2: Identify the Problems related with PIVD, spondylosis, spondylolisthesis,spinalstenosis,posturalstrain,back injuries in sports,ankylosingspondylitis,scoliosis,whiplash,cervical spine etc

CO3:Explain the Problems and Injuries related with– Perthes Disease, Coxa vara ,ligament and muscle injuries in sports,irritablehip,arthiritis,congenital dislocation of hip etc.

CO4: Discuss about the Problems And Injuries telated with – Arthiritis ,genuvalgum and varum,meniscalinjuries ligament and muscle injuries ,loose bodies ,bursitis etc

CO5**:** Define. Problems and Pain in heel,pain behind heel, plantar fascitis, mortens neuralgia , pes planus, pes cavus, CTEV, muscle and ligament and injuries.

CO6: common cold, fever, diarrhea, dysentery, amoebiasis, sore throat, stress ulcers, skin infections etc

SYLLABUS

UNIT I-

Assessment Principle : detailed physical assessment of spine , hip and thigh , knee and leg, foot and ankle .

UNIT II-

Assessment Principle :shoulder, arm , elbow, and forearm, wrist and hand.

UNIT III

Common Back Problems and Injuries: PIVD, spondylosis, spondylolisthesis, spinalstenosis, posturalstrain, back injuries in sports, ankylosingspondylitis ,scoliosis, whiplash, cervical spine etc

UNIT III

Hip and Thigh Problems and Injuries – Perthes Disease, Coxa vara ,ligament and muscle injuries in sports,irritablehip,arthiritis,congenital dislocation of hip etc.

UNIT IV-

Knee and Leg Problems And Injuries – Arthiritis ,genuvalgum and varum,meniscalinjuries ligament and muscle injuries ,loose bodies ,bursitis etc

UNIT V-

Ankle and Foot Problems And Injuries- Pain in heel,pain behind heel, plantar fascitis, mortens neuralgia , pes planus, pes cavus, CTEV, muscle and ligament and injuries.

UNIT VI-

Common diseases: common cold, fever, diarrhea, dysentery, amoebiasis, sore throat, stress ulcers, skin infections etc

BOOKS REFERANCE-

1. Acsm's Guidelines for Exercise Testing and Prescription by Gary Liguori
2. Sports Rehabilitation and Injury Prevention by P Comfort
3. Brukner and Khans Clinical Sports Medicine Injuries
4. Running: Biomechanics and Exercise Physiology in Practice by Bosch ,frans.

MAPPING

COURSE	PSO1	PSO2	PSO3	PSO4
CO1	H		5	
CO2		M		
CO3	M			
CO4				L
CO5			L	
CO6		M		

3: Highest Correlated, 2: Medium Correlated, 1: Lowest Correlated

Programme name	: MPT
Programme code	: M9410
Course Name	: Fundamentals in sports I

Course code : MPS-S- 302				
Semester /Year : III				
	L	T	P	C
	3	1	2	5

L - Lecture T – Tutorial P – Practical C – Credit

Course Objectives: The objectives of this course are

Course Outcomes.

Course Outcomes

CO1: To define brief idea about some common sports terminology,methodologyrules,equipments and infrastructure of sports like Cricket, football, hockey, badminton, tennis, table tennis,

CO2: To summarize Briefidea about some common sports: wrestling, boxing, track and field, gymnastics,

CO3: To apply and illustrate Briefidea about some common sports:volleyball, basketball, aquatic sports.

CO4: To explain the importance of Physics in sports : types motions , distance , speed, velocity , angular motion, acceleration, inertia , mass

CO5: To evaluate application of Newton's law of motion , force and its characteristics , classification of force systems , force couples composition and resolution of force system, function.

CO6:**Biomechanics :**

Biomechanics of running

Biomechanics of throwing

Unit I : Brief idea about some common sports:

Terminology, methodology rules, equipments and infrastructure.

Cricket, football, hockey, badminton, tennis, table tennis,

UNIT II: : Brief idea about some common sports:

wrestling, boxing, track and field, gymnastics,

UNIT III:Brief idea about some common sports:

volleyball, basketball, aquatic sports.

Unit III : Physics in sports :

types motions , distance , speed, velocity , angular motion, acceleration, inertia , mass ,

UNIT IV: Application of Newton's law of motion , force and its characteristics , classification of force systems , force couples composition and resolution of force

system, function ,

UNIT V: projectile motion , levers and fluid mechanics .

Unit VI : Biomechanics :

Biomechanics of running

Biomechanics of throwing

BOOKS REFERANCE-

1. Acsm's Guidelines for Exercise Testing and Prescription by Gary Liguori
2. Sports Rehabilitation and Injury Prevention by P Comfort
3. Brukner and Khans Clinical Sports Medicine Injuries

4. Running: Biomechanics and Exercise Physiology in Practice by Bosch ,frans.

MAPPING

COURSE	PSO1	PSO2	PSO3	PSO4
CO1	H			
CO2		M		
CO3	M			
CO4				L
CO5			L	
CO6		M		

3: Highest Correlated, 2: Medium Correlated, 1: Lowest Correlated

Programme name : MPT				
Programme code : M9410				
Course Name : Fundamental in sports I				
Course code : MPS-S- 303				
Semester /Year : III				
	L	T	P	C
	3	1	2	5

L - Lecture T – Tutorial P – Practical C – Credit

Course Objectives: The objectives of this course are

Course Outcomes

CO1: To describe physiological responses to exercise and its effects on metabolism , muscle fatigue, respiratory and cardiovascular changes , second wind .

CO2: To summarize electrolyte regulation during sports etc.

CO3: To discover various Response to injury: Muscle trauma, contusions, strains, and rupture, effects immobilization and detraining.

CO4: To analyze bone trauma, ligament and tendon, injuries, structures, mechanical properties and injury to articular cartilage.

CO5: To summarize various relationship between injury and nervous tissue, DOMS.

CO6: To illustrate Prevention of injuries: risk factors in sports(intrinsic and extrinsic) . strategies of injury prevention.

SYALLABUS

Unit I : Physiological Responses to exercise : Exercises effect on metabolism , muscle fatigue, respiratory and cardiovascular changes , second wind .

UNIT II: electrolyte regulation during sports etc.

Unit III :- Response to injury: Muscle trauma, contusions, strains, and rupture, effects immobilization and detraining.

UNIT IV: bone trauma, ligament and tendon, injuries, structures, mechanical properties and injury to

articular cartilage,

UNIT V: relationship between injury and nervous tissue, DOMS.

Unit VI :- Prevention of injuries: risk factors in sports(intrinsic and extrinsic) . strategies of injury prevention.

BOOKS REFERANCE-

1. Acsm's Guidelines for Exercise Testing and Prescription by Gary Liguori
2. Sports Rehabilitation and Injury Prevention by P Comfort
3. Brukner and Khans Clinical Sports Medicine Injuries
4. Running: Biomechanics and Exercise Physiology in Practice by Bosch ,frans.

MAPPING

COURSE	PSO1	PSO2	PSO3	PSO4
CO1	H			
CO2		M		
CO3	M			
CO4				L
CO5			L	
CO6		M		

3: Highest Correlated, 2: Medium Correlated, 1: Lowest Correlated

Mastersin Sports Rehabilitation -PartII
Semester– IV

Programme Name

(Made for theory as well as practical course)

Programme name : MPT				
Programmecode :M9410				
CourseName: Traumatology:Orthopedic& community medicine—Physical Therapy II				
Course code : MPS-S-401				
Semester/Year :IV				
	L	T	P	C

	3	1	2	5

L - Lecture T – Tutorial P – Practical C – Credit

Course Objectives: The objectives of this course are

Course Outcomes-

CO1: Describe about the-

shoulder and arm problems and injuries: rotator cuff injuries, periarthritis, bursitis, painful arc syndrome.

CO2: Identify the **Elbow and forearm injuries and problems**: cubitus valgus and varus, arthritis, tennis and golfer's elbow and other injuries

CO3:Explain the **Wrist and hand injuries and problems**: Claw hand, duptyrens contracture, trigger finger, arthritis, dequevrains, disease base ball finger etc.

CO4: Discuss about **Common fractures and dislocations**: fractures and dislocations of upper limb, lower limb, spine and stress fractures.

CO5**:** Define **Diagnosis and management of skin conditions of athletes**: fungal infections, boils, cellulites, sunburn etc

CO6: **Female specific problem**, spots amenorrhea, injury to female reproductive tract, menstrual problems, eating disorders, osteoporosis etc**.**

SYLLABUS:

UNIT I 5

Shoulder and arm problems and injuries: rotator cuff injuries, periarthritis, bursitis, painful arc syndrome.

UNIT IIElbow and forearm injuries and problems: cubitus valgus and varus, arthritis, tennis and golfer's elbow and other injuries

UNIT IIIWrist and hand: Claw hand, duptyrens contracture, trigger finger, arthritis, dequevrains, disease base ball finger etc.

UNIT IV Common fractures and dislocations: fractures and dislocations of upper limb, lower limb, spine and stress fractures.

UNIT V Diagnosis and management of skin conditions of athletes: fungal infections, boils, cellulites, sunburn etc

UNIT VIFemale specific problem, spots amenorrhea, injury to female reproductive tract, menstrual problems, eating disorders, osteoporosis etc**.**

BOOKS REFERANCE-

1. Acsm's Guidelines for Exercise Testing and Prescription by Gary Liguori
2. Sports Rehabilitation and Injury Prevention by P Comfort
3. Brukner and Khans Clinical Sports Medicine Injuries
4. Running: Biomechanics and Exercise Physiology in Practice by Bosch ,frans.

MAPPING

COURSE	PSO1	PSO2	PSO3	PSO4
CO1	H			
CO2		M		
CO3	M			
CO4				L
CO5			L	
CO6		M		

3: Highest Correlated, 2: Medium Correlated, 1: Lowest Correlated

Programme name : MPT				
Programme code : M9410				
Course Name : Fundamentals in sports II				
Course code : MPS-S- 402				
Semester /Year : IV				
	L	T	P	C
	3	1	2	5

L - Lecture T – Tutorial P – Practical C – Credit

Course Objectives: The objectives of this course are

Course Outcomes.

Course Outcomes
CO1: To discuss Biomechanics of swimming,Biomechanics of jumping

CO2: To summarize analysis equipment used in sports.

CO3: To apply and illustrate Psychological aspects in sports, Spirit and moral values ,

CO4: To explain the importance of doping in sports and performance enhancing drugs.Special aids in performance.

CO5: To evaluate Body composition, its analysis and effects of sports.

CO6:: Protective equipment used in sports.

SYLLABUS-

UNIT I: Biomechanics of swimming Biomechanics of jumping

UNIT II: Introduction to analysis equipment

Unit III : Psychological aspects in sports. Spirit and moral values,

UNIT IV: Doping in sports and performance enhancing drugs. Special aids in performance.

Unit V: Body composition, its analysis and effects of sports.

UNIT VI: Protective equipment used in sports

BOOKS REFERANCE-

1. Acsm's Guidelines for Exercise Testing and Prescription by Gary Liguori
2. Sports Rehabilitation and Injury Prevention by P Comfort
3. Brukner and Khans Clinical Sports Medicine Injuries
4. Running: Biomechanics and Exercise Physiology in Practice by Bosch ,frans.

MAPPING

COURSE	PSO1	PSO2	PSO3	PSO4
CO1	H			

CO2		M		
CO3	M			
CO4				L
CO5			L	
CO6		M		

3: Highest Correlated, 2: Medium Correlated, 1: Lowest Correlated

Programme name : MPT				
Programme code : M9410				
Course Name : Fundamental in sports II				
Course code : MPS-S- 303				
Semester /Year : IV				
	L	T	P	C
	3	1	2	5

L - Lecture T – Tutorial P – Practical C – Credit

Course Objectives: The objectives of this course are

Course Outcomes

CO1: To discuss injury **evaluation and management:** sporting emergencies, on field assessment, clinical assessments.

CO2: To summarize principles of management(acute management, remodeling and conditioning, maintenance of fitness and rehabilitation)

CO3: To discover Nutrition in sports :- Requirements of athletes, diet planning, needs of individuals sports, pre game meal,

CO4: To analyze carbohydrate loading,itsapplication,significance etc.

CO5: To summarize Training in sports: Various techniques like plyometrics etc. it sports training.

– Some common injuries related to some common and popular sports and their management.

1. Injuries in football and soccer 2. Track and field

3. Long distance running 4. Aquatic sports

CO6: To illustrate Some common injuries related to some common and popular sports and their management.

1. Baseball and cricket 2. hockey

3.baseball and volleyball 4. Table tennis

5. Badminton and tennis 6. Gymnastics

Syllabus-

Unit I :- Injury evaluation and management: sporting emergencies, on field assessment, clinical assessments,

UNIT II: principles of management(acute management, remodeling and conditioning, maintenance of fitness and rehabilitation)

UNIT III :- Nutrition in sports :- Requirements of athletes, diet planning, needs of individuals sports, pre

game meal,

UNIT IV: Brief on carbohydrate loading,itsapplication,significance etc.

Unit V:- Training in sports: Various techniques like plyometrics etc. it sports training.

– Some common injuries related to some common and popular sports and their management.

1. Injuries in football and soccer 2. Track and field

3. Long distance running 4. Aquatic sports

UNIT VI: Some common injuries related to some common and popular sports and their management.

1. Baseball and cricket 2. hockey 3.baseball and volleyball 4. Table tennis

5. Badminton and tennis 6. Gymnastics

BOOKS REFERANCE-

1. Acsm's Guidelines for Exercise Testing and Prescription by Gary Liguori
2. Sports Rehabilitation and Injury Prevention by P Comfort
3. Brukner and Khans Clinical Sports Medicine Injuries
4. Running: Biomechanics and Exercise Physiology in Practice by Bosch ,frans.

MAPPING

COURSE	PSO1	PSO2	PSO3	PSO4
CO1	H			
CO2		M		
CO3	M			
CO4				L
CO5			L	
CO6		M		

3: Highest Correlated, 2: Medium Correlated, 1: Lowest Correlated

Masters in Cardiopulmonary Rehabilitation –Part II

Semester– III

Paper Code	:MPC-S-301			
CourseName	:Medical And Surgical Management Of Disorders Of The Cardiopulmonary System-I			
Semester	:III			
L	T	P	C	
3	1	2	4	

L - Lecture T – Tutorial P – Practical C – Credit

Course Objectives: The objectives of this course are

Course Outcome:

C01: To describe the applied anatomy and physiology of cardio-thoracic and respiratory system.

C02: To understand the concept of mechanism of ventilation.

CO3: To demonstrate the clinical assessment of radiological anatomy and cardiac investigation like ECG, echo, PFT, ABG, etc.

CO4: To classify the stress testing and medical management of disorders of the cardiac system.

C05: To evaluate the symptoms assessment of the heart disease like cardiac rate, rhythm and conduction; cardiac arrest, shock, etc.

CO6: To plan the symptom assessment of disease condition like RHD,CHD, heart valves disease, IHD, hypertension, cardiomyopathy, etc.

Syallbus-
UNIT-1

CARDIO RESPIRATORY SCIENCES

- Cardio-thoracic appliedanatomy
- Respiratory and cardio vascularphysiology
- Applied anatomy of the Respiratorymuscles

UNIT- 2

Mechanics of ventilation

UNIT -3

Radiological anatomy Clinical assessment, rationale of laboratory investigation and differential diagnosis, ECG, exercise ECG testing, Echo, Holter monitoring, imaging techniques, PFT and ABG analysis, cardiac catheterization

UNIT-4

Stress testing & medical management of disorders of the cardiac system.

UNIT- 5

- Cardiology Assessment of symptoms of heartdisease.
- Disorders of cardiac rate, rhythm &conduction.
- Cardiac arrest & cardiacfailure.
- Shock

UNIT-6

- Rheumatic heartdisease
- Congenitral heartdisease
- Diseases of the heartvalves
- Infectiveendocarditis
- Ischaemic heartdisease
- Hypertension,hypotension
- Diseases ofpericardium
- Heart diseases inpregnancy
- Inflammatory & degenerative arterial diseases.
- Peripoheral vasculardiseases

- Cardiomyopathy
- CPR

Text Books Recommended

Sl. No	Title	Author	
1	Handbook of Respiratory Care	Robert L. Chatburn.	Jones and Bartlett (3rd edition)
2	CASH,S textbook of Chest, Heart and Vascular Disorders for Physiotherapy	Patricia A. Downie.	Jaypee Brother (4th edition)
3	Physiotherapy for Respiratory and Cardiac problems	Jennifer A. Pryor	Elsevier India (1st edition)
4	Principles and Practice of Cardiopulmonary Physical Therapy	Donna Frownfelter and Elizabeth Dean.	Mosby (5th edition)
5	Cardiorespiratory physiotherapy, Adults and Pediatrics	Eleanor Main	Elsevier (5th edition)
6	Egan's Fundamentals of Respiratory Care	Robert M. Kacmarek.	Mosby (11th edition)
7	Fishmam's pulmonary disease and disorders	Michael A. Grippi. 6	McGraw-Hill Education - Europe
8	Cardiovascular and Pulmonary physical therapy	William De Turk	McGraw-Hill Education/ Medical;3rd edition
9	ACSM guideline for Cardiac rehabilitation.		
10	AACVPR guideline for Pulmonary rehabilitation		
11	Clinical application of Mechanical Ventilation	David W. Chang	Cengage Learning Custom(4th edition)

MAPPING-

PSO / CO	PSO1	PSO2	PSO3	PSO4
CO1	2	2	3	2
CO2	3	2	2	
CO3	3	3	2	1
CO4	2	3	2	
CO5	3	2	3	1
Average PO	13	12	12	4

3: Highest Correlated, 2: Medium Correlated, 1: Lowest Correlated

Paper Code	: MPC-S-302			
CourseName	:Physiotherapy Management and Principles Of Cardiopulmonary System-I			
Semester	:III			
	L	T	P	C
	2	1	1	3

L - Lecture T – Tutorial P – Practical C – Credit

Course Objectives: The objectives of this course are

Course Outcome:

C01: To describe the physiotherapy assessment and exercise testing program.

C02: To understand the concepts and physiological effects respiratory muscle training

C03: To demonstrate the mobilization technique.

C04: To classify the concept of techniques like postural drainage, FET, AD, ACBT, breathing exercise, percussion, shaking, etc and biofeedback.

C05: To evaluate the concept of mechanical ventilators.

CO6 : To design the various therapies like humidification, aerosol therapy and oxygen delivery devices, etc.

UNIT-1 50 hours

1. Physiotherapyassessment.
2. Exercise testing and exercise training.

UNIT-2

1. Respiratory muscles training.

UNIT-3

2. Mobilization and exercises(Strengthening, conditioning andendurance)

UNIT -4

1. Airway clearance techniques: Posturaldamage Forced expiratory techniques, Autogenic Drainage, Active Cycle of Breathing Technique, Breathing exercises, Percussion, shaking and vibration.
2. Biofeedback.

UNIT- 5

Ventilator : concepts ,physiological effects andcomplications

UNIT -6

Respiratory therapy equipment and adjuncts including : Humidification, Aerosol therapy and supplemental oxygen and oxygen delivery devices in respiratorydiseases.

Text Books Recommended

S. No	Title	Author	Publisher
1	Handbook of Respiratory Care	Robert L. Chatburn.	Jones and Bartlett (3rd edition)
2	CASH,S textbook of Chest, Heart and Vascular Disorders for Physiotherapy	Patricia A. Downie.	Jaypee Brother (4th edition)
3	Physiotherapy for Respiratory and Cardiac problems	Jennifer A. Pryor	Elsevier India (1st edition)
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7	Fishmam's pulmonary disease and disorders	Michael A. Grippi.	McGraw-Hill Education- Europe
8	Cardiovascular and Pulmonary physical therapy	William De Turk	McGraw-Hill Education/Medical;3rd edition
9	ACSM guideline for Cardiac rehabilitation.		
10	AACVPR guideline for Pulmonary rehabilitation		
11	Clinical application of Mechanical Ventilation	David W. Chang	Cengage Learning Custom(4th edition)

MAPPING

PSO / CO	PSO1	PSO2	PSO3	PSO4
CO1	2	2	3	2
CO2	3	2	2	
CO3	3	3	2	1
CO4	2	3	2	
CO5	3	2	3	1
Average PO	13	12	12	4

3: Highest Correlated, 2: Medium Correlated, 1: Lowest Correlated

Paper Code	: MPC-S-303			
CourseName	:Cardio-Pulmonary Rehabilitation and Acute Cardio Respiratory Practice-I			
Semester	:III			
	L	T	P	C
	3	1	2	4

L - Lecture T – Tutorial P – Practical C – Credit

Course Objectives: The objectives of this course are

Course Outcome:

C01: To describe the exercise physiology and patient evaluation for exercise testing.

C02: To understand the principles of programme planning, implementation and also the concept of mobilization.

C03: To demonstrate the phase wise protocols in MI, beneficial effects of aerobic exercise in coronary artery disease, various aspect of cardiac rehabilitation also to study the rehabilitation in PVD and cardiac transplantation.

C04: To classify the respiratory and cardiac issues in pediatric patients.

C05: To evaluate the concept of cardio-pulmonary conditions and tumor of the heart.

C06: To design the goals and physiotherapy treatment in acute cardio respiratory conditions related to ICU patient, infection control in ICU and principles of oxygen administration and application of ICU equipment.

Syllabus-

UNIT 1 50 hours

- Exercise physiology compared with abnormal exercisephysiology
- Patient evaluation, low level exercise testing, maximal exercise testing 7

UNIT -2

- Programme planning and implementation –principles
- Mobilization

UNIT 3

1 Various protocols, phase wise, early, late and long term processes inMI.

2 Beneficial effects of aerobic exercise for patients with coronary artery diseases 3 Detailed study of various aspects of cardiacrehabilitation.

4.Peripheral Vascular Diseases

5.Cardiac transplantation

6.Trauma to thechest

UNIT 4

1. Paediatric cardio vascularproblems
2. Common pulmonary diseases, including assessment andmanagement
3. Paediatric pulmonaryproblems

UNIT 5

1.Detail study of various conditions (obstructive, restrictive, surgical conditions) patientintervention.
2.Respiratory muscletraining
3.Tumours of theheart

UNIT-6

- Goals and general basics of treatment
- Specialized expertise ICUPhysiotherapy
- General clinical aspects of management of ICUpatients
- Importance of team work and infectioncontrol
- ICU management of primary cardiopulmonarydysfunction
- Principles and application of ICUequipment

PRACTICAL EXAMINATION 100 hours

Practical Examination

1. Principals, program planning andimplementation
2. Specialtechnique

- Body positioningtechniques
- Relaxationtechniques
- Breathingexercises
- Posturaldrainage
- Advanced airway clearancetechniques

Text Books Recommended

Sl. No	Title	Author	Publisher
1	Handbook of Respiratory Care	Robert L. Chatburn.	Jones and Bartlett (3rd edition)
2	CASH,S textbook of Chest, Heart and Vascular Disorders for Physiotherapy	Patricia A. Downie.	Jaypee Brother (4th edition)
3	Physiotherapy for Respiratory and Cardiac problems	Jennifer A. Pryor	Elsevier India (1st edition)
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9	ACSM guideline for Cardiac rehabilitation.		
10	AACVPR guideline for Pulmonary rehabilitation		
11	Clinical application of Mechanical Ventilation	David W. Chang	Cengage Learning Custom(4th edition)

MAPPING

PSO / CO	PSO1	PSO2	PSO3	PSO4
CO1	2	2	3	2
CO2	3	2	2	
CO3	3	3	2	1
CO4	2	3	2	
CO5	3	2	3	1
Average PO	13	12	12	4

3: Highest Correlated, 2: Medium Correlated, 1: Lowest Correlated

Masters in Cardiopulmonary Rehabilitation –Part II
Semester– IV

Paper Code	: MPC-S-401			
CourseName	:Medical And Surgical Management Of Disorders Of The Cardiopulmonary System-II			
Semester/Year	:IV			
L	T	P	C	
3	1	2	4	

L - Lecture T – Tutorial P – Practical C – Credit

Course Objectives: The objectives of this course are

Course Outcome:

C01: To describe the disease conditions related to pulmonary system like obstructive, restrictive and infections of pulmonary system, etc.

C02: To understand the neuro-muscular and skeletal disorders leading to pulmonary conditions like muscular atrophy, poliomyelitis, etc.

C03: To demonstrate the various cardiothoracic surgery, pre and post-operative assessment and management like close and open heart surgery, etc.

C04: To classify the emergency in CTVS department and left ventricle assistive device.

C05: To evaluate the management in cardiopulmonary bypass condition

CO6: To design to process of artificial airway removal etc.

Syllabus-

7

UNIT- 1 50 hours

Obstructive pulmonarydiseases.
Restrictive pulmonarydiseases
Infections of pulmonary syetem
Interstitial, infiltrative & inflammatory pulmonary diseases
Pulmonary vasculardiseases
Diseases ofpleura
Respiratoryfailure

UNIT-2

Neuromuscular & skeletal disorders leading to global alveolar hypoventilation: Myopathies, spinal muscular atrophies, poliomyelitis, motor neuron diseases, chest deformitiesetc.

UNIT- 3

CARDIOTHORACIC SURGERY

1. Closed V/S open heartsurgery.
2. Incisions.
3. Preoperative and Postoperative assessment and monitoring of the patients(ABG, ECG, radiographs, PFT, Labsetc)

UNIT- 4

1.Emergencies inCTVS.

2.Hearttransplant.

3.Left ventricular assistivedevices.

UNIT-5

- Procedures on sternum, Chest wall,Diaphragm, Mediastinum, Oesophagus.
- Cardio-pulmonary bypass.

UNIT-6

- Artificial airways-maintenance and removal.

Text Books Recommended

Sl. No	Title	Author	Publisher
1	Handbook of Respiratory Care	Robert L. Chatburn.	Jones and Bartlett (3rd edition)
2	CASH,S textbook of Chest, Heart and Vascular Disorders for Physiotherapy	Patricia A. Downie.	Jaypee Brother (4th edition)
3	Physiotherapy for Respiratory and Cardiac problems	Jennifer A. Pryor	Elsevier India (1st edition)
4	Principles and Practice of Cardiopulmonary Physical Therapy	Donna Frownfelter and Elizabeth Dean.	Mosby (5th edition)
5	Cardiorespiratory physiotherapy, Adults and Pediatrics	Eleanor Main	Elsevier (5th edition)
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9	ACSM guideline for Cardiac rehabilitation.		
10	AACVPR guideline for Pulmonary rehabilitation		
11	Clinical application of Mechanical Ventilation	David W. Chang	Cengage Learning Custom(4th edition)

MAPPING

PSO / CO	PSO1	PSO2	PSO3	PSO4
CO1	2	2	3	2
CO2	3	2	2	
CO3	3	3	2	1
CO4	2	3	2	
CO5	3	2	3	1
Average PO	13	12	12	4

3: Highest Correlated, 2: Medium Correlated, 1: Lowest Correlated

Paper Code	: MPC-S-402			
CourseName	:Cardio-Pulmonary Rehabilitation And Acute Cardio Respiratory Practice			
Semester/Year	:IV			
	L	T	P	C
	2	1	1	3

L - Lecture T – Tutorial P – Practical C – Credit

Course Objectives: The objectives of this course are

Course Outcome:

C01: To describe the concept of functional adaptation

CO2: To understand the method of ventilator facilitator technique.

C03: To demonstrate principle of Cardiac Rehabilitation.

CO4: To classify the prescription of Cardiac Rehabilitation.

C05: To evaluate the Pulmonary Rehabilitation goals and principles.

C06: To design the exercise prescription in Diabetes patients.

Syllabus-

UNIT-1 50 hours

1. Functionaladaptation

UNIT 2

2.Ventilatory facilitationtechniques.

UNIT- 3

Principles of cardiac rehabilitation

UNIT -4

Prescription methods of cardiac rehabilitation

UNIT -5

Principles and prescription of pulmonaryrehabilitation

UNIT- 6

Diabetes and exercises.

Text Books Recommended

Sl. No	Title	Author	Publisher
1	Handbook of Respiratory Care	Robert L. Chatburn.	Jones and Bartlett (3rd edition)
2	CASH,S textbook of Chest, Heart and Vascular Disorders for Physiotherapy	Patricia A. Downie.	Jaypee Brother (4th edition)
3	Physiotherapy for Respiratory and Cardiac problems	Jennifer A. Pryor	Elsevier India (1st edition)
4	Principles and Practice of Cardiopulmonary Physical Therapy	Donna Frownfelter and Elizabeth Dean.	Mosby (5th edition)
5	Cardiorespiratory physiotherapy, Adults and Pediatrics	Eleanor Main	Elsevier (5th edition)
6	Egan's Fundamentals of Respiratory Care	Robert M. Kacmarek.	Mosby (11th edition)
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8	Cardiovascular and Pulmonary physical therapy	William De Turk	McGraw-Hill Education/Medical;3rd edition
9	ACSM guideline for Cardiac rehabilitation.		
10	AACVPR guideline for Pulmonary rehabilitation	7	
11	Clinical application of Mechanical Ventilation	David W. Chang	Cengage Learning Custom(4th edition)

MAPPING

PSO / CO	PSO1	PSO2	PSO3	PSO4
CO1	2	2	3	2
CO2	3	2	2	
CO3	3	3	2	1
CO4	2	3	2	
CO5	3	2	3	1
Average PO	13	12	12	4

3: Highest Correlated, 2: Medium Correlated, 1: Lowest Correlated

Paper Code	: MPC-S-403			
CourseName	:Physiotherapy Management And Principles Of Cardiopulmonary System-II			
Semester/Year	:IV			
L	T	P	C	
3	1	2	5	

L - Lecture T – Tutorial P – Practical C – Credit

Course Objectives: The objectives of this course are

Course Outcome:

C01: To describe the principles of oxygen administration and CPR.

C02: To understand concept of fitness training, health promotion and parameters of testing.

C03: To demonstrate stress modifications by exercise and to understand the scientific basis for exercise programs.

C04: To classify the fitness programme for cardiac patients with normal and abnormal activity and its effect on cardio vascular system also concept of exercise testing.

C05: To evaluate the effect of exercises regime on body

CO6: To design the nutrition intake programme for cardiopulmonary patient.

Syllabus-

UNIT- 1 50 hours

- Oxygen administration, principles and technique
- CPR

UNIT 2

- Fitness training and Health promotion
- Fitness, definition, aspects and parameters for testing.

UNIT-3

Scientific basis for exercise programs

Stress modifications by exercise

UNIT 4

1 Fitness for cardiac patient's normal and abnormal cardiac activity and effects on cardio vascular system

2. Exercise testing - principles of testing and prescription for individuals

UNIT 5

Effects of various exercise regimen onbody

UNIT 6

Nutrition andfitness

Text Books Recommended

Sl. No	Title	Author	Publisher
1	Handbook of Respiratory Care	Robert L. Chatburn.	Jones and Bartlett (3rd edition)
2	CASH,S textbook of Chest, Heart and Vascular Disorders for Physiotherapy	Patricia A. Downie.	Jaypee Brother (4th edition)
3	Physiotherapy for Respiratory and Cardiac problems	Jennifer A. Pryor	Elsevier India (1st edition)
4	Principles and Practice of Cardiopulmonary Physical Therapy	Donna Frownfelter and Elizabeth Dean.	Mosby (5th edition)
5	Cardiorespiratory physiotherapy, Adults and Pediatrics	Eleanor Main	Elsevier (5th edition)

6	Egan's Fundamentals of Respiratory Care	Robert M. Kacmarek.	Mosby (11th edition)
7	Fishmam's pulmonary disease and disorders	Michael A. Grippi.	McGraw-Hill Education- Europe
8	Cardiovascular and Pulmonary physical therapy	William De Turk	McGraw-Hill Education/Medical;3rd edition
9	ACSM guideline for Cardiac rehabilitation.		
10	AACVPR guideline for Pulmonary rehabilitation		
11	Clinical application of Mechanical Ventilation	David W. Chang	Cengage Learning Custom(4th edition)

PAPER IV-

PRACTICAL EXAMINATION 100 hours

1. Special technique-

- Facilitating ventilator patterns and breathing strategies
- Evidence based practice in cardiacrehabilitation
- Evidence based practice in pulmonaryrehabilitation
- Adjuncts top chestphysiotherapy

2. Humidification
3. Nebulization
4. Tracheostomycare
5. Suction
6. Lung expansiontherapy
7. Mobilization

References-

1. Handbook of Respiratory Care, Robert L. Chatburn.
2. CASH,S textbook of Chest, Heart and Vascular Disorders for Physiotherapy, Patricia A. Downie.
3. Physiotherapy for Respiratory and Cardiac problems, Jennifer A. Pryor
4. Principles and Practice of Cardiopulmonary Physical Therapy, Donna Frownfelter and Elizabeth Dean.
5. Cardiorespiratory physiotherapy, Adults and Pediatrics, Eleanor Main.
6. Egan's Fundamentals of Respiratory Care, Robert M. Kacmarek.
7. Fishmam's pulmonary disease and disorders, Michael A. Grippi.
8. Cardiovascular and Pulmonary physical therapy, William De Turk
9. ACSM guideline for Cardiac rehabilitation.
10. AACVPR guideline for Pulmonary rehabilitation.
11. Clinical application of Mechanical Ventilation, David W. Chang.

MAPPING

PSO / CO	PSO1	PSO2	PSO3	PSO4
CO1	2	2	3	2
CO2	3	2	2	
CO3	3	3	2	1
CO4	2	3	2	
CO5	3	2	3	1
Average PO	13	12	12	4

3: Highest Correlated, 2: Medium Correlated, 1: Lowest Correlate

Masters in Paediatric Rehabilitation Part-II

Semester– III

Programme Name

(Made for theory as well as practical course)

Programme name : MPT				
Programmecode :M9410				
CourseName : Physiotherapy for Paediatric Neurological Conditions-I				
Course code : MPP-S-301				
Semester :III				
	L	T	P	C

L - Lecture T – Tutorial P – Practical C – Credit

Course Objectives: The objectives of this course are

Course Outcomes

CO1: Describe Embryology and Neonatal physiology.

CO2: To Identify neonatal reflexes.

CO3: To classify the Normal motor developmental milestones and Growth and development of child and it's disorder.

CO4 : To Explain Neuro developmental assessment and developmental screening.

CO5 : To discuss about Cerebral Palsy, Down syndrome , Spina bifida ,Poliomyelitis, Hydrocephalus

CO6: To Identify Traumatic brain injury, Infections of CNS- Bacterial and Viral infection, Infantile hemiplegia, muscular dystrophy

SYLLABUS:

UNIT I

Embryology

Neonatal physiology

UNIT II

Neonatal Reflexs

UNIT III

(a) Typical motor developmental milestones

(b) Growth and development of child and it's disorder

UNIT IV

Neuro developmental assessment

Developmental Screening using various scales

UNIT V

Cerebral Palsy

Down syndrome

Spina bifida

Poliomyelitis

Hydrocephalus

UNIT VI

Traumatic brain injury

Infections of CNS- Bacterial and Viral infection

Infantile Hemiplegia

Muscular dystrophy

MAPPING

PSO CO	PSO1	PSO2	PSO3	PSO4
CO1	2	2	3	2
CO2	3	2	2	
CO3	3	3	2	1
CO4	2	3	2	
CO5	3	2	3	1
Average PO	13	12	12	4

3: Highest Correlated, 2: Medium Correlated, 1: Lowest Correlated

Programme Name	MPT
Programme Code	M9410
Course Name	PHYSIOTHERAPY FOR PAEDIATRIC ORTHOPAEDIC CONDITIONS I
Course Code	MPP-S- 302
Semester	III

Course Outcomes-

CO1: List the principles of Basic fundamental basis of assessment and diagnosis of pediatric conditions.

CO2: Understand basicPrinciples of laboratory investigation for differential diagnosis

CO3: Describe Genetic basis of paediatric disorders, counseling

CO4: Analyze the various congenital and acquired orthopaedic problems in children and its medical, surgical and PT management.

CO5: Evaluate Rehabilitation and therapeutic exercises for musculoskeletal disorders.

CO6: Create Recent Evidence based pediatric musculoskeletal PT management techniques.

UNIT I Basic fundamental basis of assessment and diagnosis of pediatric conditions.

UNIT II Principles of laboratory investigation for differential diagnosis.

UNIT III Genetic basis of paediatric disorders, counseling

UNIT IV

Describe the various congenital and acquired orthopaedic problems in children and its medical, surgical and PT management.

UNIT V Rehabilitation and therapeutic exercises for musculoskeletal disorders.

UNIT VI Recent Evidence based pediatric musculoskeletal PT management techniques.

MAPPING

PSO / CO	PSO1	PSO2	PSO3	PSO4
CO1	2	2	3	2
CO2	3	2	2	
CO3	3	3	2	1
CO4	2	3	2	
CO5	3	2	3	1
Average PO	13	12	12	4

3: Highest Correlated, 2: Medium Correlated, 1: Lowest Correlated

Course code : MPP-S-303				
CourseName :PT FOR CARDIORESPIRATORY CONDITION-I				
Semester :III				
	L	**T**	**P**	**C**
	3	2	2	5

Course Objectives: The objectives of this course are:

CO1: Describe the concept and principle of Bobath approach and Motor Relearning Program.
CO2: Explain the various Congenital & Acquired cardiac diseases in children.
CO3: Interpret CardioPulmonary disorders.
CO4: Explain CBR in Pediatric conditions.
CO5: Evaluate Physical Therapy in public schools.

COURSE CONTENT

UNIT 1
Concepts and principles of various approaches
Bobath approach
Motor Relearning Program

UNIT 2
Describe the various congenital and acquired cardiac diseases in children and its medical, surgical and PT management.

Cardio-respiratory assessment of neonate and infant and related pediatric disorder
Reflex maturation.
Developmental milestone
Developmental screening using various scales.

UNIT 3
Describe the various respiratory problems and its medical, surgical and PT management.
Cardio-respiratory assessment of neonate and infant and related pediatric disorder

UNIT 4
CBR in pediatric conditions

UNIT 5
Physical Therapy in public schools.

RECOMMENDED TEXTBOOKS

1. Physical therapy assessment in early infancy-Wilhelm Churchill Liningstone,New York,1993.
2. Physical Therapy for children-Campbell Suzann k,W.B.Saunders,Philadelphia 1994 3. Physical Management of multiple handicapped-Freser,William&Wilkins,Baltimore.
4. Elements of paediatric physiotherapy- EckerlyP , Churchill Liningstone,New York,1993
5. Physiotherapy in paediatrics-Shepherd R.,Heinmann,London 1980 2nd edition.
6. The Growth chart-WHO,Geneva,1986.
7. Orthotics in neurological rehabilitation-Aisen,DemosPublication,New York, 1992.
8. Chest physiotherapy in intensive care unit-Makezie,William and Wilkins,Baltimore,1990
9. The neural basis of motor control-Black I,Churchill Livingstone,London-1987
10. Child with spina bifida- Anderson E.M. and Spain B.,Methun,London 1997
11. A manual of neonatal intensive care-Robert N.R.C.,EdwardArnold,London 1986

MAPPING

PSO / CO	PSO1	PSO2	PSO3	PSO4
CO1	2	2	3	2
CO2	3	2	2	
CO3	3	3	2	1
CO4	2	3	2	
CO5	3	2	3	1
Average PO	13	12	12	4

3: Highest Correlated, 2: Medium Correlated, 1: Lowest Correlated

Masters in Paediatric Rehabilitation –Part II

Semester– IV

Programme name : MPT				
Programme code : M9410				
Course Name : Physiotherapy for Paediatric Neurological Conditions				
Course code : MPP-S-401				
Semester : IV				
	L	T	P	C
	3	1	2	5

L - Lecture T – Tutorial P – Practical C – Credit

Course Objectives: The objectives of this course are

Course Outcomes.

CO1: To Define Early intervention- high risk babies, Neonatal care and management, Clinical decision making for the management of paediatric conditions.

CO2: To demonstrate the Concepts and principles of various approaches - Bobath approach, Motor Relearning Program, Voijta approach, Sensory Integration and Rood's approach.

CO3: To evaluate the Advances in the management of various conditions.

CO4: Explain seizures epilepsy of childhood.

CO5: Explain Assessment of progressive locomotor disorders – Neuropathic and Myopathic.

CO6: To Identify Peripheral nerve injury of childhood - Brachial Plexus Injury, Erb's palsy.

Syllabus-

UNIT I

Early intervention- high risk babies, Neonatal care and management

Clinical decision making for the management of paediatric conditions.

UNIT II

Concepts and principles of various approaches

1- Bobath approach

2- Motor Relearning Program

3- Voijta approach

4- Rood's approach

5- Sensory Integration

UNIT III

Advances in the management of following conditions –

CP, Acquired brain injury, Spina bifida, Neuromuscular diseases.

UNIT IV

Seizures, epilepsy of childhood.

UNIT V

Assessment of progressive locomotor disorders – Neuropathic and Myopathic.

UNIT VI

Peripheral nerve injury of childhood - Brachial Plexus Injury, Erb's palsy.

MAPPING

PSO / CO	PSO1	PSO2	PSO3	PSO4
CO1	2	2	3	2
CO2	3	2	2	
CO3	3	3	2	1
CO4	2	3	2	
CO5	3	2	3	1
Average PO	13	12	12	4

3: Highest Correlated, 2: Medium Correlated, 1: Lowest Correlated

Programme Name	MPT
Programme Code	M9410
Course Name	PHYSIOTHERAPY FOR PAEDIATRIC ORTHOPAEDIC CONDITIONS II
Course Code	MPP-S-402
Semester	III

Course Outcomes-

CO1: List the principlesand Management of Musculoskeletal Impairments: JRA, Limb Deficiencies,
CO2: Understand basic management of amputation, osteogenesisimperfecta
CO3: Describe arthroghyposis multiplex congenital, Hemophilia,
CO4: Analyze the various management of congenital locomotor disorders including the prosthetic and orthotic management.
CO5: Evaluate Sports and fitness in pediatrics.
CO6: Create management about the the burn unit.

Syllabus-

UNIT I
Management of Musculoskeletal Impairments: JRA, Limb Deficiencies,

UNIT II
Amputation, Osteogenesisimperfecta,

UNIT III
Arthroghyposis multiplex congenital, Hemophilia,

UNIT IV
Management of congenital locomotor disorders including the prosthetic and orthotic management.

UNIT V Sports and fitness in pediatrics.

UNIT VI The Burn unit.

MAPPING

PSO / CO	PSO1	PSO2	PSO3	PSO4
CO1	2	2	3	2
CO2	3	2	2	
CO3	3	3	2	1
CO4	2	3	2	
CO5	3	2	3	1
Average PO	13	12	12	4

3: Highest Correlated, 2: Medium Correlated, 1: Lowest Correlated

Course code : MPP-S-403				
CourseName :PT for cardiorespiratory condition II				
Semester :IV				
	L	**T**	**P**	**C**
	3	2	2	5

Course Objectives: The objectives of this course are:

CO1: Describe the concept and principle of Voijta approach and Sensory Integration Program.
CO2: Explain the Intensive care management of high risk babies.
CO3: Interpret Respiratory disorders of childhood.
CO4: Explain the various Paediatric surgery.
CO5: Evaluate high risk babies
CO6: To design the management of high risk babies.

COURSE CONTENTS

UNIT 1
The concept and principle of Voijta approach and Sensory Integration Program.

UNIT 2

Intensive care management of high risk babies.
Developmental milestone
Developmental screening using various scales

UNIT 3

Describe the various respiratory problems and its medical, surgical and PT management

UNIT4

Pediatric surgeries and its post operative management.

UNIT 5

Neonatal care; high risk babies and management
Adaptive equipment for physically challenged children.
Recent advances in pediatric physiotherapy.
Neonatal care; high risk babies and management

UNIT-6

1. Pediatric surgeries and its post operative management.
2. CBR in pediatric conditions
3. Clinical symptomatology and Pathophysiology of cardiopulmonary disordes.
4 Physical therapy in public schools.

RECOMMENDED TEXTBOOKS

1. Physical therapy assessment in early infancy-Wilhelm Churchill Liningstone,New York,1993.
2. Physical Therapy for children-Campbell Suzann k,W.B.Saunders,Philadelphia 1994 3. Physical Management of multiple handicapped-Freser,William&Wilkins,Baltimore.
4. Elements of paediatric physiotherapy- EckerlyP , Churchill Liningstone,New York,1993
5. Physiotherapy in paediatrics-Shepherd R.,Heinmann,London 1980 2nd edition.
6. The Growth chart-WHO,Geneva,1986.
7. Orthotics in neurological rehabilitation-Aisen,DemosPublication,New York, 1992.
8. Chest physiotherapy in intensive care unit-Makezie,William and Wilkins,Baltimore,1990
9. The neural basis of motor control-Black I,Churchill Livingstone,London-1987
10. Child with spina bifida- Anderson E.M. and Spain B.,Methun,London 1997
11. A manual of neonatal intensive care-Robert N.R.C.,EdwardArnold,London 1986

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CO5	3	2	3	1
Average PO	13	12	12	4

3: Highest Correlated, 2: Medium Correlated, 1: Lowest Correlated

Practical Examination

1. Total hours of Practical Examination will be 6 hrs.

2. Practical examination will be divided into two parts.

a)Two large cases-30 marks each(30x2=60)

b)One small cases-10 marks (10x1=10)

large cases for example:

Small cases for example:

3.Following procedures will be included in the practical examination.

1.Assessment

a. physical

b.clinical

c.pathological

d.other investigations.

2.differential diagnosis &; its reason.

3.Physiotherapy management &; application of advanced techniques.

4. home programme.

Recommended books;

1.Physical therapy assessment in early infancy-Wilhelm Churchill Liningstone, New York 1993

2.Physical Therapy for children-Campbell Suzann k,W.B.Saunders, Philadelphia 1994

3.Physical Management of multiple handicapped-Freser, William & Wilkins, Baltimore.

4.Elements of paediatric physiotherapy-Eckerly P, Churchill Liningstone, New York, 1993

5.Physiotherapy in paediatrics-Shepherd R., Heinmann, London 1980 2nd edition.

6.The Growth chart-WHO,Geneva, 1986.

7.Orthotics in neurological rehabilitation-Aisen, Demos Publication, New York, 1992.

8. The neural basis of control-Black I,Churchill Livingstone, London-1987

9.Child with spina bifida- Anderson E.M. and Spain B., Methun, London 1997

10.A manual of neonatal intensive care-Robert N.R.C., Edward Arnold, London 1986

11.Child with spina Bifida – Anderson E.M. and Spain B., Methun, London 1977.

Obstetric and Gynecology Rehabilitation –Part II

Semester– III

Coursecode : MPG-S-301				
CourseName :Medical & Surgical Gynaecology-I				
Semester : III				
	L	**T**	**P**	**C**
	3	1	2	5

L - Lecture T – Tutorial P – Practical C – Credit

Course Objectives: The objectives of this course are

CO 1: To describe the Anatomy of Pelvis, PFM .

CO 2: To discuss Pelvic organs and reproductive tract.

CO 3: To illustrate internal and external genitalia, physiology of female reproductive system.

CO 4: To explain the urinary and fecal continence, menstrual cycle and its integration. Also to describe anatomy and development of breast.

CO5: To To List the Gynaecological infections.

CO6: To write design the assessment and physiotherapy protocol.

Course Contents

UNIT 1

Review of Pelvic anatomy, types of pelvis, Pelvic floor muscles.

UNIT 2

Pelvic Organs,
Reproductive tract and abdominals.

UNIT 3

Internal and external genitalia.
Physiology of female reproductive system.

UNIT 4

Physiology of urinary and faecal continence.
Menstrual cycle and its integration.
Anatomy and development of Breast.

UNIT 5

Gynaecological infections.
Pelvic inflammatory diseases.
Cyst and new growth in reproductive system.
Endometriosis.
Polycystic ovarian syndrome. (PCOS)
Pelvic pain.

UNIT 6

design the assessment and physiotherapy protocol for
gynaecological condition.

Practical

Life style modification and exercise to cure PCOD.
A structural Exercise Programme for PCOD
A structural Exercise Programme for pelvic floor muscles retraining

Recommended Textbooks

Physiotherapy in obstetrics and gynaecology by Margaret Polden and Jill Mantle
Physiotherapy in obstetrics and gynaecology by Jill Mantle ,Jeanette Haslam & Sue Barton
Obstetric and Gynaecology in Physical Therapy (Clinics in Physical Therapy) by Wilder
Textbook of Obstetrics by JB Sharma
DC Dutta's Textbook of Obstetrics
Bonney's Gynaecological Surgery
Obstetric and Gynaecologic care in physical therapy by Rebecca G. Stephenson Linda J. O' Conner
Role of Physiotherapy in Obstetric and Gynaecological conditions by Purvi K Changela

MAPPING

PSO / CO	PSO1	PSO2	PSO3	PSO4
CO1	2	2	3	2
CO2	3	2	2	
CO3	3	3	2	1
CO4	2	3	2	
CO5	3	2	3	1
Average PO	13	12	12	4

3: Highest Correlated, 2: Medium Correlated, 1: Lowest Correlated

Coursecode : MPG-S- 302				
Course Name : Clinical Obstetrics-I				
Semester : III				

L - Lecture T – Tutorial P – Practical C – Credit }

Course Objectives: The objectives of this course are

CO1: To discuss developmental anatomy embryology in details. Preconception assessment, Diagnostic test during Pregnancy
CO2: To describe physical, physiological and musculoskeletal changes during pregnancy, common complication & discomforts during pregnancy.
CO3: To illustrate Stages and mechanism of labour.Complication in labour
CO4: To explain about labour and types of assistive deliveries and caesarean section.
CO5: To evaluate about gestational DM, PIH,etc.
CO6: To write about eclampsia and water birth.

Course Contents

UNIT 1

Preconception assessment and diagnostic test. Developmental anatomy – Embryology in detail. Diagnostic test during Pregnancy.

UNIT 2

Physical and Physiological changes during Pregnancy. Musculoskeletal changes during Pregnancy.

Common complication and discomforts during Pregnancy.

UNIT 3

Stages and mechanism of labour.Complication in labour.

UNIT 4

Types of assisted deliveries. Caesarean section. High – risk Pregnancies.

UNIT 5

Gestation tropoblastic diseases. Intra Uterine Devices. Gestational Diabetes Melitus. Water birth.

UNIT- 6

PIH and eclampsia.

Recommended Textbooks

Physiotherapy in obstetrics and gynaecology by Margaret Polden and Jill Mantle
Physiotherapy in obstetrics and gynaecology by Jill Mantle ,Jeanette Haslam & Sue Barton
Obstetric and Gynaecology in Physical Therapy (Clinics in Physical Therapy) by Wilder
Textbook of Obstetrics by JB Sharma
DC Dutta's Textbook of Obstetrics
Bonney's Gynaecological Surgery
Obstetric and Gynaecologic care in physical therapy by Rebecca G. Stephenson Linda J. O' Conner
Role of Physiotherapy in Obstetric and Gynaecological conditions by Purvi K Changela

MAPPING

PSO / CO	PSO1	PSO2	PSO3	PSO4
CO1	2	2	3	2
CO2	3	2	2	
CO3	3	3	2	1
CO4	2	3	2	
CO5	3	2	3	1
Average PO	13	12	12	4

3: Highest Correlated, 2: Medium Correlated, 1: Lowest Correlated

Coursecode : MPG-S- 303				
Course Name: Physiotherapy management in gynaecology& Obstetrics-I				
Semester : III				
				C
				5

L - Lecture T – Tutorial P – Practical C – Credit }

Course Objectives: The objectives of this course are

CO1: To describe PFM grading, indication and contraindication, active PFM exercises and impairment of PFM and its PT management.
CO2: To explain about PT management of LAS, coccydeniaetc, pre and post operative PT mangement of gynaecological surgeries.
CO3: To illustrate Antenatal classes, swiss ball in pregnancy.
CO4: To explain electrotherapy modalities in obstetrics.
CO5: To evaluate PT in labour, breast feeding position.
CO6: To write about episiotomy and its PT management.

Course Contents

UNIT 1

Internal evaluation of PFM Grading, indication and contraindication.
Active Pelvic floor muscle exercises.Impairment of Pelvic floor muscle and its PT management.

UNIT 2

Levator ani syndrome, coccydynia and its PT management **,**Vulvodynia, vaginismus, anismus and its PT management.Dyspareunia and its PT management. Pre and post Physiotherapy management for Gynaecological Surgeries.

UNIT 3

Antenatal classes.Swiss ball in Pregnancy.

UNIT 4

Electrotherapy modalities in obstetrics.

UNIT 5

Physiotherapy in labour.Breast feeding positions.

UNIT 6

Episiotomy and its PT management.

Recommended Textbooks

1. Physiotherapy in obstetrics and gynaecology by Margaret Polden and Jill Mantle
2. Physiotherapy in obstetrics and gynaecology by Jill Mantle ,Jeanette Haslam & Sue Barton
3. Obstetric and Gynaecology in Physical Therapy (Clinics in Physical Therapy) by Wilder
4. Textbook of Obstetrics by JB Sharma
5. DC Dutta's Textbook of Obstetrics
6. Bonney's Gynaecological Surgery
7. Obstetric and Gynaecologic care in physical therapy by Rebecca G. Stephenson Linda J. O' Conner
8. Role of Physiotherapy in Obstetric and Gynaecological conditions by Purvi K Changela

MAPPING

PSO / CO	PSO1	PSO2	PSO3	PSO4
CO1	2	2	3	2
CO2	3	2	2	
CO3	3	3	2	1
CO4	2	3	2	
CO5	3	2	3	1
Average PO	13	12	12	4

3: Highest Correlated, 2: Medium Correlated, 1: Lowest Correlated

Obstetric and Gynecology Rehabilitation -PartII

Semester– IV

Coursecode	**: MPG-S- 401**			
CourseName	**: Medical & Surgical Gynaecology-II**			
Semester	**: IV**			
	L	**T**	**P**	**C**
	3	1	2	4

L - Lecture T – Tutorial P – Practical C – Credit

Course Objectives:

CO 1: To describe about infertility, menstrual abnormalities.

CO 2: To explain contaception and family planning.

CO 3: To evaluate urinary, bowel and anorectal dysfunction.

CO 4: To explain PT management of urinary, bowel and anorectal dysfunction .

CO5 : Togynaecological problems in adolescents .

CO6: To write down about gynaecologicalSurgeries.

Course Contents

Unit 1– .

Infertility

Menstrual abnormalities

UNIT 2

Contraception

Family planning

UNIT 3

Urogynaecology –

Urinary dysfunction

UNIT 5:

Gynaecological problems in adolescents

Hirsutism.

Incontinence scales.

Gynaecologic problems in Female athletes

UNIT 6:

Gynaecological surgeries, Puerperal sterilization.Abortion and its types

Breast cancer its screening procedures.

Mastectomy,

Types of Prolapse.
Menopause and osteoporosis.
Laproscopy and laser surgeries in Gynaecological condition

Practical

A Structural Exercise Programme for Menopausal women
Pelvic floor Muscle retraining for PFM strengthening for cure Uterus prolapse
Pelvic floor Muscle Strengthening Exercises for UI &Faecal incontinence

Recommended Textbooks

1. Physiotherapy in obstetrics and gynaecology by Margaret Polden and Jill Mantle
2. Physiotherapy in obstetrics and gynaecology by Jill Mantle ,Jeanette Haslam & Sue Barton
3. Obstetric and Gynaecology in Physical Therapy (Clinics in Physical Therapy) by Wilder
4. Textbook of Obstetrics by JB Sharma
5. DC Dutta's Textbook of Obstetrics
6. Bonney's Gynaecological Surgery
7. Obstetric and Gynaecologic care in physical therapy by Rebecca G. Stephenson Linda J. O' Conner
8. Role of Physiotherapy in Obstetric and Gynaecological conditions by Purvi K Changela

MAPPING

1

PSO / CO	PSO1	PSO2	PSO3	PSO4
CO1	2	2	3	2
CO2	3	2	2	
CO3	3	3	2	1
CO4	2	3	2	
CO5	3	2	3	1

Average PO	13	12	12	4

3: Highest Correlated, 2: Medium Correlated, 1: Lowest Correlated

Coursecode : MPG-S- 402				
Course Name : Clinical Obstetrics-II				
Semester : IV				
	L	**T**	**P**	**C**
	3	1	2	4

L - Lecture T – Tutorial P – Practical C – Credit

Course Objectives:

CO 1: To describe about puerperium.

CO2: To explainpuerperium physiological changes.

CO 3: To evaluate about diastasis recti

CO 4: To explainBreast milk, its advantages.

CO5 : To evaluate Common problem in Breast feeding.

CO6: To write about the types of nipples and its problems

Course Contents

Unit 1

Puerperium

UNIT- 2

Puerperium physiological changes.

UNIT 3

Diastasis recti.

UNIT 4

Breast milk, its advantages.

UNIT 5

Common problem in Breast feeding

UNIT 6

Types of nipples and its problems

Practical

A Structural Exercise Programme for Common complication and discomforts during Pregnancy.

A Structural Exercise Programme for Gestational Diabetes Melitus. Water birth. PIH and eclampsia.

Common Breast Feeding Position.

A Structural Exercise Programme for Diastasis recti.

Recommended Textbooks

1. Physiotherapy in obstetrics and gynaecology by Margaret Polden and Jill Mantle
2. Physiotherapy in obstetrics and gynaecology by Jill Mantle ,Jeanette Haslam & Sue Bar
3. Obstetric and Gynaecology in Physical Therapy (Clinics in Physical Therapy) by Wild
4. Textbook of Obstetrics by JB Sharma
5. DC Dutta's Textbook of Obstetrics
6. Bonney's Gynaecological Surgery
7. Obstetric and Gynaecologic care in physical therapy by Rebecca G. Stephenson Linda J
8. Role of Physiotherapy in Obstetric and Gynaecological conditions by Purvi K Changela

APPING

PSO / CO	PSO1	PSO2	PSO3	PSO4
CO1	2	2	3	2
CO2	3	2	2	
CO3	3	3	2	1
CO4	2	3	2	
CO5	3	2	3	1
Average PO	13	12	12	4

3: Highest Correlat

Coursecode :MPG-S-403				
CourseName:Physiotherapymanagementingynaecology&Obstetrics-II				
Semester IV				
	L	**T**	**P**	**C**
1	3	2	2	5

L-LectureT–TutorialP–PracticalC– Credit

CourseObjectives:

CO1:Todescribeaboutperinealmassage.

CO2:Toexplainbreastengorgement and itsPTmanagement.

CO 3:Toillustrateaerobicstraining.

CO4:Toexplainweighttraininginpregnancy.

CO5:ToevaluateTowriteaboutPTmanagementofoedemainPregnancy,GDM,HighriskPregnancy.

C06:TowriteaboutWaterbirthandManagementofcommonprobleminAntenatalperiod, PTmanagementof diastasis recti

CourseContents

Unit1

Perinealmassage.

UNIT2

Breastengorgement anditsPTmanagement.

UNIT3

AerobicsTraining.

UNIT4:

WeighttraininginPregnancy.

UNIT5

PhysiotherapymanagementofoedemainPregnancy,GDM,HighriskPregnancy.

UNIT6

Water birthandManagementofcommonproblemin Antenatalperiod.PTmanagementofdiastasisrecti.

Practical

- AStructuralExerciseProgrammeforLevatoranisyndrome, coccydynia,
- Vulvodynia,vaginismus,anismus.

- AStructuralExerciseProgrammefor GestationalDiabetesMelitus. Waterbirth.
- PIHandeclampsia.

- CommonBreast FeedingPosition.

- AStructuralExerciseProgrammeforDiastasisrecti.

- AStructuralExerciseProgrammeforGynaecologicalSurgeries.

- Antenatalclasses
- Swissball inpregnancy

- Corestrengtheningexercise

- Spinalextensionexercise

- Prenatalandpostnatalexercise

- Kegelexercise

- LifestylemodificationandexercisetocurePCOD.

- PFMevaluationtwchnique

- PFMRetrainingprogramme

- PFMStrengtheningExercises

RecommendedTextbooks 1

1. PhysiotherapyinobstetricsandgynaecologybyMargaret PoldenandJillMantle
2. Physiotherapyinobstetricsand gynaecologybyJillMantle,JeanetteHaslam &SueBarton
3. ObstetricandGynaecologyinPhysicalTherapy(ClinicsinPhysicalTherapy) byWilder
4. TextbookofObstetrics byJB Sharma
5. DC Dutta's TextbookofObstetrics
6. Bonney'sGynaecologicalSurgery
7. ObstetricandGynaecologiccareinphysicaltherapybyRebeccaG. StephensonLindaJ.O'Conner
8. RoleofPhysiotherapy inObstetricand GynaecologicalconditionsbyPurviKChangela

PSO CO	PSO1	PSO2	PSO3	PSO4
CO1	2	2	3	2
CO2	3	2	2	
CO3	3	3	2	1
CO4	2	3	2	
CO5	3	2	3	1
AveragePO	13	12	12	4

3:HighestCorrelated, 2:MediumCorrelated,1:LowestCorrelated