POST GRADUATE PROGRAMME

MASTERS OF PHYSIOTHERAPY

Faculty of Physiotherapy

Parul University

Vadodara, Gujarat, India

ANNEXURE-I

Faculty of Physiotherapy

1. Vision of the Department

To make physiotherapy an integral part of the healthcare system to ease the pains suffered by patients.

2. Mission of the Department

To train the students through scientifically equipped institutions in the care of patients to soothe the pains suffered due to ailments.

3. Program Educational Objectives

The statements below indicate the career and professional achievements that the BPT curriculum enables graduates to attain.

PEO 1	To create a competent physiotherapist who will understand and practice professional principles of physiotherapy in private practice, hospitals, government and non-government organizations, academia, research institutes and entrepreneurial pursuit.
PEO 2	Sustain continued professional development through lifelong learning activities and work for development of the field.
PEO 3	An ability to function professionally with ethical responsibility as an individual as well as multidisciplinary team with positive attitude.

4. Program Learning Outcomes

PO1	Physiotherapy knowledge	Apply the knowledge of basic science, advance therapeutics and physical and functional diagnosis in professional physiotherapy Practice.
PO2	Problem analysis	An ability to assess, critically analyze and manages patients with various diseases and disorders by using advanced tools and techniques.
PO3	Design/development of Treatment Protocol	An ability to practice advance technologies, electrophysiological tools, combination therapy for assessment and treatment for health promotion, prevention and cure of various diseases and disorders.
PO4	Use of Modern Technology/ Recent Advances	Apply scientific research and other form of best evidence in the practice of physiotherapy and in the field of academics.
PO5	Community Needs/ Services	Address prevention, wellness, and health promotion needs individuals, groups and communities.
PO6	Ethics	Practice in an ethical and legal manner.

PO7	Individual and team work	Function effectively as an individual, as a member or leader in administration, diverse teams and in multidisciplinary settings.
PO8	Communication /Communicate	Effectively on different diseases and disorders treated by physiotherapists, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions to the patients.
PO9	Case studies and clinical Trial	An ability to design and conduct clinical trials, analyze data and provide well informed conclusions on a given study and publish in peer reviewed indexed journals.
PO10	Lifelong learning	An ability to learn and practice teaching methodologies and to sustain lifelong learning activities for personal and professional Growth.
PO11	Professional Physiotherapists	Able to work professionally with critical thinking and sound knowledge in the specialized field of physiotherapy.
PO12	Contemporary Issues	Able to work on contemporary issue related to field of physiotherapy.

5. Program Specific Learning Outcomes

PSO1	Pursue a successful career in the field of Physiotherapy and broaden the horizon of physiotherapy in specialized fields.
PSO2	An ability to evolve clinical reasoning and professional expertise to meet desired health care needs of patients/ society.
PSO3	An ability to practice in a consistent manner with established legal standards, professional behaviour and ethical guidelines as an individual as well as in multidisciplinary team.

6. Program Curriculum

MPT Part-I (First 12 Months)				
Sr.no	**Subjects**	**Teaching Hours**		
		Theory	**Clinical/Practical**	**Total**
1	**Basic Science - 07200101**			
	Work physiology & Electro Physiology	100	75	175
	Bio-mechanics	100	75	175
	Research methodology & Bio-statistics	100	-	100
	Education Methodology	50	-	50
	Ethics, Management and planning	50	-	50
Total		400	150	550

	Physical and functional diagnosis - 07200102			
2	Physical and functional diagnosis	180	220	400
	Advanced Physio therapeutics (Part-I) 07200103			
3	Advanced Physio therapeutics (Part-I)	100	100	200
4	Clinical training	-	720	720
5	Seminars, Journal clubs, Teaching skills, Case presentations, Field works etc.	-	150	150
Total		**2020**		

Sr. No.	**Subject Code**	**Subject Name**	**Credit**	**Lecture**	**Clinical /Practical**	**Total**
1	07200201	Advanced Physiotherapeutic -II	-	200	400	600
2	07208201	Physiotherapy in Musculoskeletal and Sports	-	100	200	300
3	07202201	Physiotherapy in Neurological and Psychosomatic Disorders	-	100	200	
4	07207201	Physiotherapy in paediatrics	-	100	200	
5	07203201	Physiotherapy in Cardio-Respiratory Disorders and Intensive Care	-	100	200	
6	07204201	Physiotherapy in Community Based Rehabilitation	-	100	200	
7	07209201	Physiotherapy in Women's Health		100	200	
8		Clinical Training			500	500
9		Seminars, Journal clubs, Teaching skills, Case presentations, Field works etc.			150	150
Total				**1550**		

7. Detailed Syllabus

ANNEXURE-II

MPT FIRST YEAR

a. **Course Name:** Basic Science

b. **Course Code:** 07200101

c. **Prerequisite:** physiotherapy include foundational knowledge in human anatomy, physiology, biomechanics, kinesiology, pathology, and exercise science.

d. **Rationale:** physiotherapy is to provide a foundational understanding of human body structure, function, and movement essential for effective diagnosis, treatment, and rehabilitation.

e. **Course Learning Objective:**

Course Objectives	
CLOBJ 1	Students will evaluate physiotherapy ethics, regulation, enhance patient assessment, apply teaching strategies in clinical and academic context, integrate ICF documentation
CLOBJ 2	Students will be able to differentiate Research methodologies, understand bio statistical concepts, implement statistical test, evaluate study design, interpret statistical results, assess scientific literature
CLOBJ 3	Students will Understand Biomechanical Principles, Analyze Joint Mechanics, and Apply Ergonomic Principles. Evaluate Patient Positioning, Integrate Biomechanics in Rehabilitation, Assess Movement Patterns, Educate Patients on Ergonomics
CLOBJ 4	Students will Assess Individual Factors, Understand Energy System, Monitor Physiological Responses, Implement Regular Assessment, Promote Education and Awareness
CLOBJ 5	Students will Understand Electrotherapy Principles, Assess Electrical Properties of Muscles and Nerves, Evaluate Clinical Electro-Physiological Testing, integrate Evidence-Based Practices, Analyze Safety and Ethical Consideration, Develop Clinical Application Skill

f. **Course learning Outcome**

Course Outcomes	
CLO 1	To evaluate physiotherapy ethics, regulations, and patient assessment, and apply teaching strategies and ICF documentation in clinical, research, and academic contexts
CLO 2	To differentiate biostatistics and research methods, implement statistical tests, and assess scientific studies
CLO 3	To explain the biomechanics of musculoskeletal tissues and apply ergonomic principles and patient positioning in clinical practice.

CLO 4	To design exercise prescriptions and assess variables such as age, sex, and fatigue, while also examining energy systems and physiological responses to physical activity.
CLO 5	To critically analyse electrotherapy principles, assess the electrical properties of muscles and nerves, and evaluate clinical electro-physiological testing.

g. **Teaching & Examination Scheme:**

Teaching Scheme (Contact Hours)				**Examination Scheme**				
				Theory Marks		**Practical Marks**		
Theory Hour	**Tutorial**	**Lab Hour**	**Credit**	**Marks EYE (T)**	**Internal Marks (T)**	**Marks EYE (P)**	**Internal Marks (P)**	**Total Marks**
5	-	3	-	70	30	-	-	100

h. **Course Content:**

Sr. No.	**Content**	**Weightage**	**Teaching Hours**	**CLO**
1	**Principles of physiotherapy practice/ education methodology/ ethics:**	**12.5%**	**50**	**CLO1**
	1. Development of Physiotherapy Profession. 2. Ethical issues in practice of physiotherapy- Clinical, Research and Academics. Administration, legislation, rules and regulations governing physiotherapy practice- National & International (Gujarat State Physiotherapy council, WCPT and IAP). Scope of Physiotherapy in Hospital, Community & Industry. 3. History taking, assessment, tests, Patient communication, documentation of findings, treatment organization and planning/execution for intervention. 4. Documentation of rehabilitation assessment and management using International Classification of Functioning Disability and Health (ICF). 5. Standardized tests and scales used in various types of cases for assessment and interpretation in Physiotherapy practice. 6. Theories of teaching, Relationship between teaching and learning, Psychology of education and Dynamics of behavior, motivational process, of learning perception, individual differences, intelligence and personality.			

	7. Strategies of teaching, planning of teaching, Organization, Writing lesson plans, A-V aids, and Teaching methods – Socialized teaching methods. Educational aims, Agencies of education, Major philosophies of education, Modern & contemporary philosophies of education, Role of educational philosophy and Current issues and trends in education.			
2	**Research methodology and biostatistics**	**25%**	**100**	**CLO2**
	1. Introduction to biostatistics and research methodology. 2. Basic probability and sampling distributions. 3. Processing and analysis of data. 4. Tests of Analysis of variance & co-variance. 5. Significance based on parametric and non-parametric tests. 6. Research process and criteria of good research. 7. Sampling and Sample size determination. 8. Various epidemiological study designs. 9. Validity and reliability evaluation. 10. Format of scientific documents. (structure of protocols, formats reporting in scientific journals, systematic reviews and meta-analysis) Critical analysis of published articles.			
3	**Biomechanics**	**25%**	**100**	**CLO3**
	1. Biomechanics of Tissues and structures of the musculoskeletal system. 2. Normal and applied Biomechanics of Spine, Upper extremity and Lower extremity. 3. Biomechanics of posture. 4. Biomechanics of respiration, circulation, hand function and gait. 5. Methods of kinetics and kinematics investigation. 6. Patient Positioning, Body Mechanics and Transfer techniques. Ergonomic Approach to lifting and handling, workspace and Environment.			
4	**Exercise physiology**	**25%**	**100**	**CLO4**
	1. Sources of Energy, Energy Transfer and Energy Expenditure at rest and various physical activities. 2. Physiology of Movement. 3. Responses and Adaptations of various systems to Exercise and training. 4. Environmental influence on Performance. 5. Special aids to performance and conditioning.			

	6. Body consumption, nutrition and caloric balance. 7. Considerations of age and sex in exercise and training. Exercise prescription for health and fitness with special emphasis to cardiovascular disease, Obesity and Diabetes. Fatigue assessment and scientific organization of work-rest regimes to control fatigue.			
5	**Electrophysiology**	**12.5%**	**50**	**CLO5**
	Characteristics and components of Electro therapeutic stimulation systems and Electro physiological assessment devices. 1. Instrumentation for neuromuscular electrical stimulation. 2. Anatomy and physiology of peripheral nerve, muscle and neuromuscular junction. 3. Electrical properties of muscle and nerve. 4. Muscles plasticity in response to electrical stimulation. Electrical stimulation and its effects on various systems. Clinical Electro physiological testing.			
TOTAL		**100%**	**400**	

Textbooks and Reference Books:

Textbooks: Scientific Basis of Human Movement– Gowitzke, Williams and Wilkins, Baltimore 1988 (3rd Edition).

Reference Books : Kinesiology– Brunnstrom Singe, F.A. Davis, Philadelphia 1966.**,** Human Neuroanatomy– Carpenter M.B, Williams & Wilkins, Baltimore 1983

a. **Course Name:** Physical and Functional Diagnosis
b. **Course Code:** 07200102
c. **Prerequisite:** A comprehensive understanding of human anatomy, physiology, biomechanics, and clinical assessment methods.
d. **Rationale:** Is to accurately assess and identify impairments and functional limitations to guide effective treatment planning and rehabilitation.
e. **Course Learning Objective:**

Course Objectives	
CLOBJ 1	Students will Understand Assessment Frameworks, Conduct Cardiopulmonary Assessments, Implement Neuromuscular Evaluation Technique , Evaluate Musculoskeletal Conditions , integrate Patient History and Subjective Assessment , Develop Treatment Recommendations
CLOBJ 2	Students will Understand the Classification of Conditions , Identify Common Traumatic Conditions ,Conduct Comprehensive Assessments , Management and Treatment Options , Evaluate Prognosis and Recovery , Promote Injury Prevention and Health Education
CLOBJ 3	Students will Understand Clinical Decision-Making Frameworks , Enhance Assessment Skills , Analyze Assessment Findings , formulate Differential Diagnoses , Develop Evidence-Based Treatment Plans , Evaluate Treatment Effectiveness and Modify Plans
CLOBJ 4	Students will Understand Evaluation Principles , Identify Musculoskeletal Evaluation Techniques , Implement Neurological Assessment Methods , Integrate Special Tests into Assessments , Synthesize Evaluation Data , Develop Evidence-Based Assessment Protocols
CLOBJ 5	Students will Understand Assessment Principles, Conduct Range of Motion Assessments, Evaluate Muscle Strength, Assess Overall Physical Fitness, Develop Individualized Assessment Plan, and Communicate Results Effectively.

f. **Course learning Outcome**

CLO 1	Perform assessment and evaluation techniques for cardiopulmonary, neuromuscular, and musculoskeletal conditions.
CLO 2	Identify and explain the causes, signs, symptoms, and management options for various traumatic and non-traumatic conditions.
CLO 3	Develop clinical decision-making skills and formulate effective treatment plans based on assessment findings.
CLO 4	Utilize appropriate evaluation methods and special tests for musculoskeletal, neurological, and cardiopulmonary disorders.
CLO 5	Conduct comprehensive physical fitness and functional assessments, including range of motion and muscle strength evaluations.

g. **Teaching & Examination Scheme:**

Teaching Scheme (Contact Hours)				**Examination Scheme**				
				Theory Marks		**Practical Marks**		**Total Marks**
Theory Hour	**Tutorial**	**Lab Hour**	**Credit**	**Marks EYE**	**Internal Marks**	**Marks EYE**	**Internal Marks**	
3	-	4	-	70	30	-	-	100

h. **Course Content**

Sr. No.	Course Content	Weightage	Teaching Hours	CLO
1	Clinical examination in general and detection of movement dysfunction.	10%	10	CLO1
2	Principles of pathological investigations and imaging techniques related to neuromuscular, skeletal and cardiopulmonary disorders with interpretation.	5%	5	CLO1
3	Developmental screening, motor learning –motor control assessment.	5%	5	CLO1
4	Theories of aging	3%	3	
5	Cardiopulmonary medications and their effect on activity	6%	6	
6	Exercise planning and prescription.	7%	7	
7	Use of Exercise therapy techniques and application on various types of cases.	15%	15	
8	Application of electrotherapy techniques on patients, monitoring of dosages and winding up procedure.	16%	16	
9	Ergonomic aspects of exercise on oxygen, energy consumption MET value of various exercises and activity.	6%	6	
10	Effect of aerobic, anaerobic as well as Isometric and Isokinetic exercises on cardiac function.	6%	6	
11	Physiotherapy in psychiatric conditions.	5%	5	
12	Massage, Mobilization and Manipulation	16%	16	
Total		**100%**	**100**	

i. **Textbooks and Reference Books:**

Textbooks

1) Elements of Research in Physical Therapy– Currier D.P., Williams & Wilkins, Baltimore 1990 (3rd Edition).

Reference Books

1) Measurement in Physical Therapy – Churchill, Livingstone, London 1988.
2) Clinical Biomechanics of Spine – White A.A. and Panjabi, J.B., Lippincott, Philadelphia 1978.

a) **Course Name**: Advanced Physio Therapeutics – I

b) **Course Code:** 07200103

c) **Prerequisite:** Physiotherapy include a strong foundation in human anatomy, biomechanics, physiology, kinesiology, and basic therapeutic techniques.

d) **Rationale:** physiotherapy is to enhance clinical skills and knowledge for managing complex musculoskeletal and neurological conditions using advanced therapeutic techniques.

e) **Course Learning Objective:**

Course Objectives	
CLOBJ 1	Design protocol for maternal and child care, geriatric and psychiatric conditions.
CLOBJ 2	Prepare exercise planning and prescription for different conditions.
CLOBJ 3	Implement a skill using various electrotherapeutic modalities.
CLOBJ 4	Practice massage, manipulation and mobilisation techniques.
CLOBJ 5	Explain various theories of motor control and motor learning.

f) **Course learning Outcome**

CLO 1	Plan physiotherapy management for maternal and child care, geriatric and psychiatric conditions of patients appropriately.
CLO 2	Prescribe different types of exercises based on activity performance for patient correctly.
CLO 3	Apply different electro-modalities on patients in various conditions accurately.
CLO 4	Perform massage, mobilization and manipulation techniques on patients correctly.
CLO 5	Understand various theories of motor control and motor learning correctly.

g) **Teaching & Examination Scheme:**

Teaching Scheme (Contact Hours)				Examination Scheme				
Theory Hour	Tutorial	Lab Hour	Credit	Theory Marks		Practical Marks		Total Marks
				Marks EYE	Internal Marks	Marks EYE	Internal Marks	
2	-	2	-	70	30	-	-	100

h) **Course content:**

Sr. No.	Content	Weightage	Teaching Hours	CLO
1	Pain	10%	10	CLO3
2	Maternal and child care in general physiotherapy	5%	5	CLO1
3	Theories of motor control and motor learning.	5%	5	CLO5
4	Theories of aging	3%	3	CLO1
5	Cardiopulmonary medications and their effect on activity performance.	6%	6	CLO2
6	Exercise planning and prescription.	7%	7	CLO2
7	Use of Exercise therapy techniques and application on various types of cases.	15%	15	CLO2
8	Application of electrotherapy techniques on patients, monitoring of dosages and winding up procedure.	16%	16	CLO3
9	Ergonomic aspects of exercise on oxygen, energy consumption MET value of various exercises and activity.	6%	6	CLO2
10	Effect of aerobic, anaerobic as well as Isometric and Isokinetic exercises on cardiac function.	6%	6	CLO2
11	Physiotherapy in psychiatric conditions.	5%	5	CLO1
12	Massage, Mobilization and Manipulation	16%	16	CLO4
Total		**100%**	**100**	

i. **Textbook and Reference books:**

Textbooks

1) Orthopaedic Physical Therapy– Donatteli, Churchill Livingstone, London 1994.
2) Sports and Physical Therapy– Bernhardt Donna, Churchill, Livingstone, London 1995.
3) Physical Therapy of the Low Back– Twomey, Churchill, Livingstone, London 1983.
4) Manual Therapy: Nags, Snags, MWMs, etc. – Brian Mulligan, Butterworth-Heinemann 1999.
5) Kinesiology of the Musculoskeletal System – Donald A. Neumann, Mosby 2017.

Reference Books

1) Vertebral Manipulation– Maitland G.D., Butterworth & Co. Boston, 1997.
2) Peripheral Manipulation – Maitland G.D., Butterworth & Co. Boston, 1997.
3) Soft Tissue Pain and Disability– Cailliet Rene, Jaypee Brothers, New Delhi 1992.
4) Myofascial Pain and Dysfunction– Travell, Williams & Wilkins, Baltimore 1983.
5) Manual of Nerve Conduction Velocity Techniques– De Lisa, Raven Press, New York 1982.

SECOND YEAR MPT

a) **Course Name:** Advanced Physiotherapeutics -II

b) **Course Code:** 07200201

c) **Prerequisite:** Include advanced knowledge of therapeutic techniques, clinical assessment skills, and a strong foundation in musculoskeletal, neurological, and cardiovascular systems.

d) **Rationale:** Is to refine and apply advanced therapeutic techniques and strategies for complex conditions to optimize patient outcomes and rehabilitation effectiveness.

e) **Course Learning Objective:**

Course Objectives	
CLOBJ 1	Execute rehabilitation techniques used for neurological and cardio-pulmonary conditions.
CLOBJ 2	Implement physiotherapy management for obstetrics and gynaecological disorders, burns and plastic surgeries.
CLOBJ 3	Use various manual therapy techniques.
CLOBJ 4	Demonstrate Yogasanas and meditation techniques.

f) **Course learning Outcome**

CLO 1	Practice different rehabilitation techniques for neurological and cardio-pulmonary conditions on patients correctly.
CLO 2	Prepare physiotherapy management following obstetric and gynaecological disorders, burns and plastic surgeries and cancer on patients correctly.
CLO 3	To practice different manual therapy techniques as per check list on model accurately.
CLO 4	Practice Yogasanans and meditation on subjects correctly.

g) **Teaching & Examination Scheme:**

Teaching Scheme (Contact Hours)				**Examination Scheme**				
				Theory Hour		**Tutorial**		
Theory Hour	**Tutorial**	**Theory Hour**	**Tutorial**	**Marks EYE**	**Internal Marks**	**Marks EYE**	**Internal Marks**	**Theory Hour**
4	-	4	-	4	-	4	-	4

h) **Course content :**

Sr. No.	Content	Weightage	Teaching Hours	CLO
1	Manual therapy – different schools of thought	21.1%	95	CLO3
2	Principles of Neurological approaches	12.22%	55	CLO1
3	Facilitation and inhibition techniques	8.8%	40	CLO1
4	General Guidelines to be followed in Cardiac Rehabilitation, Pulmonary Rehabilitation, Burns Rehabilitation and Cancer Rehabilitation Protocol	11%	50	CLO2
5	CPR, monitoring systems and defibrillators and artificial respirators	8.8%	40	CLO1
6	Physiotherapy in common conditions of skin	8.8%	40	CLO2
7	Physiotherapy following Plastic Surgery.	8.8%	40	CLO2
8	Physiotherapy Following Obstetric and Gynaecological Disorders.	8.8%	40	CLO2
9	Yogasana - Concept of Yogic Practices, Kinds of Yogic Practices, Meaning & concept of Meditation.	11%	50	CLO4
Total		100%	450	

i) **Textbook and Reference books**

Textbooks

1) Neurorehabilitation– Farber, W.B. Saunders, Philadelphia 1982.
2) Stroke Rehabilitation: A Function-Based Approach– Glen Gillen, Elsevier, 6th Edition, 2019.
3) Motor Control: Translating Research into Clinical Practice– Anne Shumway-Cook, Lippincott Williams & Wilkins, 5th Edition, 2016.
4) Physical Therapy Management of Parkinson's disease – Turnbull Gerode, Churchill Livingstone, London 1994.
5) Proprioception and Neuromuscular Facilitation Techniques – Knot M. and Voss, Harper and Row, New York, 2nd Edition, 1972.

Reference Books

1) Adult Hemiplegia: Evaluation and Treatment– Bobath B., Heinmann, London 1988.
2) A Clinician's View of Neuromuscular Disorders– Brook M.H., Williams & Wilkins, Baltimore 1986.

3) Abnormal Postural Reflex Activity Caused by Brain Lesions– Bobath B., Aspen Publications, Rockville 1897.
4) Motor Relearning Program for Stroke – Carr, Aspen Publication, Rockville 1987.
5) The Neural Basis of Motor Control – Black I., Churchill Livingstone, London

a) **Course Name:** Physiotherapy in Musculoskeletal and Sports

b) **Course Code:** 07208201

c) **Prerequisite:** Include a thorough understanding of anatomy, biomechanics, kinesiology, and basic principles of injury prevention and rehabilitation

d) **Rationale:** Is to address and manage injuries and disorders related to the musculoskeletal system and enhance athletic performance through targeted rehabilitation strategies.

e) **Course Learning Objective:**

Course Objectives	
CLOBJ 1	Demonstrate a deep understanding of applied anatomy, pharmacology, biomechanics, kinesiology, and work physiology as they relate to the assessment and management of locomotor functions and musculoskeletal conditions.
CLOBJ 2	Able to perform comprehensive clinical assessments, interpret laboratory investigations, and formulate differential diagnoses, applying this knowledge to real-world scenarios in musculoskeletal and locomotor disorders.
CLOBJ 3	Students will effectively analyse functional impairments, including gait, posture, hand function, and perform kinetic and kinematic assessments, providing accurate evaluations for activities of daily living, sports injuries, and occupational work-related conditions.
CLOBJ 4	Design and implementing individualized physiotherapy and rehabilitation plans for managing locomotor impairments, sports injuries, and paediatric musculoskeletal conditions, with a particular focus on injury prevention, orthopaedic implants, and adaptive devices.
CLOBJ 5	Proficiently in delivering emergency care and managing sports injuries, including the use of manual therapies, exercise prescription, and doping management. They will stay updated on recent advances in sports physiotherapy and develop expertise in sports nutrition, pharmacology, and sports psychology.

f) **Course learning Outcome**

CLO 1	Describe the principles of anatomy, pharmacology, biomechanics, and kinesiology to assess locomotor functions, work-physiology, and musculoskeletal conditions in clinical practice.
CLO 2	Explain clinical assessments and laboratory investigations for differential diagnosis of musculoskeletal conditions, with a focus on pathophysiology, pathomechanics, and clinical symptomatology.
CLO 3	Analyse and assess functional impairments and disabilities using kinetic, kinematic, gait, posture, and hand function assessments, with specific attention to activities of daily living (ADL), sports injuries, and occupational work-related conditions.
CLO4	Explain physiotherapy management plans for locomotor disorders, sports injuries, and paediatric musculoskeletal conditions, including rehabilitation

	strategies for female-specific sports problems and the use of orthopaedic implants and adaptive devices.
CLO 5	Describe emergency care techniques and sports injury management through the use of manual therapies, injury prevention strategies, exercise prescription, and performance enhancement approaches, with a special emphasis on recent advances in musculoskeletal disorders, sports physiotherapy, and doping in athletes.

g) **Teaching & Examination Scheme:**

Teaching Scheme (Contact Hours)				Examination Scheme				
				Theory Hour		Tutorial		
Theory Hour	**Tutorial**	**Theory Hour**	**Tutorial**	**Marks EYE**	**Internal Marks**	**Marks EYE**	**Internal Marks**	**Theory Hour**
3	-	3	-	3	-	-	-	3

h) **Course content :**

Sr. No.	Content	Weightage	Teaching Hours	CLO
1	Applied anatomy, pharmacology with emphasis on biomechanics, kinesiology, work-physiology and locomotor functions:	3.75%	6	CLO1
2	Clinical assessment and rationale of laboratory investigations along with differential diagnosis	9.37%	15	CLO2
3	Clinical symptomatology, Patho-physiology and pathomechanics of Musculo-skeletal conditions	10%	16	CLO2
4	Functional assessment (Hand function, Gait, Posture, ADL, Occupational work).	3.75%	6	CLO3
5	Kinetic and kinematics analysis	3.75%	6	CLO3
6	Analysis and classification of sports and sports injuries	3.75%	6	CLO5
7	Assessment of locomotor impairments, disabilities and disability evaluation	4.37%	7	CLO3
8	Physiotherapy management of locomotor disorders, principles of medical and surgical aspects. Hand Rehabilitation	5%	8	CLO3
9	Principles of Injury Prevention. (Management of sports injuries, sports fitness. Mangement of pediatric musculo-skeletal disorders and pediatric sports injuries. Female Specific Problems.: Sports Amenorrhoea, Injury to female reproductive tract, Menstrual Synchrony, Sex determination, Exercise and pregnancy)	9.37%	15	CLO4
10	Orthopedic implants - designs, materials, indications, post-operative assessments and training	2.5%	4	CLO3

11	External aids, appliances, adaptive self-help devices, prescription, biomechanical compatibility, check out and training.	6.25%	10	CLO3
12	Manual therapies: Soft tissue manipulations and mobilizations, neural mobilizations, acupressure• Manual Therapy: Cyriax, Maitland, Butler, McKenzie, Kaltenborn, Mulligan,	6.25%	10	CLO5
13	Joint manipulation – Peripheral joints and vertebral joints.	5%	8	CLO5
14	Neurological complications of loco motor disorders, conservative electro diagnosis, electromyography and evoked potential studies. (Specific disease oriented)	3.75%	6	CLO4
15	Community Based Rehabilitation in musculo-skeletal disorders	3.12%	5	CLO4
16	Emergency care and athletic first aid Cardiopulmonary Resuscitation , shock management , internal and external bleeding , splinting , stretcher use	3.12%	5	CLO2
17	Exercise training & prescription, high altitude training special aids for performance enhancement, doping in athletes.	3.12%	5	CLO2
18	Recent Advances in Musculoskeletal Disorders and Sports Physiotherapy. Myofascial Release technique and Muscle Energy technique, Neuromuscular Taping Techniques	6.25%	10	CLO4
19	Sports Nutrition and Sports pharmacology, Sports psychology and retraining: Medico legal issues in sports.	7.5%	12	CLO5
Total		100%	160	

j) **Textbook and Reference books:**

Textbooks

1) Orthopaedic Physical Therapy– Donatteli, Churchill Livingstone, London 1994.
2) Sports and Physical Therapy – Bernhardt Donna, Churchill, Livingstone, London 1995.
3) Sport Injuries of the Shoulder – Souza Thomas A., Churchill, Livingstone, London 1994.
4) Mobilization of the Extremity Joints – Kaltenbore, Harper and Row, Philadelphia 1980.
5) Physical Therapy of the Low Back – Twomey, Churchill, Livingstone, London 1983.

Reference Books

1) Vertebral Manipulation – Matiland G.D, Boston, Butterworth & Co. Boston 1997.
2) Peripheral Manipulation– Matiland G.D, Boston, Butterworth & Co. Boston 1997.
3) Soft Tissue Pain and Disability– Cailliet Rene, Jaypee Brothers, New Delhi 1992.
4) Myofascial Pain and Dysfunction – Travell, Williams & Wilkins, Baltimore 1983.

a) **Course Name:** Physiotherapy in Neurological and psychosomatic disorders

b) **Course Code:** 07208201

c) **Prerequisite:** Include a foundational knowledge of neuroanatomy, neurophysiology, psychology, and basic principles of assessment and intervention in these areas.

d) **Rationale:** Is to understand and address the complex interactions between neurological conditions and psychological factors to provide comprehensive and effective treatment.

e) **Course Learning Objective:**

Course Objectives	
CLOBJ 1	Understand and explain an Anatomy, Physiology, Patho-physiology and Clinical symptomatology of various neurological and psycho-somatic disorders.
CLOBJ 2	Practice electro-diagnostic test, neurological and psycho-somatic assessment and scales for various neurological and psycho-somatic disorders.
CLOBJ 3	Differentiate various investigative and imagine techniques for various neurological and psycho-somatic disorders.
CLOBJ 4	Prepare and apply physiotherapy techniques for various neurological and psycho-somatic disorders.
CLOBJ 5	To plan physiotherapy management for patients with various neurological conditions in ICU.

f) **Course learning Outcome**

CLO 1	Describe Anatomy, Physiology of nervous system, Patho-physiology and Clinical symptomatology of various neurological and psycho-somatic disorders correctly.
CLO 2	Demonstrate and interpret various electro-diagnostic test, neurological and psycho-somatic assessment and evaluation tools for various neurological and psycho-somatic disorders on model as per check list accurately.
CLO 3	Interpret investigative and imagine techniques of patients with neurological conditions correctly.
CLO 4	Plan physiotherapy management for neurological and psycho-somatic disorders on patients correctly.
CLO5	Practice ICU assessment and management techniques on patients with neurological and psycho-somatic disorders correctly.

Teaching & Examination Scheme:

Teaching Scheme (Contact Hours)				Examination Scheme				
				Theory Hour		Tutorial		
Theory Hour	Tutorial	Theory Hour	Tutorial	Marks EYE	Internal Marks	Marks EYE	Internal Marks	Theory Hour
3	-	3	-	3	-	-	-	3

g) Course content:

Sr. No.	Content	Weightage	Teaching Hours	Total
1	Anatomy and Physiology of Nervous System.	2.6%	4	CLO1
2	Normal sequential behavioural and Physiological changes throughout the developmental arc.	2.6%	4	CLO1
3	Neurophysiology of balance, coordination and locomotion.	3.33%	5	CLO1
4	Clinical symptomatology and Pathophysiology of the neurological disorders	4%	6	CLO3
5	Principles of clinical neuro diagnosis and investigation.	4%	6	CLO3
6	Various Evaluation Scales and Assessment methods used in neurological rehabilitation.	3.33%	5	CLO3
7	1. Neurophysiology of Nerve conduction studies and Electromyography. 2. Instrumentation of Electrical stimulator, EMG, SFEMG, NCS (Nerve Conduction Studies). 3. Electrical study of reflexes (H- reflex, Axon reflex, F- response, Blink reflex, Jaw jerk, Tonic Vibration Reflex). 4. Repetitive nerve stimulation. 5. Evoked potentials (SSEP, MEP, BAERA, and VER). 6. Interpretation of neurophysiologic responses in Neuropathy, myopathy and neuromuscular disorders. 7. Evaluation of A.N.S dysfunction with reference to psycho-physiological testing. Biofeedback training. A) Neurophysiology of Nerve conduction studies and Electromyography. 8. Instrumentation of Electrical stimulator, EMG, SFEMG, NCS (Nerve Conduction Studies). 9. Electrical study of reflexes (H- reflex, Axon reflex, F- response, Blink reflex, Jaw jerk, Tonic Vibration Reflex).	6.6%	10	CLO2

	10. Repetitive nerve stimulation. 11. Evoked potentials (SSEP, MEP, BAERA, and VER). 12. Interpretation of neurophysiologic responses in Neuropathy, myopathy and neuromuscular disorders. Evaluation of A.N.S dysfunction with reference to psycho-physiological testing. Biofeedback training.			
8	Neuro-psychological functions. Perception testing and training.	2.6%	4	CLO3
9	Theories of motor control and theories of motor learning, its application in Physiotherapy.	2.6%	4	CLO3,CLO4
10	Common facilitatory and inhibitory techniques.	2.6%	4	CLO4,CLO5
11	Treatment approaches in neurological rehabilitation: Bobath, NDT, SI, Brunnstrom, Roods, PNF, Vojta, MRP, MFR	6.6%	10	CLO4,CLO5
12	Musculoskeletal treatment concept applied to neurology: Adverse neural tissue tension tests in upper limb and lower limb.	2.6%	4	CLO3,CLO4
13	Pathophysiology and Management of tonal abnormalities (Spasticity, Rigidity, Hypotonia and Dystonia).	2.6%	4	CLO4
14	Medical and Physiotherapy management following Cerebrovascular accidents.	2.6%	4	CLO4,CLO5
15	Traumatic Brain Injury. (ICU management, Coma stimulation, Restoration of motor control, Rehabilitation and community integration).	2.6%	4	CLO5
16	Traumatic spinal cord injuries. (ICU management, Coma stimulation, Restoration of motor control, Rehabilitation and community integration).	2.6%	4	CLO5
17	Physical therapy management of demyelinating, inflammatory, infectious, degenerative and metabolic diseases of the nervous system.	3.33%	5	CLO4,CLO5
18	Physical therapy management of Motor neuron diseases, neuromuscular junction disorders, Brain tumor, and Neuro cutaneous disorders.	3.33%	5	CLO4,CLO5
19	Diseases of spinal cord, peripheral nerves and cranial nerves.	2%	3	CLO4,CLO5
20	Physiotherapy management for neuromuscular disorders.	2.6%	4	CLO4,CLO5
21	Pediatric neurology (Cerebral Palsy, Developmental disorders, Neuropsychiatric disorders, Cerebral & Craniovertebral anomalies & metabolic disorders of nervous system).	2.6%	4	CLO4
22	Cognitive disorders and its rehabilitation.	2%	3	CLO4
23	Oromotor rehabilitation.	2%	3	CLO4
24	Vestibular disorders and its rehabilitation.	2%	3	CLO4
25	Bladder and Bowel dysfunction and its rehabilitation.	2%	2	CLO4

26	Assessment and management of various neurological gaits.	2%	3	CLO3,CLO4
27	Rehabilitation following disorders of Special Senses, Speech. Language and Perception.	1.33%	2	CLO4
28	Associated functional disturbances of higher functions and their testing and training.	2%	3	CLO3,CLO4
29	Application of Functional electrical stimulation and Bio-feedback in neurological rehabilitation.	1.33 %	2	CLO2
30	Learning skills, A.D.L and functional activities.	2.6%	4	CLO4
31	Aids and appliances in neurological disorders. Prescriptions, testing and training.	2%	3	CLO4
32	Basic knowledge of drugs used for neurological conditions.	2%	3	CLO1
33	Assessment of fitness and exercise prescription for special neurological population – Stroke, Paraplegia, TBI, Multiple Sclerosis, MND, Parkinsonism, & Ataxia.	2.6%	4	CLO3
34	Community based rehabilitation for neurological dysfunction. Disability evaluation and management.	2%	3	CLO4
35	Recent Advances in Neurological Rehabilitation.	6%	9	CLO4
Total		100%	150	

i) Textbook and Reference books :

Textbooks

1) Neuro-rehabilitation– Farber, W.B Saunders, Philadelphia 1982.
2) Physical Therapy Management of Parkinson's disease – Turnbull Gerode, Churchill, Livingstone, London 1994.
3) Stroke Rehabilitation– Laidler, Capman and Hall, London 1994.

Reference Books

1) A Clinician's View of Neuro Muscle Disorder– Brook M.H, Williams and Wilkins, Baltimore 1986.
2) Proprioception, Neuromuscular Facilitation Techniques– Knot M. and Voss, Harper and Row, New York 1972 (2nd Edition).
3) Abnormal Postural Reflex Activity Caused by Brain Lesions– Bobath B., Aspen Publications, Rockville 1897.
4) Adult Hemiplegia: Evaluation and Treatment– Bobath B., Heinmann, London 1988.
5) The Neural Basis of Motor Control– Black I., Churchill Livingstone, London 1987.

a) **Course Name:** Physiotherapy in Cardiorespiratory condition

b) **Course Code:** 07203201

c) **Prerequisite:** Condition include a solid understanding of cardiovascular and respiratory anatomy, physiology, and pathophysiology, as well as basic principles of assessment and intervention.

d) **Rationale:** Is to manage and rehabilitate patients with cardiovascular and respiratory conditions to improve function, quality of life, and overall health outcomes.

e) **Course Learning Objective:**

Course Objectives	
CLOBJ 1	Describe Anatomy, Physiology, Patho-physiology and Clinical symptomatology of cardio-respiratory and peripheral vascular disorders.
CLOBJ 2	Assess various cardio-respiratory and peripheral vascular disorders.
CLOBJ 3	Differentiate various investigative and imagine techniques for cardio-respiratory and peripheral vascular disorders.
CLOBJ 4	Prepare and implement physiotherapy protocol for cardio-respiratory and peripheral vascular disorders.
CLOBJ 5	To plan physiotherapy management for patients with cardio-respiratory conditions in ICU.

f) **Course learning Outcome**

CLO 1	Understand Anatomy, Physiology, Patho-physiology and Clinical symptomatology of cardio-respiratory and peripheral vascular disorders correctly.
CLO 2	Demonstrate and interpret assessment and evaluation scales for cardio-respiratory and peripheral vascular disorders on model as per check list accurately.
CLO 3	Interpret investigative and imagine techniques in patients with cardio-respiratory and peripheral vascular disorders accurately.
CLO 4	Plan physiotherapy management of patients with cardio-respiratory and peripheral vascular disorders on patients correctly.
CLO 5	Practice ICU assessment and management techniques on patients with cardio-respiratory correctly.

g) **Teaching & Examination Scheme:**

Teaching Scheme (Contact Hours)				**Examination Scheme**				
				Theory Hour		**Tutorial**		
Theory Hour	**Tutorial**	**Theory Hour**	**Tutorial**	**Marks EYE**	**Internal Marks**	**Marks EYE**	**Internal Marks**	**Theory Hour**
3	-	3	-	3	-	-	-	3

h) Course content :

Sr. No.	Content	Weightage	Teaching Hours	Total
1	Anatomy and physiology of cardio-vascular and respiratory systems.	3.3%	5	CLO1
2	Biomechanics of respiration.	2.7%	4	CLO1
3	Intrauterine development of cardiopulmonary system and difference between the adult and paediatric cardiopulmonary system.	2.0%	3	CLO1
4	Epidemiology, Symptomatology and pathophysiology of the cardio-respiratory disorders.	6.7%	10	CLO1
5	Respiratory muscle assessment & training.	2.7%	4	CLO4
6	Clinical assessment, rationale of laboratory investigations and differential diagnosis.	4.0%	6	CLO2
7	Evaluation of respiratory dysfunctions, lung function tests – volumetric, analysis of blood gases, X-ray chest.	2.7%	4	CLO2
8	Evaluation cardiac dysfunction. [ECG, exercise ECG testing, Holter monitoring etc., Echo-cardiogram, X-Ray, Imaging techniques etc.]	5.3%	8	CLO2
9	Evaluation of peripheral vascular disorders: clinical, blood flow studies, temperature plethysmography. A.N.S dysfunction testing.	2.7%	4	CLO3
10	Risk factors and preventive measures in cardio respiratory conditions.	5.3%	8	CLO1
11	Cardio-respiratory emergencies and management principles – medication, critical care, indications of surgical intervention, stabilization of vital functions defibrillation.	3.3%	5	CLO5
12	Intensive care unit (Concept and set-up, equipment for advanced methods of resuscitation, monitoring and patent management: artificial airways, ventilators, pulse –oxymetry etc.)	5.3%	8	CLO5
13	Oxygen therapy.	2%	3	CLO5
14	Cardio-pulmonary resuscitation.	2.7%	4	CLO5
15	Respiratory physiotherapy techniques (Techniques to improve lung volume; techniques to reduce the work of breathing and techniques to clear secretions.)	4%	6	CLO4
16	Physiotherapy management for common conditions in the ICU.	2.7%	4	CLO4
17	Poisoning, Drug overdose, and Drowning.	2.7%	4	CLO1

18	Physiotherapy management following general Medical & Surgical conditions.	4.0%	6	CLO4
19	Physiotherapy management of peripheral vascular disorders.	3.3%	5	CLO3
20	Exercise testing, planning and prescription: aerobic and anaerobic exercise training.	2.7%	4	CLO4
21	Respiratory Pharmacology.	2.7%	4	CLO1
22	Physiotherapy management in Obstructive and restrictive lung disorders.	2.0%	3	CLO4
23	Pulmonary Rehabilitation.	2.7%	4	CLO4
24	Physiotherapy management following congenital and acquired heart diseases.	2.0%	3	CLO4
25	Cardiac rehabilitation – Conservative and post-operative management	2.7%	4	CLO4
26	Physiotherapy modalities used for wound healing.	1.3%	2	CLO4
27	Exercise Prescription for health promotion and fitness for special populations- DM, Obesity, IHD, COPD, and HTN.	3.3%	5	CLO4
28	C.B.R in Cardio-vascular and respiratory conditions.	2.0%	3	CLO4
29	Recent advances in Cardio respiratory physiotherapy.	8.0%	12	CLO4
30	Role of Physiotherapy in mechanical ventilation & weaning from ventilator.	1.3%	2	CLO5
31	Respiratory care of neurological conditions in ICU spinal cord injury, diaphragm palsy, GBS, Myasthenia gravis, increased intracranial pressure.)	2.0%	3	CLO5
Total		100%		

i) Textbook and Reference books :

Textbooks

1) Cardiopulmonary Physiotherapy– Irwin, C.V., Mosby, St. Louis 1990.
2) Cardiac Rehabilitation – Amundsen L.R., Churchill, Livingstone, London 1988.
3) Pulmonary Rehabilitation: Guidelines to Success – Hoidkins, Butterworth, Boston 1984.

Reference Books

1) Clinical Application of Ventilatory Support– Kinby, Churchill, Livingstone, New York 1990.
2) Cardiopulmonary Symptoms in Physiotherapy – Cohen M., Living 1988.

a) **Course Name:** Physiotherapy in Community Based rehabilitation

b) **Course Code:** 07204201

c) **Prerequisite:** Include foundational knowledge in rehabilitation principles, public health, cultural competence, and community engagement strategies.

d) **Rationale:** is to provide accessible, culturally relevant, and holistic care that empowers individuals and communities to achieve optimal health and functional outcomes.

e) **Course Learning Objective:**

Course Objectives	
CLOBJ 1	Enhance the active participation of individuals with disabilities in community life, ensuring equal access to social, economic, and cultural activities.
CLOBJ 2	Provide education and resources to empower individuals with disabilities and their families, enabling informed decision-making.
CLOBJ 3	Facilitate access to healthcare, rehabilitation, education, and social services, ensuring they are available, accessible, and culturally appropriate.
CLOBJ 4	Raise awareness about the needs and rights of individuals with disabilities while promoting cooperation among stakeholders to coordinate effective rehabilitation services
CLOBJ 5	Establish mechanisms to evaluate the effectiveness of CBR programs and advocate for policies that support the rights and inclusion of individuals with disabilities

f) **Course learning Outcome**

CLO 1	To promote the active participation of individuals with disabilities in community life by ensuring equal access to social, economic, and cultural activities, through the identification of barriers, the development of inclusive practices, and the advocacy for supportive policies within the community.
CLO 2	Students will be able to design and implement educational programs and resource materials that empower individuals with disabilities and their families, facilitating informed decision-making and effective advocacy for their rights and needs within the community.

CLO 3	Students will be able to assess community resources and identify gaps in healthcare, rehabilitation, education, and social services, develop strategies to enhance the accessibility and cultural appropriateness of existing services, fostering inclusive environments that meet the diverse needs of individuals with disabilities.
CLO 4	Students will be able to articulate the needs and rights of individuals with disabilities, utilizing various communication strategies, identify and engage key stakeholders to promote collaboration in the development and implementation of effective rehabilitation services
CLO 5	Students will be able to develop and implement evaluation frameworks to assess the effectiveness of community-based rehabilitation (CBR) programs, using both qualitative and quantitative methods, formulate advocacy strategies that promote policies supporting the rights and inclusion of individuals with disabilities, utilizing evaluation findings to strengthen their case.

g) Teaching & Examination Scheme:

Teaching Scheme (Contact Hours)				Examination Scheme				
				Theory Hour		Tutorial		
Theory Hour	Tutorial	Theory Hour	Tutorial	Marks EYE	Internal Marks	Marks EYE	Internal Marks	Theory Hour
3	-	3	-	3	-	-	-	3

h) Course content :

Sr. No.	Content	Weightage	Teaching Hours	Total
1	Health and Illness; Levels of Healthcare & Fitness	3.3%	5	CLO1
2	Basic Concepts of rehabilitation and foundations of rehabilitation	3.3%	5	CLO1
3	Institute based rehabilitation services and multi-disciplinary approach	2.7%	4	CLO1
4	Methodology of CBR with reference to National Health Delivery system	3.3%	5	CLO1
5	Role of National Institutes, District Rehabilitation Centre and Primary Health Centre (with appropriate exposure)	2.7%	4	CLO1
6	Public awareness to the various disabilities. Communications. Message Generation and dissipation	2.7%	4	CLO2
7	Persons with disability; Act – 1995 and related Government infrastructure	3.3%	5	CLO2

8	Role of Government in CBR, inter-sectoral programs and co-ordination. Implementation of the Act	2.0%	3	CLO2
9	Role of Non-Government organizations in CBR	3.3%	5	CLO3
10	Scope of community physiotherapy	6.7%	10	CLO3
11	Disability detection and early intervention	5.3%	8	CLO3
12	Physical fitness, stress management through yoga and psychosomatic approaches.	2.7%	4	CLO3
13	Home exercise programs for various classifications of disabilities	4.0%	6	CLO3
14	Physiotherapist as a Master Trainer in CBR	3.3%	5	CLO5
15	Physiotherapy in maternal and child health care	5.3%	8	CLO2
16	Evaluation and theories of aging; Assessment of the elderly; Exercise prescription for the elderly; Psychosocial and safety issues in elderly.	6.7%	10	CLO3
17	Geriatric Rehabilitation	3.3%	5	CLO2
18	Holistic physiotherapy for the aged	2.0%	3	CLO2
19	Occupational Health, Occupational Hazards, Industrial Hygiene, Vulnerable workers group and labour law	2.0%	3	CLO3
20	Industrial therapy, Injury prevention and returning the worker to productivity	3.3%	5	CLO4
21	Ergonomics, Principles, Issues related to hand tools, posture, material handling and lifting.	4.0%	6	CLO3
22	Prevention of work related Injuries and redesigning workspace, Designing auditory and visual displays for workers; Occupational stress; Environmental Pollution – nose, vibration etc.	2.0%	3	CLO3
23	Physiotherapy role in industry – preventive, intervention, ergonomic and rehabilitative	4.0%	6	CLO4
24	Women's, Health: Women's reproductive health and health care; Exercise prescription in pre and post-natal stage	2.7%	4	CLO2
25	Diagnosis and treatment of musculoskeletal pain and dysfunction during pregnancy and post menopause	4.0%	6	CLO3
26	Treatment of Incontinence and Pelvic floor dysfunction; Special problems related to women.	1.3%	2	CLO2
27	. Recent Advances in Community Physiotherapy	10.7%	16	CLO5
Total				

i) Textbook and Reference books:

Textbooks

1) Paraplegia and Tetraplegia– Brombley, Churchill, Livingstone, Edinburgh 1991.
2) Motor Relearning Program for Stroke– Carr, Aspen Publication, Rockville 1987.
3) Physical Rehabilitation: Assessment and Treatment– O'Sullivan, F.A. Davis, Philadelphia 1994.

Reference Books

1) Industrial Therapy – Key G.L, Mosby, St. Louis 1987.
2) Hand Rehabilitation– Christine, Churchill, Livingstone, London 1995.
3) Manual of Nerve Conduction Velocity Techniques– De Lisa, Raven Press, New York 1982

a) **Course Name:** Physiotherapy in paediatrics
b) **Course Code:** 07207201
c) **Prerequisite:** Include a strong understanding of child development, paediatric anatomy and physiology, and basic principles of paediatric assessment and intervention.
d) **Rationale:** Is to address and manage developmental, physical, and functional challenges in children to enhance their growth, development, and quality of life.
e) **Course Learning Objective:**

Course Objectives	
CLOBJ 1	Students will be able to describe and analyze normal motor development across prenatal, infancy, and childhood stages, identifying key milestones and factors influencing development.
CLOBJ 2	Students will gain the skills to perform developmental assessments and screenings using various standardized scales, diagnosing developmental disorders effectively.
CLOBJ 3	Students will understand the genetic basis of pediatric disorders and the implications of embryology and genetic counseling in diagnosis and management.
CLOBJ 4	Students will be equipped to design and implement evidence-based interventions for pediatric patients, including management strategies for congenital and progressive locomotor disorders.
CLOBJ 5	Students will stay current with recent advances in paediatric physiotherapy, evaluating their implications for clinical practice and public health initiatives.

f) Course learning Outcome

CLO 1	Proficiently conduct developmental assessments and screenings, utilizing various scales to identify and diagnose paediatric disorders
CLO 2	Demonstrate the ability to integrate knowledge of motor development, genetic factors, and clinical symptomatology to make informed decisions in the management of paediatric patients.
CLO 3	Develop individualized exercise prescriptions and therapeutic interventions tailored to specific paediatric populations, considering conditions such as cerebral palsy, muscular dystrophy, and obesity.
CLO 4	Apply an integrated approach to the management of paediatric disorders, collaborating with multidisciplinary teams to enhance patient outcomes in various settings, including public schools and community-based rehabilitation.
CLO 5	Critically evaluate recent advances in paediatric physiotherapy, demonstrating the ability to apply new knowledge to clinical practice, and contribute to ongoing research in the field.

g) Teaching & Examination Scheme:

Teaching Scheme (Contact Hours)				Examination Scheme				
				Theory Hour		Tutorial		
Theory Hour	Tutorial	Theory Hour	Tutorial	Marks EYE	Internal Marks	Marks EYE	Internal Marks	Theory Hour
3	-	3	-	3	-	-	-	3

h) Course content :

Sr. No.	Content	Weightage	Teaching Hours	CLO
1	Normal motor development (development during Prenatal, Infancy, and child hood).	3.6%	5	CLO1
2	Reflex maturation.	2.9%	4	CLO1
3	Developmental assessment and diagnosis.	3.6%	5	CLO1
4	Developmental screening using various scales.	3.6%	5	CLO1
5	Genetic basis of paediatric disorders. Embryology & genetic counselling.	3.6%	5	CLO2
6	Cardio-respiratory assessment of neonate and infant and related paediatric disorder.	4.3%	6	CLO2
7	Principles of laboratory investigations for differential diagnosis.	5.7%	8	CLO2
8	Clinical symptomatology and patho-physiology of locomotor and cardiopulmonary disorders.	7.1%	10	CLO2
9	Growth and development of a child and its disorders.	4.3%	6	CLO2
10	Maturational, Pathophysiological and recovery process in the CNS.	4.3%	6	CLO2
11	Assessment of progressive locomotor disorders – Neuropathic and Myopathic.	8.6%	12	CLO3
12	Early intervention- high risk babies, Neonatal care and management.	4.3%	6	CLO3

13	Management of congenital locomotor disorders including the prosthetic and orthotic management.	5.7%	8	CLO3
14	Analysis of fitness and exercise prescription for special paediatric populations – cerebral palsy, down'ssyndrome, polio, muscular dystrophy, juvenile diabetes and obesity.	4.3%	6	CLO4
15	Management of neuro paediatric patients.	5.0%	7	CLO4
16	Disorders of perception and sensory integration.	3.6%	5	CLO4
17	Integrated approach in management of paediatric disorders.	7.1%	10	CLO5
18	Paediatric surgeries and its post-operative management.	4.3%	6	CLO5
19	Adaptive equipment for physically challenged children.	2.9%	4	CLO5
20	Physical therapy in public schools.	4.3%	6	CLO5
21	Sports and fitness in paediatrics.	4.3%	6	CLO5
22	CBR in paediatric conditions.	2.9%	4	CLO5

h) Textbooks and reference books:

Textbooks

1) Physical Therapy for Children – Campbell Suzann K, W.B. Saunders, Philadelphia 1994.
2) Physical Management of Multiple Handicapped– Freser, William & Wilkins, Baltimore.
3) Elements of Pediatric Physiotherapy– Eckerley P., Churchill Livingstone, Edinburgh 1993.

Reference Books

1) Child with Spina Bifida– Anderson E.M. and Spain B., Methun, London 1977.
2) Physical Therapy Assessment in Early Infancy – Wilhelm, Churchill, Livingstone, New York 1993.
3) The Growth Chart– WHO, Geneva, 1986.

Course Name: Physiotherapy in Women's Health

a) **Course Code:** 07209201
b) **Prerequisite:** Include a strong understanding of anatomy and physiology of female reproductive and pelvic floor and its muscles, antenatal and postnatal care, pelvic floor dysfunction management, menstrual health and breast health.
c) **Rationale:** Is based on addressing various physical and functional changes throughout a women's life cycle.

d) Course Learning Objective:

Course Objectives	
CLOBJ 1	Understand the key health issues affecting women across different life stages, including reproductive health and chronic conditions.
CLOBJ 2	Advocate for preventive measures, such as screenings and lifestyle modifications, that support women's health.
CLOBJ 3	Explore the impact of social, cultural, and economic factors on women's health and healthcare access.
CLOBJ 4	Enhance effective communication and counselling skills to empower women in health decision-making
CLOBJ 5	Assess the effectiveness of health programs and resources aimed at improving women's health and promote holistic approaches to care.

e) Course learning Outcome

CLO 1	Students will be able to analyze common reproductive health concerns, such as menstrual disorders, pregnancy complications, and menopause, and their impact on overall health, including adolescence, reproductive years, pregnancy, menopause, and older adulthood
CLO 2	Students will be able to identify and advocate for essential preventive measures, including screenings and lifestyle modifications, that promote women's health, emphasizing the importance of early detection and proactive health management throughout different life stages
CLO 3	Students will be able to analyze how social, cultural, and economic factors influence women's health outcomes and access to healthcare services, and propose strategies to address these disparities and improve health equity for women in diverse communities
CLO 4	Students will be able to apply effective counseling strategies to support women in navigating health-related decisions and addressing their concerns, provide accurate and relevant health information in a clear and supportive manner, empowering women to make informed choices about their health.
CLO 5	Students will be able to analyze and articulate the principles of holistic care, emphasizing the integration of physical, emotional, social, and spiritual health in women's health programs, assess the outcomes and impact of health programs aimed at improving women's health, propose evidence-based recommendations for enhancing existing health programs and resources

f) Teaching & Examination Scheme:

Teaching Scheme (Contact Hours)				Examination Scheme				
				Theory Hour		Tutorial		
Theory Hour	Tutorial	Theory Hour	Tutorial	Marks EYE	Internal Marks	Marks EYE	Internal Marks	Theory Hour
3	-	3	-	3	-	-	-	3

g) Course content:

Sr.	Topics	Weightage	Teaching Hours	CLO
1	**General concept & principles of Physiotherapy**	4.12%	**5**	CLO1
2	**Physiotherapy in Antenatal Phase**: Routine antenatal & Pre-conceptual care Gestational diabetes mellitus , Pre-eclampsia and high risk pregnancy ,Antenatal Exercises & Back care• Diastasis recti. ,Posture, balance, gait, Breathing pattern, Pain• Joint mobility, tightness, deformity, Abdominal muscle power	11.76%	**20**	CLO1
3	**Physiotherapy during Antenatal complications:** Assessment and Management of Common musculoskeletal, neurological, vascular,cardiothoracic problems during pregnancy Pelvic floor muscles, Bowel & bladder dysfunction-• Perineum Anal sphincter	11.76%	**20**	
4	**Physiotherapy in Labour:** Preparation-Coping skills: Relaxation, Breathing, Positions in labour, Massage in labour, Pain relief in labour, Alternative therapies in different stage of labour	5.88%	**10**	
5	**Physiotherapy in Postnatal Phase**: pelvic floor muscle exercises.; Postnatal care, Physiotherapy in postnatal complications,Physiotherapy in Normal Delivery and Caesarean Section• Postnatal home exercise; Therapeutic modalities	11.76%	**20**	
6	**Breastfeeding:** Ergonomics, Breast engorgement, Sore and cracked nipples	3.53%	**4**	
7	**Physiotherapy during Climacteric and Menopausal complications Post-Menopausal Osteoporosis, Falls in Elderly**; Posture• Pain; Muscle power	11.76%	**20**	
8	**Physiotherapy in Gynaecological Disorders:** Assessment and Management of Pelvic inflammatory disease, Endometriosis, Prolapse, Menstrual & Premenstrual disorders, Infertility, Polycystic ovarian syndrome, Vaginismus, Dyspareunia, Vulvodynia, Menstrual irregularities, Diseases of genital tract, Uterine displacement, Genital prolapse, Uterine malformation, Uterine fibroid, ovarian tumors, Breast carcinoma, Pelvic inflammatory diseases, reproductive tract malignancies, lymphedema assessment, Hysterectomy – vaginal and abdominal, Genital tract injuries-Perineal tear, Vesicovaginal fistula and recto-vaginal fistula, Pelvic organ prolapse, Sexually transmitted diseases - HIV, Syphilis, Gonorrhoea	11.76%	**20**	
9	**Physiotherapy for women with special needs**: Hypertension and Diabetes Mellitus, Oncologic conditions (Breast cancer, Uterine and Cervical cancer) and lymphedema Management	11.76%	**20**	

10	**Physiotherapy management in Bladder and Bowel incontinence** • Kegel exercises, Pelvic floor muscle rehabilitation, Functional retraining, Biofeedback, Interferential Therapy, Electrical stimulator, Manometry, Perineometer, Vaginal cones, Bladder retraining, Voiding training, Treatment of incontinence. • Bladder diary, PERFECT scheme, Stress test, Post void residual measurement, Mid-stream stop test, Pad test, Paper towel test, Perineal and vaginal assessment, Frequency/volume chart, Perineometer	11.76%	**20**	
11	**Recent advances in Obstetrics and Gynaecology Physiotherapy interventions**	4.12%	**6**	
Total				

h) Textbooks and reference books :

Textbooks

1) "Women's Health in Physiotherapy" by Helen O'Connell and Jenny Smith
2) "Physiotherapy in Women's Health" by Susan C. Bennett
3) "The Female Pelvic Floor: Function, Dysfunction and Management" by Margaret A. Sherburn et al.
4) "Pelvic Floor Re-education: Principles and Practice" by Kari Bo et al.
5) "Postnatal Care: A Multidisciplinary Approach" edited by Francesca Naish and Jenny Smith
6) "The Menopause Handbook" by Dr. David A. Edelman

Reference books:

1) "Women's Health and Physical Therapy" by Rebecca Stephenson
2) "Physical Therapy for Women's Health" by Kathe Hampton
3) "Obstetric and Gynecologic Physical Therapy" by Nancy C. T. Hernandez
4) "Women's Health: A Textbook for Physiotherapists" by Jane A. Simpson