FACULTY OF PHYSIOTHERAPY

BACHELORS OF PHYSIOTHERAPY

PROGRAM OUTCOMES (POs)

- **PO-1**: **Foundational Knowledge:** Develop a strong understanding of anatomy, physiology, biomechanics, and other basic medical sciences essential for physiotherapy practice.
- **PO-2: Clinical Assessment:** Acquire skills to evaluate and assess physical and functional impairments in patients.
- **PO-3: Therapeutic Techniques:** Learn to apply various physiotherapy techniques, including manual therapy, electrotherapy, and exercise therapy.
- **PO-4: Rehabilitation:** Understand and implement rehabilitation programs for patients with physical, neurological, and musculoskeletal conditions.
- **PO-5: Patient-Centered Care:** Develop the ability to design individualized treatment plans based on patient needs and conditions.
- **PO-6: Evidence-Based Practice:** Promote the use of evidence-based methods in physiotherapy interventions.
- **PO-7: Prevention and Wellness:** Educate patients on preventive measures and promote health and wellness.
- **PO-8: Interdisciplinary Collaboration:** Collaborate effectively with other healthcare professionals to ensure comprehensive patient care.
- **PO-9: Communication Skills:** Build strong communication and interpersonal skills for effective patient interaction and education.
- **PO-10: Research Skills:** Cultivate the ability to conduct research and contribute to advancements in the field of physiotherapy.
- **PO-11: Professional Ethics:** Understand and adhere to ethical principles and professional standards in physiotherapy practice.
- **PO-12: Lifelong Learning:** Foster a commitment to continuous learning and professional development to adapt to evolving healthcare needs.

PROGRAM EDUCATIONAL OBJECTIVES(PEOs)

- **PEO1:** The program will produce graduates who will be competent professionals in health care system and hospitals, academics, government, or entrepreneurs.
- **PEO2**: The graduates will be able to adapt to the fast-changing world of health care system needs and will become effective collaborators and through latest & innovative methodologies in physiotherapy, they will be able to address the social and health care challenges.
- **PEO3:** Graduates will be good professionals and in course of time will be able to lead the team to find solutions and improvements in their field of expertise or become entrepreneurs and professionals play the leading roles in health care.

PROGRAM SPECIFIC OUTCOMES(PSOs)

- **PSO1:** Students enrolled in BPT (Program) study and acquire complete knowledge of disciplinary and allied health sciences. The BPT (program) covers a wide range of basic and applied aspects of exercise therapy and electrotherapy courses as well as courses of Biomechanics.
- **PSO2:** This course enables the students to take up advanced studies like MPT and Ph. D. degree in many prestigious institutions all over India and abroad in Musculoskeletal science, Sports science, Neurology, Cardio-respiratory Sciences, Rehabilitation Sciences, Pediatrics Science and can find opportunities in following:
- **PSO3:** Teaching in colleges where any of these Subjects, acquaints the students with the applied aspects of this fascinating discipline as well.

BACHELORS OF PHYSIOTHERAPY

COURSE OUTCOME

BPHT-101	Human Anatomy- I

After completing the course, student would be able to-

1. Identify and describe anatomical aspects of muscle, bones & joints, & to understand and analyze movements of upper extremity.
2. Understand the anatomical basis of various clinical conditions e.g. Trauma, deformities, pertaining to upper limbs & spine.
3. Determining localize various surface landmarks.
4. Analyze various components and contents of the Thorax- with special emphasis to tracheo-bronchial tree, & cardio- pulmonary system.
5. Reviewing and demonstrate the movements of various joints.
6. Compose and describe the source and course of major arteries, veins and Lymphatic with special emphases to extremities and spine.

BPHT-102	Human Physiology- I

After completing the course, student would be able to-

1. Acquire the knowledge of the relative contribution of each organ system in maintenance of the interior [Homeostasis].
2. Describe physiological functions of various systems, with special reference to Musculo-skeletal, Cardio-respiratory, and alterations in function with aging.
3. Predict physiological responses & adaptation to environmental stresses- with special emphasis on physical activity & temperature.
4. Analyze the interaction between the nervous and endocrine systems in regulating physiological processes.
5. Acquire the skill of basic clinical examination, with special emphasis to Cardiovascular and Respiratory system, & Exercise tolerance / Ergography.
6. Develop and Propose a treatment plan based on physiological principles for a case study involving homeostatic imbalance.

BPHT-103	Computer

After completing the course, student would be able to-

1. Define core computer science concepts and develop good skills for better communication.
2. Effectively use Microsoft Office to communicate with patients while rendering care.
3. Utilize PowerPoint presentations and Picture management for effective teaching and learning.
4. Correlating uses of computer for basic statistics using excel.
5. Reviewing uses of Internet services for Research and Documentation.
6. Composing the functionality of software in health care system.

BPHT-104	Electro Therapy- I

After completing the course, student would be able to-

1. Recall physics principles and Laws of Electricity, Electro-magnetic spectrum, and ultra - sound.
2. Categorizing the effects of environmental & man-made electro- magnetic field at the cellular level & risk factors on prolonged exposure.
3. Determining the main electrical supply, Electric shock & precautions of Modality
4. Organizing in brief, certain common electrical components such as transistors, valves, capacitors, transformers etc and the simple instruments used to test /calib rate these components [such as potentiometer, oscilloscope etc] of the circuitry, and will be able to identify such components.
5. Acquire knowledge of various superficial thermal agents such as Paraffin wax bath, Cryotherapy, homemade remedies, etc; their physiological and therapeutic effects, Merits/ demerits; and also acquire the skill of application. And high frequency modalities, their basic physics, working, physiological and therapeutic effects
6. Adapting a comprehensive electrotherapy protocol for a specific clinical condition.

BPHT-201	Human Anatomy- II

After completing the course, student would be able to-

1. Identify and describe anatomical aspects of muscle, bones & joints, & to understand and analyze movements of lower extremity
2. Understand the anatomical basis of various clinical conditions e.g. trauma, deformities, pertaining to lower limbs & pelvis.
3. Judging various localize surface landmarks and demonstrate the movements of various joints of lower limb
4. Distinguish major arteries, veins and lymphatic with special emphases to extremities and pelvis.
5. Hypothesizing the source, course of major arterial, venous and lymphatic system, with special emphasis to lower extremities and pelvis.
6. Simulating the various parts of Central Nervous System (C.N.S) - Fore-brain, Midbrain, Hind-brain, Brain stem, courses of cranial nerves; functional components - course distribution- Anatomical bases of clinical lesions.

BPHT-202	Human Physiology- II

After completing the course, student would be able to-

1. Acquire the knowledge of the relative contribution of each organ system in maintenance of the milieu interior [Homeostasis].
2. Comparing physiological functions of various systems, with special reference to Neuro-motor, Female uro-genital function, and alterations in function with aging.
3. Implementing the skill of basic clinical examination, with special emphasis to Peripheral and Central Nervous system.
4. Analyze the interaction between the nervous and endocrine systems in regulating physiological processes.

5. Evaluate the efficacy of various therapeutic interventions for common physiological disorders.
6. Propose a treatment plan based on physiological principles for a case study involving homeostatic imbalance.

BPHT-203	Biochemistry

After completing the course, student would be able to-

1. Defining structures & functions of cell in brief.
2. Categorizing normal functions of different components of food, enzymes,
3. Comparing Basal Metabolic Rate & factors affecting the same [in brief], with special reference to obesity.
4. Judging nutritional aspects of carbohydrates, lipids, proteins & vitamins & their metabolism with special reference to obesity.
5. Evaluating enzymes; discuss in brief, factors affecting enzyme activity. and details biochemical aspects of muscle contraction.
6. Adapting knowledge in brief about the Clinical biochemistry, with special reference to Liver & renal function test, Blood study for Lipid profile, metabolism of fat, Carbo-hydrates, proteins, bone minerals, and electrolyte balance.

BPHT-204	Exercise Therapy- I

After completing the course, student would be able to-

1. Define the various terms used in mechanics, Biomechanics and Kinesiology.
2. Paraphrasing the basic principles of Physics related to mechanics of movement /motion & will be able to understand the application of such principles to the simple equipment designs, and their efficacy in therapeutic gymnasium and various starting positions used in therapeutics.
3. Preparing skill to use of various tools for the Therapeutic gymnasium.
4. Distinguishing passive movements in terms of various Anatomical planes and various starting and derived positions.
5. Assessing the skill of application of various massage manipulations and describe the Physiological effects, therapeutic use, merits /demerits of the same.
6. Adapting a skill of assessment for sensations, superficial and deep reflexes, pulse rate/ Blood pressure, Chest expansion/respiratory rate, and limb length/girth measurement on Models.

BPHT-205	English

After completing the course, student would be able to-

1. Outlining good vocabulary skills for better communication
2. Understanding and effectively communicates with teachers, patients and public
3. Implementing correct grammar and vocabulary to write a formal letter.
4. Distinguish between the themes and tones of two different poems.
5. Critique a piece of writing for its effectiveness in conveying ideas.
6. Compose an original short story or essay on a given topic.

BPHT-301	Pathology & Microbiology

After completing the course, student would be able to-

1. Identifying concepts of cell injury & changes produced thereby in different tissues & organs - capacity of the body in healing process. And have sound knowledge of the agents responsible for causing human infections, pertaining to C.N.S., C.V.S. Musculoskeletal & Respiratory system.
2. Understand the Etiology – pathogenesis, the pathological effects & the clinical – pathological correlation of common infections &non-infectious diseases.
3. Executing the concepts of Neoplasia with reference to the Etiology, gross & microscopic features, diagnosis & prognosis in different tissues & organs of the body.
4. Correlate normal & altered morphology of different organ systems in different diseases needed for understanding disease process & their clinical significance (with special emphasis to Neuro- Musculo-skeletal & cardio-respiratory systems).
5. Hypothesizing the common Immunological disorders & their resultant effects on the human body.
6. Composing in brief, about the Hematological diseases & investigations necessary to diagnose them & determine their prognosis.

BPHT-302	Exercise Therapy-II

After completing the course, student would be able to-

1. Recall fundamental principles of exercise therapy, including types of exercises and their therapeutic applications.
2. Explain the physiological effects of different forms of exercise on the musculoskeletal and cardiovascular systems.
3. Demonstrate basic therapeutic exercises, such as range of motion, stretching, and strengthening techniques.
4. Differentiate between exercises used for rehabilitation, conditioning, and injury prevention.
5. Assess a patient's physical condition and select appropriate therapeutic exercises for recovery.
6. Develop an individualized exercise therapy program tailored to a patient’s specific needs and goals.

BPHT-303	Psychology

After completing the course, student would be able to-

1. Recall key psychological concepts, theories, and terminology, such as cognitive processes and behavior patterns.
2. Explain major psychological theories, such as those of learning, motivation, and personality development.
3. Apply psychological principles to real-world scenarios, such as stress management or conflict resolution.
4. Differentiate between various psychological disorders and their underlying causes based on case studies.
5. Assess the validity and reliability of psychological tests and interventions.

6. Develop a psychological intervention or experimental study to address a specific behavioral or mental health issue.

BPHT-304	Biomechanics

After completing the course, student would be able to-

1. Recall fundamental concepts of biomechanics, such as forces, motion, and mechanical properties of tissues.
2. To acquire the knowledge of axis and planes and review the anatomy of each joint.
3. Analyze movements using biomechanical tools and techniques, such as gait analysis or force measurements.
4. To acquire the knowledge of forces acting at various joints.
5. Assess the effectiveness of interventions, such as orthotics or rehabilitation techniques, on movement efficiency.
6. Design a biomechanical solution, such as a prosthetic device or exercise program, to improve functional performance.

BPHT-305	First Aid & Emergency care

At the end of the course, the candidate will-

1. Recall basic principles of first aid, emergency care protocols, and the ABCs (Airway, Breathing, Circulation) of life support.
2. Explain the steps to manage common emergencies, such as bleeding, fractures, burns, and cardiac arrest.
3. Demonstrate practical skills in CPR, wound dressing, splinting, and using an automated external defibrillator (AED).
4. Identify the severity of injuries or conditions and prioritize actions based on the situation.
5. Assess the effectiveness of first aid techniques and modify care based on the patient's response.
6. Develop an emergency response plan for a specific setting, such as a workplace or public event.

BPHT-401	Pharmacology

After completing the course, student would be able to-

1. Recall key pharmacological terms, drug classifications, and mechanisms of action.
2. Explain the pharmacokinetics and pharmacodynamics of drugs, including absorption, distribution, metabolism, and excretion.
3. Demonstrate the proper administration of medications and adjust dosages based on specific patient needs.
4. Differentiate between the therapeutic and adverse effects of various drug classes.
5. Assess the safety and efficacy of drug therapies, considering patient history and potential drug interactions.
6. Design a pharmacological treatment plan for a patient based on their medical condition and pharmacological principles

BPHT-402	Electro Therapy- II

After completing the course, student would be able to-

1. Describe the Production &Physiological effects, Therapeutic uses, merits, demerits indication &contraindications of various low/medium Frequency Currents modes.
2. Describe the Physiological effects &therapeutic uses of various therapeutic ions& Topical Pharmaco-therapeutic agents to be used for the application of Iontophoresis& sono/phonophoresis
3. Acquire the skill of Application of the Electro therapy modes like UVR and LASER on models, for the purpose of Assessment &Treatment.
4. Acquire an ability to select the appropriate mode as per the tissue specific & area specific application.
5. Assess the effectiveness of an electrotherapy treatment plan based on patient outcomes.
6. Design a comprehensive electrotherapy protocol for a specific clinical condition.

BPHT-403	Gen. Medicine (including Gerontology& Dermatology)

After completing the course, student would be able to-

1. Recall key terms and concepts related to general medicine, gerontology, and dermatology, such as common diseases and skin conditions.
2. Explain the pathophysiology, symptoms, and treatments for various medical conditions in adults and the elderly, including common dermatological disorders.
3. Perform basic diagnostic procedures and interpret results for common medical conditions, including skin examinations and geriatric assessments.
4. Differentiate between various diseases and conditions based on clinical presentations, lab results, and patient history.
5. Assess treatment plans for patients, considering age-specific factors, comorbidities, and quality of life in both general medicine and dermatology.
6. Develop a comprehensive treatment plan for a geriatric or dermatological patient, incorporating medical history, diagnostic findings, and current guidelines.

BPHT-404	Community Medicine, Sociology & Environmental Sciences

After completing the course, student would be able to-

1. Recall key concept s and terms in community medicine, sociology, and environmental sciences, such as health determinants, social structures, and ecological factors.
2. Explain the relationship between social, environmental, and health factors, and their impact on community health.
3. Implement public health strategies for disease prevention, health promotion, and environmental sustainability in a community setting.
4. Differentiate between the social determinants of health and analyze how environmental factors influence community well-being.
5. Assess community health programs and policies, considering social, cultural, and environmental impacts on health outcomes.
6. Design an intervention or program that addresses a specific community health issue, integrating social, environmental, and medical perspectives

BPHT-501	Orthopedics and Traumatology

After completing the course, student would be able to-

1. Recall key orthopedic terms, anatomical structures, and common fractures or musculoskeletal disorders.
2. Explain the pathophysiology and clinical manifestations of common orthopedic conditions, such as fractures, dislocations, and arthritis.
3. Demonstrate appropriate techniques for diagnosing orthopedic conditions, including physical examination, imaging, and assessment of injuries.
4. Analyze clinical scenarios to differentiate between types of fractures, musculoskeletal injuries, and their management options.
5. Assess treatment plans for orthopedic and traumatic injuries, considering patient outcomes, surgical and non-surgical interventions.
6. Develop comprehensive rehabilitation programs for patients with orthopedic conditions or trauma, focusing on recovery, mobility, and prevention of further injury

BPHT-502	Neurology (Pediatrics, Psychiatry)

After completing the course, student would be able to-

1. Recall key neurological concepts, common pediatric neurological disorders, and psychiatric conditions.
2. Explain the pathophysiology of neurological and psychiatric disorders in children and adults, including developmental and behavioral disorders.
3. Demonstrate appropriate diagnostic techniques and clinical assessments for pediatric neurological conditions and psychiatric illnesses.
4. Analyze case studies to identify neurological or psychiatric conditions based on clinical features, lab results, and patient history.
5. Assess the effectiveness of treatment plans for pediatric neurological or psychiatric disorders, adjusting based on patient progress and response.
6. Develop a comprehensive care plan for pediatric patients with neurological conditions or psychiatric disorders, integrating medical, psychological, and therapeutic approaches.

BPHT-503	Physical and Functional Diagnostics skills

After completing the course, student would be able to-

1. Recall key concepts, terminology, and techniques used in physical and functional diagnostics, such as musculoskeletal assessments and functional movement screenings.
2. Explain the principles behind physical examination and diagnostic testing in assessing patient function and movement disorders.
3. Demonstrate the correct application of diagnostic tests, including joint mobility, strength assessments, and functional capacity evaluations.
4. Analyze patient data and diagnostic results to identify movement dysfunctions, impairments, or limitations.

5. Evaluate the results of physical and functional diagnostic tests to determine the severity of a condition and its impact on function.
6. Develop individualized rehabilitation or treatment plans based on physical and functional diagnostic findings to optimize patient recovery.

BPHT-504	Obstetrics and Gynecology

After completing the course, student would be able to-

1. Recall key terms, conditions, and procedures related to obstetrics and gynecology, such as pregnancy stages, common gynecological disorders, and diagnostic tests.
2. Explain the physiological processes of pregnancy, labor, and menstruation, as well as the pathophysiology of common gynecological conditions.
3. Demonstrate appropriate clinical skills for assessing pregnant women, conducting pelvic exams, and performing common gynecological procedures.
4. Analyze clinical cases to diagnose obstetric and gynecological conditions based on symptoms, lab results, and imaging findings.
5. Assess the effectiveness of treatment options for obstetric and gynecological conditions, considering patient health, pregnancy status, and treatment outcomes.
6. Develop individualized management plans for patients with obstetric or gynecological concerns, integrating medical, surgical, and preventive care strategies. cific gynecological condition.

BPHT-601	General Surgery (including Plastic Surgery)

After completing the course, student would be able to-

1. Recall key surgical procedures, techniques, and common conditions treated in general and plastic surgery.
2. Explain the pathophysiology, indications, and risks associated with various general and plastic surgical procedures.
3. Demonstrate basic surgical techniques and assist in the preparation and management of surgical patients.
4. Analyze clinical scenarios to determine appropriate surgical interventions, considering patient history, conditions, and surgical risks.
5. Assess surgical outcomes and complications, adjusting treatment plans based on patient progress and recovery.
6. Develop comprehensive surgical treatment plans, incorporating both functional and aesthetic considerations, for patients requiring general or plastic surgery.

BPHT-602	Research Methodology and Biostatistics

After completing the course, student would be able to-

1.Gain knowledge of the basic concepts of Biostatistics & its need for professional Practice& research.

2.Explain the basic principles of research design, data collection, sampling methods, and statistical analysis.

3. Apply appropriate statistical techniques, such as hypothesis testing and regression analysis, to analyze research data.

4.Analyze research studies to evaluate their methodology, statistical validity, and reliability of results.

5.Assess the strengths and weaknesses of different research designs and statistical methods for various types of studies.

6.Design a research study, including data collection methods and statistical analysis plans, to address a specific scientific question or health issue.

BPHT-603	Physiotherapeutic Skills

After completing the course, student would be able to-

1. Recall fundamental physiotherapeutic techniques, such as manual therapy, exercise prescription, and modalities used in treatment.
2. Explain the therapeutic principles and rationale behind different physiotherapeutic interventions for various conditions.
3. Demonstrate the correct application of physiotherapeutic techniques, including exercise therapy, electrotherapy, and manual mobilization.
4. Analyze patient conditions and clinical presentations to determine appropriate physiotherapeutic treatments based on individual needs.
5. Assess the effectiveness of physiotherapeutic interventions, making adjustments to treatment plans based on patient progress and response.
6. Develop individualized treatment plans incorporating various physiotherapeutic techniques to optimize patient recovery and function.

BPHT-604	Bio-engineering & Professional Ethics

After completing the course, student would be able to-

1. Recall key concepts in bio-engineering, including biomedical devices, technologies, and professional ethics principles.
2. Explain the role of bio-engineering in healthcare, along with ethical considerations in the development and application of biomedical technologies.
3. Apply bio-engineering principles to design or assess biomedical devices, ensuring they meet safety and ethical standards.
4. Analyze ethical dilemmas in bio-engineering, considering the impact of technology on patients, healthcare systems, and society.
5. Evaluate bio-engineering projects and innovations, assessing their ethical implications, societal impact, and adherence to professional standards.
6. Develop solutions that integrate bio-engineering innovations with professional ethics to address healthcare challenges responsibly.

BPHT-701	Physiotherapy in Musculoskeletal sciences

After completing the course, student would be able to-

1. Recall key musculoskeletal disorders, anatomical structures, and physiotherapy techniques used in musculoskeletal rehabilitation.
2. Explain the pathophysiology and clinical manifestations of musculoskeletal conditions such as arthritis, fractures, and soft tissue injuries.
3. Demonstrate appropriate physiotherapy interventions for musculoskeletal conditions, including exercise therapy, manual therapy, and modalities.
4. Analyze patient assessments, diagnostic results, and clinical symptoms to design individualized musculoskeletal rehabilitation programs
5. Evaluate the effectiveness of physiotherapy treatments for musculoskeletal conditions, modifying interventions based on patient progress.
6. Develop comprehensive physiotherapy treatment plans for musculoskeletal conditions, integrating evidence-based techniques to optimize patient recovery.

BPHT-702	Physiotherapy in Community Based Rehabilitation

After completing the course, student would be able to-

1. Describe:
   - The general concepts about health, disease and physical fitness.
   - Physiology of aging process and its influence on physical fitness.
   - National policies for the rehabilitation of disabled – role of PT.
   - The strategies to access prevalence and incidence of various conditions responsible for increasing morbidity in the specific community – role of PT in improving morbidity, expected clinical and functional recovery, reasons for non-compliance in specific community environment solution for the same.
   - The evaluation of disability and planning for prevention and rehabilitation.
   - Community Based Rehabilitation in urban and rural set up.
2. Explain the principles of community-based rehabilitation, focusing on accessibility, inclusivity, and patient-centered care in the community context.
3. Apply physiotherapy techniques and interventions in a community setting to address common physical disabilities and promote functional independence.
4. Analyze the needs of individuals and communities to design appropriate, culturally sensitive rehabilitation programs that address local health challenges.
5. Evaluate the outcomes of community-based rehabilitation programs, considering factors such as patient satisfaction, functional improvement, and community engagement.
6. Develop and implement a community-based rehabilitation plan that incorporates local resources, patient needs, and sustainability to improve overall health outcomes.

BPHT-703A	Choice based (Physiotherapy in Pediatrics)

After completing the course, student would be able to-

1. Recall key pediatric physiotherapy concepts, developmental milestones, and common pediatric conditions (e.g., cerebral palsy, torticollis).
2. Explain the growth and developmental stages in children and how physiotherapy interventions support normal development.
3. Demonstrate physiotherapy techniques for pediatric conditions, such as developmental delay, posture correction, and motor skills improvement.
4. Assess a child's motor development and identify deviations from typical patterns to design age-appropriate interventions.
5. Evaluate the effectiveness of pediatric physiotherapy programs based on developmental outcomes and adjust treatments accordingly.
6. Develop individualized treatment plans and play-based therapy strategies for children with specific physical needs or disabilities.

BPHT-703B	Choice based (Physiotherapy in Manual)

After completing the course, student would be able to-

1. Recall key manual therapy techniques, such as joint mobilizations, soft tissue manipulation, and myofascial release.
2. Explain the underlying principles and therapeutic effects of manual therapy techniques on musculoskeletal conditions.
3. Demonstrate appropriate manual therapy techniques to address pain, mobility restrictions, and musculoskeletal dysfunctions.
4. Assess a patient's condition to determine which manual therapy techniques are most appropriate based on clinical evaluation.
5. Evaluate the effectiveness of manual therapy interventions and adjust treatment plans based on patient response and progress.
6. Design a comprehensive manual therapy treatment plan, integrating various techniques to address specific musculoskeletal issues.
7.

BPHT-801	Physiotherapy in Neurosciences

After completing the course, student would be able to-

1. Recall key neurological concepts and conditions relevant to physiotherapy, such as stroke, Parkinson's disease, and spinal cord injuries.
2. Explain the pathophysiology of neurological disorders and how they affect movement and function.
3. Demonstrate appropriate physiotherapy interventions, such as motor relearning techniques or gait training, for patients with neurological conditions.
4. Assess the impact of different neurological disorders on motor function and design an individualized treatment plan.
5. Evaluate the effectiveness of physiotherapy interventions based on patient outcomes and adjust treatment strategies as needed.
6. Develop a comprehensive rehabilitation program that incorporates evidence-based physiotherapy practices for neurological recovery.

BPHT-802	Physiotherapy in Cardiorespiratory and General Conditions

After completing the course, student would be able to-

1. Identify, discuss & analyze cardio-vascular & pulmonary dysfunction, based on Patho-physiological principles, & arrive at the appropriate functional diagnosis,
2. Explain the pathophysiology of cardiorespiratory disorders and their impact on functional movement and respiration.
3. Demonstrate appropriate physiotherapy techniques for managing respiratory function and improving cardiovascular endurance.
4. Assess the severity of cardiorespiratory conditions through clinical signs and diagnostic results, and design suitable rehabilitation strategies.
5. Evaluate the effectiveness of cardiorespiratory physiotherapy interventions, modifying treatment plans based on patient progress and needs.
6. Develop individualized rehabilitation programs that incorporate exercises and techniques to improve cardiorespiratory function in patients with general or specific conditions.

BPHT-803A	Choice based course (Physiotherapy in Sports)

After completing the course, student would be able to-

1. Recall key sports-related injuries, rehabilitation principles, and physiotherapy techniques used in sports medicine.
2. Explain the mechanisms of sports injuries, their impact on performance, and the role of physiotherapy in recovery.
3. Demonstrate appropriate physiotherapy interventions for injury prevention, recovery, and performance enhancement in athletes.
4. Assess the severity and type of sports injury through clinical evaluation and diagnostic tests to design effective treatment plans.
5. Evaluate the effectiveness of rehabilitation protocols and modify treatment strategies based on the athlete's recovery progress.
6. Develop personalized rehabilitation programs and conditioning strategies to optimize athletic performance and prevent injury recurrence.
7.

BPHT-803B	Choice based course (Physiotherapy in Hand Conditions)

After completing the course, student would be able to-

1. Recall key anatomical structures, common hand conditions, and physiotherapy techniques used in hand rehabilitation.
2. Explain the pathophysiology and functional impact of common hand conditions, such as fractures, tendon injuries, and carpal tunnel syndrome.
3. Demonstrate manual therapy techniques, splinting, and therapeutic exercises to improve hand function and reduce pain in patients.
4. Assess a patient’s hand condition through clinical evaluation and design a targeted treatment plan to address their specific needs.
5. Evaluate the outcomes of hand rehabilitation interventions and adjust treatment plans based on patient progress.
6. Develop individualized rehabilitation programs, including exercise regimens and ergonomic strategies, to restore optimal hand function.

MASTERS OF PHYSIOTHERAPY

PROGRAM OUTCOMES (POS)

1. **Demonstrate professional autonomy** in delivering specialized physiotherapy services across diverse health care and community settings.

   Speciality Specific – Orthopaedics, Neurology, Cardio-respiratory, Sports, Paediatrics, and Rehabilitation

2. **Apply clinical expertise** in specialty physiotherapy for prevention, diagnosis, and management of physical dysfunction

   Speciality Specific – Orthopaedics, Neurology, Cardio-respiratory, Sports, Paediatrics, and Rehabilitation

3. **Coordinate interdisciplinary and multidisciplinary care** through effective referrals and collaborative planning.

4. **Ensure continuity of care** through structured patient follow-up and rehabilitation outcome monitoring.

5. **Develop leadership qualities** for managing physiotherapy departments within hospitals and academic institutions.

6. **Administer physiotherapy services** efficiently, ensuring evidence-based practice and ethical standards.

7. **Plan and manage academic programs** in physiotherapy, integrating teaching, research, and clinical practice.

8. **Implement quality assurance and improvement strategies** in physiotherapy education and service delivery.

9. **Promote community health** by organizing and participating in outreach and awareness programs.

10. **Engage in lifelong learning** to stay updated with advances in physiotherapy and healthcare systems.

PROGRAM EDUCATIONAL OBJECTIVES (PEOS)

1. **Pursue advanced academic qualifications** such as doctoral programs and fellowships in physiotherapy and allied health sciences.
2. **Lead interdisciplinary teams** and serve as expert practitioners within healthcare systems and rehabilitation settings.
3. **Engage in specialized research** and contribute to scientific knowledge in physiotherapy through academic and clinical institutions.
4. **Develop entrepreneurial ventures** in physiotherapy services, wellness centers, or technology-based rehab solutions.
5. **Promote innovation and evidence-based practice** in specialty physiotherapy through leadership in clinical and research environments.
6. **Contribute to community and global health** by integrating physiotherapy expertise with sustainable healthcare initiatives and professional development.

PROGRAM SPECIFIC OUTCOMES (PSOS)

1. **Conduct independent and collaborative research** integrating interdisciplinary, multidisciplinary, and transdisciplinary approaches in physiotherapy.
2. **Apply evidence-based physiotherapy interventions** using advanced clinical and critical reasoning skills for patient-centered care.
3. **Communicate effectively** with healthcare professionals, patients, and caregivers using appropriate verbal, written, and digital platforms.
4. **Utilize contemporary trends and technologies** to improve physiotherapy practices and patient outcomes in specialized settings.

5. **Evaluate and document clinical outcomes** through systematic review and implementation of innovative therapeutic strategies.

6. **Demonstrate professionalism and ethical responsibility** in research, practice, and clinical documentation within advanced physiotherapy domains.

Masters of Physiotherapy

Course outcome

MC-101	Basic Medical Sciences

Course Objectives: To Refurnish the Basic medical science Knowledge and skill of master's of Physiotherapy students with a focus on anatomy on pharmacology

Course Outcomes:

After completing the course, student would be able to-

1. Remember fundamental concepts of anatomy, physiology, and biochemistry, such as the structure and function of organs.
2. Understand physiological processes, such as blood circulation or neural communication, and their relevance to health.
3. Apply basic medical science principles to solve clinical problems, like interpreting lab results.
4. Differentiate between normal and abnormal physiological or biochemical states in diseases.
5. Critically assess medical case studies and research findings based on foundational scientific principles.

Integrate knowledge from various medical sciences to design treatment strategies or hypotheses.

MC-102	Biomechanics

Course Objectives: To Refurnish the Biomechanics and movement science skill and Knowledge of master's of Physiotherapy students.

Course Outcomes:

After completing the course, student would be able to-

1. Remembering basic principles of biomechanics, including concepts like force, torque, and kinematics.
2. Explain the relationship between mechanical principles and human movement, such as gait analysis or joint mechanics.
3. Apply biomechanical concepts to analyze and optimize human motion or assess orthopedic conditions.
4. Examine the forces acting on the body during specific activities, identifying potential sources of injury or dysfunction.
5. Critically evaluate biomechanical models, experimental data, and interventions to ensure their effectiveness and validity.
6. Develop innovative solutions or devices, such as orthotics or ergonomic tools, to improve movement efficiency and safety.

MC-103	Research Methodology and Biostatistics

Course Objectives: To enable and upgrade the knowledge of Research Methodology and Biostatistics in field of research for master's students.

Course Outcomes:

After completing the course, student would be able to-

1. Recall key concepts in research methodology, such as hypothesis formation, study designs, and basic statistical terms.
2. Explain the importance of research ethics, data collection techniques, and the role of biostatistics in interpreting research findings.
3. Apply appropriate statistical tests to analyze data and implement research methods to design a study or experiment.
4. Differentiate between various types of research designs, sampling techniques, and statistical methods based on their suitability for specific research questions.
5. Critically assess research articles, data presentations, and statistical results for validity, reliability, and applicability.
6. Develop a research proposal, including objectives, methodology, and statistical analysis plans, to address a specific scientific problem.

MM-104	Assessment And Evaluation in Musculoskeletal Physiotherapy

Course Objectives: To enable and upgrade the knowledge of master's students in Musculoskeletal Physiotherapy and understand the purpose and importance of assessment and evaluation in musculoskeletal physiotherapy.

Course Outcomes:

After completing the course, student would be able to-

1. Recall key anatomical structures, musculoskeletal tests, and physiological principles related to musculoskeletal conditions.
2. Explain the purpose and principles of different musculoskeletal assessment techniques, such as goniometry and manual muscle testing.
3. Perform musculoskeletal assessments, including range of motion (ROM) testing, palpation, and functional movement assessments.
4. Interpret clinical findings from musculoskeletal assessments to identify potential dysfunctions or pathologies.
5. Assess the effectiveness of treatment interventions based on evaluation results and clinical progress.
6. Develop individualized assessment protocols and rehabilitation plans based on patient-specific musculoskeletal conditions and needs.

MN-104	Assessment And Evaluation in Neuro Physiotherapy

Course Objectives: To enable and upgrade the knowledge of master's students in Neuro-physiotherapy and understand the purpose and importance of assessment and evaluation in neuro physiotherapy.

Course Outcomes:

After completing the course, student would be able to-

1. Recall the key neurological structures, systems, and pathologies relevant to neuro physiotherapy assessment and evaluation.
2. Explain the principles and methods of neurological assessments, including the evaluation of motor function, sensory perception, and reflexes.
3. Use various neuro physiotherapy assessment tools, such as the Modified Ashworth Scale, Berg Balance Scale, and sensory testing techniques, in clinical practice.
4. Analyze neurological assessment data to differentiate between different types of neurological conditions (e.g., stroke, Parkinson's disease, spinal cord injury).
5. Evaluate the effectiveness of neuro rehabilitation interventions based on ongoing assessment results and clinical progress.
6. Develop comprehensive and individualized assessment plans for patients with neurological conditions, integrating clinical findings and rehabilitation goals.

MS-104	Sports Traumatology – I

Course Objectives: To enable and upgrade the knowledge of master's students to understand the principles and concepts of Sports Traumatology.

Course Outcomes:

After completing the course, student would be able to-

1. Recall the basic concepts, terminology, and types of sports-related injuries, such as strains, sprains, fractures, and dislocations.
2. Explain the pathophysiology and mechanisms of common sports injuries, including the role of tissues like ligaments, muscles, tendons, and bones in trauma.
3. Apply assessment techniques (e.g., special tests, range of motion, palpation) to evaluate sports injuries and identify appropriate treatment plans.
4. Analyze injury patterns based on sport-specific movements and identify potential risk factors contributing to acute or chronic injuries.
5. Critically evaluate treatment options for sports injuries, including conservative management, physical therapy interventions, or surgical referrals.
6. Develop comprehensive rehabilitation programs for athletes based on injury type, severity, and the goal of returning to sport safely and effectively.

MCP-104	Assessment And Evaluation in Cardiopulmonary Physiotherapy

Course Objectives: To enable and upgrade the knowledge of master's students in Cardiopulmonary Physiotherapy and understand the purpose and importance of assessment and evaluation in Cardiopulmonary physiotherapy.

Course Outcomes:

After completing the course, student would be able to-

1. Recall key assessment tools and normal cardiopulmonary values (e.g., PFT, ABG, heart rate).
2. Explain the rationale and techniques for assessing cardiopulmonary systems, such as auscultation and exercise tolerance tests.
3. Perform clinical evaluations like chest expansion, spirometry, and functional capacity testing.
4. Differentiate findings between normal and pathological conditions (e.g., obstructive vs. restrictive lung disease).
5. Testing assessment data to assess the severity of dysfunction and evaluate intervention outcomes.
6. Develop tailored evaluation protocols based on individual patient needs and clinical presentation.

MR- 104	Rehabilitation in Community Health

Course Objectives: To understand the principles and concepts of rehabilitation in the context of community health settings and understand the purpose and importance of Rehabilitation in Community Health.

Course Outcomes:

After completing the course, student would be able to-

1. Recall the fundamental principles of community health and rehabilitation, including key terms such as health promotion, prevention, and rehabilitation in a community setting.
2. Explain the impact of social determinants on health and how they affect the rehabilitation process in different community populations (e.g., low-income, rural areas, or vulnerable groups).
3. Apply assessment and intervention strategies for community-based rehabilitation, using appropriate methods for various health conditions such as chronic diseases, disabilities, and mental health.
4. Analyze community health data (e.g., demographics, disease prevalence) to identify the needs of specific populations and prioritize rehabilitation programs accordingly.
5. Critically evaluate the effectiveness of community health programs and rehabilitation interventions in improving the overall well-being of individuals and populations.
6. Develop community health rehabilitation programs that integrate multidisciplinary approaches, considering resources, community participation, and sustainability for long-term health improvement.

MP- 104	Assessment And Evaluation in Paediatrics Physiotherapy

Course Objectives: To enable and upgrade the knowledge of master's students in Paediatrics Physiotherapy and understand the purpose and importance of Assessment And Evaluation in Paediatrics Physiotherapy.

Course Outcomes:

After completing the course, student would be able to-

1. Recall key developmental milestones and standard paediatric assessment tools used to evaluate children's motor skills, posture, and functional abilities.
2. Explain the principles of paediatric physiotherapy assessment, including how developmental stages, neurodevelopmental conditions, and congenital disorders impact the evaluation process.
3. Apply appropriate assessment techniques and tools for different age groups in paediatric physiotherapy to identify movement dysfunctions, developmental delays, and other health concerns.

4. Analyze the results from paediatric assessments, identifying patterns of motor impairments, and differentiating between various paediatric conditions that may require specific intervention strategies.
5. Critically evaluate the reliability and validity of different paediatric assessment methods and tools, considering their applicability in diverse clinical settings (e.g., hospital, community, or home).
6. Design individualized treatment and rehabilitation plans based on paediatric assessment outcomes, incorporating evidence-based practices, and engaging families in the intervention process.

MC-201	Management & Educational Methodology in Physiotherapy

Course Objectives: To enable and upgrade the knowledge of students in management of physiotherapy setup with ethics and learn about educational methodology used in physiotherapy.

Course Outcomes:

After completing the course, student would be able to-

1. Recall key concepts and principles related to management and educational methodologies in physiotherapy, including leadership styles, educational frameworks, and organizational strategies.
2. Explain the importance of management and educational methods in physiotherapy, and describe how effective leadership and teaching approaches can enhance patient care and professional development.
3. Implement management strategies in clinical settings to improve service delivery, workflow, and patient outcomes, as well as apply teaching techniques to facilitate learning in both educational and clinical environments.
4. Analyze case studies or real-world scenarios to identify management challenges or educational needs in physiotherapy practice, and assess the strengths and weaknesses of current systems.
5. Critically evaluate the effectiveness of different management approaches or educational methods in physiotherapy, considering factors such as patient satisfaction, team collaboration, and staff performance.
6. Develop a comprehensive management plan for a physiotherapy department or create an innovative educational program aimed at improving clinical skills and promoting ongoing professional development among physiotherapists.

MC-202	Physiotherapy Methods-1

Course Objectives: To Understand the principles and theories of physiotherapy methods and understand and apply principles of patient education and self-management in physiotherapy practice.

Course Outcomes:

After completing the course, student would be able to-

1. Recall fundamental physiotherapy techniques, modalities, and treatment approaches used in clinical practice.
2. Explain the rationale behind different physiotherapy methods, including their indications, contraindications, and physiological effects.
3. Displaying the ability to effectively apply physiotherapy techniques and methods in various clinical settings, addressing patient needs and conditions.
4. Analyze the outcomes of different physiotherapy methods in the treatment of specific conditions, evaluating their effectiveness and suitability for different patient profiles.
5. Critically assess and compare the benefits and risks of various physiotherapy methods, considering factors such as patient history, treatment goals, and available resources.
6. Design a personalized physiotherapy treatment plan using appropriate methods and modalities tailored to the specific needs and goals of the patient.

MM-203	Physiotherapy In Non- Traumatic Orthopaedic Conditions

Course Objectives: To understand the principles and concepts of physiotherapy in the management of non-traumatic orthopaedic conditions and recognize and diagnose common non-traumatic orthopaedic conditions and understand their underlying causes.

Course Outcomes:

After completing the course, student would be able to-

1. Recall the common non-traumatic orthopaedic conditions treated in physiotherapy, such as osteoarthritis, rheumatoid arthritis, and degenerative disc disease.
2. Explain the pathophysiology, clinical features, and underlying causes of non-traumatic orthopaedic conditions, and their impact on the musculoskeletal system.
3. Demonstrate the appropriate physiotherapy techniques and interventions for managing non-traumatic orthopaedic conditions, focusing on pain relief, mobility, and function.
4. Analyze the clinical presentation of patients with non-traumatic orthopaedic conditions, considering factors such as severity, comorbidities, and prognosis, to select the most effective treatment strategies.
5. Assess the outcomes of physiotherapy interventions for non-traumatic orthopaedic conditions, considering improvements in function, pain management, and quality of life.

6. Develop an individualized physiotherapy treatment plan for patients with non-traumatic orthopaedic conditions, incorporating evidence-based interventions and patient-specific goals.

MN-203	Physiotherapy In Paediatrics Neurology

Course Objectives: To understand the principles and theories of the normal development of the nervous system in children and recognize and understand the common neurological conditions affecting children, such as cerebral palsy, spina bifida, and brain injury.

Course Outcomes:

After completing the course, student would be able to-

1. Recall the common paediatric neurological conditions treated with physiotherapy, such as cerebral palsy, developmental coordination disorder, and spina bifida.
2. Explain the neurological impairments associated with paediatric conditions and how they affect motor skills, movement patterns, and functional abilities in children.
3. Presenting physiotherapy techniques for paediatric neurological rehabilitation, such as neurodevelopmental therapy (NDT) and functional training, to improve motor skills and independence.
4. Analyze the developmental milestones of children with neurological impairments and identify potential delays or abnormalities that require specific intervention.
5. Assess the effectiveness of physiotherapy interventions in improving functional outcomes in paediatric neurological conditions, such as improved mobility, strength, and coordination.
6. Develop an individualized treatment plan for a child with a neurological disorder, incorporating appropriate therapeutic modalities, family education, and goal-setting to enhance motor function and quality of life.

MS-203	Sports Traumatology – II

Course Objectives: To enable and upgrade the knowledge of master's students to understand the principles and concepts of Sports Traumatology

Course Outcomes:

After completing the course, student would be able to-

1. Recall the anatomical structures commonly injured in sports trauma, including ligaments, tendons, muscles, and bones.
2. Explain the pathophysiology and mechanisms of sports injuries, such as strains, sprains, fractures, and dislocations, and their effects on the musculoskeletal system.
3. Apply assessment techniques, such as palpation, range of motion testing, and special tests, to evaluate sports-related injuries and determine the extent of damage.
4. Analyze clinical findings and diagnostic results, such as imaging and physical tests, to distinguish between different types of sports injuries and plan appropriate rehabilitation strategies.
5. Assess the progress of rehabilitation in athletes with sports injuries, determining if recovery goals are being met and adjusting interventions accordingly to optimize recovery and return-to-play timelines.
6. Design a comprehensive rehabilitation program for athletes recovering from sports trauma, incorporating techniques for pain management, tissue healing, functional restoration, and injury prevention, tailored to individual needs and goals.

MCP-203	Cardiopulmonary Physiotherapy Technique

Course Objectives: To understand the anatomy, physiology, and pathophysiology of the cardiopulmonary system and technique used in physiotherapy for cardiopulmonary rehab.

Course Outcomes:

After completing the course, student would be able to-

1. Recall the key principles and techniques of cardiopulmonary physiotherapy, including breathing exercises, chest physiotherapy, and postural drainage.
2. Explain the physiological effects of cardiopulmonary physiotherapy techniques on respiratory and cardiovascular function, and how they help manage conditions such as COPD, asthma, and heart failure.
3. Apply appropriate cardiopulmonary physiotherapy techniques to patients with respiratory and cardiovascular conditions, such as using controlled breathing exercises for managing shortness of breath or postural drainage for clearing secretions.
4. Analyze the patient's clinical condition, including assessment of oxygen saturation, lung function, and exercise capacity, to determine which cardiopulmonary physiotherapy technique is most beneficial for improving their function.

5. Evaluate the effectiveness of the applied physiotherapy interventions, such as monitoring progress in respiratory function or exercise tolerance, and modify the treatment plan based on the patient's response.
6. Design a personalized cardiopulmonary rehabilitation program for patients, integrating exercises to improve respiratory strength, cardiovascular fitness, and overall functional capacity, while considering their specific health conditions and goals.

MR- 203	Assessment And Evaluation Assistive Technology

Course Objectives: To Gain knowledge of the functional and clinical assessment methods used to evaluate the needs and capabilities of individuals requiring assistive technology for mobility and stability.

Course Outcomes:

After completing the course, student would be able to-

1. Recall key terms, types of assistive technologies (AT), and their applications in various clinical settings for individuals with disabilities.
2. Explain the purpose of assistive technology in enhancing the functional independence of individuals with physical, cognitive, or sensory impairments, and how different types of AT are selected based on the patient's needs.
3. Apply knowledge of assessment tools to evaluate a patient's functional limitations and identify the appropriate assistive technologies to improve their daily activities and overall quality of life.
4. Analyze the patient's specific needs and environment to evaluate the effectiveness of different assistive devices and determine how they can address the patient's challenges in mobility, communication, or daily functioning.
5. Evaluate the success of assistive technology interventions by assessing improvements in the patient's independence, participation in activities, and quality of life, and provide recommendations for further modification or adjustment.
6. Design a comprehensive assistive technology evaluation plan that includes patient assessments, device trials, and outcome measures, tailored to an individual's needs and specific environmental factors.

MP- 203	Physiotherapy In Paediatrics Condition

Course Objectives: The Students will gain a comprehensive understanding of the normal and abnormal development of the nervous system in children, along with the pathophysiology of various neurological conditions affecting pediatric populations.

Course Outcomes:

After completing the course, student would be able to-

1. Recall key pediatric conditions that require physiotherapy intervention, including developmental delays, cerebral palsy, and muscular dystrophy.
2. Explain the principles and approaches used in pediatric physiotherapy, including age-appropriate assessment and treatment techniques for children with various conditions.
3. Apply pediatric physiotherapy techniques to assess and manage specific conditions, focusing on improving motor skills, strength, and functional independence in children.
4. Analyze the physical, cognitive, and emotional needs of children with pediatric conditions to develop personalized rehabilitation plans that address their unique challenges.
5. Evaluate the effectiveness of physiotherapy interventions in pediatric patients by assessing progress in motor development, functional abilities, and quality of life.
6. Design and implement physiotherapy programs for children with pediatric conditions, integrating developmental milestones, play-based activities, and family education to optimize rehabilitation outcomes.

MC-301	Physiotherapy Methods II

Course Objectives: To understand the principles and theories of physiotherapy methods and understand and apply principles of patient education and self-management in physiotherapy practice.

Course Outcomes:

After completing the course, student would be able to-

1. Recall key physiotherapy methods and techniques used in musculoskeletal, neurological, and cardiopulmonary rehabilitation.
2. Explain the underlying principles and theoretical frameworks of advanced physiotherapy techniques, such as manual therapy, electrotherapy, and exercise prescription.
3. Apply advanced physiotherapy methods to assess and treat patients with complex conditions, ensuring techniques are suited to individual needs and specific diagnoses.
4. Analyze patient conditions and treatment responses to modify physiotherapy approaches, ensuring the most effective use of techniques for optimal outcomes.

5. Critically evaluate the effectiveness of different physiotherapy methods in improving patient function, pain reduction, and overall rehabilitation, using outcome measures and clinical reasoning.
6. Design and implement personalized physiotherapy treatment plans using a combination of methods and techniques tailored to the specific needs of patients, with a focus on achieving functional goals.

MC-302	Basics Of Exercise Physiology & Nutrition

Course Objectives: To understand the basic principles of exercise physiology including energy systems, muscle structure and function, and the physiological responses to exercise.

Course Outcomes:

After completing the course, student would be able to-

1. Recall fundamental concepts of exercise physiology and nutrition, including energy systems, muscle physiology, and macronutrient requirements.
2. Explain the physiological processes involved in exercise performance, recovery, and the role of nutrition in supporting these processes.
3. Apply knowledge of exercise physiology and nutrition to design exercise and dietary programs aimed at improving physical performance and overall health.
4. Analyze the effects of various types of exercise on the body and evaluate how different nutritional strategies influence exercise performance, recovery, and health outcomes.
5. Assess the effectiveness of exercise and nutrition interventions in achieving fitness and health goals, using evidence-based guidelines and outcome measures.
6. Design comprehensive exercise and nutrition plans for individuals or groups, considering specific needs, goals, and the integration of both exercise physiology and nutritional science.

MM-303	Physiotherapy In Traumatic Orthopaedic Conditions

Course Objectives: To understand the pathophysiology of traumatic orthopaedic conditions including fractures, dislocations, and soft tissue injuries and understand the principles of management for traumatic orthopaedic conditions, including early mobilization, pain management, and prevention of complications.

Course Outcomes:

After completing the course, student would be able to-

1. Recall the key principles of physiotherapy in the management of traumatic orthopedic conditions, including common injuries and their therapeutic interventions.
2. Explain the mechanisms of traumatic orthopedic injuries, the healing process, and the role of physiotherapy in recovery and rehabilitation.
3. Apply physiotherapeutic techniques and interventions, such as joint mobilization, strengthening exercises, and manual therapy, to treat patients with traumatic orthopedic injuries.
4. Analyze the clinical signs and symptoms of different traumatic orthopedic conditions and develop an appropriate physiotherapy treatment plan based on the patient's specific injury and needs.
5. Evaluate the outcomes of physiotherapy interventions for traumatic orthopedic conditions by assessing the patient's functional progress and modifying the treatment approach as necessary.
6. Design individualized rehabilitation programs for patients recovering from traumatic orthopedic injuries, incorporating exercise progression, pain management, and functional restoration strategies.

MN-303	Physiotherapy & Rehabilitation in Neurological Disorders-I

Course Objectives: To understand the pathophysiology of common neurological disorders, such as stroke, Parkinson's disease, multiple sclerosis, and spinal cord injury and physiotherapy rehabilitation in neurological condition.

Course Outcomes:

After completing the course, student would be able to-

1. Recall the types of neurological disorders commonly treated with physiotherapy, such as stroke, multiple sclerosis, and Parkinson's disease, and their key characteristics.
2. Explain the pathophysiology and symptoms of neurological disorders and how physiotherapy can help in the rehabilitation process, focusing on improving motor function, balance, and coordination.

3. Apply specific physiotherapeutic interventions and rehabilitation techniques, such as motor retraining, proprioceptive exercises, and functional training, to individuals with neurological disorders.
4. Analyze the impact of various neurological disorders on a patient's functional abilities and devise appropriate physiotherapy interventions based on the patient's needs, impairments, and goals.
5. Evaluate the effectiveness of physiotherapy treatments for neurological disorders by assessing changes in patient outcomes, including improvements in mobility, independence, and quality of life.

Develop personalized rehabilitation programs for patients with neurological disorders that incorporate evidence-based physiotherapy interventions, patient education, and long-term management strategies.

MS-303	Non-Traumatic Medical Condition of Athlete

Course Objectives: To understand common non-traumatic medical conditions that can affect athletes, such as asthma, diabetes, cardiovascular disorders, and gastrointestinal disorders.

Course Outcomes:

After completing the course, student would be able to-

1. Recall the common non-traumatic medical conditions that athletes may experience, such as asthma, diabetes, hypertension, and overuse injuries.
2. Explain the physiological mechanisms behind non-traumatic medical conditions in athletes and how these conditions impact their performance and overall health.
3. Apply knowledge of non-traumatic medical conditions to develop appropriate strategies for preventing and managing these conditions in athletes, such as monitoring vital signs and adjusting training loads.
4. Analyze the symptoms and diagnostic criteria for various non-traumatic medical conditions in athletes, and assess how these conditions influence their ability to compete and train effectively.
5. Evaluate the effectiveness of interventions and treatment plans for non-traumatic medical conditions, including medication, lifestyle changes, and adjustments in training programs, based on the athlete’s progress and well-being.
6. Design comprehensive rehabilitation and management plans for athletes with non-traumatic medical conditions, incorporating individualized treatment strategies to optimize performance while ensuring long-term health and safety.

MCP-303	Medical and Surgical Condition of Heart, Lung and Vascular System

Course Objectives: To understand the anatomy and physiology of the heart, lungs, and vascular system, including their normal function and structure and recognize and understand the pathophysiology of common medical and surgical conditions affecting the heart, lungs, and vascular system, such as myocardial infarction, heart failure, chronic

Course Outcomes:

After completing the course, student would be able to-

1. Recall the common medical and surgical conditions of the heart, lung, and vascular system, such as coronary artery disease, asthma, and deep vein thrombosis (DVT).
2. Explain the pathophysiology, symptoms, and risk factors associated with various heart, lung, and vascular conditions, and their impact on the body's function.
3. Apply the knowledge of medical and surgical conditions to assess patients' clinical symptoms, monitor their progress, and assist in managing conditions through appropriate physical therapy interventions.
4. Analyze the diagnostic tests and treatment modalities used for heart, lung, and vascular diseases, including understanding the rationale for procedures like angioplasty or lung resection.
5. Evaluate the effectiveness of various interventions (surgical, pharmacological, and physiotherapy-based) in improving patient outcomes in heart, lung, and vascular conditions, considering both short-term and long-term recovery.
6. Develop comprehensive care plans for patients with heart, lung, and vascular conditions, integrating medical, surgical, and rehabilitation strategies to optimize function, reduce complications, and promote recovery.

MR-303	Rehabilitation in Industrial Health

Course Objectives: To enable and upgrade the knowledge of students in Rehabilitation Physiotherapy and develop knowledge of the role of rehabilitation in preventing and managing work-related injuries and illnesses in industrial settings.

Course Outcomes:

After completing the course, student would be able to-

1. Recall the key principles and components of industrial health and rehabilitation, including the common work-related injuries and diseases.
2. Explain the role of rehabilitation in preventing and managing industrial injuries, and understand the connection between workplace conditions and health outcomes.
3. Apply knowledge of industrial health practices to assess workplace hazards, evaluate employees' functional capabilities, and recommend rehabilitation interventions

4. Analyze the impact of various industrial injuries (e.g., musculoskeletal disorders, respiratory conditions) on worker productivity and quality of life, and identify risk factors within specific work environments.
5. Evaluate the effectiveness of rehabilitation programs in the industrial setting by assessing their impact on employee recovery, safety, and return-to-work rates.
6. Design customized rehabilitation programs tailored to the specific needs of workers, focusing on injury prevention, functional recovery, and workplace ergonomics.

MP-303	Physical and Functional diagnosis in Paediatrics Science

Course Objectives: The Students will gain a comprehensive understanding of the normal development of children, including gross and fine motor skills, cognitive development, and social-emotional development.

Course Outcomes:

After completing the course, student would be able to-

1. Recall the key concepts, terminologies, and diagnostic tools used in physical and functional assessments in pediatric patients.
2. Explain the importance of conducting physical and functional assessments in pediatric populations and describe the stages of child development relevant to diagnosis.
3. Apply appropriate pediatric assessment techniques to evaluate a child's physical health, functional abilities, and developmental milestones.
4. Analyze the results of physical and functional assessments to identify any deviations from normal development or any underlying medical conditions.
5. Evaluate the effectiveness of different diagnostic approaches in pediatrics and select the most appropriate methods for specific patient needs and conditions.
6. Design individualized assessment protocols and diagnostic plans for pediatric patients with complex conditions, incorporating physical and functional testing to guide treatment strategies.

MC-401	Bio-engineering Rehabilitation Principles and Applied Exercise Physiology

Course Objectives: To understand the fundamental principles of bioengineering and their application in the field of rehabilitation and the biomechanics of human movement and how it is affected by injury, disability, and disease and to learn the fundamental principles of exercise physiology, including the physiological responses to exercise and how the body adapts to physical training and understand how exercise and physical activity affect various biological systems in the body, including the respiratory, cardiovascular, muscular, and nervous systems.

Course Outcomes:

After completing the course, student would be able to-

1. Remembering: Recall key concepts of bio-engineering rehabilitation, exercise physiology principles, and technological tools used in rehabilitation.
2. Understanding: Explain the relationship between bio-engineering principles and exercise physiology in the context of rehabilitation and how they contribute to recovery.
3. Applying: Apply bio-engineering principles and exercise physiology knowledge to design and implement rehabilitation programs that use assistive devices and exercise interventions.
4. Analyzing: Analyze how different bio-engineering devices (e.g., prosthetics, orthotics) and exercise interventions impact the rehabilitation process for various medical conditions.
5. Evaluating: Evaluate the effectiveness of bio-engineering technologies and exercise interventions in improving functional outcomes in patients undergoing rehabilitation.
6. Simulating personalized rehabilitation plans that integrate bio-engineering solutions and exercise physiology techniques to optimize recovery and functionality.

MM-402	Physiotherapy In Vertebral Disorders

Course Objectives: To understand common non-traumatic medical conditions that can affect athletes, such as asthma, diabetes, cardiovascular disorders, and gastrointestinal disorders.

Course Outcomes:

After completing the course, student would be able to-

1. Recall the anatomy and physiology of the vertebral column and the common vertebral disorders treated in physiotherapy.
2. Summarizing the pathophysiology of vertebral disorders and how they affect spinal function and mobility.
3. Apply physiotherapy techniques, including manual therapy, exercises, and modalities, to manage vertebral disorders and improve spinal health.
4. Analyze clinical symptoms and diagnostic findings to identify different vertebral disorders and determine appropriate physiotherapy interventions.
5. Evaluate the effectiveness of various physiotherapy interventions for vertebral disorders based on patient outcomes and recovery progress.
6. Develop individualized rehabilitation plans for patients with vertebral disorders, incorporating evidence-based physiotherapy techniques to enhance mobility, reduce pain, and improve spinal function.

MN-402	Physiotherapy And Rehabilitation in Neurological Disorders-II

Course Objectives: To understand the pathophysiology of common neurological disorders, such as stroke, Parkinson's disease, multiple sclerosis, and spinal cord injury and physiotherapy rehabilitation in neurological condition.

Course Outcomes:

After completing the course, student would be able to-

1. Recall the specific neurological conditions covered in the course, including their pathophysiology and clinical features.
2. Explain the role of physiotherapy in the management and rehabilitation of advanced neurological disorders, such as stroke, multiple sclerosis, and Parkinson's disease.
3. Apply evidence-based physiotherapy interventions, such as neuroplasticity exercises, functional training, and motor learning principles, for patients with neurological disorders.
4. Analyze patient case studies to assess functional limitations and design appropriate rehabilitation strategies tailored to individual needs.
5. Evaluate the outcomes of different rehabilitation approaches in improving motor control, function, and quality of life for patients with neurological disorders.
6. Develop comprehensive rehabilitation plans that integrate physiotherapy techniques, assistive devices, and multidisciplinary approaches to maximize recovery and independence for patients with neurological disorders.

MS-402	Sports Psychology

Course Objectives: To develop an understanding of the psychological factors that influence performance in sports and exercise and identify psychological skills and strategies that can be used to enhance performance, such as goal setting, imagery, self-talk, and relaxation techniques

Course Outcomes:

After completing the course, student would be able to-

1. Recall the basic principles of sports psychology, including key theories and concepts such as motivation, mental toughness, and concentration.
2. Explain the relationship between psychological factors and athletic performance, and how mental skills affect an athlete’s ability to perform under pressure.
3. Apply sports psychology techniques, such as goal setting, imagery, and relaxation exercises, to enhance an athlete's performance and mental well-being.
4. Analyze how psychological factors like anxiety, stress, and self-confidence influence athletic performance in various sports.
5. Evaluate the effectiveness of different sports psychology interventions in improving mental resilience, focus, and team dynamics in athletes.

6. Design personalized sports psychology strategies for athletes to improve mental preparation, emotional regulation, and performance consistency in competitive environments.

MCP-402	Physiotherapy in the intensive care unit

Course Objectives: To develop an understanding of the physiological changes that occur in critically ill patients and the impact these changes have on the musculoskeletal and respiratory systems gain knowledge about common conditions and disorders that require physiotherapy in the ICU, such as acute respiratory distress syndrome (ARDS), pneumonia, and sepsis.

Course Outcomes:

After completing the course, student would be able to-

1. Recall the key physiological changes and challenges faced by critically ill patients in the ICU, such as respiratory failure, circulatory instability, and immobility.
2. Explain the role of physiotherapy in managing patients in the ICU, particularly in the areas of respiratory care, mobility, and prevention of complications like pressure sores or deep vein thrombosis.
3. Apply specific physiotherapy techniques such as chest physiotherapy, mobilization, and positioning to improve the respiratory function and overall recovery of ICU patients.
4. Analyze the impact of early mobilization and physiotherapy interventions on patient outcomes in the ICU, including the reduction in ICU-acquired weakness and ventilator-associated pneumonia.
5. Evaluate the effectiveness of various physiotherapy interventions in the ICU, considering patient safety, comfort, and recovery rates.
6. Design a comprehensive physiotherapy treatment plan tailored to the specific needs of a critically ill patient in the ICU, integrating techniques for airway clearance, mobility, and muscle strength restoration.

MR- 402	Physiotherapy in the Clinical Rehab Conditions

Course Objectives: To enable and upgrade the knowledge of master's students to explore the role of physiotherapy in addressing the physical, psychological, and social needs of individuals with clinical rehabilitation conditions.

Course Outcomes:

After completing the course, student would be able to-

1. Recall the various clinical rehabilitation conditions, including musculoskeletal, neurological, cardiopulmonary, and orthopedic conditions that require physiotherapy interventions.
2. Explain the pathophysiology, symptoms, and rehabilitation needs of patients with clinical rehab conditions, focusing on how physiotherapy supports recovery and function restoration.
3. Apply appropriate physiotherapy techniques, including manual therapy, exercises, and modalities, to improve the physical function and quality of life of patients with different clinical conditions.
4. Analyze the patient's assessment data, including range of motion, strength, and functional performance, to develop targeted rehabilitation goals and treatment plans.
5. Evaluate the effectiveness of different physiotherapy interventions in clinical rehab conditions, considering patient progress, outcomes, and any barriers to recovery.
6. Design a personalized, evidence-based physiotherapy rehabilitation program for patients with clinical conditions, ensuring optimal outcomes through the integration of various therapeutic approaches and exercises.

MP- 402	Physiotherapy & Rehabilitation Techniques In Paediatrics disorders

Course Objectives: To enable and upgrade the knowledge of master's students in Paediatrics Physiotherapy to understand the purpose and importance of rehabilitation techniques in paediatrics disorders

Course Outcomes:

After completing the course, student would be able to-

1. Recall the common paediatric disorders (such as cerebral palsy, developmental delays, and muscular dystrophy) that require physiotherapy and rehabilitation techniques.
2. Explain the principles and importance of early intervention in paediatric rehabilitation and how physiotherapy contributes to motor development and functional improvement in children.
3. Apply specific physiotherapy techniques, including play therapy, positioning, and strengthening exercises, to address the unique needs of children with different paediatric disorders.
4. Analyze the assessment findings of paediatric patients, such as posture, muscle tone, and motor skills, to develop a tailored rehabilitation plan.
5. Evaluate the progress and effectiveness of physiotherapy interventions in paediatric patients, assessing improvements in movement, strength, and overall development.
6. Design individualized rehabilitation programs that integrate various therapeutic techniques to address the diverse needs of children with paediatric disorders, ensuring developmental milestones are achieved.

MM-403	Current Concepts in Musculoskeletal Physiotherapy

Course Objectives: To develop a comprehensive understanding the skills to critically appraise and analyze research literature and incorporate the best available evidence into clinical decision-making and practice of the current concepts, theories, and principles related to musculoskeletal physiotherapy

Course Outcomes:

After completing the course, student would be able to-

1. Recall the fundamental concepts, anatomy, and pathophysiology related to musculoskeletal conditions.
2. Explain the principles of assessment and rehabilitation in musculoskeletal physiotherapy
3. Apply evidence-based techniques for the evaluation and management of musculoskeletal disorders.
4. Analyze patient cases to determine the most effective physiotherapy interventions.
5. Critically evaluate the outcomes of different musculoskeletal physiotherapy techniques.

6. Design comprehensive treatment plans integrating modern concepts in musculoskeletal physiotherapy.

MN-403	Current Concepts in Neuro Physiotherapy

Course Objectives: To gain knowledge and proficiency in using various treatment techniques specific to neuro physiotherapy, such as motor retraining, task-specific practice, balance and gait training, neuromuscular re-education, and functional electrical stimulation.

Course Outcomes:

After completing the course, student would be able to-

1. Recall the fundamental neuroanatomy, neurological conditions, and principles of neurophysiotherapy.
2. Explain the pathophysiology of neurological disorders and the rationale behind physiotherapy techniques.
3. Apply neurophysiotherapy techniques in the assessment and treatment of neurological patients.
4. Analyze patient cases to identify deficits and choose appropriate intervention strategies.
5. Critically assess the effectiveness of various neurophysiotherapy interventions.
6. Design individualized neurophysiotherapy treatment plans based on current evidence and patient needs.

MS-403	Current Concepts in Sports Medicine

Course Objectives: To understand of sports-related injuries: Develop a comprehensive understanding of common sports-related injuries, including their etiology, risk factors, prevention strategies, and management approaches.

Course Outcomes:

After completing the course, student would be able to-

1. Recall the basic principles of sports injuries, anatomy, and healing processes
2. Explain the mechanisms of common sports injuries and the rationale for treatment methods.
3. Apply sports assessment techniques and rehabilitation protocols in clinical practice.
4. Analyze injury cases to determine contributing factors and appropriate interventions.
5. Evaluate the effectiveness of sports injury prevention strategies and rehabilitation programs.
6. Design personalized injury prevention programs and rehabilitation plans for athletes.

MCP-403	Current Concepts in Cardiopulmonary Physiotherapy

Course Objectives: To understanding of cardiopulmonary anatomy and physiology: Develop a comprehensive understanding of the structure and function of the cardiovascular and respiratory systems, including their interplay and regulation during rest and exercise.

Course Outcomes:

After completing the course, student would be able to-

1. Recall fundamental concepts of cardiopulmonary anatomy, physiology, and common conditions.
2. Explain the pathophysiology of cardiopulmonary disorders and treatment rationales.
3. Apply assessment techniques and therapeutic interventions in cardiopulmonary care.
4. Analyze patient cases to identify cardiopulmonary impairments and intervention priorities.
5. Evaluate the outcomes of physiotherapy interventions for cardiopulmonary conditions.
6. Develop personalized cardiopulmonary rehabilitation programs based on patient needs.

MR- 403	Current Concepts In Community Health Rehabilitation

Course Objectives: To develop an understanding of the broad scope of community health rehabilitation, including the social, environmental, and cultural factors that influence health and well-being.

Course Outcomes:

After completing the course, student would be able to-

1. Recall basic principles of community health rehabilitation and public health concepts.
2. Explain the impact of social determinants on community health and rehabilitation needs.
3. Apply strategies for community-based assessment and intervention programs.
4. Analyze community health data to identify gaps and prioritize rehabilitation needs.
5. Evaluate the effectiveness of community health rehabilitation interventions.
6. Design comprehensive community health rehabilitation plans considering local resources.

MP- 403	Current Concepts in Paediatric Physiotherapy

Course Objectives: To gain a comprehensive understanding of the current research and evidence-based practices in pediatric physiotherapy and develop knowledge of the latest theoretical frameworks and concepts relevant to pediatric physiotherapy.

Course Outcomes:

After completing the course, student would be able to-

1. Recall fundamental concepts of paediatric growth, development, and physiotherapy principles.
2. Explain normal and abnormal motor development in children and their impact on function.
3. Apply paediatric physiotherapy techniques for conditions like cerebral palsy and muscular dystrophy.
4. Analyze assessment results to determine functional impairments in paediatric patients.
5. Evaluate the effectiveness of physiotherapy interventions in improving functional outcomes in children.
6. Design individualized paediatric physiotherapy treatment plans based on clinical assessments.