

**Faculty of
Allied Medical Sciences**

Department of Physical Therapy

**Description of Courses
Program
Bachelor Degree in Physical Therapy**

2025/2026

**Description of Courses offered by the
Department of Physical Therapy**

Course Number	Course Title	Credit Hours	Prerequisites or * Co requisite	Teaching Method
11011109	General medical chemistry	3	-	blended
The fundamental principles of chemistry include measurement and significant figures, the study of atoms, elements, molecules, ions, and chemical reactions. It also covers mass relationships in chemical reactions, physical properties, and concentration calculations through various methods, as well as reactions in aqueous solutions. Additionally, the study of gases and their physical properties, acids and bases, and the basics of neutralization titrations in volumetric analysis are included. Furthermore, it involves using chemistry in pharmaceutical calculations, including drug dilution and dose calculations.				
11011110	General medical chemistry (Practical)	1	11011109*	face-to-face
General safety principles, basic laboratory techniques, identifying the physical and chemical properties of substances, preparing and diluting solutions, titrating acids and bases, and understanding the physical properties of gases.				
11011283	General medical biology	3	-	online
Cell structure, cell chemistry, cellular respiration, photosynthesis, cell communication, cell division, principles of molecular genetics, genetic code, replication and transcription of genetic material, protein synthesis, bacterial and viral genetics, hormonal regulation in plants and animals, basic principles of biological classification, and fundamentals of ecosystems for living organisms.				
11011284	General medical biology (Practical)	1	11011283*	face-to-face
Cell structures, the chemical components of living cells, and cellular activities (such as reproduction methods, enzyme functions, physical properties, respiration, and photosynthesis). The course also includes the study of plant and animal tissues, diversity of living organisms, and genetics.				
11021206	General medical physics	3	-	blended
Basic concepts and principles of mechanics (motion of objects, laws of motion, work, and energy), elasticity, and fluid dynamics. It includes an overview of elasticity, general information on fluid dynamics, heat and temperature, and frequency (such as sound and electromagnetic waves).				
12021212	Anatomy and Histology	3	11011283*	blended
Introduction to anatomical terms and the study of the anatomy of various human body organs, including the skin and its appendages, bones, muscles, nervous system, circulatory system and heart, respiratory system, urinary and reproductive systems, and endocrine glands. This course links organ anatomy with their functions, covering types of tissues both at the macroscopic level and microscopically, starting from cells to the structure and function of different tissue types.				
12021213	Anatomy and Histology (Practical)	1	12021212 *	face-to-face
Anatomical terminology and body sections. Anatomy of human body systems, including the skeletal system and joints, muscles, nervous system, cardiovascular system, digestive system, respiratory system, and urinary-reproductive system. It also covers tissues such as epithelial and connective tissues, skin and its appendages, and the lymphatic system.				

12032116	Pathology	3	11011283	blended
Cell diseases, acute and chronic inflammation, tissue repair, blood disorders, tumors, infectious diseases, respiratory diseases, heart diseases, skin diseases, and chronic conditions (such as diabetes and hypertension). It also includes an overview of diseases and disorders affecting bones, muscles, and joints, as well as musculoskeletal injuries and various congenital and acquired bone diseases.				
12041218	Medical Ethics	1	-	online
Principles of medical rehabilitation ethics: Patient rights, including respect, privacy, integrity, and autonomy in decision-making; patient safety, covering patient protection laws and the legal responsibilities of allied health professionals for their actions within the professional context. It includes understanding responsibilities and obligations in legal medical procedures, such as informed consent and confidentiality; legal issues like malpractice and negligence; risk management, infection control, and service quality, along with legal aspects. Enforcing standards in health professions to promote quality care; and professional conduct rules, including relationships with patients, colleagues, and other professionals.				
12041210	Physiology	3	11011283	blended
Basic information on the functions of the cardiovascular and respiratory systems, circulation, and the nervous system, as well as the basic principles of physiological control. This includes an overview of the sensory organs, nerves, muscles, blood, glands, and the reproductive and urinary systems, along with the role of these systems in the overall functioning of the human body.				
12012119	Introduction to Physical Therapy	1	-	online
The history of the profession and a description of the theoretical and practical foundations of physical therapy methods and techniques. It also explains the role of physical therapists in practicing the profession in various settings, such as educational centers, research, medical and administrative consultations, and the local community. This includes treating patients in outpatient clinics, hospitals, or different therapy centers.				
12012120	Clinical Psychology	2	-	online
The psychological aspects of disabilities and common disorders. This course helps learn how to communicate with patients in an effective therapeutic manner, considering factors that may affect the assessment and implementation of treatment plans for all patients, both children and adults. It will focus on common relevant cases, including congenital disabilities (such as intellectual disabilities and physical impairments, like amputations and fractures) and mental disorders (such as depression and dementia) as well as chronic diseases (like strokes).				
12012121	Anatomy of Musculoskeletal System	2	12012122	face-to-face
A detailed study of the anatomical features of the musculoskeletal system, focusing on providing precise and precise anatomy of bones, muscles, and joints. It also includes the study of the nerves and blood vessels that supply this system and their importance in the field of physical therapy.				
12012122	Anatomy of Musculoskeletal System (Practical)	1	12012121*	face-to-face
Applying skills related to identifying various superficial bony landmarks, as well as the prominent deep structures visible on the skin, including parts of joints, muscles, nerves, and the blood vessels that supply them.				

12012112	Artificial Intelligence in Kinesiology and Biomechanics	3	12021212	blended
This course provides an introduction to the study of human body movement, focusing on fundamental biomechanical principles such as the stress–strain relationship, and the mechanics of bones, joints, and muscles, as well as concepts of center of gravity, stability, and levers within the human body, with an emphasis on normal and pathological gait analysis, including gait phases, lower limb angular motion, and muscle activity, using artificial intelligence, machine learning, computer vision, and digital technologies to accurately record, analyze, and compare movement patterns.				
12012127	Exercise Physiology	2	12041210	face-to-face
Studying the physiological effects of exercise on different body systems, focusing on the changes that occur in the heart, lungs, blood vessels, endocrine system, and metabolism at various stages of life. This includes applying these principles to create therapeutic exercise programs for different medical conditions.				
12012134	Neuroscience	3	12032116	blended
The anatomy of the nervous system, including both the central nervous system and the peripheral nervous system, and its functional integration with the musculoskeletal system. This includes detailed anatomy of brain parts (cerebrum, cerebellum, and brainstem) and an in-depth study of the spinal cord and the nerve pathways that carry movement commands from the central nervous system to the peripheral system, as well as the nerve pathways that transmit sensations from the peripheral system to the central system. Additionally, this involves understanding the physiology of nerves, analyzing nerve signals, and chemical changes, and their role in understanding diseases that affect the nervous system, as well as how these chemical changes impact bodily functions and how to manage them.				
12012221	Therapeutic Exercises	2	12012127	face-to-face
An introduction to all types of therapeutic exercises for all muscle groups, both individually and as groups. This includes methods for strengthening and stretching exercises to maintain the range of motion in joints and improve overall patient mobility, enabling them to perform daily activities. This course also covers modern and scientifically proven methods and theories for performing these therapeutic exercises, using all necessary equipment such as balance devices, weights, and exercise machines to achieve therapeutic goals. It includes an explanation of the basics and theories of neuromuscular coordination and the methods used to support therapeutic exercises, as well as creating home exercise programs for patients.				
12012222	Therapeutic Exercises (Practical)	1	12012221*	face-to-face
The practical aspect of applying therapeutic exercises and manual techniques performed by the therapist for the patient, such as passive exercises to maintain joint range of motion, stretching exercises, and strengthening exercises. It also involves learning the necessary skills to use devices and tools that assist in strengthening and stretching muscles to maintain neuromuscular coordination and balance between muscles, ensuring their proper functioning together.				
12012228	Principles of Radiological Diagnosis and Artificial Intelligence	2	12012122*	face-to-face
This course aims to introduce students to the fundamentals of medical imaging using radiation, including X-ray, computed tomography, and magnetic resonance imaging, with an emphasis on the physical and technical principles of radiological diagnosis, while providing an introduction to the				

application of artificial intelligence in medical image analysis to enhance diagnostic accuracy, reduce errors, accelerate clinical decision-making, and support the recognition of pathological patterns through intelligent image-based analysis aligned with recent technological advances.				
12012230	Evaluation of Musculoskeletal System	2	12012112	blended
Methods for assessing muscle function, which include measuring muscle strength and joint range of motion using objective and standardized techniques. Through this course, students will learn about certain medical conditions related to joints and muscles, as well as the objective and practical elements in the initial assessment of a patient, starting with taking the medical history and documenting the results of muscle strength and joint range of motion assessments. Students will also learn how to develop a treatment plan that suits the medical condition from a physical therapy perspective. Additionally, this course will explain the position of joints and muscles during normal walking and the effects of certain diseases and disorders related to muscles and joints on the walking process.				
12012231	Evaluation of Musculoskeletal System (Practical)	1	12012230*	face-to-face
The practical aspect of applying standardized methods and tests to assess the strength of the upper and lower limb muscles, neck and trunk muscles, as well as joint range of motion, muscle activity, and mobility during walking. Students will be trained in the movement analysis of certain conditions and their effects on walking and movement.				
12012234	Electrotherapy	2	11021206	face-to-face
An introduction to electrical devices used in physical therapy, their principles of operation, and their physiological effects on the body. This includes devices that produce superficial and deep heat, such as hot packs, short-wave and long-wave electromagnetic waves, infrared radiation, lasers, and magnetic devices. The course also covers ultrasound therapy and mechanical traction for the spine, discussing the physiological effects of these devices, application methods, and precautions for their use. Additionally, it includes electrical stimulation therapy, types of therapeutic currents, their sources, and their use in treating various diseases and movement disabilities.				
12012235	Electrotherapy (Practical)	1	12012234*	face-to-face
The practical aspect of using electrical devices in physical therapy, such as devices that produce superficial and deep heat, including hot packs, short-wave and long-wave electromagnetic waves, infrared radiation, lasers, and magnetic devices. It also covers ultrasound therapy and mechanical traction for the spine. Additionally, this course includes the practical side of electrical stimulation therapy.				
12012238	Manual Therapy	1	12012119*	face-to-face
Understanding methods for manually mobilizing joints by the therapist, including various manual therapeutic skills used in physical therapy, their benefits, scientific theories, applications, and the physiological effects on the treated tissues based on scientific principles. This aims to treat various conditions affecting the joints and muscles to relieve joint pain, relax tense muscles, increase flexibility in contracted and non-contracted parts of muscles and other tissues, and improve the function of the musculoskeletal system.				
12012239	Manual Therapy (Practical)	1	12012238*	face-to-face
The practical aspect of various methods for applying the theoretical side of manual therapy to all joints in the body, including their uses and precautions for use. It covers how to perform movements regarding grasping the joint or muscle, the proper body position for both the therapist and the patient				

during movement application, as well as increasing the range of motion in the spine and maintaining normal motion levels in all joints of the body.				
12013130	Orthopedic Physical Therapy 1	2	12012230	blended
Basic knowledge of clinical musculoskeletal disorders related to physical therapy practice, including fractures, soft tissue injuries, arthritis, knee and hip joint replacements, and bone diseases. The course will present basic assessment methods for evaluating the muscles and bones of peripheral joints and rehabilitating peripheral joints.				
12013131	Orthopedic Physical Therapy 1 (Practical)	1	12013130*	face-to-face
Laboratory practical experience in assessing cases and performing all therapeutic methods and physical therapy techniques for conditions related to bone and muscle diseases, including various types of fractures, soft tissue injuries, arthritis, knee and hip joint replacements, and bone diseases. This includes rehabilitating peripheral joints to prepare for clinical cases.				
12013132	Geriatric Physical Therapy	2	12012221	face-to-face
Physiological and functional changes that occur due to aging, with a focus on necessary modifications in physical therapy programs for older adults. This course emphasizes designing physical therapy programs for seniors and includes methods for educating and motivating them to engage in physical activity. It also addresses psychological and cognitive changes and conditions in older adults.				
12013133	Neurologic Physical Therapy 1	2	12013133	face-to-face
Neuromuscular control of human movement and rehabilitation based on a problem-solving approach for assessing and treating various neurological disorders. This course includes a structured approach to neuromuscular control in relation to normal and abnormal postures, balance, mobility, and upper limb functions. Additionally, it will cover strokes, including their assessment and treatment mechanisms, as they are among the most common neurological disorders.				
12013134	Neurologic Physical Therapy 1 (Practical)	1	12013133*	face-to-face
An introduction to acute and chronic neurological conditions and the assessment of neurological diseases through various tests and examinations conducted by the therapist. The focus will be on developing the skills necessary to differentiate between injuries of the central and peripheral nervous systems in their various forms.				
12013135	Physical Therapy for Surgery and Burn	1	12041210	online
This course will explore the complications that occur after surgery and how to prevent them. Specifically, students will study post-mastectomy rehabilitation and how to help patients recover after different types of surgeries. The course will also cover the fundamentals of burns and techniques for accelerated wound healing and control of pain. Additionally, students will delve into the rehabilitation and care of burn patients, including stretching exercises to improve mobility and flexibility. Through this course, students will gain essential knowledge and skills to support patients recovering from surgery and burns by using different physical therapy modalities.				
12013136	Physical Therapy for Surgery and Burn (Practical)	1	12013135*	face-to-face
In this course, the student will learn about the practical application of different techniques in physical therapy and rehabilitation during the recovery process after burns and various surgeries and how to				

<p>help patients improve their quality of life after different types of surgeries. The course will also cover the practical application of physical therapy techniques to accelerate wound healing and control pain. Additionally, students will delve into the rehabilitation and care of burn patients, including stretching exercises to improve mobility and flexibility.</p>				
12013140	Physical Therapy Clinic 1	2	12013131*	face-to-face
<p>Applying the theoretical aspects studied earlier and using basic knowledge to assess patients and develop and implement treatment plans for musculoskeletal disorders and orthopedic surgeries that require rehabilitation. In this course, students will be limited to observing and monitoring qualified physical therapists as they assess and treat patients.</p>				
12013238	Prosthetics and Smart Technology	2	12041210	face-to-face
<p>This course addresses the fundamental concepts of prosthetics and orthoses for different levels of amputation and musculoskeletal deformities. It focuses on the use of modern technologies and intelligent systems, including sensors, neural control, and artificial intelligence, in the design, fitting, and evaluation of these devices. Students learn how to measure and customize prosthetic devices using innovative technological tools to improve functional performance and patient comfort, and they are introduced to the stages of manufacturing smart prosthetics and orthoses using data-driven and digital analysis-based personalized solutions.</p>				
12013231	Orthopedic Physical Therapy 2	2	12013130	face-to-face
<p>This course will cover clinical musculoskeletal disorders related to physical therapy practice, including rheumatic diseases, muscle and bone tumors, and diseases of the bones and muscles, as well as common musculoskeletal disorders of the spine. Basic assessment methods will be presented for evaluating the muscles and bones of the lower limbs and spine, along with rehabilitation techniques for the lower limbs and spine.</p>				
120131232	Orthopedic Physical Therapy 2 (Practical)	1	12013231*	face-to-face
<p>Practical laboratory experience in assessing cases and applying all therapeutic methods and physical therapy techniques for conditions such as rheumatic diseases, muscle and bone tumors, and diseases of the bones and muscles, as well as common musculoskeletal disorders of the spine. This also includes rehabilitation of the lower limbs and spine to prepare students for clinical cases.</p>				
12013233	Neurologic Physical Therapy 2	2	12013133	face-to-face
<p>An integrated application of neurorehabilitation principles with complex neurological disorders such as spinal cord injuries, multiple sclerosis, Parkinson's disease, ataxia, and head injuries. The focus will be on evidence-based treatment of neurological conditions, working as a cohesive team, and providing patient-centered care that addresses the needs of individuals to enhance healthcare and prevent complications.</p>				
12013234	Neurologic Physical Therapy 2 (Practical)	1	12013233*	face-to-face
<p>Practical laboratory experience in assessing neurological conditions and rehabilitating patients, as well as applying all therapeutic methods and physical therapy techniques for cases such as strokes, spinal cord injuries, multiple sclerosis, Parkinson's disease, ataxia, and head injuries.</p>				
12013235	Pediatric Physical Therapy 1	2	12012134	face-to-face
<p>Principles of normal development in children, focusing on gross and fine motor development, the importance of motor learning, and concepts of motor control. The course will also discuss abnormal development and the resulting functional and motor deficits, along with defining issues related to</p>				

motor impairment and their impact on growth. This course provides a model for practicing physical therapy with children, including examples of different therapeutic approaches, early intervention strategies, and assessment and treatment methods for newborns.				
12013236	Sports Physical Therapy	1	12013140	face-to-face
This course introduces students to physical therapy for sports injuries and conditions related to bones and joints resulting from accidents both on and off the sports field. It includes identifying risk factors, first aid tools for sports injuries, injuries associated with fractures, and the rehabilitation of these injuries and the injured athlete. This encompasses examination, diagnosis, intervention, and outcomes.				
12013237	Sports Physical Therapy (Practical)	1	12013236*	face-to-face
Practical application of assessment and physical therapy methods for sports injuries, including ligament tears, fractures, and tendon dislocations, focusing on risk factors and first aid tools for sports injuries.				
12013240	Physical Therapy Clinic 2	2	12013140	face-to-face
Applying the theoretical aspects previously studied and using basic knowledge to assess patients and develop and implement treatment plans for neurological disorders in both adults and children, as well as rehabilitation after brain or spinal surgeries. The students' role in this course is limited to observing and monitoring qualified physical therapists as they assess and treat patients.				
12014110	Research Methods	3	-	blended
Introducing the importance of scientific research and its types, along with the methods, techniques, and essential elements in scientific research. This includes the requirements and conditions necessary for conducting structured research, taking into account research ethics. It covers how to conduct research in an organized way, including selecting and designing the study, gathering information, and analytical strategies, such as case studies, experimental designs, survey methods, and writing research reviews.				
12014131	Cardiopulmonary Physical Therapy	2	12012127	face-to-face
Through this course, students will be able to assess patients with disorders of these systems by taking a medical history. This course enables students to systematically analyze the evaluation information they gather and develop an appropriate treatment plan, considering the physiological changes related to the patient's condition. The course also includes physical therapy for various respiratory and circulatory disorders, educating the patient and their family, home exercises, and suitable health practices at home or work that are appropriate for the patient's condition, as well as methods for monitoring the patient's progress.				
12014132	Cardiopulmonary Physical Therapy (Practical)	1	12014131*	face-to-face
The practical aspect of assessing and treating patients with respiratory and circulatory disorders, as well as other specialized body systems, will be covered in this lab. It will include hands-on practice in measuring blood pressure and pulse, listening to heart and breath sounds, reading electrocardiograms, and practicing positions that help clear the airways of excess fluids and secretions. The practical part will also involve practicing the clinical and therapeutic exercises needed for various conditions studied in the theory section, as well as evaluating and using the necessary supportive devices during treatment that are suitable for the patient's condition.				
12014133	Pediatric Physical Therapy 2	2	12013235	face-to-face

Principles of assessment and physical therapy methods for various medical conditions in children, such as different diseases of the nervous system, musculoskeletal disorders, congenital conditions at birth, and heart and respiratory diseases.				
12014137	Pediatric Physical Therapy 2 (Practical)	1	12014133*	face-to-face
The course will cover various physical therapy methods for medical conditions in children, including those related to the nervous system, musculoskeletal system, and congenital conditions at birth. Supervised hands-on experience and assessment strategies will be provided for therapeutic interventions for children.				
12014138	Physical Therapy for Women's health	2	-	face-to-face
This course focuses on studying the components of the pelvis and diseases affecting the female urinary and reproductive systems, as well as their overall health, particularly during different stages of pregnancy, childbirth, and postnatal rehabilitation. It includes practical applications of physical therapy methods that promote women's health, strengthen pelvic muscles, and therapeutic exercises for the back and abdominal muscles after childbirth.				
12014148	Field Training in Physical Therapy 1	4	12013240	face-to-face
Clinical training to develop skills in assessing patients, creating physical therapy treatment plans, and managing patients will last for 16 weeks, with students training two full days a week. During this period, students will work under the supervision of trainers on cases related to bone diseases and surgeries, neurological disorders, pediatric conditions, burn patients, general surgery, and heart and lung diseases.				
12014249	Field Training in Physical Therapy 2	8	12014148	face-to-face
Clinical training to develop students' skills in assessing patients, creating physical therapy treatment plans, and managing patient care will last for 16 weeks, with four full days of training each week. During this time, students will work under the supervision of trainers on cases involving bone diseases and surgeries, neurological disorders, pediatric conditions, burn patients, general surgery, and heart and lung diseases.				
12014220	Research project in physical therapy	1	12014249* 12014110	face-to-face
In this course, students choose a clinical case from the various cases they encountered during their studies or field training for their research project. Students begin by reviewing the literature on the assessment and treatment methods used in similar cases. At the end of the semester, they present their findings to their classmates in a seminar-style presentation.				
12021210	Biochemistry	3	11011109	blended
Introduction to biochemistry, Water properties and buffer, Amino acid, Proteins structures, Types of proteins such Globular protein and Fibrous protein, Enzymes, Enzymes kinetics, Nucleic acid, Introduction to Carbohydrate, Carbohydrate metabolism, Lipid structure, function and metabolism.				
12032111	General Pharmacology	3	-	blended
The general principles of pharmacology, including pharmacokinetics and pharmacodynamics of drugs in general, especially those related to anesthesia and intensive care units. It describes the pharmacokinetics of medications in specific patient groups, such as patients with obesity, pregnant women, premature infants, newborns, and children. Finally, it outlines the different classes of drugs that affect all body systems, with special attention to anesthetic agents and groups.				
12024210	Management of Health Services	3	-	blended

Principles of management and leadership in general, focusing on the administrative skills needed for health care professionals in hospitals and medical clinics. This includes communication with the medical team, problem-solving skills, delegation, time management, and improving the quality of medical services. It also covers quality control in providing health services. Additionally, the course includes writing resumes, preparing for job interviews, and presentation skills.				
12034220	Medical Terminology	3	-	blended
This course introduces students to the basic medical concepts and terms used in the healthcare field, with a focus on vocabulary and expressions related to allied health professions. It aims to develop the ability to understand and interpret common terms that help health care professionals communicate effectively with medical teams and analyze patient cases.				
12014221	Medical Sociology	3	-	blended
This course covers the basic principles of medical rehabilitation and teamwork. It highlights the role of each member of the health care team and their relationship with the roles of other members. The course also focuses on the medical and research ethics that rehabilitation team members must follow in clinics and hospitals.				
12014230	Physical Therapy for Intensive Care Unit	3	12012127	blended
This course covers the principles of physical therapy and rehabilitation for patients who are unconscious, have experienced cardiac arrest, drowning, poisoning, cerebrovascular accidents (strokes), and those recovering from major surgery. The focus is on improving their health through various physical therapy procedures. Physical therapy is an important treatment within the intensive care unit (ICU) aimed at restoring patient movement and stability using methods such as chest physiotherapy.				
12014231	Physical Therapy for Internal Medicine	3	12012221	blended
This course focuses on studying the use of various physical therapy methods to manage complications and symptoms of many health conditions, such as high blood pressure, high cholesterol, diabetes, and insulin resistance.				
12014232	Hydrotherapy	3	12012221	blended
This course introduces hydrotherapy, its goals, benefits, and how to use water properties to support exercises in patient treatment. It covers essential concepts of hydrotherapy and its applications in physical therapy, including the effects of heat, cold, steam, and their impacts on muscles, joints, nerves, the circulatory system, and the body as a whole. Additionally, it discusses the use of hydrotherapy in treating certain conditions such as rheumatism, joint issues, muscle strains, tears, and injuries or fractures resulting from these conditions.				
12014233	Motor Control and Learning	3	12012134	blended
This course explores concepts of motor control and learning, including the factors that influence motor learning and the relationship between the nervous system and motor learning. It covers the stages of the motor learning process, analyzes recent trends in studying motor learning, and discusses different learning curves. Additionally, the course examines various models of learning and movement control, memory systems, individual differences, and the measurement of motor skills.				