



Concise Course Curriculum of the Undergraduate Physiotherapy Programme (TEI Programme)

1st Semester (winter period)

A/A	Module	Weekly hours		Semester (total)	
		Lecture	Laboratory /Clinical	Work Load	ECTS
1	Anatomy of Musculoskeletal System	4	2	210	7
2	Anatomy of the Nervous System & Internal Organs	4	-	180	6
3	Physiology	3	-	140	5
4	Trunk Kinesiology	3	3	180	6
5	Computer Science in Health	2	-	80	3
6	English for Specific Purposes – Medical Terminology	2	-	80	3
Sum		18	5	870	30

2nd Semester (spring period)

A/A	Module	Weekly hours		Semester (total)	
		Lecture	Laboratory /Clinical	Work Load	ECTS
1	Pathology	4	-	180	7
2	Pharmacology	2	-	90	3
3	Neurophysiology	3	-	110	4
4	Kinesiology of Limbs	4	4	240	8
5	Soft Techniques Techniques	2	2	120	4
6	Biostatistics	2	1	105	4
Sum		17	7	845	30

3rd Semester (winter period)

A/A	Module	Weekly hours		Semester (total)	
		Lecture	Laboratory /Clinical	Work Load	ECTS
1	Surgery-Orthopaedics-Traumatology	4	-	150	6
2	Neurology	3	-	135	5
3	Principles of Cardiorespiratory Physiotherapy	2	4	150	5
4	Kinesiotherapy- Therapeutic Exercise	2	2	120	4
5	Biomechanics -Pathomechanics	3	2	150	5
6	Principles of Biophysics-Electrophysiology	3	-	135	5
	Sum	17	8	840	30

4th Semester (spring period)

A/A	Module	Weekly hours		Semester (total)	
		Lecture	Laboratory	Work Load	ECTS
1	Physical Therapy for Special Populations	3	-	135	5
2	Clinical Cardio-Respiratory Physiotherapy	3	7	240	9
3	Principles of Musculoskeletal Physiotherapy	3	-	135	5
4	Physiotherapy Assessment	3	2	165	6
5	Physical Modalities- Applied Electrotherapy	2	3	135	5
	Sum	14	12	810	30

5th Semester (winter period)

A/A	Module	Weekly hours		Semester (total)	
		Lecture	Laboratory	Work Load	ECTS
1	First Aid	2	-	90	3
2	Clinical Musculoskeletal Physiotherapy I	4	8	300	11
3	Principles of Neurological Physiotherapy	3	2	175	7
4	Manipulative :Physiotherapy	2	2	120	4
5	Physiology of Therapeutic Exercise	3	-	135	5
	Sum	14	12	820	30

6th Semester (spring period)

A/A	Module	Weekly hours		Semester (total)	
		Lecture	Laboratory	Work Load	ECTS
1	Clinical Musculoskeletal Physiotherapy II	3	6	250	10
2	Clinical Neurological Physiotherapy I	3	6	230	9
3	Diagnostic Imaging	2	-	90	3
4	Ergonomics- Prevention of Musculoskeletal Diseases	2	-	90	3
5	Elective Module 1: Intelligent Systems of Decision Making /Health Psychology	2	-	60	2
6	Patients Management- Ethics in Physiotherapy	2	-	90	3
	Sum	14	12	810	30

7th Semester (winter period)

A/A	Module	Weekly hours		Semester (total)	
		Lecture	Laboratory	Work Load	ECTS
1	Clinical Neurological Physiotherapy II	4	9	300	10
2	Sports Physiotherapy	3	2	165	6
3	Functional Management of Movement Dysfunctions	3	-	135	5
4	Research Methods in Health Sciences	2	1	120	4
5	Clinical Reasoning and Decision-making in Physiotherapy	2	-	90	3
6	Elective Module 2: Prosthetics-Orthotics /Management-Organisation-Quality of Healthcare Units	2	-	60	2
	Sum	16	12	880	30

8th Semester (spring period)

A/A	Module	Weekly hours		Semester (total)	
		Lecture	Laboratory	Work Load	ECTS
1	Thesis (Final- year dissertation)	-	-	-	20
2	Practical Placement (Internship)	-	-	-	10
	Sum				30

Brief Outline of Undergraduate Physiotherapy Modules

1st Semester (winter period)		
Course	Aim of Course	Content of Course
Anatomy of the musculoskeletal system	The aim of this course is the description and identification of the parts and structures of the muscular & skeletal system in relation to the human body.	Anatomy of the muscular and bony tissues, description of relative structures, identification of bony landmarks, surface anatomy, identification of muscles and their points of insertion
Anatomy of the nervous system & internal organs	Description of the anatomy of the nervous system and its structures. Description and identification of the internal organs of the human body.	Anatomy of the nervous tissue and neurons. Structures of the central and peripheral nervous system. Anatomy of the cells and structural components of the internal organs (Endocrine glands, peptic, respiratory, circulatory, urinary, genital, sensory systems).
Physiology	Review of the normal function and the interaction between the systems of the human body with emphasis on the respiratory, musculoskeletal and circulatory systems.	Cell function. Blood. Circulatory system. Peripheral circulation. Urinary and peptic systems. Thermoregulation. Endocrine glands. Muscular contraction. Respiratory function/gas exchange.
Trunk Kinesiology	This is the first course in the two-course Kinesiology sequence, introducing students to basic principles of kinesiology. Muscle performance testing and measurement of joint motion of the trunk, spine, pelvis and head.	Introduction to kinesiology, types of joints, description of normal and abnormal human movement, mobility integrity, mechanisms of muscle function. Human neuromuscular junctions. Kinesiology of the spinal column, trunk, pelvis & head.
Computer Science in Health	The presentation of the basic principles and concepts of modern biomedical technology and its applications in health professions and physiotherapy in particular.	Basic concepts of computer science in health administration. Protocols, classification, coding, communication and tele-medicine. Internet. Artificial intelligence and medicine. Visual reality. Medical imaging.
English for Specific Purposes	Enhance students' abilities in the main language skills (listening, speaking, reading, and writing as they pertain to physical therapy) and sub skills (understanding medical texts, producing academic writing, delivering oral presentations)	Texts, audio and visual material that relate to physical therapy (ranging from anatomy to physical disabilities) as well as developing presentation skills, taking medical histories, and doing patient consultations are areas covered in the course.

2nd Semester (spring period)		
Course	Aim of Course	Content of Course
Pathology	Students will learn the common diseases of human body, the specific symptoms and they will concentrate on physical examination and clinical assessment process.	Patho-anatomy, international classification of diseases. How to approach patients. Clinical examination, Diagnosis, Infectious diseases concepts. Common diseases of the respiratory, circulatory, peptic, urinary, renal, and endocrine gland systems. Collagen disease. Arthritis. Evaluation of common skin diseases. Blood diseases.
Pharmacology		
Neurophysiology	This course aims to a deep understanding of the basic neurophysiology concepts such as the synapses, the pyramidal tracks, the basal ganglia connections and the basic normal and abnormal clinical signs.	Characteristics and functions of sensorimotor system. Study of the neural connections, the organization of the central nervous system and the control of the voluntary movement. Mental functions and the autonomous nervous system
Kinesiology of Limbs	This second course of Kinesiology sequence introduces students to muscle performance testing and measurement of joint motion of the upper and lower limb.	Shoulder girdle, elbow, wrist, hand, pelvic girdle and hips, knee, ankle, foot – functional, kinematic and kinetic characteristics, motion analysis and muscle power assessment (MRC). Motions and muscles acting across these joints. Open and closed kinetic chain exercise analysis.

Soft Tissue Techniques	Train students to understand the basic principles of massage techniques. Decision making in choosing the appropriate technique according to assessment.	Introduction to soft tissue mobilizations techniques, types of massage, techniques of traditional massage, connective tissue and deep friction massage, lymphatic massage, criteria for technique choice, indications – contra-indications, types of skin diseases.
Biostatistics	Students learn basic principles of statistics and explore mechanisms of data management.	Introduction, basic concepts, types of data, distribution, research design, types of health related research, sampling, descriptive statistics, comparisons, correlations, analysis of variance.

3rd Semester (winter period)		
Course	Aim of Course	Content of Course
Surgery – Orthopaedics-Traumatology	This course explores common and important musculoskeletal injuries and introduces students to the principles of orthopaedic surgery.	Fractures, sprains, dislocations. Soft tissue injury. Deformities of spinal column and the extremities. Orthopaedic surgery and traumatology. Inflammatory joint disease. Degenerative joint disease. Neurogenic arthropathy. Infective arthropathies. Inositis.
Neurology	Study of the structures and function of the central and peripheral nervous system. Review of neurological conditions & diseases. Presentation of the basic principles of neurological examination and imaging techniques.	Neurological examination of the central and peripheral system. Imaging techniques. Diseases affecting the central and peripheral nervous system (congenital, acquired or traumatic) in relation to movement and sensory disorders, the neuromuscular junction and neuromuscular diseases. Epilepsy
Principles of Cardiorespiratory Physiotherapy	Basic principles for the assessment and physiotherapy interventions for patients with respiratory and cardiovascular diseases, as well as pre and postoperative physiotherapy of patients undergoing respiratory or cardiovascular surgery, or surgery with a high risk of respiratory/cardiovascular complications.	Respiratory failure. Obstructive & restrictive diseases. Paediatric respiratory physiotherapy. Pre & postoperative physiotherapy. Respiratory physiotherapy in the ICU. Pulmonary rehabilitation. Heart failure. Chronic heart failure. Surgery for cardiovascular diseases. Coronary disease. Hypertension.
Kinesiotherapy-Therapeutic Exercise	The application of motion to the rehabilitation of musculoskeletal injuries and the planning of kinisiotherapy programs.	Passive, assisted, active motion as therapeutic tools. Open and closed kinetic chain. Plyometrics. Static, dynamic, ballistic stretching. Flexibility. Proprioception training.
Biomechanics-Pathomechanics	Provides students with an in-depth understanding of the developed loads on the human body during various activities and rehabilitation. Connect motion with the effective and safe loading of biomaterials.	Mechanical principles and natural laws applied to musculoskeletal system. Kinematics, morphology and mechanical properties of the human joints. Mass, centre of gravity, posture, balance and gait, analysis of reflexes. Methods of monitoring musculoskeletal function such as EMG, motion analysis system etc. Mechanical properties of biomaterials.
Principles of Biophysics - Electrophysiology	Introduction to the basic principles of biophysics and electrophysiology of the human body. Exploration of the use of electrotherapy and physical agents for the rehabilitation of the muscular and neural function.	Elements of biophysics. Evoked potentials, electrostimulation, Electromyography. Direct and alternating currents. Ultraviolet radiation. Laser. Magnetic fields. Ultrasound. Diathermy.

4th Semester (spring period)		
Course	Aim of Course	Content of Course
Physiotherapy for Special Populations	This course focuses on the specific needs and capabilities of special populations the physiotherapy assessment and the design of safe and effective exercise programs.	Assess and train specific patient groups such as children with special mental difficulties, pregnant and post-partum women, elderly patients, patients with sensory impairments, cardiorespiratory problems and mental retardation with physiotherapy principles.
Clinical Respiratory Physiotherapy	Provide students with an in-depth understanding of the specific nature of respiratory diseases and their clinical assessment. Develop skills for breathing facilitation, expectoration and the improvement of respiratory muscles properties.	Kinematic analysis of breathing. Clinical assessment of respiratory function, damage – diseases. Post operation respiratory physiotherapy. Airway clearance techniques. Chronic obstructive pulmonary disease, asthma etc. The impact of thoracic spine deformities (e.g. scoliosis) on respiration. Intensive care unit, mechanical ventilation.
Principles of Musculoskeletal Physiotherapy	This course concentrates on the deep understanding of the physiotherapy assessment and management of musculoskeletal disorders preparing students to diagnose, manage and treat musculoskeletal injuries in an evidence-based approach.	Physiotherapy assessment and rehabilitation after fractures, sprains, dislocations, subluxations. Tendon, chondral and nerve injuries.
Physiotherapy Assessment	This course introduces and prepares students to the methodology of physiotherapy assessment. This is based on collecting subjective and objective findings before setting goals and programming the treatment.	Selection of reliable and valid assessment tools. Utility of these tools in a valid way. Organize the subjective and objective findings. Set goals, prioritize problems and design the treatment protocol
Physical Modalities – Applied electrotherapy	Introduction to physical modalities and understanding of the physiological changes caused after their application. Students learn how to perform safely electrotherapy for healing different types of injured tissues.	Introduction to electrotherapy. Neuromuscular electrostimulation, TENS, FES, iontophoresis, Laser, Sock wave, EMG Biofeedback. Indications and contra-indications.

5th Semester (winter period)		
Course	Aim of Course	Content of Course
First aid	The course focuses in preparing students to identify life threatening conditions and provide immediate support to patients. Emphasis is given on cardiopulmonary resuscitation (CPR), treatment of burns, bites, stings, electric shock and poisons.	Basic concepts of first aid. Assessment of neurological, cardiopulmonary and orthopaedic injuries. Examination and treatment of integumentary system (wounds, burns, bites, stings, skin ulcers, traumatic injuries etc.). Control of bleeding, foreign body removal, debridement, support of fractures and dislocations. Hypothermia, heat stroke, electric shock and poisons. Carrying injured individuals. Emergency tracheotomy
Clinical musculoskeletal physiotherapy I	This is the first in the two-module Musculoskeletal physiotherapy sequence, preparing students to diagnose, manage and treat acute and chronic musculoskeletal injuries- both conservatively and post-surgically for the upper and lower limbs.	Physiotherapeutic assessment and intervention for degenerative osteoarthritis, rheumatological diseases, autoimmune diseases, chronic syndromes (frozen shoulder, overuse syndromes, anterior knee pain, etc), pre- and postoperative (knee arthroplasty, hip arthroplasty, etc) and peripheral nerve injuries.
Principles of Neurologic Physiotherapy	The assessment of neurological patients and the principles of the therapeutic interventions aimed at these patients. Assessment of the motor and	Clinical and laboratory tools of neurological assessment (scales, functional tests, EMG, etc). Popular rehabilitation approaches (PNF, Bobath, motor learning, forced use, virtual reality, FES, biofeedback, etc)) for the neurological patient

	functional deficits of neurological patients and planning of the rehabilitation program based on plastic changes of the brain	(upper & lower motor neuron syndrome, extrapyramidal syndromes, somatosensory deficits, perceptive & cognitive deficits)
Manipulative Physiotherapy	Basic principles for the differential clinical diagnosis and rehabilitation of the articular system through the use of mobilization and manipulation techniques for physiotherapists. Clinical reasoning for deciding the optimal therapeutic mobilization technique for specific musculoskeletal dysfunctions. Clinical assessment of the biomechanical behavior of the peripheral nervous system and application of neurodynamic tests.	Differential diagnosis of tissues (bones, ligaments, tendons, muscles, neural tissue, fasciae, skin) responsible for the restriction of joint motion. Basic principles of osteokinematics and arthrokinematics of the upper & lower limbs and the spine. Basic kinds of joint mobilization and their application for the assessment of joint mobility. Biomechanical and neurophysiological mechanisms underlying the basic principles for manipulation and mobilization techniques. Introduction to various manipulative therapy concepts (Maitland, Kaltenborn, etc).
Physiology of Therapeutic Exercise	Function of muscular, respiratory, nervous, circulatory and endocrinal system during body work with emphasis on therapeutic exercise. Short- and long term effects of therapeutic exercise in the various systems of the human body. Clinical and laboratory methods of assessment of physical performance.	Characteristics of various types of muscle fibers, energy sources, different types of metabolism (aerobic, anaerobic, etc) under conditions of physical effort. Characteristics of the use of energy sources regarding the duration, the intention and the frequency of exercise for the successful planning of an exercise regime, such as the aerobic and anaerobic threshold and maximal oxygen consumption. Basic types of exercise for achieving specific aims (e.g. strengthening, improvement of aerobic capacity, etc). Effect of various types of exercise on the systems of the human body (cardiovascular, respiratory, nervous, muscular, etc).

6th Semester (spring period)		
Course	Aim of Course	Content of Course
Clinical Musculoskeletal Physiotherapy II	This module prepares students to evaluate, manage and treat with safety and effectiveness musculoskeletal deformities and disorders of spine. It mainly concentrates on the newly developed functional rehabilitation concepts for spinal conditions and injuries (both, treated conservatively and surgically).	Assessment of human spinal deformities (scoliosis) and musculoskeletal syndromes and disorders (low back pain, nerve root syndromes, facet joint syndromes, spinal stenosis, discogenic presentations etc). Treatment of auto-immune and metabolic diseases of spine, chronic spinal conditions and pathologies, osteoarthritis, rheumatoid arthritis as well as post surgical conditions (i.e. arthroscopy, fusion etc.) utilizing all current early and functional rehabilitation concepts (stability principles, McKenzie, manipulative therapy etc.).
Clinical Neurological Physiotherapy I	This course aims to support students with in-depth knowledge of the physiological kinetic neurodevelopment. Emphasis is given on neurodevelopmental disorder- assessment and treatment.	Neurodevelopmental stages and physiological changes at every position (supine, prone, sitting, standing). Recognition of abnormal signs at every stage. Assessment, prognosis and setting therapeutic goals in cerebral palsy, polyneuropathies, myopathies. Rehabilitation techniques.
Diagnostic (medical) imaging	The course aims to introduce students into various medical imaging techniques and their special characteristics. Students learn about their application and diagnostic effectiveness in various pathological conditions especially in musculoskeletal diseases.	Introduction to medical imaging techniques. Basic X-Ray findings in spinal column and limbs. Radiology, ultrasound, scintiscan, CT-scan, MRI of the various human body systems. Phlebography, arteriography. Sensitivity, specificity and accuracy of medical imaging techniques.

Ergonomics- Prevention of Musculoskeletal Diseases	Students learn the basic principles of protection and rehabilitation of musculoskeletal problems caused at work, through an in-depth understanding of the developed loads on the human body during various activities and the danger for musculoskeletal injuries.	Ergonomical principles and natural laws applied to musculoskeletal system. Recognition of inappropriate posture and unsafe loading of biomaterial. Mechanical properties of biomaterials. Overuse syndromes, The impact of adverse working conditions and stress in the human body. Prevention of ergonomical inappropriate postures and rehabilitation of functional asymmetries.
Intelligent Systems of Decision Making	Students learn the techniques and applications of computational intelligence and the principles of using clinical decision support systems	Introduction to computational intelligence, its principles and its techniques, clinical decision making systems.
Health Psychology		
Patients Management-Ethics in Physiotherapy	Understand the importance and limits of ethics between health professionals, patients and their families. Learn how to manage ethical issues when conducting research in health issues.	Ethics in health professions, law and society, morality and religion, human rights. Professional rights in public and private sectors. Potentials for personal development in the physiotherapy profession. Recognition of unethical behaviors and protection from 'unethical' colleges.

7th Semester (winter period)		
Course	Aim of Course	Content of Course
Clinical Neurological Physiotherapy II	Clinical management of neurological patients with movement and functional deficits Application of assessment tools and planning of therapeutic interventions based on the clinical symptoms of the patient and the relative functional goals. Critical thinking and clinical reasoning for the selection of the optimal intervention based on the clinical picture of the patient.	Clinical importance of the reorganization of the cortex for the rehabilitation of neurological patients. Changes in the kinematic characteristics of functional activities, such as sit to stand, gait, balance in the neurological patient. Therapeutic interventions for spinal cord lesions, cerebellar lesions, upper motor neuron syndrome, extrapyramidal lesions (Parkinson's disease), traumatic brain injury. Analysis of the perceptual-cognitive deficits, somatosensory deficits and the way they affect the rehabilitation process. Role of clinical neuropsychology. Analysis of case studies.
Sports Physiotherapy	Basic principles for the assessment and rehabilitation of sports injuries with emphasis on prevention through the rehabilitation of predisposing intrinsic (functional asymmetries/imbbalances) and extrinsic (environmental) factors. Differentiation of therapeutic approach in the rehabilitation of sports injuries through the application of progressive rehabilitation programs Planning of rehabilitation programs for sports injuries.	Characteristics of sports injuries (types, tissues involved, analysis of the inflammatory reaction). Etiology of sports injuries (prevalence, intrinsic & extrinsic factors). Physiotherapy assessment of the sports injuries (laboratory and clinical measurements of the muscular functional capacity of the athletes, recording of myodynamic asymmetries and imbalances). Prevention of sports injuries (equalization of functional imbalances, improvement of predisposing factors). Rehabilitation techniques for sports injuries (taping, proprioception and kinaesthesia training, stretching). Physical agents (cryotherapy, heat).
Functional Management of Movement Dysfunctions	Basic principles of functional rehabilitation of movement disorders with emphasis on functional rehabilitation of central nervous lesions. Basic principles of postoperative rehabilitation of diseases and lesions of the central nervous system.	Assessment and functional rehabilitation for a) diseases-lesions of the central nervous system, b) injuries of the peripheral nerves, c) tetraplegia-paraplegia, d) pre- and postoperative, e) chronic conditions of peripheral nerve damages, f) sports injuries.
Research Methodology in Health Sciences	This course covers basic principles of research methodology and scientific information queries. Students learn	Basic principles of research methodology.

	<p>how to perform a literature review, how to test research protocols, statistical results.</p> <p>Emphasis is given to research methods applied to answer clinical questions in physiotherapy.</p>	<p>The role of research, definitions, the scientific method and its prerequisites, research in the Internet</p> <p>Research planning, sampling methods, types of research, basic and applied research.</p> <p>Measurement, measurement scales. Variables and statistical data.</p> <p>Descriptive research, correlations, parametric and non parametric research, multivariate analysis.</p>
<p>Clinical Reasoning and Decision-making in Physiotherapy</p>	<p>Basic techniques of research methodology with emphasis in the study of presentation of research results and in the planning and presentation of a research in conferences and scientific meetings.</p>	<p>Presenting and analyzing the results of a research study.</p> <p>Writing articles and presentations of research studies.</p> <p>Examples of research studies in physiotherapy</p> <p>Scientific conferences - meetings</p>
<p>Prosthetics - Orthotics</p>	<p>Basic principles of rehabilitation by using orthotics</p>	<p>Introduction to different kinds of prosthetics and orthotics. Analysis of rehabilitation by their utility in paralysis, scoliosis, kyphosis, amputation.</p>
<p>Management-Organisation-Quality of Healthcare Units</p>		

